Trade Liberalization and Industrial Development in Latin America

A. GESKE DIJKSTRA
Erasmus University, Rotterdam, The Netherlands

Summary. — This paper examines the effects of trade liberalization on industrial development in Latin America. It suggests that there may be a tradeoff between static (X-efficiency, allocative efficiency) and dynamic efficiency effects, in particular, for countries that do not have a developed industrial base. A review of empirical evidence on several indicators of efficiency shows that X-efficiency and allocative efficiency effects occur but are not very strong. Other factors may be more important for bringing about productivity growth and structural change. Even for Latin American countries with a more developed industrial base (Argentina, Brazil, Mexico), dynamic efficiency effects from trade liberalization do not come about automatically. © 2000 Elsevier Science Ltd. All rights reserved.

Key words — Latin America, trade liberalization, manufacturing industry, development

1. INTRODUCTION

Trade liberalization was one of the reforms that swept over Latin America in the 1980s and early 1990s, in the aftermath of the debt crisis and in the context of broader structural adjustment measures. It was often carried out in combination with other liberalization and deregulation policies, and sometimes also with stabilization policies. Some countries began serious trade reforms in the mid-1980s and most other countries carried out trade liberalization during 1989–93. Chile was already much earlier, carrying out trade reform during 1974–78.

The impact of trade liberalization, and of structural adjustment in general, on industrial development is a relatively neglected issue so far (but see de Valk, 1994; Lall, 1995). One of the reasons for this is that manufacturing industry is a problematic sector for the adherents of structural adjustment. Manufacturing is considered to have been protected and subsidized too much. Market liberalization ideally involves a more efficient allocation of resources, and this may lead to a decrease of the manufacturing sector.

Why, then, should the impact of trade liberalization on manufacturing be of concern? If it follows from the theory that trade liberalization enhances welfare, should not we accept any outcome of the liberalization process, including deindustrialization? This is a rather unsatisfactory answer (see also Weeks, 1996). Industrial development is crucial for long-run growth, for two reasons (Zattler, 1996). First, productivity growth and technical development are higher in manufacturing industry than in other sectors of the economy, and technological spillovers from the sector may be important. Second, a country that does not develop industry is dependent on primary exports; most primary exports are subject to a long-run deterioration of the terms of trade. If industry matters, then the question of the impact of trade liberalization on industry is relevant and legitimate.

The aim of this paper is to analyze the effects of trade liberalization on industrial development in Latin America, both in the short and in the long run. In the next, theoretical section, I break down these effects into static and dynamic effects, and within the static effects I distinguish between X-efficiency and allocative efficiency. Section 3 develops suitable indicators for these different types of efficiency, based on this theoretical framework. Section 4 examines available evidence for Latin America. The evidence presented here consists of some analysis of comparative statistical data for the region, and of a review of available country case studies. The questions that will be answered include whether trade liberalization enhanced the three types of efficiency, and what the
prospects are for long-run industrial development for the region. Section 5 concludes the paper.

2. THEORETICAL EFFECTS OF TRADE LIBERALIZATION

Trade liberalization is defined as policies that diminish restrictions to the free international movement of goods and services. More particularly, it includes the diminishing of import quota and the lowering of import tariffs, and the diminishing of restrictions to exports and the lowering of export taxes. These policies all result in a decrease of the price of importables, and in an increase in the price of exportables. If markets work as they are expected and supply elasticities are sufficiently strong, these measures lead to increases in imports and exports. The same result can also be obtained by maintaining import tariffs, but adding export subsidies so that the anti-export bias is reduced (Greenaway, Morgan & Wright, 1998). Although this is not “liberalization,” it will also be included in the analysis.

A devaluation of the exchange rate is often considered part of trade liberalization. In countries where imports used to be heavily restricted, the move toward a market allocation of imports requires devaluation. Apart from this however, I do not include devaluation in the definition of trade liberalization, since the impact of devaluation on imports and exports is asymmetrical: it stimulates exports and lowers imports.

Rodrik reviews four arguments in favor of trade liberalization (1995). The first is an increase in static efficiency based on Ricardo’s comparative advantage. Specialization will increase welfare in both countries as long as relative prices before trade differ. Second, there are dynamic effects: trade enhances technological change, learning and economic growth. Third, economies with more trade adjust more easily to adverse external shocks, and fourth, trade liberalization reduces waste stemming from rent-seeking activities. According to Rodrik, only the first of these arguments is firmly based in economic theory. With respect to the fourth argument, he convincingly argues that the extent of rent-seeking is more likely to be a function of the “hardness” of the state than of the type of economic policies carried out. As long as the state is “soft,” that is, bribery and corruption are widespread, rent-seeking continues. Firms that cannot obtain import licenses anymore will seek other rents. With respect to the third argument, the ability to cope with external shocks, it is logically difficult to see why this ability will be enhanced by increased dependence on world markets.

Contrary to Rodrik, I do think that there are theoretical grounds for the second argument, the dynamic effects of trade liberalization. For industrialized countries, the expected benefits of trade liberalization on dynamic efficiency are considered even more important. This has been demonstrated, in particular, in the literature on regional economic integration (Baldwin, 1994; Molle, 1990). Improvements in static efficiency increase the growth rate of the economy, but only temporarily. An improvement in dynamic efficiency is expected to lead to a permanently higher growth rate (Baldwin, 1994). This can be the result of permanently higher rates of investment, of more investment in research and development (R&D) and more technical innovation, of higher levels of (technological) learning in the economy and of higher productivity growth.

Within static efficiency, I distinguish between allocative efficiency and X-efficiency, or micro-economic efficiency. This distinction goes back to Leibenstein (1966). There is an improvement in X-efficiency if the same output is produced with fewer resources, or more output is produced with the same amount of resources. Allocative efficiency is improved if resources are better allocated over the whole economy. In the Pareto optimal situation, it is not possible to increase the output of any good without reducing the output of at least one other good. Both X-efficiency and allocative efficiency are static effects: they are one-time improvements as a result of the change in relative prices which follows from trade liberalization. Improvements in all three types of efficiency will definitely enhance total welfare in the economy. There may, however, be tradeoffs between the different types of efficiency. In that case the net effect on total welfare is ambiguous.

(a) Static effects

It is generally expected that X-efficiency improves after trade liberalization. This is based on two effects. First, it leads to lower prices for imported goods. All firms and households using imported goods will have higher production and output, with lower costs. In many countries, however, trade restrictions
and tariffs for imported inputs, raw materials and machinery were already much lower than for final goods. If this is the case, the impact of liberalization and lower tariffs on X-efficiency in industrial firms will be limited.

