Employment Strategy Papers

Trade liberalization, export orientation and employment in Argentina, Brazil and Mexico

By Christoph Ernst

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Foreword

In the 1990s, Latin America was characterized by drastic changes in its development model. Inspired by the Washington Consensus, Argentina, Brazil and Mexico opted – albeit in varying degrees – in favour of a more liberal system. One major policy shift occurred from import-substitution policies involving trade barriers and capital controls, towards export-oriented growth strategies involving elimination of trade barriers and open capital markets. Export orientation was also accompanied by efforts at regional integration: Argentina and Brazil created the Southern Common Market (Mercosur) with their neighbouring countries Paraguay and Uruguay, while Mexico reinforced its trade links with the United States and Canada through its membership in the North American Free Trade Agreement (NAFTA).

According to traditional trade theory, economic liberalization is meant to result in increased trade, accelerated technological change, efficiency gains and growth. It is argued that a more efficient allocation of resources will, in the long run, lead to increased welfare and will have a positive impact on employment as well as on poverty and inequality, even though negative employment effects in specific sectors may occur in the short run. Since these countries had a comparative advantage of abundant labour, one of the selling points for trade liberalization was the belief that labour would benefit, as production for export was believed to be more labour-intensive than production for the internal market. Moreover, because demand for low-skilled labour would increase relative to demand for skilled labour, it was also argued that low-skilled workers would receive greater pay increases relative to skilled workers, thus compressing the unequal income distribution that has plagued these countries, especially Brazil and Mexico, for decades.

But did the new development strategy result in improved growth and employment as expected? This study describes the trade liberalization process as well as the general patterns of trade and export performance of Argentina, Brazil and Mexico and attempts to assess sectoral labour market impacts. It investigates whether the new development strategy resulted in predicted outcomes for growth and employment. The study also attempts to show which sectors were the winners and losers as a result of the policy shifts, and how these shifts affected the overall labour market.

Economic opening in Argentina, Brazil and Mexico did not lead to export dynamism and had a disappointing impact on employment, even though economic opening and regional integration caused a strong increase in trade and led to a better integration into the world economy. Only Mexico experienced an export surge in manufacturing production and employment during the second half of the 1990s, mainly due to the booming *maquiladora* sector. However, the *maquiladora* industry did not develop significant links with the rest of the economy. There was no upgrading of production even for the more sophisticated exports, since the import content of exports also rose significantly. Moreover, the *maquiladora* industry has declined significantly since 2000 thus reducing drastically formal job creation in Mexico. Another worrying phenomenon is the decline in specialization of dynamic products vis-à-vis the world market and the remaining specialization in primary, semi-processed primary or low value-added goods, in particular in Argentina, but also in Brazil.

The direct impact of increased imports on employment in the manufacturing sector was both positive and negative depending on the industry during the second half of the 1990s, but its indirect impact was negative as a result of industrial restructuring and a rise in labour productivity, in particular in Argentina and Brazil. This led to a general decrease in demand for labour in manufacturing, but also to a wage shift in favour of skilled workers, as illustrated clearly in the automobile sector of Argentina and Brazil. SMEs were the major losers of the

new development strategy, as they were not able to benefit from new export opportunities, due to lack of financial resources and technical support. In Mexico, the opening of the domestic market to highly subsidized US products had a disastrous impact on employment in agriculture and represented another setback of trade opening. This shows that sequencing and appropriate targeting of the economic opening process is crucial in avoiding high social adjustment costs.

Even though economic opening has not produced the desired results with regard to employment at a first stage, an export orientation strategy still has the potential to contribute to quality employment creation. The efforts towards better integration into the world market should continue in strength as it has the potential to yield higher welfare for the whole population as shown in the case of industrial clustering or third generation maquiladoras. A better integration into the world economy is crucial, but so is the domestic market, in particular for employment, which is an important element to guarantee sustainable growth and equitable development.

This working paper forms part of the comparative study on employment creation in Argentina, Brazil and Mexico, undertaken by the Employment Analysis and Research Unit of the Employment Strategy Department. The objective of this study is to propose recommendations, for submission to the social partners, with respect to the creation of employment in these countries, based on an analysis of four policy areas: macroeconomic policy, trade, industrial and regional policy, labour market policies and social dialogue. The study is part of the implementation of the Global Employment Agenda, the employment arm of Decent Work.

Rizwanul Islam
Director
Employment Strategy Department

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ACRONYMS

ALADI:	Asociación Latinoamericana de Integración/Associação Latino-americana de Integração
CET:	Common External Tariff
DS:	Declining Star
ECLAC:	Economic Commission for Latin America and the Caribbean (CEPAL)
EU:	European Union
FDI:	Foreign Direct Investment
FTA:	Free Trade Agreement
FTAA:	Free Trade Agreement of the Americas
GDP:	Gross Domestic Product
IDB:	Interamerican Development Bank
INEGI:	Instituto Nacional de Estadística Geografía e Informática
ISI:	Industrialization by Substitution of Imports (Development Strategy)
ISIC:	International Standard Industrial Classification
ISTC:	International Standard Trade Classification
Mercosur:	Southern Cone Common Market (Mercosul in Portuguese)
MO:	Missed opportunities
N.A.:	Not available
NAALC:	North American Agreement on Labour Cooperation
NAFTA:	North American Free Trade Agreement
N.S.:	Not significant
OECD:	Organization for Economic Co-operation and Development
PICE:	Programa de Integración y Cooperación Económica
R:	Retreat sectors
RCA:	Revealed Comparative Advantage
RS:	Rising Star
TICD:	Tratado de Integración y Cooperación para el Desarrollo
TNCs:	Transnational Corporations
UN:	United Nations
UNCTAD:	United Nations Conference on Trade and Development
UNIDO:	United Nations Industrial Development Organization
WB:	The World Bank
WITS:	World Integrated Trade Solution
WTO:	World Trade Organisation
% =	Percentage

1. Introduction

During the 1990s, Argentina, Brazil and Mexico changed their economic development models. Inspired by the Washington Consensus, they all opted – albeit in varying degrees – in favour of a more liberal system. One major policy shift occurred from import-substitution policies involving trade barriers and capital controls, towards export-oriented growth strategies involving elimination of trade barriers and open capital markets. Export orientation was also accompanied by efforts in regional integration: Argentina and Brazil created the Southern Common Market (Mercosur) with their neighbouring countries Paraguay and Uruguay, while Mexico reinforced its trade links with the United States and Canada through its membership in the North American Free Trade Agreement (NAFTA).

According to traditional international economic theory, economic liberalization is meant to result in increased trade, accelerated technological change, efficiency gains and growth. It is argued that a more efficient allocation of resources will, in the long run, lead to increased welfare and will have a positive impact on employment as well as on poverty and inequality[1], even though negative employment effects in specific sectors may occur in the short run. One of the selling points for trade liberalization in developing countries was the belief that labour would benefit, since production for export was believed to be more labour-intensive than production for the internal market. By opening the economy and thus removing price distortions, it was argued that the combination of a more efficient resource distribution based on the country's comparative advantage of abundant labour coupled with more dynamic growth would stimulate job growth.[2] Moreover, because demand for low-skilled labour would increase relative to demand for skilled labour, it was also argued that low-skilled workers would receive greater pay increases relative to skilled workers, thus compressing the unequal income distribution that has plagued these countries, especially Brazil and Mexico, for decades.

But did the new development strategy result in improved growth and employment as expected? This study describes the trade liberalization process as well as the general patterns of trade and export performance of Argentina, Brazil and Mexico and attempts to assess sectoral labour market impacts. It investigates whether the new development strategy resulted in predicted outcomes for growth and employment. The study also attempts to show which sectors were the winners and losers as a result of the policy shift, and how these shifts affected the overall labour market.

2. Trade liberalization and regional integration

Argentina was the first country to start a trade liberalization programme during the mid-1970s and then again during the mid-1980s, initially on a unilateral basis, then intensifying it in 1986 with its neighbouring country, Brazil, through an economic cooperation and integration agreement.[3] This agreement was reinforced in 1988 by the Treaty on Development Integration and Cooperation[4], which contained important sectoral protocols for a list of product categories.[5] In 1989, over 60 per cent of the tariff lines formerly under quantitative restrictions were liberalized (Estevardeordal, Goto and Saez, 2000). The country proceeded with further liberalization thereafter, with the exception of the car industry. In

1990, import licensing requirements were removed and tariffs were made uniform to 21 per cent and, thereafter, progressively reduced further, as described in Table 1.

Mexico started to reform its trade regime in 1985. It eliminated import licenses on capital and intermediate goods and reduced tariffs, so that by 1993, the weighted average tariff level was 8 per cent (Lustig, 2001). By 1990, when Mexico initiated discussions on NAFTA, it was one of the most open developing countries in the world (OECD, 2002).

Table 1: Evolution of average unweighted import tariffs, 1987-2001 (percentages)

	1987	1990	1991	1992	1995	1997	1998	2001
Argentina	27.0	20.5	12.2	11.8	10.5	11.3	13.5	11.6
Brazil	51.0	32.2	25.3	21.2	11.1	11.8	14.6	12.9
Mexico	11.3	11.1	13.1	13.4	13.1	12.6	13.3	16.2

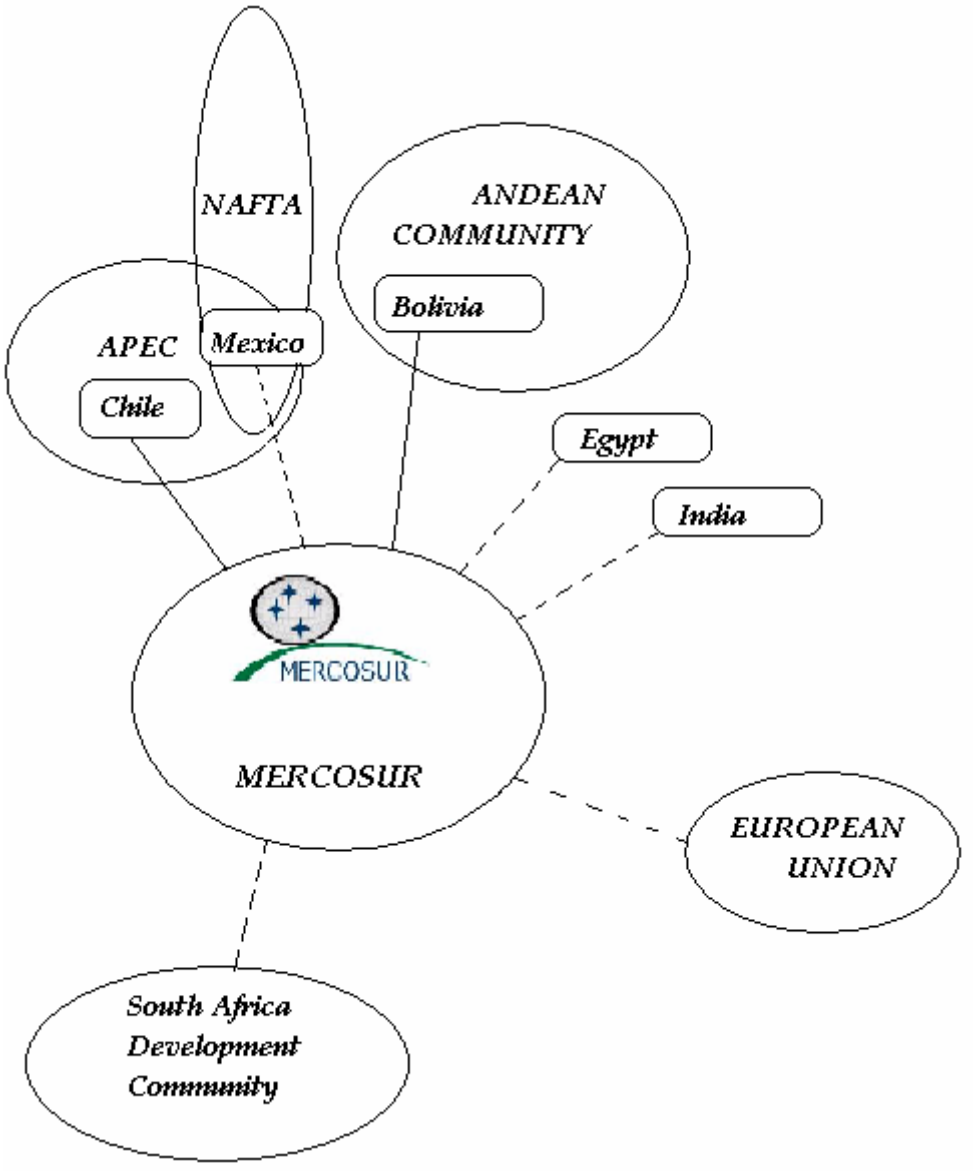
Source: Authors' calculation based on data derived from databases of the World Trade Organization (WTO), the Inter-American Development Bank (IDB), the World Bank and the United Nations Conference on Trade and Development (UNCTAD).