Second, orthodox theory postulates that the increased competition from imported goods forces domestic producers of import competing goods to be more efficient, resulting in higher X-efficiency. But, this assumes that at higher output prices prior to trade liberalization, the substitution effect (more leisure/slack) dominated the income effect for the firm (manager). In other words, managers did not use the (protection-induced) higher output prices to increase their incomes and profits, for example, in order to invest in the firm, but rather increased slack and had higher costs. This is probably not so for all firms (Rodrik, 1992; Marshall, 1992). In addition, if substitution effects dominate income effects, firms that were already exporting before trade liberalization can be expected to reduce X-efficiency. For them, the higher output prices will lead to more slack/leisure and not to increases in income (Marshall, 1992; Rodrik, 1995). It can be expected, however, that in import-substituting regimes (before trade liberalization), import competing firms will be quantitatively more important than exporting firms.

In sum, there will probably be a net overall positive effect of trade liberalization on X-efficiency in manufacturing, but it is lower than orthodox theory assumes, for two reasons. First, the trade regime before liberalization already allowed cheap imports of inputs, machinery and raw materials, and second, not all import competing firms used the extra income from protection to cover inefficiency.

The improvement in allocative efficiency is the standard argument in favor of trade liberalization. Welfare will increase if resources are used where they are most productive. Whether this structural change leads to more manufacturing production depends on the comparative advantage of manufacturing at the outset. Structural changes within manufacturing can also be expected. There are short-term adjustment costs, however, since resources cannot instantly move from one sector with low comparative advantage to another sector with higher comparative advantage.

In general, theory predicts that the welfare gains from improvements in allocative efficiency will be larger for small countries. This is because the new prices will be closer to the old prices in large economies with large markets, and so small countries experience a larger change in relative prices. As a result, there will be more reallocation of productive resources in small countries. The corollary of this is that adjustment costs also tend to be larger for small countries than for large countries (Helleiner, 1996).

In general, the static allocative efficiency effects from trade liberalization are very much contingent upon competitive markets. But, it is quite realistic to assume that the domestic market of import competing producers before trade liberalization is characterized by oligopolistic competition. In principle, the entry of foreign goods enhances competition in the domestic market, lowers prices and increases welfare. As Levy and Nolan (1992) show, however, the loss for domestic producers quite likely exceeds the increase in consumer surplus. Although overall welfare increases, from the perspective of the country too much of this increase accrues to foreign firms. Levy and Nolan do not conclude from this that trade should be restricted. A “first best” policy is to subsidize sales from domestic firms and to tax sales by foreign firms. But, if this is not feasible given the limited state capacity to carry out discriminating policies, then tariffs can be used. These tariffs do not need to be very high: under some realistic assumptions, Levy and Nolan conclude that trade reform which reduces import tariffs to about 15% is welfare-enhancing, even if the domestic market is oligopolistic.

Static welfare effects will also be affected if imperfect markets prevail in the trading sector in developing countries. This is also a very realistic assumption. Although trade liberalization leads to lower import prices at the border, these lower prices tend not to be reflected in lower domestic prices. In general, monopoly power is caused by an inelastic supply curve, by a reduced number of firms and by collusion (Pindyck & Rubinfeld, 1992). If imported goods are of a high-tech or high-price nature (for example machinery or agricultural equipment), demand will be relatively inelastic. In addition, barriers to entry in the importing activity may be rather high: sunk costs are present in the form of market-specific information that is required, or in the form of specific physical or financial investments. In these cases, there is a natural tendency for the import market to be dominated by one or a few agents. Even in the case of relatively homogeneous goods for which the demand curve is
elastic and for which not much specific knowledge is required to sell or use them (food, clothing), monopoly power may exist. If the ownership of the domestic supermarkets, for example, is concentrated, it is possible that imported food products are sold at a much higher margin from the border prices than marginal costs would predict. If the lower border prices of industrial inputs are not passed on to domestic users of these goods (producers), X-efficiency increases will not come about.

On the export side, trade liberalization involves lowering or abolishing export restrictions and export taxes. Whether prices of exportables increase for domestic producers depends once again on the domestic market structure in trade. If government intervention is replaced by private monopsonistic or oligopsonistic control of export marketing, price increases at the border are not passed on to (small) producers. In this case, the expected increase in allocative efficiency does not come about. In general, in economies characterized by an unequal distribution of income and wealth, the tendency toward imperfect markets will be stronger. This is particularly the case in Latin America. In small countries it is more likely that market concentration occurs precisely because markets are small. For this reason, the losses in potential allocative efficiency improvements are larger in small countries than in large countries.

(b) Dynamic efficiency

Dynamic efficiency implies that the economy achieves a permanently higher growth rate. Trade liberalization may contribute to the exchange of ideas and to a faster adoption of technologies and knowledge (Krueger, 1998). But, trade liberalization may be neither necessary (if capital goods could already be imported at low rates, and foreign investment was also already allowed) nor sufficient (a domestic skill base must be available).

More systematic arguments have been developed around the dynamic efficiency effects of trade liberalization stemming from increased competition. The impact of competition on investment and innovation is ambiguous, however. On the one hand, competition reduces profit margins which limits the scope for investment in general, and for investment in Research and Development (R&D) in particular. This is the Schumpeterian argument that some form of imperfect competition is required in order to stimulate investment in innovation (Schumpeter, 1942, p. 106; cited in Van de Klundert, 1997, p. 63). On the other hand, larger firms with a guaranteed position in the market tend to be less innovative according to the product cycle theory. Innovation will come from newcomers in the market who face fierce competition. An unambiguously positive dynamic effect of trade liberalization is that more competition and a larger market enhance the international cooperation and specialization in R&D activities and reduce redundancy (Baldwin, 1994; Rodrik, 1995).

A third argument for dynamic effects of trade liberalization is related to the existence of increasing returns to scale. Firms can benefit from the larger market created by trade liberalization. But, increasing returns to scale are principally related to manufacturing industry, and are unlikely to be important to the same extent in primary goods production.

In sum, net positive dynamic effects from trade liberalization may derive from more competition and from increasing returns to scale. These effects will only come about, however, if a country has already achieved a certain level of industrialization. The positive dynamic effects from competition only follow if R&D activities take place in the economy so that cooperation and specialization between and among firms can come about.

It follows that there may be a tradeoff between the static improvements in allocative efficiency and dynamic gains from trade. Many developing countries have a static comparative advantage in primary goods production in which little R&D takes place and in which returns to scale are relatively unimportant. If developing countries have a comparative advantage in manufacturing, this tends to be manufacturing that uses cheap labor-intensively, or consists of the processing of primary resources. These industrial branches are less likely to enhance dynamic efficiency effects as compared to skill-intensive and technology-intensive branches. An additional problem is the lower elasticity of demand for primary production, and also for cheap labor-intensive manufacturing production and raw material processing.

In sum, developing countries with a static comparative advantage in primary exports and in industries intensive in cheap labor are less likely to benefit from the positive dynamic effects of trade liberalization. Although there are positive allocative efficiency effects, the
specialization in agriculture or in industries based on cheap labor means that income elasticity of demand is lower, no economies of scale apply, and less innovative activities take place. For developing countries specializing in industries processing raw resources, the same risks apply with respect to income elasticity of demand, but economies of scale are more likely to exist and there are more chances for long-term productivity increases.