Brazil launched a major tariff reduction programme in 1991, which envisaged annual tariff reductions to reach fixed final target rates, a programme it completed in 1993. Later, the range of tariffs was further reduced, non-tariff barriers (NTBs) removed and the average rate lowered. Table 1 shows that drastic reductions were already achieved in Argentina and Brazil even before the inception of Mercosur, and continued after this regional agreement came into effect both in terms of tariffs and NTBs. The late 1990s, however, saw some setbacks[6] due to the economic crisis, but the overall trend has been towards further liberalization. Nevertheless, the Mercosur countries still have a relatively high level of trade protection compared with OECD countries: in 2001, the average tariff for the European Union (EU) was 3.9 per cent, the United States 5.1 per cent and Japan 4.0 per cent. At the sectoral level, OECD countries have high protection – directly or indirectly – for specific agricultural and semi-manufactured products, where they have lost competitiveness on the world market, and low protection for high-technology products where they are strongly competitive. The trend in Mercosur countries, and to a lesser extent Mexico, is the opposite: low protection for primary products and high protection for industrial products, as their comparative advantage lies mainly in low-value-added products.

After liberalizing trade bilaterally, Brazil and Argentina decided to create a common market of the Southern Cone of the Americas, Mercosur, to which they invited Uruguay and Paraguay to join. Both countries already had bilateral agreements with Uruguay. The main goals of Mercosur were to foster trade, enhance productive and technological changes in key sectors through investment flows and promote cooperation in key areas such as transport, energy and technology. The major pillars of Mercosur are the free movement of goods and services, but also of productive factors, the establishment of a common external tariff (CET) as well as the harmonization and coordination of economic policies[7] and legislation among member countries. Its final objective is more ambitious than that of NAFTA and it aims to follow, to some extent, the model of the European integration, with a strong emphasis not only on the economic, but also the social, political and cultural dimensions. Its final goal is the establishment of a genuine common market. Despite this ambitious goal, Mercosur has as yet – in contrast to the EU - few supranational bodies and institutions; instead, governance has been mainly inter-governmental. This is particularly true for labour market governance (see Berg, Ernst and Auer, forthcoming).

In addition to being a free trade zone, Mercosur is also a customs union, in that the member countries agreed in Ouro Preto in 1994 to a CET, which implied substantial overall external tariff reductions (Baumann, 2001), but also some tariff increases for specific products by each member country. In this context, the CET contains a national list of exceptions for specific products (mainly automobiles, sugar, capital goods, informatics and telecommunications) proposed by each Mercosur member. In general, the trend is to reduce the CET and the list of exceptions. The list of sensitive products was introduced to facilitate structural adjustment and help place the sectors involved in a competitive position within the region by the end of a specified period. The CET is characterized by tariff escalation, meaning that products in the same sector, but at different stages of production, have different tariff levels. A form of managed trade applies to the automotive sector, whereby it benefits from local content provisions.[8]

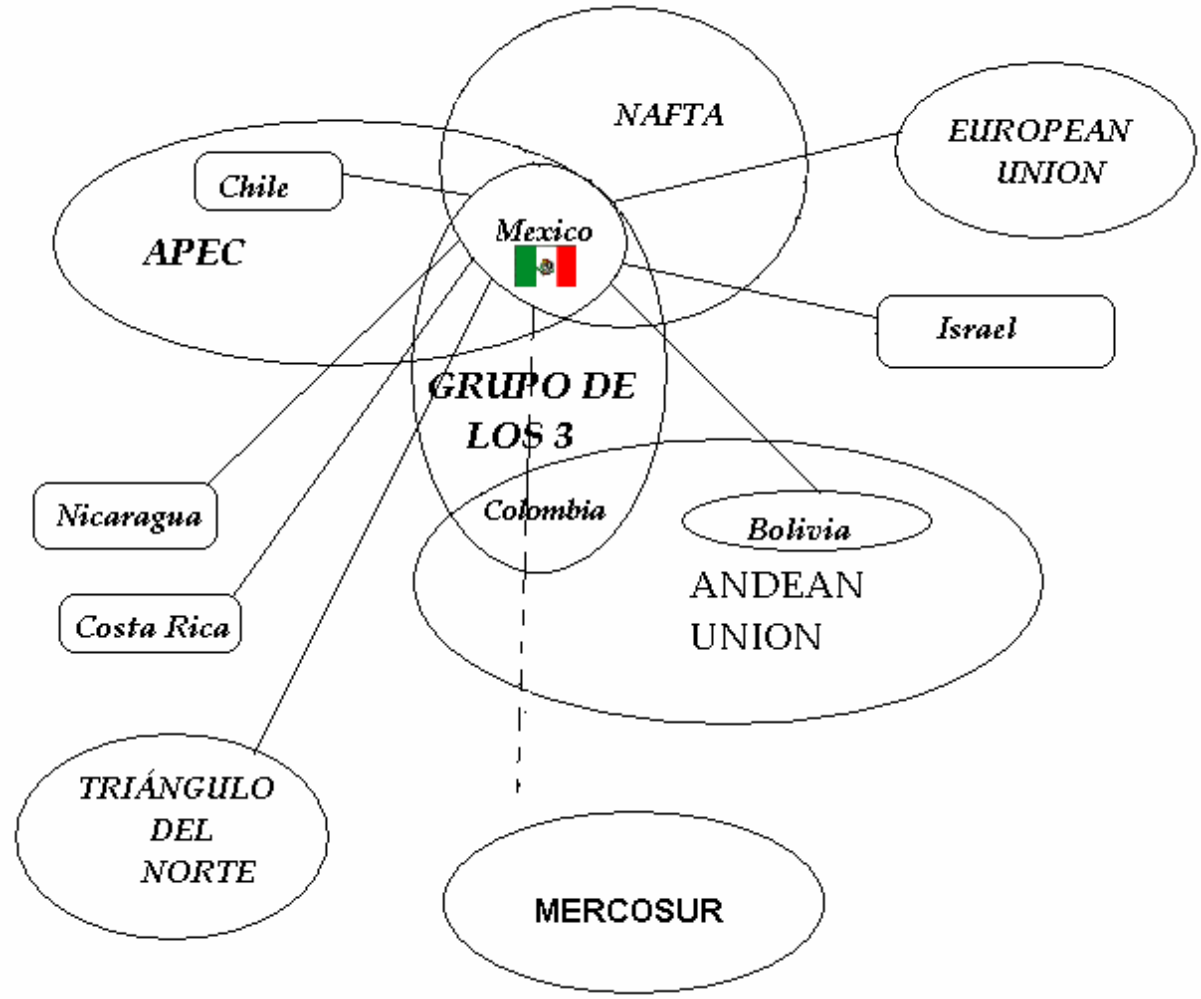
Figure 1: Mercosur's trade agreements



Mercosur countries are not only interested in advancing and deepening their integration process, they also look for better integration into the world economy with the help of bilateral trade agreements. Nevertheless, besides a special treaty with Chile and Bolivia, many of the trade agreements (dash lines) are still in process, such as with the European Union, the Andean Group and Mexico. The interest of Mercosur countries in further South-South integration is striking as demonstrated by recent negotiations with the South Africa Development Community, India and Egypt.

Mexico has followed a similar path of trade liberalization, but a different regional integration strategy. After being badly hit by an economic crisis in 1982, it changed its economic policy drastically, from an import-substitution to an export-oriented development strategy, and it progressively liberalized its trade regime. It accorded special attention to its relationship with its main trading partner, the United States, initially through bilateral agreements in the 1980s and subsequently by a further deepening of relations with the formation of NAFTA in 1994. This agreement included, for the first time, a developing country and two industrialized countries (Audley et al., 2003). NAFTA's objectives are mainly limited to the liberalization of trade between its members (UNCTAD, 2003). It is basically an economic agreement, and even migration is not adequately covered in the treaty. Mercosur on the other hand, aims at real socioeconomic, political and cultural integration, although this process is still in its early stages. Moreover, Mercosur is a South-South integration process of similar countries with similar production patterns, and thus few complementarities. In addition, the national markets have relatively low demand elasticity. However the regional market, being less competitive, serves as a trial or apprenticeship stage for future integration at the global level, as it entails fewer social adjustment costs.

Figure 2: Mexico's trade agreements



NAFTA, on the other hand, has implied the integration of an emerging economy, Mexico, with two powerful and very competitive countries, the United States and Canada. Despite strong competition from United States exporters, Mexico has, nevertheless, benefited from a high degree of complementarity of its production structure vis-à-vis that of its northern partners in terms of goods and services and production factors, with special emphasis on the labour force. It also received privileged, permanent and secured access to the richer countries' markets which have a high demand for their exported goods.. As a result, it became a destination for large FDI inflows, through which it also acquired know-how and technology aimed at closing the technology gap. Mexico not only attracts the interest of its northern partners, but also that of other industrialized countries in Europe and Asia by virtue of its role as a platform for their exports to the United States. An active trade policy which seeks not only further trade agreements with countries in the region but also abroad (Israel, European Union), may strengthen Mexico's strategic role as a hub or an export platform to important markets, not only mainly the US, but also the EU market. Contrary to Brazil and Argentina, Mexico has already implemented a series of free trade agreements as shown in Figure 2.[9]

NAFTA resulted in significant United States tariff cuts for a number of agricultural products and most Mexican manufactured goods, particularly textiles and apparel, and lesser cuts on footwear, chemicals, miscellaneous manufactures and transport equipment. Mexico also undertook dramatic tariff cuts on all agricultural and livestock products and all manufactured products of its NAFTA partners. Some sensitive agricultural products such as maize and beans are still excluded, but Mexico allowed a substantial above-quota, tariff-free import of corn that caused a negative employment impact on rural workers (Polaski, 2003). Tariff rates with NAFTA, covering about 90 per cent of Mexico's trade, are thus very low,[10] but unweighted average import tariffs increased slightly, but continuously, with the rest of the world (from 11 per cent in the late 1980s to 16 per cent in 2001). This means that its trade with the rest of the world was not facilitated during this period.

3. Trade by origin

As a major result of trade liberalization trade was expected to rise. Figures (Table 2) comparing trade growth rates from the 1980s until 2003 confirms an increase of trade in all three countries. Nevertheless, while the growth rates of exports in the 1990s were just slightly higher than in the 1980s in Argentina and Brazil, the growth rates of imports experienced a strong surge. However, since 2000, the situation inversed with a strong increase of exports, in Argentina beginning only from 2003 (14.3 per cent), and a decline of imports. Mexico experienced higher growth rates in trade during the whole period, with the exception of the 2000-2003 period, where it could not benefit from the positive evolution of primary exports and where it was damaged at the same time by the decline of the *maquila* industry. But during the 1990s, it saw a strong increase in its imports, but also in its exports and thus had a more balanced trade structure.

Table 2: Evolution of exports and imports (percentages)

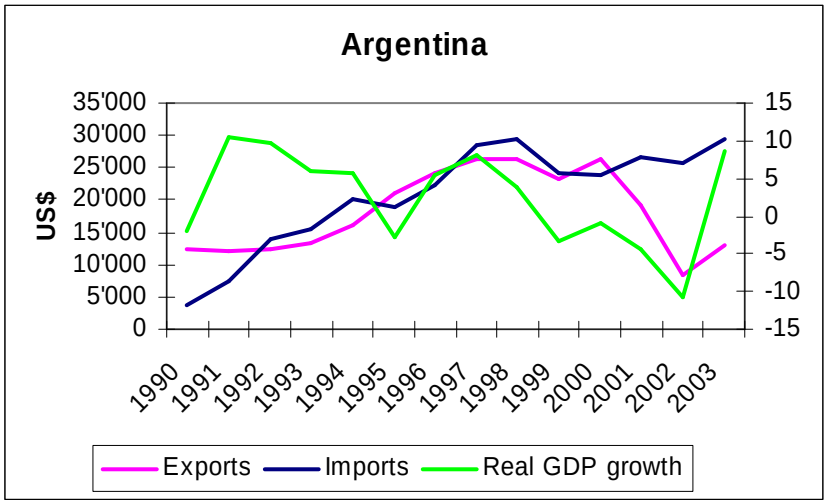
		Exports	
Countries	**1980s**	**1990s**	**2000-03**
Argentina	5.9	8.5	4.0
Brazil	5.6	6.0	10.1
Mexico	9.4	15.4	-0.3
		Imports	
Argentina	-6.9	25.2	-7.1
Brazil	-0.3	11.8	-4.4
Mexico	10.7	15.9	-0.7

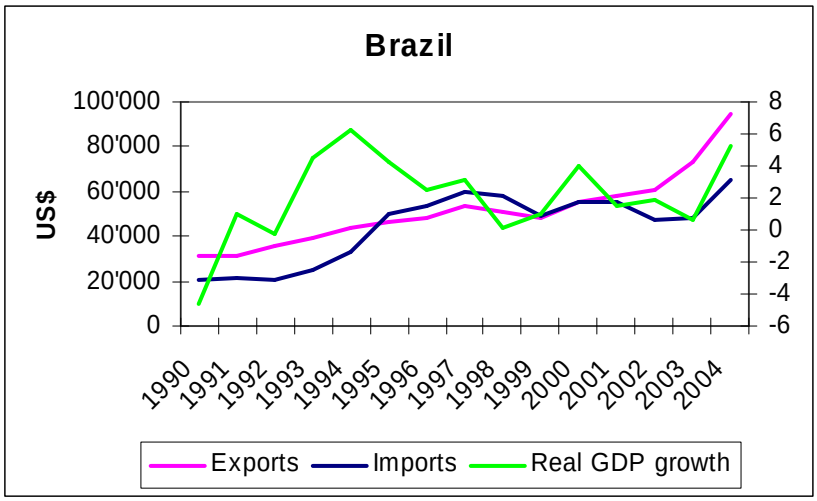
Source: UN Comtrade (Average annual growth rates in percentage).

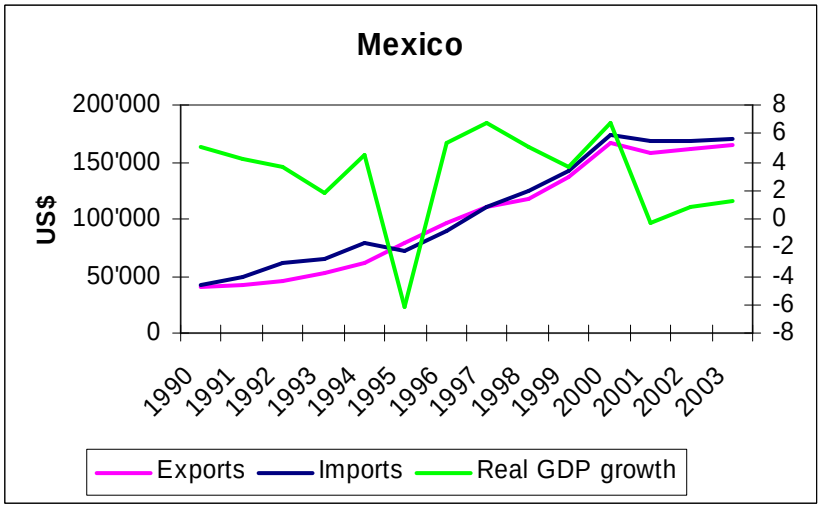
During the 1990s, a strong increase in exports, and an even higher one in GDP and imports, can be observed in Argentina until 1998 when the country entered into a recession phase (Figures 3 to 5). In 2001, the economic crisis led to a strong decline of the GDP measured in US dollars and a rather parallel decline in imports, whereas exports, mainly in

agricultural products, recovered, supported by the strong devaluation of the local currency. Brazil, a late starter with regard to trade liberalization, experienced a strong trade rise beginning from 1994 with the introduction of the Real Plan. It also reached a peak in 1998, suffered a short slowdown in 1999 due to the economic crisis and did not show a constant evolution later. While imports were very strong between 1994 and 1998 following closely the GDP during the whole period, exports surpassed them in 2001, mainly promoted by a weak Real and a stronger export orientation of domestic companies. Only recently, since 2003, Argentina's and Brazil's exports increased significantly for primary products due to a rising world demand, mainly from China. Mexico had a steady increase in all three variables during the whole period with slightly higher growth rates after the Tequila crisis in 1994/95. Since the recession in the USA in 2000, external trade went down, combined with slow economic growth. An analysis of the correlation between GDP and trade demonstrates, in particular, a high correlation between imports and GDP in all three countries with a value of about 0.9.[11] In Mexico, exports were also closely related to GDP whereas Argentina and Brazil had values under 0.6. This also proves the lack of export dynamism and relevance of the Argentinean and Brazilian economies compared with Mexico.

Figures 3-5: Evolution of exports, imports (millions of current US dollars) and GDP (percentage growth rate) from 1990 to 2003





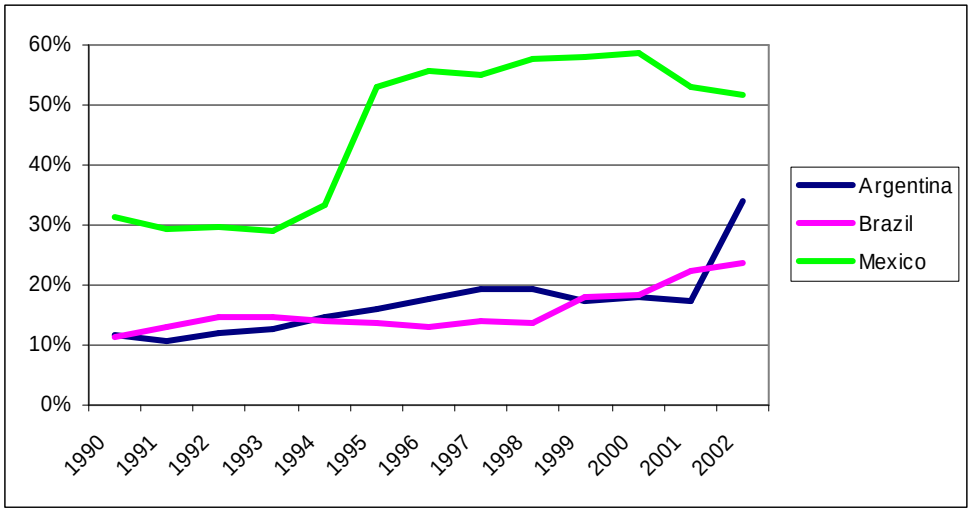


Source: Exports, imports: UN Comtrade; GDP: ECLAC, 2004, **http://www.eclac.cl/badestat/anuario_2004/index.htm**

In general, trade opening led to a higher surge in imports than in exports, leading to structural negative trade balances, which only have been mitigated in periods of economic crisis and strong devaluation. The appreciation of the exchange rate was partly responsible for this disappointing performance since appreciation increased the price of the exported goods calculated in dollars. This also meant that workers' wages calculated in dollars increased, even when the workers' wages in local purchasing power did not. As a result, competitiveness, gauged in terms of labour costs, deteriorated (Frenkel and Ros, 2003). For example, in Mexico, between 1988 and 1997, real manufacturing wages increased slightly only to fall again, so that by 1997 they were lower than their 1988 value. Yet calculating the same wages in dollars shows a large and continual increase in dollar wages that deteriorated the competitiveness of Mexican labour until 1995, when the exchange rate was devalued.

Thus, the Mexican economy was hurt externally by the rising dollar cost of its exports, and internally because lower wages resulted in weak internal demand.

Figure 6: Evolution of trade openness[12] in Argentina, Brazil and Mexico



Source: UN Comtrade.

A major direct impact of trade liberalization was an increase in trade openness of Argentina, Brazil and Mexico. The trade openness indicator defined as the ratio of exports and imports over GDP, as shown in Figure 6, describes the importance of trade in total GDP. It confirms that Mexico was already the most open country at the beginning of the 1990s. It strongly increased its position, whereas Argentina and Brazil only doubled their trade openness from a low level of about 10 per cent to 20 per cent until 2001. The domestic recession, and mainly the under-valued domestic currencies, helped these countries to promote their exports at the beginning of the new millennium which led to a strong improvement of their trade openness indicator.

An important part of world-wide trade flows are intra-industrial, which is defined as export and inflow flows between two countries within the same industry or category of products. This form of two-way trade is often seen in industrialized countries with similar levels of development. It is a sign of a diversified and sophisticated trade and economic structure and is positively related to trade openness and the process of trade integration.

Mexico increased the importance of its intra-industrial trade from 18.3 per cent of total trade in 1985 to 41.4 per cent in 1999. The other two countries had a low level: Argentina with a level of 3.6 per cent in 1995 and Brazil with just 5.6 per cent, but both have risen since then to 15.8 per cent in Argentina in 1999 and 15.0 in Brazil. Intra-industrial trade is, in general, high with main trade partners. In the case of Mexico, intra-industrial trade with NAFTA partners was close to 50 per cent, while this form of trade between Argentina and Brazil reached a level of 40.6 per cent. Intra-firm trade of multinationals played an important role in industrial trade in all three countries. In the case of Mexico, a large part of imports are re-exported after being processed, such as in the textile, apparel or the chemical sector (A. González Pacheco, 2001). In Mercosur countries, the sectoral agreement in the automobile sector led to a boom in intra-industrial trade in motor vehicles and auto parts (ALADI, 2000).

In Mexico, the main products of intra-industrial trade were machinery and equipment, electrical material, automobile and auto parts (Dussel Peters, 2000).

Table 3: Destination and origin of imports and exports, percentage share of total exports/imports, 1990-2002

	Imports (%)		Exports (%)	
Argentina	1990	2002	1990	2002
Latin America and Caribbean	33	37	27	42
United States	20	20	14	12
EU	27	23	31	20
Asia	12	11	10	11
Brazil				
Latin America and Caribbean	18	18	11	19
United States	20	22	25	26
EU	22	28	32	25
Asia	11	16	17	14
Rest of the world	30	17	15	
Mexico				
Latin America and Caribbean	4	4	6	3
United States	67	63	70	89
EU	17	10	13	3
Asia	8	18	7	1

Source: Calculations based on UNComtrade.

The analysis of trade flows by region and country (Table 3) shows the growing importance of trade with partners of regional trade agreements. Even though we can already consider NAFTA and Mercosur as "natural" trading blocs among neighbouring countries with historically strong ties, the agreements signed in the 1990s, as well as general trade liberalization, gave an additional boost to trade with their neighbours.[13] In Mercosur, intra-regional trade increased strongly until 1995 (20.3 per cent) and then declined steadily to 17.7 per cent in 2002, because of the economic crises in Argentina and Brazil. Within NAFTA, intra-regional trade has been increasing constantly, from 41 per cent in 1990 to 56 per cent in 2002. In 2002, 91 per cent of Mexico's trade was with its NAFTA partners, while 22 per cent of Argentina's trade was with its Mercosur partners[14], and only 5 per cent of Brazil's was with its Mercosur partners. The United States is increasingly important for Mexican trade, accounting for 89 per cent of its exports and 63 per cent of its imports. Europe's share has declined quite dramatically. Trade with other Latin American countries does not have much relevance for Mexico, Brazil and Argentina, except perhaps Brazil-Mexico trade links. Industrialized countries, mainly those of Europe and the United States, are crucial trading partners for Argentina and Brazil, although recently, as Table 4 shows, new partners have

emerged, particularly China, as a destination for agricultural products mainly from the two big Mercosur countries (Berg, Ernst and Auer, forthcoming).

The difference in importance of intra-regional trade between Mexico on the one hand and Brazil and Mercosur on the other is due to various reasons, including an earlier start to trade liberalization by Mexico, the evolution of a favourable exchange rate, and an expansionary phase of the United States economy. One important aspect not mentioned so far, is the economic complementarities between the countries, not only in the labour markets, but also with regard to specialization. We speak of a high degree of trade complementarity when country A mainly exports goods to country B, that the latter does not produce, and vice-versa. A high trade complementarity is a sign of strong potential to develop inter-industry trade. Dussel Peters (2000) found a high degree of complementarity between Mexico and its NAFTA partners, while trade complementarity between Argentina and Brazil is rather low, compared to their complementarity with EU countries.[15] Low complementarity, due to limited industrial diversity and development as well as similar specialization in primary and low processed products, meant limited trade in terms of quantity and diversity (Ernst, 1997).

Briefly, intra-regional trade is important, indeed extremely important for Mexico and it has been fostered by regional integration through NAFTA. On the other hand, for Argentina and Brazil trade relations outside the regional setting, especially with industrialized countries, are crucial because of low intra-regional complementarity.

4. Export specialization and employment

In order to evaluate the effect of trade liberalization on employment, the following analysis of the relationship between export specialization and employment is based on a comparison of data on: (1) the share of specific products in exports; (2) the import content of exports[16]; (3) the labour intensity of specific product groups (see also Annex Table 2); (4) their employment; (5) wage growth; as well as (6) the share of those product groups in total manufacturing employment. (For illustration, we take the case of tanning and dressing of leather in Argentina between 1995 and 2000.) Employment in this sector, which is highly labour intensive, declined by 2.4 per cent and wages by 2.0. Both values are inferior to average manufacturing employment, which increased by 3.9 per cent and wages, which increased by 7.5 per cent, which means that this sector was severely affected by the new economic setting. The employment share of tanning within manufacturing employment was on average 1.7 per cent. Tanning has a share in total exports of 3.6 per cent and has a low input of imported goods with a value close to 1 (0.92).