Developing countries that have no static comparative advantage in industries with increasing returns to scale or with a high degree of innovative activity, and that are also characterized by imperfect markets in trade are even worse off. There are no dynamic efficiency gains, and not all welfare gains according to static efficiency improvements come about. If those having an interest in trade are politically strong, trade liberalization policies will prevail and policies to promote production will not come about.

In sum, it is important to separate potential static and dynamic effects of trade liberalization. From a development perspective, the long-term, dynamic effects are more important than the short-term effects. This does not mean that trade should be restricted if no dynamic effects can be expected, but it does mean that complementary action has to be taken to reduce the likelihood that less industrialized countries will be kept in their initial static comparative advantage, resulting in much lower growth rates than richer countries.

3. INDICATORS FOR STATIC AND DYNAMIC EFFICIENCY

The aim of the remainder of this paper is to assess the effects of trade liberalization on manufacturing industry in Latin America, disentangling these effects into X-efficiency, allocative efficiency and dynamic efficiency effects. From the theoretical framework developed above, several indicators can be deduced.

Increases in X-efficiency are expected to occur in the import competing sectors due to more competition, and in all sectors using imported inputs, raw materials and machinery. As we argued above, these positive effects are not so large if firms already had cheap access to imported inputs and if not all firms used the additional income from protection for increasing slack (costs). In practice, increases in X-efficiency can be assessed from two indicators. One is labor productivity, and the other is a reduction in the mark-up. Labor productivity will increase if trade liberalization lowers the prices of imported inputs and if the increased competition leads to reductions in the number of workers. A reduction in the mark-up on prices will mainly reflect the effect of more competition from imports.

Within manufacturing, an improvement in allocative efficiency occurs if branches more in line with the country’s comparative advantage grow, and others decline. We can examine whether structural change has occurred in the economy in general, and within manufacturing, and assess whether the change is in line with expected comparative advantage. In general, an expected allocative efficiency effect is a change away from import competing sectors to exporting sectors. This does not automatically imply that such a change should also occur within manufacturing industry, however. If a country does not have any comparative advantage in industry, the structural change will involve less industry and more primary production.

As argued above, we expect dynamic efficiency effects to occur only in countries that already have an industrial base, or more precisely, where firms exist that have increasing returns to scale, and where some technological development has already taken place and R&D activities exist. Several indicators can be used for assessing dynamic efficiency effects. We can look at growth of the manufacturing sector. Within manufacturing, we can examine whether there has been structural change in favor of branches that make intensive use of skilled labor as opposed to sectors intensive in unskilled labor, of branches where increasing returns to scale apply and of branches that are intensive in R&D activities.

Another indicator for dynamic efficiency is the growth in total factor productivity, TFP. This can be considered an indicator of technological progress since it is defined as the residual growth in value-added, not explained by increases in labor or capital. Finally, growth of manufactured exports can be considered an indicator for dynamic efficiency. Long-term growth will be enhanced if countries specialize more in skill-intensive manufacturing production. Therefore, the growth of skill-intensive manufactured exports, and the share of skilled manufactured exports in total manufactured exports are suitable indicators.
Although it is difficult to measure the income elasticity of demand for exports directly, an approximation can be obtained by using the CAN software with data on manufactured exports to OECD markets (Buitelaar & Van Dijck, 1997). With this software, it is possible to assess whether a country’s market share increases in “dynamic” or “stagnant” product markets. The dynamic markets can be considered to have a larger income elasticity of demand.

4. THE EVIDENCE

By now, all Latin American countries have liberalized their trade. Chile started with a radical trade liberalization in 1974, Mexico and Bolivia began in 1985, and most other countries applied serious trade reforms during 1989–93 (Agosín & Ffrench-Davis, 1993). All countries have abolished quotas and reduced import tariffs. Export taxes have also been reduced and government marketing boards no longer exist. Most evidence on the impact of trade liberalization is available for the countries that started the process earlier, but some case studies have already been carried out in other countries. The advantage of case studies is that often the impact of other factors on our efficiency indicators can be assessed. These other factors include the macroeconomic situation and the demand situation, the level of the exchange rate, and the market structure.

(a) X-efficiency

Several studies have looked at labor productivity in industry before and after trade liberalization, and have attempted to establish a link with liberalization. For Mexico, Weiss (1992) showed that labor productivity growth was higher after trade liberalization (1985–89) than before (1981–85). Comparing 48 manufacturing branches, he found a weak but statistically significant relationship between trade liberalization, measured as a smaller difference between international and domestic prices, and labor productivity growth. During 1984–86 on the one hand, and 1987, on the other, 20% of the increase in labor productivity growth could be explained by trade liberalization. This means that most of the increase in labor productivity is due to other factors.

In a more recent article, Weiss reports findings by Hernández showing that during 1987–93, Mexican labor productivity rose less than wages in US$ in all but one manufacturing branch (Weiss, 1999). For this measure of Unit Labor Costs per branch, no significant relationship could be found with trade liberalization measured as the drop in nominal tariff protection. But, the increase in relative unit labor costs during 1987–93 can be explained by the impact of the overvalued exchange rate. The one branch with rapidly rising labor productivity was the automobile industry, a sector that enjoyed special program of support until the early 1990s, which stimulated investment.

Jenkins (1995) studied labor productivity in Bolivian manufacturing in response to trade liberalization after 1985. This productivity was lower than the 1980 level in the first half of the 1980s, then turned above that level after 1986. Regressing absolute figures of labor productivity on growth in value-added, capacity utilization and a dummy for trade liberalization, all factors are significant and have the expected sign. This means that Bolivian trade reforms may have induced higher labor productivity. Regressing labor productivity growth on these factors, however, the capacity and growth of value-added factors were no longer significant, and the liberalization dummy only at the 10% level.

For Chile, many studies are available on the impact of trade liberalization on manufacturing productivity, but they differ widely in productivity definitions, methodology, and in the years they compare (see also Pietrobelli, 1994). The latter is important since productivity developments are influenced, among other factors, by the macroeconomic situation which moved from recession (1974–76) to boom (1979–81) to another recession (1982–85). Manufacturing output followed this business cycle closely, while manufacturing employment continuously declined during 1973–82 and recovered a bit during 1983–86 (Gatica Barros, 1989).

In one study, Richards (1997) found that on average, annual manufacturing labor productivity increased by 5.3% during 1972–82 (the period of trade liberalization), and decreased by 11.8% during 1983–90. Comparing productivity levels at the plant level by using census data of 1967 and 1979, Tybout, de Melo and Corbo (1991) found that overall productivity fell, but there was a positive relationship between reduction of protection and increases in labor productivity. This relationship was strongest with smaller firms. Marshall (1992)
reports a significant increase in “X-efficiency” during 1974–79, and a less significant (90% level) deterioration of X-efficiency during 1979–86. Marshall also found that there was a positive and weakly significant relationship with trade liberalization, measured as a reduction of the effective rate of protection and an increase in import share.