Table 4: Main manufacturing exports and their labour market impact, 1995-2000

	X share (%)	M in X (%)	LabInt	Emp (%)	Wages (%)	EmpShare (%)
Product group						
Argentina						
Food processing and production	27	0.93	Medium	2.6	5.1	9.4
Manufacture of motor vehicles	7.2	-0.31	Medium	-5.8	-2.7	2.7
Tanning and dressing of leather	3.6	0.92	High	-2.4	-2	1.7
Manufacture of basic chemicals	3.5	-1.91	Medium	-1.7	7.3	1.6
Manufacture of other chemical products	3.2	-1.62	Low	7.5	14.3	6.1
Total manufacturing average				**3.9**	**7.5**	
Brazil						
Food processing and production	12.2	0.79	Low	2.1	-1	5.3
Manufacture of basic iron and steel	7.7	0.82	Medium	4.2	-7.3	2.1
Manufacture of motor vehicles	5.3	-0.31	Medium	-4.5	1.7	2.3
Manufacture of other food products	5	0.86	Medium	-1.2	-1.5	8
Manufacture of paper and paper products	4.5	0.50	High	-2.6	-4.5	2.8
Total manufacturing average				-0.9	-3.1	
Mexico						
Manufacture of motor vehicles	15.0	0.75	Low	6.6	0.1	3.1
Manufacture of televisions and radios	7.7	0.62	Low	9.8	0.9	0.1
Manufacture of office, accounting equipment	6.0	0.52	Low	17.8	4.2	0.6
Manufacture of other electrical equipment	4.5	0.62	Low	11.5	3.7	0.8
Manufacturing of wearing apparel	3.8	0.48	Low	4.4	-6.1	1.5
Total manufacturing average				**3.5**	**-5.1**	

Note: Ranking according to exports (four-digit level) in value (current US$).
X Share: Share of product group exports in total exports, in percentages (Xi/Xtotal).
M in X %: This indicator shows the share of product group imports (M) in product group exports (X): X-M/X.[13]
LabInt: Labour intensity, calculated for each country based on employment-output ratio (see Annex Table 4b).
Emp: Average annual employment growth. Wages: Real average annual wage growth in constant US$: Argentina: 1995-99; Brazil: 1996-99; Mexico: 1995-2000.
EmpShare: Sector's share in total manufacturing employment: Argentina, Brazil: 1999; Mexico: 2000.
Highlighted values (Emp, Wages) indicate industries which performed better than the average for manufacturing.

Source: Own calculations based on UN Comtrade and United Nations Industrial Development Organization (UNIDO), Indstat 4, Revision 3.

Historically, primary products, especially agricultural and food products have constituted the highest proportion of Argentina's major exports and are still dominant (73 per cent in 2003 according to ECLAC data[17]). This pattern has not changed significantly since the 1980s (77 per cent in 1980 and 71 per cent in 1999), but the composition of products has changed, notably in the increase in vegetable oils and soya products.[18] Also petroleum products have emerged as one of the leading exports since the early 1990s as a result of new discoveries[19]. These products have low to medium labour intensity. The largest export item, processed food, experienced positive but below-average employment and wage growth; however, its employment share is relatively important within the manufacturing sector, with 9.4 per cent (Table 4). Argentina has only one highly labour-intensive sector among the seven main export sectors: tanning and dressing of leather. But while exports have grown, Argentina has experienced negative employment and wage growth. The country has maintained capital-intensive sectors among its main export sectors, which benefited from special treatment throughout the import-substituting industrialization (ISI) period. All these sectors experienced

a negative trade balance during 1995-2000 and, besides other chemical products, which performed well, had below average (basic chemicals) or even negative employment and wage growth rates (motor vehicles).

Brazil's leading exports have generally constituted a mix of primary and, to a lesser extent, secondary semi-processed products. Nevertheless, there has been an evolution from roasted coffee as the leading export product in 1980, to iron and ore in 1990 and aircraft in 2001, but a return to a primary product as the leading export product, soya beans, in 2003.[20] As in Argentina, most of the leading products are of medium labour intensity. Processed food products are also among Brazil's main exports, but contrary to Argentina, they are less labour-intensive and the sector employs fewer workers. Together with other major food products, they comprise 13.3 per cent of the manufacturing sector. Both sectors have negative, but above average, wage growth. Processed food has shown positive employment growth figures, while other food products have shown negative employment growth. Automobiles, another leading export industry, but which imported more than it exported[21] experienced an employment decline of 4.5 per cent. At the same time, real wages increased by 1.7 per cent for the remaining workforce. The primary sector in Brazil is less important for exports than in Argentina with a value of 49 per cent in total exports in 2003, slightly up from 48 per cent in 1990. Brazil is also more diversified than Argentina, as their ten leading export products, among three industrial goods, only represent 34 per cent of total exports.

Contrary to Mercosur countries, Mexico shows a clear, strong growth in its manufactured exports. While in the 1980s petroleum and gas and agricultural products dominated exports, machines, transport equipment and telecommunications were the leading exports in 2001.[22] And while Argentina's and Brazil's main exports have a medium level of labour intensity, Mexico's, in general, besides part of the *maquiladora* sector (Ghose, 2003), are concentrated in low labour-intensive products with relatively high value added. However, those exports contain a high level of imported inputs, as the relatively low levels of X-M/X demonstrate. In general, these industries experienced above-average labour wage and employment growth. Nevertheless, the share of the leading exports in total industrial employment is rather low, apart from motor vehicles with a 3.1 per cent share.

Mexico has indeed succeeded in changing its specialization from primary to manufactured goods, which currently comprise nine of the ten leading exports in 2003, even though crude petroleum became again the leading export goods. Manufacturing exports experienced above-average wage and employment growth for the period under analysis, but also low labour intensity. Its importance for employment creation and wage increase, even though positive, is therefore relatively limited in traditional capital-intensive industries. The exception is the *maquiladora* industry, which saw a strong increase in production and strong employment growth during the second half of the 1990s (see Berg, Ernst, Auer, forthcoming). However, the country's exports have a high proportion of imported inputs, and the *maquila* export sector in particular has developed few links with the rest of the economy and thus has not generated much positive multiplier effects.

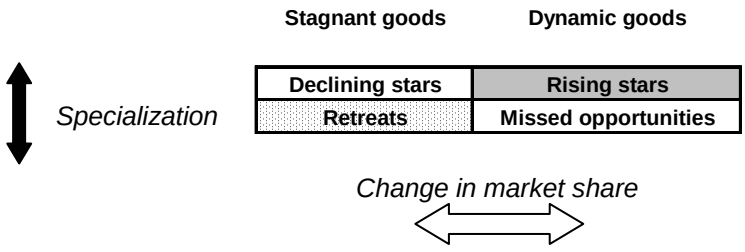
In summary, export orientation has produced disappointing employment results in the Mercosur countries, but has had a fairly positive impact on the labour market in Mexico. And contrary to expectations of traditional economic thinking, countries with a relatively high number of working poor, and thus an abundance of cheap labour, did not succeed in specializing in high labour-intensive products, apart from Mexico's maquiladora industry. The recent return of primary goods as the leading export products in Brazil and Mexico is another worrying phenomenon.

A more detailed analysis of the international competitiveness further reveals the nature of specialization in these countries and its implications for employment. A simple analysis of exports could be misleading, as high export levels do not necessarily mean that a country is in a favourable position on the world market. It could even be in deficit if the import value exceeds the export value. The specialization index adopted in this study is therefore based on the principle of the revealed comparative advantage (RCA) developed by Bela Balassa.[23] This specialization index is then compared with the change in the import share of the destination market within a competitive matrix. The matrix shows the competitiveness situation of a country is determined by the evolution of the country's participation in a defined market (country's efficiency on horizontal axis) in this case, the world market, Mercosur and NAFTA, during a specific period, as well as the dynamic of the demand of exported goods (country's position on vertical axis).This kind of specialization would be promising for the future development of trade, production, and thus employment.

Products that experience a positive change over time (between the base year and the final year of analysis) in the destination market's import share are called *dynamic goods (DG)*. Imports of this commodity increased faster than total imports of all commodities or the commodity average of import growth. Products with a negative change over time in market share are termed *stagnant goods (SG)*, which means that the share of a stagnant commodity on the import market has decreased over time. Imports of this commodity have seen a slower rate of growth than total imports of all commodities, or the commodity average of import growth. A *rising star* (RS) is therefore a dynamic commodity in the destination market of the export in which the country under consideration is specialized, while a *declining star (DS)* is a stagnant commodity in which the country is specialized, as described below. *Missed opportunities (MO)* are dynamic commodities on the world market in which the country has lost its specialization, while *retreats (R)* are stagnant products worldwide, with declining specialization in the country under analysis.

This is best illustrated by an example: the I-Pod is a dynamic good on the world market; it is exported by the United States, and is a rising star for that country, but a missed opportunity for France, for example, as the latter is not specialized in the export of this product. The traditional Walkman, on the other hand, has lost its importance on the world market and has become a stagnant good. For a country like China, which still exports this product, it constitutes a declining star, while for Germany, which is not specialized in this product any more, it has became a retreat.

Figure 7: Competitiveness matrix



Interesting observations can be made from an analysis of the total number of product groups in each category of the competitive matrix listed in Table 5. Between the periods 1985–1995 and 1995–2000, the number of rising stars declined considerably, from 277 to 89, for all three countries taken together, while the number of retreat products increased considerably, from 109 to 246, as did the declining stars.[24] In the regional setting, the evolution has been more favourable, with more products in the rising stars category and less

in the declining stars category, but also with a higher number of missed opportunities. This means that specialization within the region was fairly positive compared to the world market.

Table 5: Evolution of number of products within the competitiveness matrix, 1985-99

Argentina		Brazil		Mexico	
1985-90 World		1985-90 World		1985-90 World	
65	99	64	71	77	106
46	32	39	62	24	25
1995-2000 World		1995-2000 World		1995-2000 World	
101	29	96	35	70	25
70	35	76	29	100	26
1995-2000 Mercosur		1995-2000 Mercosur		1995-2000 NAFTA	
64	47	73	41	68	27
59	56	48	63	90	43

Note: Table 5 follows the pattern of above shown matrix: left top: declining starts; right top: rising stars; left bottom: retreats; right bottom: missed opportunities

Source: Own calculations based on ECLAC, TradeCan, 2003a.

Declining and rising stars are of particular interest when analysing the labour market, as they show the country's actual specialization, contrary to missed opportunities and retreats. Table 6 lists those product categories and their labour market impact. Between 1985 and 1995, Argentina specialized exclusively in agricultural and food products (see Annex Table 1) and between 1995 and 2000 in refined petroleum products, but also in a higher value industry, motor vehicles, which featured among the rising stars. Nevertheless, Argentina's economic opening up led to the strengthening of its specialization in primary products and to medium-technology products.[25] An analysis of its specialization vis-à-vis the regional and less competitive Mercosur market, which also includes Paraguay and Uruguay, shows that, almost exclusively, agricultural and food products have dominated Argentina's specialization. Most sectors of specialization have, in general, a low to medium level of labour intensity and reveal an above-average employment performance, with the exception of motor vehicles.

Table 6: Rising and declining products in the world and regional markets, and their employment impact

Declining stars				Rising stars			
Wages	Emp.	LabInt	**Argentina**	LabInt	Emp	Wages	
			World				
>	>	Medium	Fixed vegetable oils	Essential oils, perfume	Medium	n.a.	n.a
<	>	Medium	Feeding stuff for animals	Petroleum products, refined	Low	>	>
>	>	Medium	Maize (corn), unmilled	Motor vehicles	Medium	<	<
			Mercosur				
>	>	Medium	Maize (corn), unmilled	Wheat and meslin, unmilled	Medium	>	<
>	>	Low	Milk and cream	Cereals, unmilled	Medium	>	<
<	<	Low	Non-ferrous base metal waste	Margarine and shortening	Medium	>	>
			Brazil				
			World				
<	<	Medium	Iron ore and concentrates	Spices	Medium	<	>
>	<	Medium	Coffee and coffee substitutes	Aircraft	Low	>	>
>	>	Low	Oil seeds and oleaginous fruit	Nickel	Low	>	>
			Mercosur				
<	<	High	Cotton fabrics, woven	Made-up articles of textile materials	High	<	<
>	>	Low	Cutlery	Motor vehicles	Medium	<	>
<	>	High	Footwear	Other artificial fibres for spinning	High	<	<
			Mexico				
			World				
>	>	Low	Radio-broadcast receivers	Motor vehicles	Low	>	>
>	0	Low	Railway vehicles	Undergarments	Low	>	<
>	>	Low	Rotating electric plant	Furniture and parts	Medium	<	<
			NAFTA				
<	<	High	Sulphur and unroasted iron pyrites	Railway vehicles	Low	0	>
<	<	High	Fuel wood	Undergarments	Low	>	<
>	>	Low	Radio-broadcast receivers	Telecommunications equipment	Medium	<	>

Note: Period of analysis: 1995-2000. Wages: Real wage growth calculated in constant US$. Emp: Employment growth. Argentina: 1993-99. Brazil: 1996-99. Mexico: 1994-2000. LabInt: Labour intensity. >: Growth rate above average growth rate of the manufacturing sector; <: Growth rate below on average.

Source: Own calculations based on ECLAC, TradeCan, 2003a.

Between 1985 and 2000, Brazil, like Argentina, was specialized in primary products and in slightly processed primary products such as food products (coffee) and iron and steel vis-à-vis the world market. Their employment results have been rather mixed. Whereas rising star, nickel, and declining star, oil seeds, showed above-average employment and wage performance, spices (RS), coffee and iron ore (both DS) had negative results. The new specialization in aircraft manufacturing has been the most striking phenomenon during the past few years. It is a sector of low labour intensity, but high in value added and technology, and has enjoyed strong employment growth (74.3 per cent) and real wage growth (85.4 per cent). However, it directly employs only 0.3 per cent of manufacturing workers. Nevertheless, it has positive indirect employment effects in the region of São José do Campos, where it is concentrated (see Berg, Ernst and Auer, forthcoming). Unlike Argentina, which exports low processed goods to its neighbouring countries, Brazil specializes in manufactured product groups in intra-regional Mercosur trade (see its rising and declining stars in Table 6 above). Its textiles and motor vehicles, which are its leading specializations of exports towards the region, are industries of high and medium labour intensity respectively. However, these industries have, in general, displayed a relatively poor performance with regard to employment and real wages, with the exception of motor vehicles (which showed above average wage growth).

Mexico, on the other hand, reinforced its specialization in manufactured exports in the 1990s, to the world market, but also with NAFTA, dropping its specialization of primary products and semi-processed primary products. Its sectors of specialization are either of low or medium labour intensity, with the exception of two declining stars, fuel wood and sulphur, that are of high labour intensity, as are the *maquiladora* industries in general (Palma, 2003, Mortimore, Buitelaar and Bonifaz, 2000). As for wages, the results are mixed. While motor vehicles, radio-broadcast receivers and undergarments showed above average employment growth, undergarments showed negative wage growth. Furniture, fuel wood, sulphur and telecommunications equipment showed negative employment growth, although telecommunications equipment showed a positive real wage growth. Real wages also grew faster in the *maquiladora* industries, but they were still significantly lower than in other manufacturing industries.[26]

In brief, Argentina and Brazil have remained specialized in low value and low to medium labour-intensive primary and semi-processed products, creating little employment (OIT, 2004). Brazil, however, Brazil has a comparative advantage in some manufactured goods (e.g. motor vehicles, textiles), especially in its trade with its Mercosur neighbours. Nevertheless, with the exception of some successful industries, the Mercosur countries are increasingly distant from the most dynamic flows of international trade, such as high-technology products.[27] Mexico has continued to deepen its specialization in manufactured goods. According to Dussel Peters (2003), Mexico is better positioned, as 60 per cent of its exports in the late 1990s were considered to be of a medium to high technological level, compared to only 20 per cent in the 1980s. However, these industries depend heavily on imports of intermediate goods, which represent more than 80 per cent of total export sales, and which account for a larger proportion of the value added (e.g. knowledge, research). The local value added of *maquila* exports decreased from a gross production value of 37 per cent in 1974 to just 20 per cent in 1997. This implies that those apparently high-technological products are assembled by a relatively low-skilled labour force. A closer look at the missed opportunities reveals that all three countries may have the potential to specialize in hitherto unexploited, relatively high-value-added product categories: for example, all three in the production of internal combustion piston engines, Argentina also in auto parts, Brazil in some textile categories and Mexico in electrical equipment.[28]

In general, the increasingly worsening specialization of Argentina, Brazil and Mexico is an issue which future trade and industrial policies should address. The employment and real wage performance of their export products, although slightly positive, remain mixed. Outward orientation has not led to an export specialization with strong employment growth. Economic restructuring has led to a concentration in low value added and capital-intensive manufactures, with low to medium labour intensity, contrary to expectations of traditional trade theory.

Though trade in services is an important component of total trade in Argentina, Brazil and Mexico, its relative importance has, for the most part, declined. According to UNCTAD, in Argentina, the share of trade in services fell from 21 per cent in the 1980s to 18 per cent in the 1990s; in Mexico, it fell from 19 to 11 per cent. In Brazil, however, the share of trade in services increased from 8 to 13 per cent. All three countries have a negative trade in services balance, mainly because of higher transport and travel imports, but also royalties, government services and other business services. Besides travel and transport, commercial services improved significantly in all three countries, which was strongly related to economic opening. In addition to this, Mexico saw a strong increase in communications, other business services and computer and information services, Brazil in financial and other business services and Argentina in computer and information services and government services. The category of finances, insurances and business services had a strong contribution to employment, and even of good quality, especially in Argentina, but also in Brazil and Mexico during the 1990s (See Berg, Ernst and Auer, forthcoming). Recently, the three countries, but mainly Brazil, have demonstrated dynamism in their exports of service-intensive technology and qualified work, but also of some non-traditional services, such as transport, travel, and insurance. Trade in services in the region is often linked to FDI and intra-firm trade, especially in finances and business services.

5. Imports, increased competition and its impact on the labour market

The economic opening of a country tends to encourage imports. Increased imports lead to greater competition in the local market thus putting a strain on local producers, who either disappear or adjust to the new context. However, it also helps enterprises to become more competitive through the use of imported components in their production.[29] The most successful companies often apply modernization or rationalization measures that affect employment negatively. This section, in analysing the effect of increased imports on employment in Argentina, Brazil and Mexico, shows that the direct impact of imports on employment was small, but that increased competition contributed to a rise in productivity, which had a negative employment impact.

Table 7 analyses the employment impact on specific products at the three-digit level of the Standard International Trade Classification (SITC) that have had high import penetration according to an indicator that compares net imports with domestic absorption. Within these industries, we then look at output, employment and wages figures to assess the labour market impact of increased import competition.

Table 7: Industries most exposed to imports and the evolution of the labour market, 1995-2000

	X-M/(Y-X+M) (ranking)	Output growth	Lab Int	EmpShare	EmpGrowth	WageGrowth
Argentina	Electronic valves, tubes, etc.	3.1	Medium	0.6	4.1	7.3
	TV, radio receivers and ass. goods	0.4	High	0.4	-2.9	2.2
	Medical appliances	8.9	Medium	0.8	5.1	6.9
	Special purpose machinery	1.9	Medium	2.3	3.3	3.9
	Electric motors, generators	6.6	Medium	1.0	1.1	6.0
	TOTAL Manufacturing	**1.7**		**100**	**3.9**	**4.1**
Brazil	Processing of nuclear fuel	-4.4	Medium	0.9	-9.0	2.0
	Electronic valves, tubes, etc.	-1.5	High	0.5	-2.5	-8.2
	Medical appliances	5.7	Medium	0.8	-2.5	-0.6
	Optical instruments & photo equip.	13.8	Medium	0.2	1.1	4.0
	Man-made fibres	12.3	High	0.1	-0.3	-4.0
	TOTAL Manufacturing	**4.0**		**100**	**-0.9**	**-3.1**
Mexico	Electronic valves, tubes, etc.	14.7	Low	0.1	4.1	7.0
	Processed meat,fish,fruit, veget.	-2.4	Medium	3.0	1.8	-4.1
	Special purpose machinery	3.4	High	0.9	6.2	-1.5
	Dairy products	5.8	Low	1.2	3.1	-1.1
	General purpose machinery	4.8	Medium	1.4	6.6	-2.0
	TOTAL Manufacturing	**3.7**		**100**	**3.5**	**-4.4**

Note: X-M/(Y-X+M): This indicator shows net imports (X-M) divided by domestic absorption (Y-X+M), or how much has been consumed domestically. This indicator demonstrates which industry has been most exposed to import competition. Table 7 lists the five industries most exposed to import competition for each country. Labour market indicators are calculated as in Table 6. Highlighted employment and wage values show above-average values. Output growth rates are annual average values at constant market prices, wages are real: Argentina: 1995-99, Brazil: 1996-99, Mexico: 1996-1999. EmpShare: Employment share in total manufacturing employment. Highlighted values are values above the average of total manufacturing.
Source**:** Own calculations based on data from: UN Comtrade, UNIDO, Indstat4, Revision 3.

With the exception of two food industries in Mexico, most of the goods exposed to import competition were higher value added goods such as medical appliances, electronic valves or special-purpose machinery. Contrary to major export sectors, which had a low to medium labour intensity, industries exposed to imports had mostly medium to high labour intensity and were therefore slightly more important for employment. Yet, their share in total manufacturing employment was not significant with values of less than 1 per cent, apart from special purpose machinery in Argentina (2.3 per cent) and food products in Mexico (together 4.2 per cent). Nevertheless, the labour market impact of economic opening was mixed and strongly depended on each specific industry. In Mexico, these industries experienced good output and, in the majority, employment growth and negative, but above average (-4.4 per cent), wage growth with the exception of electronic valves. In Argentina and Brazil, even though these industries had, to a large extent, good output and wage growth, employment growth was in the majority, less favourable compared to the rest of the manufacturing sector. These values were either negative, especially in Brazil, or lower than the average of the manufacturing sector.

What explains the relatively good labour market performance of sectors that faced the highest import penetration? First of all, during the period of analysis, 1995-2000, the sharp increase in imports following trade liberalization came to an end, which may imply that in those sectors, employment may also have declined in the first half of the 1990s. However, this cannot be confirmed, since employment figures (where available for the first half of the 1990s) do not show a sharp decline. A more convincing argument is that during the years under consideration, the three countries had relatively good growth rates, apart from the crisis

years in Mexico (1995) and Brazil (1998/99) and an economic slowdown in Argentina at the end of the 1990s. However, these crises were accompanied by or were the result of currency devaluations in Mexico (1994) and Brazil (1999), reducing the relative price bias in favour of imports. One obvious argument is that increased imports are not always bad for production and consumption, or for employment. Imports of intermediary products may help introduce new technologies and increase productivity. Furthermore, although increased productivity has a labour conserving component, it also leads to higher efficiency in the domestic economy, thus having a positive impact on production, welfare and employment.

Overall, trade liberalization led to increased imports, especially of medium to high labour- intensive goods with relatively high value added and technology, compared with exports. The labour market impact of increased competition on manufacturing was mixed, with both positive and negative benefits for employment. Agriculture, on the other hand, agriculture suffered significantly from cheap imports. Rural workers were the main losers in Mexico; they were strongly affected by cheap corn imports, as well as by grains and oilseeds from the United States. As a result, corn prices fell and so did rural incomes. According to the Mexican National Institute for Statistics, Geography and Informatics INEGI (Instituto Nacional de Estadística, Geografía e Informática)[30], about one million jobs were lost during the period 1993-2002, which prompted emigration (Papademetriou, 2003).

In order to understand better the importance of trade compared to other variables, this study deepens its analysis by using a growth accounting approach.[31] Doing so enables an understanding of the magnitude of the impact of various variables on employment. We focus our attention on whether and how much import penetration led to job losses compared with other variables, such as labour productivity, domestic consumption or absorption, and the domestic coefficient.[32] Estimations are made on the contribution of foreign trade (r2), labour productivity (r1) and domestic demand (r3) to change in employment growth rates (L or r0) by sectors.

Table 8: Decomposition on employment growth: productivity, domestic coefficient and domestic absorption, by main activities, 1995-2000

Sectors	La ra0	Lb rb0	Y/L r1	Y+M r3a	Y/(Y+M) r2a	Y+M-X r3b	Y/(Y+M-X) r2b	Na:r2a=0	Nb:r2b=O	a: Job change	b: Job change
						Argentina					
Agriculture	-79.31	-79.31	88.01	8.70	0.00	8.69	0.01	-79.31	-79.31	0.00	1.00
Industry	-13.78	-13.79	22.95	9.18	-0.01	9.17	0.00	-13.78	-13.79	-73.00	15.00
Services	16.07	15.78	1.81	19.01	-1.13	17.14	0.45	17.20	15.33	-45885.00	24586.00
Total	**10.06**	**9.89**	**4.85**	**15.76**	**-0.85**	**14.44**	**0.30**	**10.92**	**9.59**	**-42581.00**	**19570.00**
						Brazil					
Agriculture	-3.96	-3.96	20.30	16.32	0.00	16.32	0.00	-3.98	-3.96	-196.00	148.00
Industry	8.21	8.21	2.12	10.34	0.00	10.33	0.00	8.21	8.21	-96.00	250.00
Services	10.09	9.95	2.12	12.85	-0.64	11.61	0.47	10.73	9.49	-258591.00	188220.00
Total	**8.23**	**8.15**	**3.67**	**12.26**	**-0.36**	**11.56**	**0.25**	**8.59**	**7.90**	**-286691.00**	**215688.00**
						Mexico					
Agriculture	-15.60	-15.60	24.34	8.75	-0.02	8.76	-0.02	-15.58	-15.58	-34.00	-36.00
Industry	41.22	41.20	0.11	41.42	-0.09	41.36	-0.05	41.31	41.25	-3565.00	-1774.00
Services	21.32	21.22	7.32	31.07	-2.43	30.68	-2.14	23.75	23.36	-301177.00	265615.00
Total	**31.60**	**31.54**	**-0.50**	**32.66**	**-1.58**	**32.46**	**-1.42**	**33.18**	**32.97**	**-268626.00**	**224154.00**

Note**:** L = change in employment growth rates = r0, Y/L = output divided by employment = labour productivity = r1; Y+M = domestic consumption or absorption = output and imports = r2; Y/(Y+M) = domestic coefficient = output divided by output and imports = r3; a: only considers imports M; b: also considers the offsetting effect of exports: M-X.
Source**:** Own calculations based on data from: World Development Indicators, World Bank, UN Comtrade.