For Chile, it seems that increased competition from imports coupled with low internal demand led to large-scale labor shedding and closing of firms in the first period of trade liberalization 1974–79, leading to higher labor productivity. After 1982, a lack of financing for new investment and low wage levels provoked a labor-intensive production process, reducing labor productivity (Gatica Barros, 1989; Pietrobelli, 1994).

A general conclusion from all three countries is that there are weak positive effects of trade liberalization on labor productivity, but that other factors are probably more important to explain productivity growth. This is also confirmed in a study of Peru, where Cortez found that increases in demand, and the institutional setting of firms, were the most important factors in explaining productivity growth in manufacturing (Cortez, 1997).

The impact of trade liberalization on X-efficiency in Brazil has been measured by looking at the sectoral mark-ups (Moreira & Correa, 1998). During 1990–95, sectoral mark-ups declined in 32 out of 37 manufacturing branches. The markup decreases vary between 2% and 65%, and they reflect both reductions in prices and in costs. The exceptions include industries that are in practice not very tradable due to high transport costs or barriers to entry in distribution (concrete, beverages), or an oligopolistic market structure at the international level (pharmaceuticals). Two other branches (paper and paperboard products, rubber) were already very competitive before trade liberalization. This points to evidence of increasing competition in import competing branches leading to a reduction in slack and an increase in X-efficiency. These authors do not attempt, however, to establish a relation with the reduction in protection by branch. As they do note, the increased competition is probably also caused by the overvalued exchange rate. This was especially the case during 1992–95 (Moreira & Correa, 1998).

In sum, these studies confirm positive X-efficiency effects after trade liberalization. Where it was attempted, only a weak relationship with trade liberalization could be established. Other factors, such as a reduction in domestic demand, and an overvalued exchange rate, were also important in bringing about the efficiency effects.

(b) Allocative efficiency

If trade liberalization changes the relative domestic prices for importables and exportables, we expect structural changes to occur. The economy will produce more according to its comparative advantage, or according to its endowments. It can be expected that Latin America is good at labor-intensive products and at raw-resources intensive products. The former may imply a shift from agriculture to industry; the latter a change toward mining and other primary production but also the processing of these raw materials. Within manufacturing, more labor-intensive production and more raw material processing (production of intermediate goods) can be expected. Latin American countries that already have a developed industrial base can be expected to specialize more in technology (R&D; increasing returns to scale) intensive and human capital intensive goods. In Latin America, the most industrialized countries before trade liberalization policies were carried out included Brazil, Mexico and Argentina. They had the largest proportion of manufactured exports out of total exports in 1980, and they also had the highest R&D expenditure as percentage of GDP in the early 1980s (Alcorta & Peres, 1995, p. 31). These countries can be expected to experience also dynamic efficiency effects.

Weeks (1996) examined whether there was structural change within manufacturing for five Latin American countries taking all years during 1970–92 (and sometimes 1963–92) into account. All possible inflection points were tested and only statistically significant results are reported. A structural change in the direction of intermediate goods for the later years is reported for Colombia (1985–92) and Mexico (1983–92), but not for Argentina, Brazil and Chile. There is some evidence for a lower share of consumer durables and capital goods in Chile between 1981 (for capital goods 1983) and 1992, and for a lower share of capital goods in Mexico during 1983–92. It is difficult, however, to draw conclusions from these results. The periods for which statistically
significant structural change is reported often begin earlier than the trade liberalization.

Gatica Barros (1989) analyzed structural change in Chilean manufacturing during 1967–82. Most manufacturing branches experienced large production declines. The most important factor was the reduction of domestic demand, but eight branches were also affected by competition from imports (textiles, wearing apparel, leather, footwear, pottery, glass, machinery and professional equipment). Four branches experienced output growth that was partly due to increased exports (food, paper, other chemicals and electrical machinery).

Valdés (1992) compared output in 1965–70 with output in 1978–80 and 1988–90 in Chile, thus quantifying the extent of structural change in a first and a second period of trade liberalization. He analyzed both structural change between sectors of GDP, and within manufacturing by comparing actual relative output shares with potential relative output shares. Industry as a whole decreased sharply in the first period (lost 3% of GDP compared to potential relative output), and moderately in the second (another 1% of GDP). But, changes within manufacturing were even larger. In the first period, import-substituting manufacturing branches registered an output decline of 3.4% of GDP, while natural resource-based branches decreased by another 0.7% of GDP. In the second period, import-substitution branches continued to decline (by 4.4% of GDP relative to potential output), but natural resource-based branches increased output by 1.1% relative to potential output.

In Nicaragua, overall manufacturing production remained stagnant during 1990–93 after drastic trade liberalization (Dijkstra, 1996), although, there were large differences between branches. Some virtually disappeared as a result of import competition, an overvalued exchange rate and reduced domestic demand (textiles, clothing, leather and footwear), while others for which domestic demand (textiles, clothing, leather and footwear), while others for which domestic demand operated more stable (food, beverages) fared better.

We now turn to the countries with a more developed industrial base. In Mexico, trade liberalization proved to lead to surprisingly little structural change within manufacturing. During 1985–94, there was a decline of two percentage points in traditional and labor-intensive sectors like textiles, clothing and leather (Weiss, 1999, p. 155). On the other hand, machinery and equipment increased their share in manufacturing output from 22% to 25% in the same period. Within this category, the branches of automobiles and electronics experienced the highest growth rates. This means that production that was relatively intensive in capital and skills was most dynamic. This positive development was not so much due to the impact of trade liberalization as such, but to special support programs (tax credits, cheap imports of inputs) that were in place until the early 1990s (Weiss 1999, p. 157). The condition for this support was that firms had to match their export value with the value of imports, so these programs were a stimulus for exports.

In Mexico, the trade balance for manufacturing and also for most individual branches deteriorated after trade liberalization, since imports increased faster than exports. It has to be born in mind, however, that also in this country, trade liberalization was combined with an overvalued exchange rate. Weiss reports computations by J. Casar showing that Revealed Comparative Advantage (RCA) declined during 1987–90 for 33 out of 42 two-digit manufacturing branches. The nine branches with increases in RCA include some raw material processing industries, and again transport equipment and electronics. When trying to establish a relationship between the decline in RCA with the extent to which nominal tariffs had been reduced, no such evidence could be found (Weiss, 1999). This again points to a stronger impact of the general macroeconomic situation (the exchange rate) than of particular tariff reductions.