A negative *r2a* is an indicator of increased import competition, as it shows the decline of domestic consumption met by domestic production. All countries an increase in import competition, though it was not strong (see Table 8). Mexico, the most open economy, had the strongest rise. In general, in all three countries, services had the highest negative values. However, by including the offsetting effect of export expansion (r2b), the trade impact was slightly positive figures in the case of Argentina and Brazil, but not in Mexico. This shows that exports did have a compensatory role to increased import competition, even though it was not very strong. In all three countries, it is the strong rise in domestic absorption *r3* which explains a large part of the overall employment rise, dominating the still important adverse effect of increased productivity. Nevertheless, at the sectoral level, the strong rise in productivity sometimes outweighed the positive impact of increased consumption, especially in agriculture in all three countries and in industry in Argentina, which continued its "deindustrialization" process from an employment point of view. Mexico's good employment performance goes hand in hand with low productivity growth.

An analysis of the manufacturing sector using UNIDO Indstat 4, Revision 3 and UN Comtrade data, reveals some interesting results: the sectors which suffered most from import competition were footwear, basic chemicals and motor vehicles in Argentina. In Mexico we find in general a slightly negative impact, with highest values for basic chemicals, special purpose machines, electric motors and medical appliances. This result matches the findings of S. Polaski, 2003, which stated a decline in domestic manufacturing employment, in part due to import competition and to the substitution of foreign inputs in assembly plants. In Brazil, the result is mixed with very few sectors suffering from a strong negative impact of imports, such as electric motors, TV and radio broadcast receivers and, to a certain extent, motor vehicles.

There are also sectors which benefited most from increased imports, such as saw milling, publishing, medical appliances in Argentina, as well as general and special purpose machines, and medical appliances in Brazil. Exports can play an offsetting impact on employment in specific manufacturing sectors, such as in the automobile sector in all three countries, but this effect is rather low.

If we assume that r_2 equals to zero, that is import competition remained at the same level, then we can estimate on how much employment would have grown if imports (r2a) or net imports (imports minus exports r2b) had increased in the same proportion as domestic output. Taking r_{2a} as a reference, all three countries show that without increased import competition, employment growth would have been higher (Na). In terms of net jobs, increased import competition cost Argentina 43,000 jobs[33] or -1.03 per cent of total employment; Brazil 287,000 jobs or -0.44 per cent, and Mexico 269,000 jobs or -1.64 per cent during 1995-2000. If net imports are considered (Nb), the situation is even reversed in the case of Argentina (20,000 jobs created) and Brazil (216,000 jobs created) and mitigated in the case of Mexico, which still suffered from job losses of 224,000. A strong rise in domestic absorption – even outpacing the productivity increase – is the main explanatory variable, which was rather high in Argentina and Brazil and low in Mexico.

As the growth accounting approach could not find a significant negative and direct impact of imports on employment during the period of analysis, other more indirect channels may explain the disappointing employment figures. Many economists have pointed out that imports bring about higher competition in the domestic market, forcing domestic producers to improve their productivity through greater availability of high quality inputs, technology acquisition via imports or exports, import discipline, and higher turnover. This phenomenon implies the exit of the least efficient firms and the expansion of the most efficient ones. In Brazil and Argentina during the 1990s, productivity gains in manufacturing were positive. Import discipline may have played an important role in this regard (López-Córdova and Moreira, 2003), as increased competition through imports forced companies to improve efficiency in firm management, raise output and increase their scale efficiency. Productivity growth in a low economic growth context may provide another explanation for the negative impact of imports on employment. An analysis of the relationship between the rate of growth of imports and labour productivity shows that the correlation between both variables for the whole economy was rather insignificant for Argentina and Brazil, but high for Mexico at 0.8 (calculation based on UN Comtrade and UNIDO Indstat data). An ILO research (1999a) covering the first half of the 1990s confirmed a close relationship between economic opening and increased labour productivity in all three countries, mainly in Argentina and Brazil and to a lesser extent in Mexico.[34] The structural effect of economic opening on labour productivity was largely dominating.

Income distribution has not improved in these countries as a result of economic opening. It remained more or less at the same high level in Brazil with a Gini coefficient of 0.64 in 2001 and 0.51 in Mexico in 2001 and increased in Argentina from 0.5 in 1991 to 0.6 in 2002. D. Lederman (2003), while analyzing wages adjusted for skill by degree of exposure to trade, stated that in Argentina and Mexico the highest salaries are found in sectors most exposed to imports and exports, while the non-tradable sector has one of the lowest salaries. In Brazil, highest salaries are attributed to import sectors, whereas export sectors earning in total is close to the non tradable sector level. Traditional trade theory following the prediction of the Stolper-Samuelson theorem, foresees an increase of jobs for low skilled workers as a result of trade liberalization, as Southern countries are reportedly to be abundant in low skilled workers and specialize in labour-intensive products. Nevertheless, this theorem cannot be confirmed in the analyzed countries. Higher trade brought about more imports of capital goods and technology thus changing the production function upwards. A higher level of

technology meant a higher need for skilled workers benefiting from higher wages at the expense of unskilled workers. Moreover, these countries are relatively abundant in low skilled workers compared with OECD countries, but those workers who benefited most from economic opening were those relatively skilled with regard to the national context and with regard to other competitors from Southern countries (J. Ros, 2000, G. Palma, 2003, F. Carneiro, 2002, G. Hanson, 2003, R. Frenkel, 2000).

Economic opening did not only mean sectoral production shifts, but also regional shifts affecting the marginalized regions. In Mexico, the winners of trade opening were the Northern regions bordering the USA and the Federal District of Mexico City leaving the already under-developed South further behind.[35] Similar trends have been observed in Mercosur countries where mainly Buenos Aires and Northern urban areas in Argentina and the South and South-East of Brazil, traditionally the most advanced regions of the respective countries, benefited most from economic opening. This period also coincided with a strong increase in informal activities in Brazil and Mexico and more recently in Argentina. It would be interesting to analyze in a separate study how much of this rise could be attributed to economic opening.

6. Implications of trade liberalization for domestic companies

The new outward-oriented development strategy and a more globalized world market led to the abandonment of old methods of organizing production and to a change in business behaviour. This section shows how local companies reacted to the changing environment. Small and medium-sized enterprises (SMEs) experienced serious difficulties integrating into the global economy, which led to negative employment and wage figures. For example, SMEs account for only about 10 per cent of the exports of Argentina and Brazil, compared to 56 per cent of the exports of Taiwan Province of China, and 53 per cent in Italy (OIT, 2004).

During ISI, firms would typically carry large inventories of spare parts, had a high degree of vertical integration and a reduced level of specialization, and were oriented towards the domestic market. Since opening their markets, Latin American enterprises have learned to apply new organizational principles of flexible manufacturing and just-in-time and zero-defect methods, adapting them to their own needs and circumstances.

They have increasingly begun resorting to outsourcing of intermediate inputs and subcontracting of production services. Integration has become less vertical and production had a higher import content per unit of product (Benavente et al., 1997). Efforts at technological adaptation thus has become less necessary; new technology entered the country through imported inputs, which became cheaper due to the reduction of import tariffs, specific regulations allowing tax exemptions (Ferraz, Kupfer and Iooty, 2004), and exchange rate appreciation. Increased imports have led to a decline in the ratio of domestic valued added to the value of the goods (Kosacoff, 2000a), in particular for exports (CEPAL, 2004). This has had a negative effect on local producers of intermediary and final goods, whose production was replaced by imports (Dussel Peters, 2004). Cheap imports of capital goods have also aggravated the trend towards the substitution of labour by capital. The industries which suffered most in Argentina, Brazil and Mexico due to increased import competitiveness were footwear, wearing apparel (with the exception of Mexico), furniture, capital goods, machinery and equipment as well as printing (Kosacoff, 2000b). Increased outward orientation has also generated new opportunities for export industries, not only in the *maquiladoras*, as mentioned earlier, but also in specific manufacturing sectors promoted during the ISI period, and, more recently, in agricultural products, which have benefited from exchange rate devaluation.

As a result, current production patterns are technologically more complex and closer to global technological standards of production, but, on the other hand, less intensive in the use of local technical knowledge and local equipment. Proactive strategies, aimed at high growth rates in production and related productivity, were implemented in Argentina only in the early 1990s. In general, many companies in Argentina, for example, applied defensive restructuring strategies in order to keep up with the increased competitive pace (Bisang, 2000). This generated a surge in productivity mainly through a reduction of the workforce. Companies invested less in new plants, and undertook more reorganization and rationalization of existing productive structures through the introduction of new technologies and investment in information technology (Bonelli, 2001). In Mexico, on the other hand, where companies applied more aggressive regimes that sought out strategic domestic and foreign markets, labour productivity increased at a slower pace (Haar, Leroy-Beltràn and Beltràn, 2004; Ramos and Cikurel, 2004). As a result, there was a lower rate of decline in employment, also because of different labour market institutions. For example, contractual clauses guaranteeing employment have been much more common in Mexico than in Argentina (Katz, 2000a). It has also been observed that there is a certain convergence towards the standards of productive efficiency in developed countries, but all in a context of strong growth of structural unemployment, trade imbalances and unequal distribution of the benefits of technological modernization. The productivity increase in Argentina and Brazil was fragmented and only strong in some specific sectors. Moreover, the surge in informal activities in Brazil, and to a lesser extent in Mexico, had a negative impact on productivity growth (CEPAL, 2004).

The 1990s experienced fundamental changes in the structure of business organization. The new economic environment, less regulated and more competitive, acted as a powerful selection mechanism and enhanced business concentration. Public companies' share in the economy strongly declined as a result of privatization. In all three countries, TNCs' national branches and big national companies increased their presence in the economy[36] and became the most dynamic with regard to exports. The losers in the new outward-oriented strategy have clearly been SMEs, which are extremely important for employment: in 2002, they accounted for 70 per cent of total employment in Argentina, for 60 per cent in Brazil, but only for 48 per cent in Mexico. The new scenario led to strategic uncertainties about future positions in the market; companies had to face new and stiffer competition, were dependent on new intermediary agents (e.g suppliers) and needed cooperative arrangements with other firms, among others, to increase the scale of production (Yoguel, 2000). Besides higher productivity gains in larger companies than in SMEs (Katz, 1998), access to credit was the major obstacle for SMEs. While large national companies (Bisang, 2000) and TNCs had access to either international or national credit, it was almost impossible for SMEs to obtain credit from the local market, not only because of high real interest rates but also because commercial banks steadily reduced their credit to the productive sector between 1990 and 2003 in Mexico, Argentina and Brazil. Banks' lending policies have favoured ability-to-pay criteria of the traditional kind instead of being supportive to firms in their business projects (Dussel Peters, 2004; Yoguel, 2000). While big companies were able to begin modernizing their product lines, local subcontracted firms could not pursue modernization, as they were less export-oriented. Moreover, new foreign investors often had their own supplier network, which meant fewer new opportunities for local suppliers (Alarcón and Zepeda, 2004).

Cluster: An interesting but still rare phenomenon of the 1990s is industrial clustering among firms. The synergistic effect of forward and backward linkages of clusters helps exploit respective comparative advantages and thus increases competitiveness. Clusters can be found in natural- resource-based sectors, such as the grape and mango cluster in Petrolina and the apple cluster in Santa Catarina, Brazil, or the software industry in Blumenau, all in Brazil or the electronic industry in Guadalajara, Mexico. Most clusters can be found in the

context of complex production systems. In these clusters, and mainly in the Mexican *maquiladoras* such as automobile and electronics, the first-tier supplier, a foreign company, generally specializes in high-technology activities. Local second and third suppliers are often trapped in the low-value-added segment.[37] Brazil provides two interesting examples of clustering. The metalworking cluster in Espirito Santo is an example of successful cooperation between small and large local companies and has managed to upgrade production in specific niches.

Aeronautics in Sao Paolo has successfully established backward and forward linkages around the leading firm, the aircraft manufacturer, Embraer, and thus helped second- and third-tier subcontractors to upgrade. Aircraft, which represents high-value-added goods including high technology, have become one of the most important Brazilian exports, and Embraer has even started to invest heavily in production plants abroad, including China. This cluster, which created important backward linkages through subcontracting relationships and a focus on horizontal integration, is certainly a Brazilian success story, even though it has contributed to only 0.3 per cent of direct employment in manufacturing. Nevertheless, direct employment increased by 97 per cent between 1995 and 1999, creating 4,000 new jobs between 2000 and 2002 (Bernardes, 2001 and data from Embraer). Moreover, there are multiplier effects on manufacturing in this region and the local economy as a whole (especially in traditional services, like social activities or education, but also transport and infrastructure). Its recent success can be explained by a deep restructuring process as a result of privatization. However, it is also a very specific sector that depends largely on government support – not only in Brazil, but also in OECD countries – such as public purchase, export promotion or direct and indirect support of technological innovation.[38] It also includes an increasingly high share of imported components in its aircraft production[39]; in the early 1990s, components of Brazilian origin constituted 40–80 per cent of production depending on the aircraft model. This is to a large extent the result of the high labour share in the value of an aircraft varying between 30 and 50 per cent of total costs (Frischtak, 1992). Embraer, however, has tried to develop local competencies in the framework of its "learning strategy" (Bernardes, 2001). In some cases, industrial clustering was the result of private initiatives, which were then further promoted by the public sector. In other cases, the State took the first step to enhance industrial clustering (Pietrobelli and Rabellotti, 2004).

7. FDI and trade

The 1990s were characterized by a general trend towards greater market opening, which created a favourable environment for increasing trade and FDI flows.[40] Industrial policies were fairly neutral and supportive of this trend. The involvement of foreign companies can help boost trade in goods and services of the host country, since foreign investment in general spurs imports of intermediary and capital goods, and in Latin America, TNCs have also become the leading export firms.[41]

Figures 7 to 9 illustrate the evolution of exports, imports and FDI flows. The closest link between all three variables and thus the strong interdependence between trade and FDI can be seen in Figure 9 on Mexico. The looser links in Argentina and Brazil can be explained by the fact that a large part of foreign investment in the 1990s went to non-tradables such as utilities and finance. It is interesting to observe that since 2000 declining FDI inflows have not been followed by declining exports and imports. Since 2003, exports in particular have shown promising results, which were partly due to a favourable exchange rate in Argentina and Brazil. Nevertheless, the "export boom" is highly concentrated in specific agricultural goods (e.g. soybean), to specific countries, in particular China, and is therefore rather fragile.

Intra-firm trade has been playing an increasingly important role, not only in Mexico's assembly plants, but also, to a lesser extent, in Brazil and Argentina (e.g Kulfas, Porta and Ramos 2002). In Argentina, for example, 60 per cent of TNCs' exports and 80 per cent of their imports were intra-firm transactions (Kosacoff, 2000c). In the case of Mexico, a large part of imports were re-exported after being processed, such as in textiles, confectionary or chemicals (González Pacheco; León, Alejandra and Dussel Peters, Enrique, 2001). Due to special sectoral agreements, the automobile industry has been extremely important in terms of intra-industry trade for all three countries (ALADI, 2000). In Mexico, other main areas of intra-industry trade have been machinery and equipment and electrical equipment (Dussel Peters, 2000). As TNCs contributed to higher exports and even higher imports they had, in general, a negative impact on the trade balance, in particular in Argentina and Brazil, but a positive one on the capital-account balance. All three countries also received increasingly FDI in traded services. The most striking flows went into packaging and commercial services in Argentina, R&D production in Brazil and into software development in Mexico.

Figure 8: Argentina: exports, imports and FDI (millions of current US$), 1990-2003

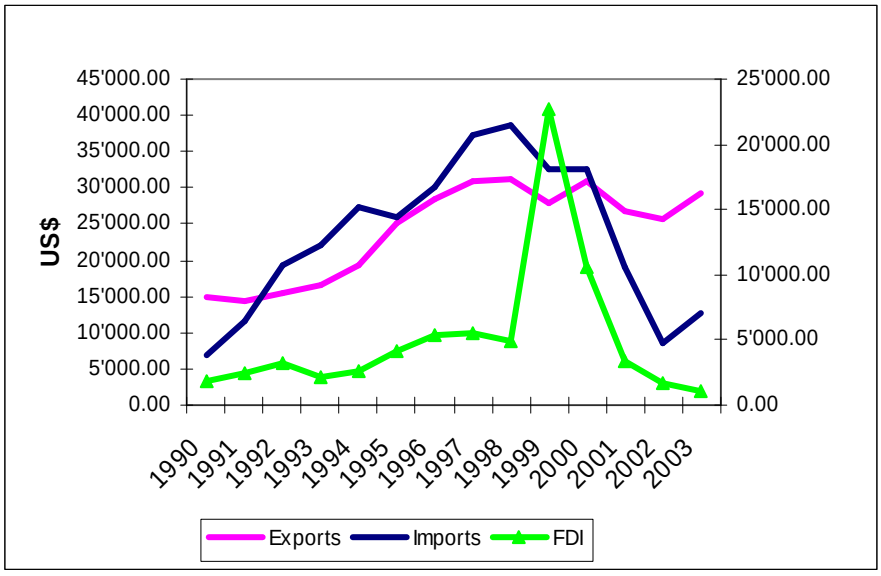
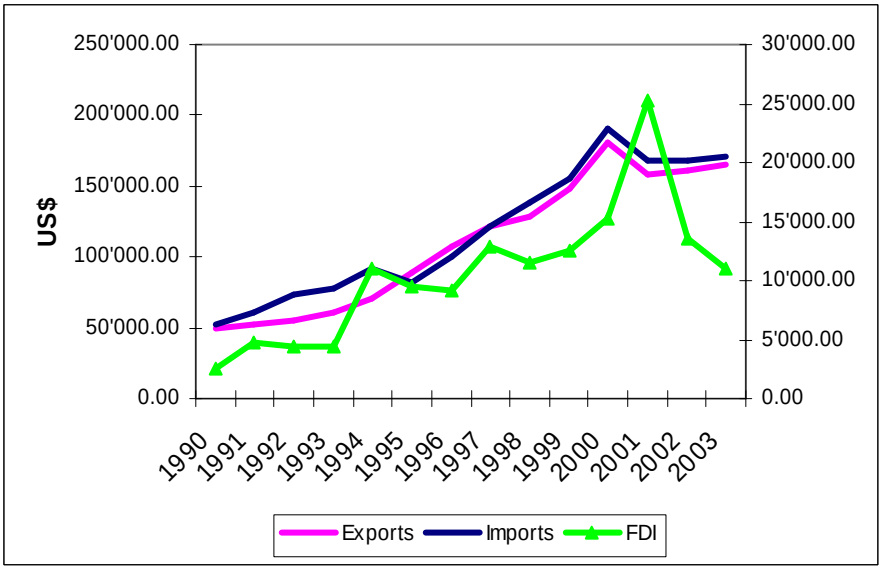


Figure 9: Brazil: exports, imports and FDI (millions of current US$), 1990-2003

Figure 10: Mexico: exports, imports and FDI (millions of current US$), 1990-2003



Source: ECLAC, 2004, http://www.eclac.cl/badestat/anuario_2004/index.htm

8. Conclusions

Economic opening in Argentina, Brazil and Mexico did not lead to export dynamism and had a disappointing impact on employment, even though trade liberalization and regional integration caused a strong increase in trade and led to a better integration into the world economy. Only Mexico experienced an export surge (see Table 9) in manufacturing production and employment during the second half of the 1990s, mainly due to the booming *maquiladora* sector. However, the maquiladora industry did not develop significant links with the rest of the economy. Even for the more sophisticated exports, it did not generate a real upgrading, since the import content of exports also rose significantly. Moreover, the *maquiladora* industry has declined significantly since 2000 thus reducing drastically formal job creation in Mexico.

Another worrying phenomenon is the decline in specialization of dynamic products vis-à-vis the world market and the remaining specialization in primary or semi-processed primary products, in particular in Argentina, but also in Brazil. Even though strong exports in these goods may have a positive impact on macroeconomic variables this specialization is not very promising for the future development of the country and may strengthen the marginalization of Argentina and Brazil on the world market. These exports have high price vulnerability and they create very few good quality jobs. In addition, few new production plants have been created in Argentina and Brazil as a result of economic opening, which led more to the restructuring of existing manufacturing plants. This process was thus not "job-creating", as it did not focus on sectors with high labour intensity.

Table 9: Summary: Trade and labour market variables

Trade	Argentina	Brazil	Mexico
	+++	+++	++
Tariff reduction	++	++	+++
Export increase	+++	+++	+++
Import increase	++	++	+++
Intraregional trade increase	-	-	-
Specialization in dynamic exports	++	++	+
Labour intensity of major exports	-/+	-/0	+
Employment impact of exports	-/+	+	0-+
Wage impact of exports			
Direct employment impact of increased imports	-/+	-/+	-/+
Indirect employment impact of increased imports	-	-	-/0

Note: -: declining, -/+: mixed, + low/positive, ++: strong (labour intensity: medium), +++: very strong

While exports increased significantly during the 1990s, there was an even steeper rise in imports in the region, in particular in Argentina and Brazil. The direct impact of imports on employment in the manufacturing sector was both positive and negative depending on the industry during the second half of the 1990s, but its indirect impact was negative. Higher competition in the domestic market and imports of technology led to industrial restructuring and to a rise in labour productivity in the traditional industrial sectors, in particular in Argentina and Brazil. This resulted in a general decrease in demand for labour in manufacturing, but also to a wage shift in favour of skilled workers, as illustrated clearly in

the automobile sector of Argentina and Brazil, sectors largely dominated by TNCs. SMEs were the major losers of the new development strategy, as they were not able to benefit from new export opportunities. Lacking access to financial resources and lacking technical support by the public sector were the main reasons for their poor performance. In Mexico, the opening of the domestic market to highly subsidized US products had a disastrous impact on employment in agriculture and represented another setback of trade opening. This shows that sequencing and appropriate targeting of the economic opening process is crucial to avoid high social adjustment costs.

Even though economic opening has not produced the desired results with regard to employment at a first stage, an export orientation strategy has still the potential to contribute to quality employment creation. The efforts towards a better integration into the world market should continue in strength as it can, if properly planned and organized, yield higher welfare for the whole population. First of all, the effects would be more beneficial if the countries ensured the competitiveness of their exchange rate. This would improve the situation of the tradable sector, and thus encourage firms to expand production and employment in this sector. This would not only help stimulate exports, but it would develop the internal market as domestic firms would be more competitive with imports, both of consumer goods as well as intermediary products and the relative prices of local goods would improve. Moreover, a booming tradable sector will have a positive impact on the non tradable sector.

Second, Argentina, Brazil and Mexico will certainly keep their strong specialization in primary goods or technology goods with limited domestic valued added in the future, but in order to guarantee sustainable and balanced economic development, they may be interested in diversification of their export structure and in developing further sectors which produce higher value-added goods and which ensure higher quality employment. Trade specialization should be steered by an active industrial policy, which facilitates the integration of domestic firms into the world market, but market forces should play a major role in shaping the new trade pattern. Higher value added exports have the positive effect of being less volatile on the world market, they have an important multiplier effect on employment, and they are responsible for the creation of better quality jobs. The strong comparative advantage in agricultural goods, for example, could be used for up-grading the production by specializing in food processing and by developing a comparative advantage in machineries for agricultural production.

Third, new policies should ensure that a level playing field exists between domestic and foreign firms, for example by maintaining a competitive exchange rate and by re-assessing the need for import privileges, which were introduced with the aim of initiating new productive activities, but which are not beneficial for developing forward and backward linkages. The public sector could also provide technical and financial supports (e.g. guarantee schemes for exports and over sea investment) to smaller enterprises to help them better integrate with TNCs and the world economy. A better integration into the world economy is crucial, but so is the domestic market, in particular for employment, which is an important element to guarantee sustainable growth and equitable development.

Notes:

1 See also Martinez, 2004, on the expected positive outcome of trade liberalization.

[2] See Stallings and Weller (2001) for a discussion of the debate.

[3] PICE: Programa de Integración y Cooperación Económica/Integração e Cooperação Econômica.

[4] Tratado de Integración y Cooperación para el Desarrollo/ Integração e Cooperação para o Desenvolvimento (TICD).

[5] Specific key sectors, either agricultural or capital-intensive industries, were promoted as a step towards harmonization and coordination of policies and rules and the reduction of trade barriers between these countries.

[6] For example, the introduction of a statistical tax, an increase in the list of exceptions and tariffs for some key industries such as the car industry (from 35 per cent to 70 per cent in 1995).

[7] Although macroeconomic coordination, in particular, has been a problem between Argentina and Brazil due to economic crisis, devaluations and different business interests (discussed in more detail in Chapter III).

[8] The CET has a tariff structure of 11 levels, ranging from 0 to 20 per cent (Estevardeordal, Goto and Saez, 2000).