In Brazil, Moreira and Correa (1998) also found that trade liberalization led to an increase in both manufacturing exports and imports, but imports grew faster than exports during 1989–96. The import penetration ratio for manufacturing as a whole increased from 5% to 16%, while the export ratio increased from 10% to 15%. As a result, the manufacturing trade balance turned from positive to negative in this period. Brazil also had an overvalued exchange rate, especially during 1992–95. The capital goods branch had the largest increase in the import penetration ratio: from 12% to 42%, but also (along with intermediate goods) the largest increase in the export ratio: from 8% to 17%.

Looking at structural changes within manufacturing, Moreira and Correa (1998) compared potential output of branches (if the share in total output had remained the same) with actual output, according to the same method as used by Valdés (1992) for Chile. The
difference between potential and actual output was then computed as percentage of potential to see the sector’s gains. Nondurable consumer goods proved to have experienced the largest gain, followed by transport capital goods (including cars) and durable consumer goods. Capital goods and complex intermediate goods proved to have reduced their share in output. The study then goes on to decompose the changes in sectoral output into domestic demand effects, export effects, and import penetration effects. For the gainers, domestic demand effects proved to be the most important factor. The decline in the capital goods sector was due to increased imports after trade liberalization, which were not matched by increased exports. Individual branches that suffered most from import competition were electronic and communication equipment, and industrial equipment. Transport capital goods, including cars, experienced some increased import competition and a small reduction in exports over the whole period, but this was made up by an increase in domestic demand so that the overall effect was positive.

On the whole, there was a shift toward industries intensive in natural resources, and away from labor and capital-intensive industries. Domestic demand changes were the most important factor in these positive and negative shifts. For the group of technology intensive sectors, import competition increased but the effect of this on output was matched by increases in domestic demand, so that overall output gain was zero. The industrial branches where increasing returns to scale are important, proved to have suffered an output loss during 1989–96, mainly due to import penetration (Moreira & Correa, 1998). The same happened to sectors that were paying above average wages (probably skill-intensive sectors), while sectors paying below-average wages experienced a gain. But the relative gains and losses were not very large. Manufacturing branches with high intensity in R&D proved to have lost after trade liberalization, but those with medium R&D intensity gained so there was no clear trend.

A more detailed study of the Brazilian motor industry confirms the important role of domestic demand for this technology and skill-intensive sector (Cuadros Carvalho, Robles Reis de Queiroz, Consoni & Pampiona da Costa, 1997). After 1992, demand for cars increased explosively, first due to a reduction in taxes leading to lower prices, and then due to the successful stabilization (in 1994) which led to increases in consumer credit possibilities. Investment rates began to increase after 1990, and from 1992 onward they increased explosively. Apart from modernization of existing companies, new companies also came into existence, which enhanced competition and specialization.

The trade liberalization was important in reducing the costs and increasing the quality of (imported) inputs. It also led to increased imports of (finished) cars, so that domestic firms began to sell foreign cars in order to satisfy rising domestic demand. The trade balance for the car industry deteriorated, as sales increased more than production during 1992–95. In response, the government set up the “Motor Industry Regime” (MIR). The government reintroduced temporary (until 1999) but rather high protection for cars, but made it clear that it would not tolerate a negative trade balance. This protection has created differential treatment of producers of end products as compared to producers of components, and has increased prices in the domestic market. On the other hand, the MIR induced firms to increase investment substantially from 1995 onward. Investment has led to modernization of the motor industry, to higher productivity and to more specialization, and will thus increase competitiveness in the medium term.

Argentina also started a rapid trade liberalization process in 1990. Chudnovsky and Chidiak (1996) examine its impact on three capital intensive sectors (paper, petrochemical industry and iron and steel) by comparing 1990 and 1994 data. All branches experienced increases in import shares. This has been accompanied by lower domestic prices, higher productivity, more concentration and more vertical integration in these branches. In paper, and iron and steel, production increased, in cellulosis and petrochemicals it did not, but these branches did not collapse. Chudnovsky and Chidiak explain this from the import-substitution policies of the past which enhanced the building up of technological capacity in these branches. Expansions in production capacity did not occur, however, in these capital-intensive branches. Investment seems to have been hampered, among other factors, by uncertainty over general macroeconomic policies and over developments in MERCOSUR.

All in all, the Chilean (and Nicaraguan) experiences show the expected decline in import
substituting industries, although part of this must be explained by the drop in domestic demand (for Chile: mid-1970s) and by an overvalued exchange rate (Chile: 1978–81). The positive effect of trade liberalization on industries in which Chile has a static comparative advantage (natural resource based industries) did not occur until the 1980s when the exchange rate was more favorable and when a draw back system was in place for exports (Pietrobelli, 1994, p. 440).

Positive static efficiency effects, both X-efficiency and allocative efficiency, were probably also hampered by the oligopolistic structure of the Chilean economy. With the privatization and financial liberalization, the “grupos económicos” strengthened their position since they purchased former state enterprises at bargain prices and monopolized the access to cheap foreign credits. By the end of 1978, five economic groups controlled 53% of total assets of the largest 250 private enterprises in Chile (Pietrobelli, 1994, p. 454). In Nicaragua, economic concentration in the domestic trading sector also played a role: prices were often higher than one would expect on the basis of trade liberalization (Dijkstra, 1996).

The experiences of the three large countries with a more developed industrial base do not show a clear trend in favor of technology or skill-intensive production after trade liberalization. In Mexico, the car and computer industries fared well but this was due to sector specific export promotion measures. Capital goods production in Brazil declined relatively as a result of import competition. Investment in the motor industry expanded explosively but this was due to an increase in domestic demand and to newly (in 1995) introduced special support measures, including protection. Capital and skill-intensive industries in Argentina could by and large survive the trade liberalization due to the protection they had enjoyed earlier. But major investments did not come about as they were hampered by uncertainty over the (Mercosur) market. These experiences show that even in countries with a relatively high level of industrial development, specific promotion measures and a high and certain domestic demand are needed in order to bring about growth in the sectors that are important for long-run growth.

(c) Dynamic efficiency

A first indicator for dynamic efficiency is the growth of manufacturing production. In most Latin American countries, manufacturing has been growing since 1990, although there are large variations from year to year and between countries (see Table 1). Taking a simple average of growth rates for all countries and all years (1990–96) for which data are available, the average growth rate is 2.5% per year. This is not particularly high, given population growth rates of about 2% per year, and the fact that this is a period of economic recovery and growth for most countries. As percentage of

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>2.0</td>
<td>11.9</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>−10.1</td>
<td>−8.0</td>
<td>−3.6</td>
<td>9.0</td>
<td>5.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Mexico</td>
<td>6.8</td>
<td>3.4</td>
<td>4.2</td>
<td>−0.7</td>
<td>4.1</td>
<td>−4.8</td>
</tr>
<tr>
<td>Chile</td>
<td>1.1</td>
<td>6.6</td>
<td>11.0</td>
<td>5.1</td>
<td>2.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Colombia</td>
<td>4.2</td>
<td>0.8</td>
<td>4.5</td>
<td>1.6</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>2.6</td>
<td>2.1</td>
<td>10.3</td>
<td>6.5</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>−4.3</td>
<td>2.6</td>
<td>12.1</td>
<td>2.1</td>
<td>2.9</td>
<td>−0.7</td>
</tr>
<tr>
<td>Ecuador</td>
<td>0.7</td>
<td>3.2</td>
<td>3.6</td>
<td>2.5</td>
<td>4.4</td>
<td>2.2</td>
</tr>
<tr>
<td>El Salvador</td>
<td>3.2</td>
<td>7.7</td>
<td>9.9</td>
<td>−1.5</td>
<td>7.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Honduras</td>
<td>0.7</td>
<td>1.7</td>
<td>6.1</td>
<td>6.3</td>
<td>−1.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Jamaica</td>
<td>3.9</td>
<td>−7.5</td>
<td>1.3</td>
<td>−1.6</td>
<td>0.3</td>
<td>−1.2</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>−1.6</td>
<td>6.5</td>
<td>−5.1</td>
<td>0.0</td>
<td>0.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Panama</td>
<td>13.8</td>
<td>10.5</td>
<td>9.2</td>
<td>6.3</td>
<td>4.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Paraguay</td>
<td>2.5</td>
<td>1.1</td>
<td>0.4</td>
<td>2.0</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Uruguay</td>
<td>−1.4</td>
<td>−0.5</td>
<td>1.5</td>
<td>−9.0</td>
<td>4.2</td>
<td>−2.9</td>
</tr>
<tr>
<td>Venezuela</td>
<td>6.1</td>
<td>9.8</td>
<td>2.5</td>
<td>−1.0</td>
<td>−2.4</td>
<td>7.6</td>
</tr>
</tbody>
</table>

*a Source: World Bank (1998).*
GDP, manufacturing value-added declined after trade liberalization in all countries except for Ecuador (where the share was stable) and Honduras, where a small increase can be noted (World Bank, 1998). The average manufacturing growth rate is a bit higher for the countries with a more developed industrial base (Argentina, Brazil, Mexico) than for the other countries: respectively, 2.8% and 2.4%. But the difference proves to be not statistically significant, so there does not seem to be a difference in this dynamic efficiency effect between these larger and more industrially developed countries, and the other countries.

Weiss reports several studies on TFP growth in Mexico after trade liberalization (Weiss, 1999). Most studies find increases in TFP growth. But results vary as to whether a relationship with trade liberalization can be established. For Chile, it was reported above that labor productivity fell during 1983–90 (Richards, 1997), in a period when “long-run effects” of trade liberalization may become visible. No attempt is made, however, to establish an explicit relationship with trade policies. For other countries, no studies of the relationship between trade liberalization and productivity growth have been made. In general, we can assume a relationship between output growth and productivity growth. With an average manufacturing growth rate of 2.5%, productivity growth probably has been limited.

For the whole Latin American region, manufactured exports proved to have increased and to have become more skill-intensive and more technology-intensive in the 1980s (IDB, 1992), but, the distribution of the origin of these exports was very uneven. The lion’s share came from Mexico and Brazil. The IDB defines high-tech exports as including SITC two-digit 51, 54, 58, 71, 72 73, and 86. Brazil, Mexico, and Argentina accounted for 96.4% of the regional exports of these goods. The IDB also shows that revealed comparative advantage for Latin America in high-tech exports has increased during 1978–80 and 1988–90. Given the dominance of a few countries in these exports, however, we cannot conclude on the revealed comparative advantage of the other countries. In addition, these data refer for most countries to the period before trade liberalization.

If we look at more recent data, it is clear that the growth of manufactured exports has continued (Figure 1). For most countries and in most years, growth rates were high (Table 2). But there is more variability in these growth rates than in the growth rates for manufacturing production. Figure 1 also shows the continued dominance of the large countries Argentina, Brazil and Mexico in manufactured exports from the region. But there is again no significant difference between the growth rates of these larger countries (20.0%, on average), and those of the small and medium countries (18.7%).

These data on manufactured exports are only a weak indicator for dynamic efficiency of trade.

---

Figure 1. Manufactured exports from Latin American countries.
liberalization. First, we do not know to what extent this growth is due to trade liberalization, or to other factors such as improved macroeconomic stability, or improved access to markets (the US market for many countries, and Mercosur for Argentina). Second, a growth in manufactured exports may imply growth of labor-intensive, assembly industries, or growth of raw material processing at the cost of more capital and more skill intensive exports. In the latter case, more increasing returns to scale and a higher R&D intensity can be expected. Third, in most countries growth in manufactured exports has been accompanied by a higher growth in manufactured imports, leading to a rapid deterioration in the manufactures trade balance (Table 3). Brazil is an exception in that the manufactures trade balance was positive in most years. Some case studies throw more light on these issues.

For Mexico, Weiss (1992) reports a weak but significant positive relationship between trade

Table 2. Latin America: Growth rates of manufactured exports

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>7.1</td>
<td>−6.1</td>
<td>−4.7</td>
<td>30.2</td>
<td>24.0</td>
<td>36.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Brazil</td>
<td>−12.0</td>
<td>6.4</td>
<td>18.1</td>
<td>11.2</td>
<td>4.8</td>
<td>3.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Mexico</td>
<td>10.6</td>
<td>21.1</td>
<td>137.3</td>
<td>17.9</td>
<td>21.5</td>
<td>31.2</td>
<td>20.8</td>
</tr>
<tr>
<td>Bolivia</td>
<td>13.1</td>
<td>−20.8</td>
<td>177.3</td>
<td>44.6</td>
<td>81.6</td>
<td>−22.1</td>
<td>−10.8</td>
</tr>
<tr>
<td>Chile</td>
<td>12.5</td>
<td>22.5</td>
<td>14.8</td>
<td>14.3</td>
<td>24.3</td>
<td>12.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Colombia</td>
<td>19.6</td>
<td>42.5</td>
<td>−9.0</td>
<td>34.9</td>
<td>10.8</td>
<td>19.3</td>
<td>−4.4</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>0.4</td>
<td>0.0</td>
<td>18.0</td>
<td>13.4</td>
<td>14.1</td>
<td>13.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Ecuador</td>
<td>7.9</td>
<td>10.3</td>
<td>73.1</td>
<td>78.4</td>
<td>34.7</td>
<td>15.2</td>
<td>26.8</td>
</tr>
<tr>
<td>El Salvador</td>
<td>−15.8</td>
<td>−3.9</td>
<td>78.0</td>
<td>25.0</td>
<td>10.2</td>
<td>5.1</td>
<td>10.2</td>
</tr>
<tr>
<td>Guatemala</td>
<td>45.9</td>
<td>17.8</td>
<td>15.5</td>
<td>6.2</td>
<td>14.5</td>
<td>15.7</td>
<td>14.5</td>
</tr>
<tr>
<td>Honduras</td>
<td>−3.9</td>
<td>36.9</td>
<td>32.6</td>
<td>−9.0</td>
<td>2.7</td>
<td>−31.7</td>
<td>330.2</td>
</tr>
<tr>
<td>Jamaica</td>
<td>18.5</td>
<td>−10.6</td>
<td>−0.7</td>
<td>1.6</td>
<td>21.5</td>
<td>16.6</td>
<td>−4.9</td>
</tr>
<tr>
<td>Panama</td>
<td>19.6</td>
<td>−0.3</td>
<td>13.5</td>
<td>1.5</td>
<td>25.1</td>
<td>17.0</td>
<td>−2.8</td>
</tr>
<tr>
<td>Paraguay</td>
<td>14.6</td>
<td>−12.6</td>
<td>20.0</td>
<td>21.2</td>
<td>43.9</td>
<td>1.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Peru</td>
<td>7.8</td>
<td>−5.7</td>
<td>−5.8</td>
<td>−2.0</td>
<td>15.6</td>
<td>20.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Uruguay</td>
<td>2.7</td>
<td>−4.1</td>
<td>4.6</td>
<td>2.6</td>
<td>20.7</td>
<td>−0.4</td>
<td>6.1</td>
</tr>
<tr>
<td>Venezuela</td>
<td>24.1</td>
<td>−24.0</td>
<td>8.3</td>
<td>32.0</td>
<td>13.2</td>
<td>17.1</td>
<td>−2.9</td>
</tr>
</tbody>
</table>