[9] Triángulo del Norte: El Salvador, Guatemala, Honduras. Grupo de los Tres: Mexico, Venezuela and Colombia (Panama).

[10] The average tariff rates for United States and Canadian imports are 1.1 per cent and 1.6 per cent respectively, as of May 2001 (WTO, 2002).

[11] Correlation GDP-Imports, 1990-2002: Argentina: 0.91, Brazil: 0.86, Mexico: 0.90. Correlation GDP-Exports, 1990-2002: Argentina: 0.56, Brazil: 0.57, Mexico: 0.83.

[12] Definition: Trade openness indicator = **(∑Miw+ ∑Miw)/PIB.**i: products**;** Mw: imports from the rest of the world.**;** Xw: exports to the rest of the world.

[13] A closer look at the enterprise level shows that the regional market plays an important role, especially for small exporting firms. In 2001, 46 per cent of the exports from Argentina and 23 per cent from Brazil went to Mercosur and Chile, while these destinations accounted for only 33 per cent and 13 per cent of the exports of large exporting companies in Argentina and Brazil respectively (OIT, 2004).

[14] Figures for 2000 were even higher: Argentina, 32 per cent and Brazil, 14 per cent.

[15] The complementarity index based on the revealed comparative advantage (RCA) index developed by Ernst in 1997 shows a value of 0.57 between Argentina and the EU and of 0.62 between Brazil and the EU, while trade complementarity between Argentina and Brazil is much lower, with a value of 0.47.

[16] The difference of exports minus imports divided by exports ((X-M)/X) shows the importance of the import content of exports, as economic opening has often led to an increase in the import content.

[17] In 2003, soyabean oil (7.0 per cent) was the fourth most important export good followed by soya beans (6.2 per cent). See ECLAC 2004b: http://www.eclac.cl/badestat/anuario_2004/index.htm.

[18] Crude petroleum with 7.8 per cent (second most exported good), petroleum products with 7.4 (number 3) and natural gas with 2.9 per cent (number 8) are part of the major exports in 2003 according to ECLAC 2004b: http://www.eclac.cl/badestat/anuario_2004/index.htm.

[19] Even though the aircraft industry was still an important exporter in 2003 with a share of 2.7 per cent, it fell far behind soya beans with 5.9 per cent benefiting from a favourable international environment.

[20] (X-M)/X is negative with -0.31.

[21] Nevertheless in 2003, crude petroleum became once again the most important export good with a share of 10.2 per cent, followed by passenger motor cars.

[22] The revealed comparative advantage of Balassa is defined as follows:
RCA = (Mij/Mi)/Mj/M) with:
Mij: value of imports of commodity i originated in exporter country j
Mi: Value of imports of commodity i (Mij/Mi: market share)
M: total import value
With regard to the specialization index, commodities with specialization levels higher (or lower) than 1 may be distinguished. The used UN/World Bank software TradeCAN based on UNComtrade data then includes in the report only commodities in which a country is "specialized" or "not specialized".

[23] A calculation of the evolution of the market share for each category confirms the trend towards the declining importance of rising stars in Argentina, Brazil and Mexico.

[24] Primary products: 42 per cent of total exports in 1990 and 46 per cent in 2001; medium-technology industries: 12 per cent in 1990 and 16 per cent in 2001, see Svarzman, 2004.

[25] In addition, labour market institutions have been biased against wage increases. The government applied a policy to prevent a strong rise in the minimum wage and to control its influence on many other wages. Unionization and collective bargaining were repressed through weak labour laws. In the *maquiladoras*, protection contracts were signed with "ineffective" trade unions (Polaski, 2003; see also Chapter VI).

[26] Just 12 per cent of total exports in Brazil and 3 per cent in Argentina are located in the high-technology sector (OIT, 2004).

[27] Other missed opportunities with regard to the world market, 1995-2000: Argentina: Parts of motor vehicles, residual petroleum products (and textile and leather towards Mercosur market); Brazil: Essential oils, perfumes, textile made-up articles (tin, meat and margarine towards Mercosur market); Mexico: Equipment for distributing electricity, electric power machinery (TV receivers and electric plants towards NAFTA).

[28] Example of high import dependency of exports: 78.6 per cent of exports containing temporarily imported goods in Mexico between 1990 and 2003 (Dussel, 2004).

[29] The list of industries is not intended to be comprehensive; the main aim of the study is to analyse import penetration, illustrating it with some concrete examples.

[30] This figure also includes fishing, forestry and trapping *(INEGI, National Employment Survey 2002).*

[31] For more details, see attachment.

[32] Domestic absorption represents domestic utilization for final private consumption. The domestic coefficient is the share of domestic output in domestic absorption. For further information, see also Krueger, 1980 or Mesquita Moreira and Najberg, 2000.

[33] Job changes have been calculated by taking the difference between L and N times the average number of employment in the sector during the period of analysis.

[34] Productivity growth: Argentina (1992.96): 47 per cent; Brazil (1989-96): 48 per cent, Mexico (1988-1994): 17 per cent.

[35] For more information, see G. Hanson, 2003 and A. Rodríguez-Pose, 2003.

[36] For example, in Brazil, market participation (sales) of public enterprises declined from 44.6 per cent in 1991 to 24.3 per cent in 1999, TNCs' participation increased from 14.8 per cent to 36.4 per cent, while national holdings remained static (Ferraz, Kupfer and Iootty, 2004).

[37] There are some positive signs such as Delphi in the automotive sector in Juarez, which developed a local engineering centre and where local suppliers managed to produce higher value-added goods.

[38] According to the Brazilian Aeronautics Industry Association, a North-South Cooperation Programme for high technology turned out to be quite successful in this regard.

[39] An increase in imports by an annual average of 55 per cent between 1995 and 1999.

[40] See chapter 5 for more details on FDI.

[41] In Argentina, the participation of TNCs in the external trade of the major industries in 1998 was as follows: Telecommunications - exports: 100 per cent, imports: 98.7 per cent; automobiles - exports: 98.9 per cent, imports: 97.9 per cent; pharmaceutical products - exports: 69.9 per cent, imports: 76.3 per cent (Kulfas, Porta and Ramos, 2002).

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ANNEX

Table 1: Competitive matrix compared with world and regional markets, 1985-2000

Argentina

1985-90 World

Vegetable oils	Meat and edible meat offals, fresh
Meat and edible meat offals, prep	Fish, fresh, chilled, dried or frozen
Fuel wood	Cereal and flour preparations
Cereals, unmilled	Leather
Oil seeds and oleaginous fruit	Crustaceans and molluses
Dyeing and tanning extracts	Special transactions and commod. N.C.

1995-2000 World

Vegetable oils	Essential oils, perfume
Feeding stuff for animals	Petroleum products, refined
Maize (corn), unmilled	Motor vehicles
Meat and edible meat offals	Residual petroleum products
Tea and maté	Internal combustion piston engines
Cotton	Parts and accessories of motor vehicles

1995-2000 Mercosur

Maize (corn), unmilled	Wheat and meslin, unmilled
Milk and cream	Cereals, unmilled
Non-ferrous base metal waste	Margarine
Vegetable oils	Leather
Vegetables, fresh, chilled, frozen	Edible products and preparations
Fish, fresh, chilled, dried or frozen	Textile yarn

Brazil

1985-1990 World

Iron ore and concentrates	Pig iron, spiegeleisen, sponge iron
Coffee and coffee substitutes	Ingots and primary forms of iron/steel
Tin	Silk
Fruit, preserved and fruit preparations	Footwear
Feeding stuff for animals	Manufactures of leather
Meat and edible meat offals	Meat and edible meat offals

1995-2000 World

Iron ore and concentrates	Spices
Coffee and coffee substitutes	Nickel
Oil seeds and oleaginous fruit	Wood manufactures, n.e.s.
Feeding stuff for animals	Internal combustion piston engines
Ingots and other primary forms	Made-up articles, of textile material
Dyeing and tanning extracts	Essential oils, perfume

1995-2000 Mercosur

Cotton fabrics, woven	Made-up articles, of textile materials
Cutlery	Road motor vehicles
Footwear	Other man-made fibers for spinning
Iron ore and concentrates	Meat and edible meat offals
Coffee and coffee substitutes	Tin
Tea and maté	Margarine and shortening

Mexico

1985-1990 World

Sulphur and unroasted iron pyrites	Equipment for distributing electricity
Lead	Television receivers
Coffee and coffee substitutes	Radio-broadcast receivers
Silver, platinum	Crustaceans and molluces
Internal combustion piston engines	Telecommunications equipment
Petroleum oils, crude	Stone, sand and gravel

1995-2000 World

Radio-broadcast receivers	Motor vehicles for transport
Railway vehicles and equipment	Undergarments
Rotating electric plant and parts	Furniture and parts
Television receivers	Equipment for distributing electricity
Meters and counters	Electric power machinery
Vegetables, fresh, chilled, frozen	Internal combustion piston engines

1995-2000 Nafta

Sulphur and unroasted iron pyrites	Railway vehicles and associated equipment
Fuel wood	Undergarments
Radio-broadcast receivers	Telecommunications equipment
Meters and counters	Television receivers
Vegetables, fresh, chilled, frozen	Equipment for distributing electricity
Electrical apparatus electrical circuits	Rotating electric plant and parts

Note: For an explanation of this table, please see Figure 7 and Note to Table 6.

Source: Own calculations based on ECLAC, TradeCan.

Table 2: Labour intensity per country, five lowest and highest labour-intensive product groups in manufacturing

Low labour intensity	High labour intensity
Argentina	
Knitted and crocheted fabrics and articles	Tanning, dressing and processing of leather
Wearing apparel, except fur apparel	Domestic appliances n.e.c.
Printing and related service activities	Railway/tramway locomotives and rolling stock
Refined petroleum products	Office, accounting and computing machinery
Furniture	Coke oven products
Brazil	
Aircraft and spacecraft	Coke oven products
Recycling of non-metal waste and scrap	TV and radio receivers and associated goods
Recycling of metal waste and scrap	Artificial fibres
TV/radio transmitters; line communication apparatus	Beverages
Electric motors, generators and transformers	Building and repairing of ships and boats
Mexico	
Measuring/testing/navigating appliances, etc.	Tobacco products
Made-up textile articles, except apparel	Builders' carpentry and joinery
TV and radio receivers and associated goods	Processing/preserving of fish
Railway/tramway locomotives and rolling stock	Fertilizers and nitrogen compounds
Tanks, reservoirs and containers of metal	Wooden containers

Note: See Note 14.

Source: Own calculations based on UN Comtrade data and UNIDO, Indstat, revision 3.

Growth accounting approach

The growth accounting approach follows two main identities:

Cit = Yit + Mit-Xit

Pit = Yit / Lit

Substituting (ii) in (i) you get: **Lit= (Cit + Xit – Mit)/Pit**
(1) P t = Po exp (r1 t)

(2) S t = So exp (t with
S t = Yit/Cit = a. Yit/(Yit + Mit) or b. Yit/(Yit +(Mit-Xit))

(3) C t = Co exp (r3t) with
(a) Cit= Yit + Mit
or
(b) Cit = Yit + Mit-Xit

(4) L t = Lo exp ((r2 + r3 – r1)t) = Po exp (-r1t) So exp (r2 t) Co exp (r3 t)

In this model, *M* stands for imports, *X* for exports and *Y* for output. P is labour productivity defined as output Y divided by employment L. i represents the sectors and t the time period. *C* is domestic consumption or absorption, or often named domestic availability. It represents domestic utilization for final private consumption, intra-industry demand, inventory accumulation, other investment, and government use. There are two ways of defining it: output plus imports (Y + M) or output plus net imports meaning imports minus exports (Y + M –X). The second definition includes the offsetting aspect of export expansion. *S* is the domestic coefficient, which is defined by the product divided by domestic consumption. It defines the share of domestic output in domestic consumption. All variables are measured in US$ to constant market prices with 1995 as the basis year. In our model, the rate of change in employment (*r0*) is by definition the result of changes in domestic absorption (*r3*), the growth rate of the domestic coefficient or the share of domestic output in domestic absorption (*r2*), which is a proxy for foreign sector contribution, minus the growth rate of labour productivity (*r1*).

This relatively simple model provides interesting results, but has the drawback of assuming constant rates of growth for all defined variables, which is especially problematic for periods with strong macroeconomic instability as sometimes experienced by our analysed countries. In order to limit the negative impact of this assumption, this analysis includes a relatively short period of time, 1995-2000, with relatively stable macroeconomic evolution, apart from the Brazilian crisis in 1998/99, which was relatively short and had little impact. For comparison reasons, the same time period 1995-2000 has been chosen for all three countries even though in each country show some differences, which affect all used economic variables[1].

[1] Mexico, for example, started a period of strong recovery from the crisis in 1995 and its economy slowed down at the end of the period, while Argentina had a similar evolution with a time lag of about one year. Brazil, on the other hand, suffered from an economic crisis and strong devaluation in 1999, at the end of the period of analysis.

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