*a Source: Elaboration of data from World Bank (1998).
*b From 1992 onward, exports from assembly industries (maquila) are included.
*c For Central American and Caribbean countries, exports from assembly industries are not included.

Table 3. Trade balance in manufactures, in millions of US$°

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>−1252</td>
<td>135</td>
<td>424</td>
<td>−3448</td>
<td>−9640</td>
<td>−10592</td>
<td>−13877</td>
<td>−10199</td>
<td>−13576</td>
</tr>
<tr>
<td>Brazil</td>
<td>8665</td>
<td>7613</td>
<td>3622</td>
<td>4053</td>
<td>7315</td>
<td>5868</td>
<td>−218</td>
<td>−13559</td>
<td>25354</td>
</tr>
<tr>
<td>Mexico</td>
<td>−4336</td>
<td>−5194</td>
<td>−10780</td>
<td>−10745</td>
<td>−18918</td>
<td>−16615</td>
<td>−12632</td>
<td>3694</td>
<td>74474</td>
</tr>
<tr>
<td>Bolivia</td>
<td>−486</td>
<td>−454</td>
<td>−546</td>
<td>−790</td>
<td>−816</td>
<td>−809</td>
<td>−699</td>
<td>−936</td>
<td>−1154</td>
</tr>
<tr>
<td>Chile</td>
<td>−2951</td>
<td>−4229</td>
<td>−4357</td>
<td>−4370</td>
<td>−5994</td>
<td>−6844</td>
<td>−6885</td>
<td>−9701</td>
<td>−10928</td>
</tr>
<tr>
<td>Colombia</td>
<td>−2708</td>
<td>−2460</td>
<td>−2580</td>
<td>−1386</td>
<td>−2766</td>
<td>−5099</td>
<td>−6648</td>
<td>−6835</td>
<td>3756</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>−752</td>
<td>−892</td>
<td>−1107</td>
<td>−1022</td>
<td>−1475</td>
<td>−1783</td>
<td>−1728</td>
<td>−1803</td>
<td>−2264</td>
</tr>
<tr>
<td>Ecuador</td>
<td>−1374</td>
<td>−1427</td>
<td>−1449</td>
<td>−1940</td>
<td>−2069</td>
<td>−2053</td>
<td>−2866</td>
<td>−3097</td>
<td>−2593</td>
</tr>
<tr>
<td>El Salvador</td>
<td>−480</td>
<td>−594</td>
<td>−415</td>
<td>−426</td>
<td>−765</td>
<td>−1020</td>
<td>−1242</td>
<td>−1519</td>
<td>−1351</td>
</tr>
<tr>
<td>Guatemala</td>
<td>−802</td>
<td>−963</td>
<td>−854</td>
<td>−925</td>
<td>−1393</td>
<td>−1566</td>
<td>−1453</td>
<td>−1854</td>
<td>−1525</td>
</tr>
<tr>
<td>Honduras</td>
<td>−607</td>
<td>−648</td>
<td>−615</td>
<td>−592</td>
<td>−672</td>
<td>−837</td>
<td>−849</td>
<td>−1210</td>
<td>−1061</td>
</tr>
<tr>
<td>Jamaica</td>
<td>−416</td>
<td>−519</td>
<td>−405</td>
<td>−391</td>
<td>−436</td>
<td>−729</td>
<td>−631</td>
<td>−895</td>
<td>−968</td>
</tr>
<tr>
<td>Panama</td>
<td>−463</td>
<td>−578</td>
<td>−967</td>
<td>−1159</td>
<td>−1381</td>
<td>−1577</td>
<td>−1688</td>
<td>−1720</td>
<td>−1858</td>
</tr>
<tr>
<td>Paraguay</td>
<td>−326</td>
<td>−431</td>
<td>−941</td>
<td>−1023</td>
<td>−923</td>
<td>−1147</td>
<td>−1658</td>
<td>−2135</td>
<td>−1920</td>
</tr>
<tr>
<td>Peru</td>
<td>−1242</td>
<td>−728</td>
<td>−1003</td>
<td>−1286</td>
<td>−2051</td>
<td>−2414</td>
<td>−3507</td>
<td>−4947</td>
<td>−4826</td>
</tr>
<tr>
<td>Uruguay</td>
<td>−298</td>
<td>−245</td>
<td>−320</td>
<td>−474</td>
<td>−869</td>
<td>−1179</td>
<td>−1255</td>
<td>−1312</td>
<td>−1589</td>
</tr>
<tr>
<td>Venezuela</td>
<td>−7987</td>
<td>−3860</td>
<td>−3198</td>
<td>−6612</td>
<td>−9029</td>
<td>−7251</td>
<td>−4066</td>
<td>−5584</td>
<td>−4220</td>
</tr>
</tbody>
</table>

liberalization and manufactured exports, comparing manufactured export growth of different branches between the years 1984–86 and 1987. Thirteen percent of the variation in export growth can be explained by a decrease in protection. In Central American and Caribbean countries, trade liberalization seems to have led to an increase in nontraditional primary exports and in some countries also to increases in manufactured exports. The growth of manufactured exports from this region is mainly due to assembly industries, often coming from free trade zones (Taylor & Thorpe, 1998). This growth of export free zones had already occurred earlier in some Caribbean countries. In the Dominican Republic, high export increases from free-trade zones proved to be accompanied by low overall growth rates and falling real wages (Kaplinsky, 1993).

Pietrobelli (1994) analyzed the share of skilled labor-intensive and technology-intensive exports in total exports in Chile. He found that these shares declined during 1966–86, while the share of low-skill and low-technology exports increased. Within manufactured exports, the same trend could be observed. This is in keeping with the structural change toward natural resource-intensive manufacturing branches reported above.

The third issue is that of industrial competitiveness, and in particular, the long-run demand prospects for manufactured exports. Buitelaar and Van Dijck (1997) examine the market shares for manufactured goods of eight small and medium Latin American countries (Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Uruguay and Venezuela). They show that seven out of these eight countries export more manufactures to stagnant OECD markets than to dynamic OECD markets. Six countries increased their market share in stagnant sectors during 1977–94, while only four increased their market share in dynamic sectors. This points to a lower income elasticity of demand for most manufactured exports of these countries.

All in all, these studies show a mixed record with respect to dynamic efficiency effects of trade liberalization in Latin America. Manufacturing growth was positive but not very high, and in so far as data are available, TFP growth was also positive but the relationship with trade liberalization could not always be demonstrated. The country with the longest experience with trade liberalization (Chile) showed no positive development in productivity growth. Manufactured exports from the region increased much faster than production. It is not clear, however, whether these exports imply positive dynamic efficiency effects of trade liberalization. Other factors may have been important, and it is probably the case that most of these "manufactured" exports are based on cheap labor and on raw material processing. For Chile, it has been shown that its manufactured exports became less skill and technology-intensive. Most manufactured exports from small and medium Latin American countries are directed to stagnant markets.

5. CONCLUSION

In the 1990s, Latin America has again become a respected player in international markets. Trade with the rest of the world expanded, growth rates became positive, and capital inflows exceeded outflows, as they did before the debt and adjustment crisis of the 1980s. Trade liberalization is often considered an important factor in bringing about these results. Almost all Latin American countries carried out drastic trade reforms at around 1989–90, while some countries started in the 1970s (Chile) or earlier in the 1980s (Bolivia, Costa Rica, Mexico). This paper has explored the impact of trade policies, and whether these policies indeed can be expected to enhance long-run development of the region. The paper focused on manufacturing industry as an important sector for long-run development.

The reduction of barriers to international trade (reducing import tariffs and export taxes and limiting state regulation of trade) can be expected to have different effects on manufacturing efficiency in the short versus long term. In the short term, there may be positive effects on allocative efficiency and on X-efficiency. Allocative efficiency effects are larger for small countries than for large countries. But the potential adjustment costs are also larger so welfare may decrease in the short run. Positive X-efficiency effects depend on whether access to inputs improves, and/or on the relative importance of substitution and income effects for firms (or firm managers) in import competing and exporting sectors and on the relative importance of these sectors themselves. These (eventual) short-term positive effects (X-efficiency and allocative efficiency) are hampered, however, by imperfect competition in domestic production and/or trade.
Theory suggests that dynamic efficiency effects will occur mainly in countries that already have a firm industrial base or that are far ahead in the industrialization process. Otherwise, the reallocation of resources in keeping with static comparative advantage that results from trade liberalization will lower long-term growth prospects. This is the result of a lower income elasticity of demand for these goods, and a lower potential for internal and external economies of scale, learning effects, and R&D investment. Countries that do not have this industrial base are expected to miss out on these long-run effects.

In sum, the expected theoretical effects of trade liberalization are not unambiguously positive. For countries with a limited industrial base, there is a tradeoff between static positive effects and dynamic negative effects. Short-run (static) effects will also be limited if the domestic trade sector is characterized by imperfect competition.

The evidence on indicators for X-efficiency, allocative efficiency and dynamic efficiency for Latin America proves to support many of these theoretical expectations. Labor productivity always increased after trade liberalization (Bolivia, Chile, Mexico), but the relationship with trade policy was weak. In Brazil, trade liberalization reduced the mark-up on prices.

Trade liberalization also proved to lead to intensive restructuring within manufacturing. Competition from imports led to a decline of most manufacturing branches and of industry as a whole in both Chile and Nicaragua. In line with theoretical expectations, allocative efficiency effects were stronger in these small and medium countries than in larger countries such as Brazil or Mexico. It seems, however, that the restructuring that occurred in countries such as Chile and Brazil was to a large extent due to factors other than trade policies, in particular, to changes in domestic demand and the exchange rate level. The effect of trade liberalization on allocative efficiency seems to be overstated.

Another conclusion from this study is that in Latin American countries with a more developed industrial base, trade liberalization is unlikely to bring about a structural change in the direction of sectors with possibilities for dynamic efficiency effects (sectors with high R&D intensity and increasing returns to scale). In Brazil and Mexico, the capital goods sector experienced a relative decline, while in Argentina this sector survived but no substantial new investment came about. The high-tech sectors that did experience growth in these countries (cars and computers in Mexico, motors in Brazil) benefited from specific export promotion measures and (in Brazil) also from exceptionally large increases in domestic demand.

Although manufactured exports from all Latin American countries increased rapidly in the 1990s, these exports often consist of products from assembly industries based on cheap labor, or of processed raw materials. For Chile, it was demonstrated that manufactured exports had a lower skill and technology intensity than before trade liberalization. Most manufactured exports from eight small and medium Latin American countries went to stagnant markets.

Given these not so positive effects of trade liberalization on Latin American economies, one can wonder why these measures have been carried out comprehensively and rapidly in all countries, including countries where domestic industry was likely to suffer. The explanation comes from the positive expected effects on the domestic trade sector. Indeed, import and retail trade operate in oligopolistic market structures in many Latin American countries. These commerce companies have a strong interest in trade liberalization since they benefit from the margin between lower border prices and higher domestic prices.

From a development perspective, long-run consequences of policies are more important than short-run effects. For this reason, it is important that all countries establish an industrial base that benefits from internal and external economies of scale and in which learning effects play a role. From the experiences reviewed above, it seems that specific export promotion measures, contingent on export performance, are the best policy for avoiding negative long-run effects of trade liberalization.

NOTES

1. According to strategic trade theory, the presence of scale economies is also an argument for protection: if these industries do not exist yet, protection can be used to bring them into being.

2. Unit labor costs $ULC = W/(e \times p)$, where $W$ is total payments per hour in local currency, $e$ is the nominal exchange rate and $p$ is labor productivity.

4. A problem with these results is that the Durbin–Watson statistic is low in all cases.

5. Potential output shares computed by assuming that shares remain constant.

6. According to Verdoorn’s law, see Ocampo and Taylor (1998).

REFERENCES


Tybout, J., de Melo, J., & Corbo, V. (1991). The effects of trade reforms on scale and technical efficiency,


