The Behavior of Manufacturing Firms Under the New Economic Model

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Summary. — A study of medium and large domestic manufacturing firms in Latin America shows that the region's new economic model has led to significant transformations in firm behavior. The study results may not be generalizable, however, since the sample is small and not statistically representative. Nevertheless, they provide insights into the behavior of the most modernizing domestic manufacturing firms, and into the role of policy aimed at encouraging firms to upgrade. © 2000 Elsevier Science Ltd. All rights reserved.

Key words — Latin America, microeconomics, industry, exports

1. INTRODUCTION

The countries of Latin America underwent important transformations during the 1990s. There were radical changes in macroeconomic and trade policies and in the general economic environment, such as in matters relating to state intervention and the regulatory framework. These changes were accompanied by an increased globalization of world markets. As a result, there were important changes at the macroeconomic level and in the way the countries of the region relate to the world economy. There were also significant transformations in the behavior of firms.

Yet, while there have been many studies of the macroeconomic changes that have taken place in Latin America, studies of their microeconomic impact are relatively scarce. One of the first of these studies examined how Chilean firms adapted to such changes during the 1970s and early 1980s (Corbo & Sánchez, 1984). In recent years, there has been a growing interest in changes in manufacturing companies' behavior and the way they adapt to the new economic environment (Baumann, 1994; Bierschowsky, 1994; Castillo, Dini & Maggi, 1994; Katz & Burachik, 1997; Peres, 1998).

This paper presents the findings of two research projects carried out in Latin American medium and large domestic manufacturing firms. These studies examined companies' strategies and the changes in firm behavior in response to the new economic policies in the region and to the changes in world trade.

The first project compared the behavior of companies from different industries in Chile, Mexico and Venezuela. ¹ Of the 60 companies included in this survey, comparable results were available for 38 domestic medium and large manufacturing firms, 11 of which exported regularly. The second project focused on firms exporting nontraditional manufactured goods and was carried out in Brazil (Bonelli, 1998), Chile, Colombia and Mexico (Macario, Niels & Kate, 1998). The investigation included 61 companies and 51 of which were exporters.

Data for a total of 69 firms were used for this study. The companies belong to the following industries: automobile parts, chemical, food processing, footwear, garment, machinery and equipment, printing, pulp and paper, and textiles. The studies included interviews—guided by open-ended questionnaires—with company executives and plant visits. The interviews were complemented with information provided by trade association representatives, industry experts and government officials. In some cases, the initial interviews were supplemented by follow-up visits to obtain a better perspective on the changes in company strategy over time.

The sample is not necessarily representative, however, of the current situation of Latin American domestic manufacturing companies. Export companies are overrepresented because

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one of the main goals of the second investigation was to learn more about the strategies of firms that were successful exporters of manufactured goods. The sample included industries that were exporting goods with a relatively high level of value added—when compared with the bulk of exports—and in which domestic firms played an important role. The sample did not include those sectors that were for all practical purposes dominated by one firm, such as is the case of Vitro for the glassware industry in Mexico. Care was also taken not to pick industries where export success may have partially resulted from intrinsic natural resources comparative advantages or from subsidies. Transnational corporations (TNCs) and maquiladora firms were excluded to insure comparability between the country studies. There is a strong selection bias. Moreover, the sample is very small and not statistically representative.

Even if the changes observed in the conduct of these firms are an accurate representation of the chief trends among modernizing domestic manufacturing companies in Latin America at the present time, the statements presented in this paper are only valid for the companies included in the sample. Because of the small sample and the selection criteria, further research is needed to know if it is possible to generalize the findings.

This paper begins with a description of the main characteristics of the behavior of a standard domestic manufacturing firm under import substitution. Section 3 describes the chief features of the behavior of the sample firms following the implementation of the new economic model. In Section 4, export firms and nonexport firms are compared in terms of economies of scale and learning-by-exporting. Section 5 discusses some determinants of firm response to the new economic model. Section 6 presents the main conclusions and policy recommendations.

2. FIRM BEHAVIOR UNDER IMPORT SUBSTITUTION

This section describes the main features of the evolution of a representative medium and large domestic manufacturing firm under import substitution. The typical import-substitution manufacturing firm was a family company that was initially set up in a small workshop to produce garments, footwear or food products. It could also be a small metal-casting plant. This small workshop slowly expanded, buying new equipment, moving to new premises and became a manufacturing firm. The transition from small workshop to manufacturing plant was often quite difficult and risky, in the face of competition from many other similar workshops. Financial assistance for small firms was generally unavailable, so that one of the critical factors in the transition was the ability to accumulate enough financial resources to expand. Hence, very few workshops were able to become manufacturing firms unless the entrepreneurs were successful in obtaining sufficient funds, often thanks to family support, lobbying government agencies or sheer luck.

Production was generally organized at the beginning along the same lines as in the workshop and slowly evolved into a pattern loosely based on the organization of work in plants in industrialized countries. Plant layout was often designed by the entrepreneur himself. The firm manufactured a wide variety of products with unsophisticated design and quality standards. This was appropriate for a growing body of consumers who were just beginning to have access to manufactured goods and were therefore not very demanding. Management was generally the responsibility of family members and did not follow professional criteria. Production workers were paid fixed wages or—in some cases—on a piecework basis, without strict quality requirements. Firms did not provide training.

Most production operations were carried out internally by the firm. Subcontracting was very rare and only used for very specific operations, which were difficult to carry out in the plant itself, or to satisfy unexpected surges in demand. In general, inputs were manufactured domestically, given import-substitution policies, as well as the costs and delays involved in importing them from abroad. Larger firms tended to be vertically integrated, manufacturing inputs for their own use and to sell to other domestic firms. There was a strong incentive for firms to become as integrated as possible since companies selling intermediate goods were often rivals in the finished product market.

Incentives were set up in such a way that most firms specialized in manufacturing for the domestic market, protected from import competition pressures. It was often difficult for manufacturers to export on a regular basis owing to a combination of factors, such as the
anti-export bias resulting from high tariffs or from nontariff barriers; the relatively low level of the exchange rate in most countries throughout nearly all of the import-substitution period; and the very high transportation costs within the region. Protectionism and transport costs made it difficult to export to the industrialized countries. Tariff and nontariff barriers in other Latin American countries—which could have been the most accessible markets—also contributed to making exporting less appealing, although firms did occasionally export to neighboring countries, particularly those with a lower degree of industrial development. Exports were countercyclical, increasing when there was a drop in domestic demand or a depreciation of the exchange rate. The products that were exported were the same ones that the firms sold on the domestic market.

By the time they had been able to overcome the initial financial constraints and had reached a certain production threshold, manufacturing companies generally had relatively easy access to financial support from the government, which provided credit at low and often subsidized interest rates. This allowed the manufacturing firm to continue expanding. Once companies reached this stage, the pressures to increase productivity were not as strong as in earlier stages.

In addition, by the time the firm had established a manufacturing plant of an adequate scale for the dimensions of the domestic market, competition from similar domestic companies was considerably reduced. The small domestic market could be controlled by a limited number of firms that engaged in collaborative behavior, dividing it up into market shares that remained quite stable as time went by. Therefore, once the company had achieved a minimum production scale and a given share of the domestic market, the typical manufacturing firm would reach a plateau. It was perfectly possible for the firm to continue operating in this way, with family-style management: there were no strong pressures pushing the company to continue evolving. Its environment became quite stable and safe.

The lack of strong competitive pressures, once the firm had passed a certain threshold, had repercussions on the way production was organized. Productivity increases, quality improvements and cost reductions were not compulsory. Hence, while production was broadly organized following the guidelines used in industrialized countries, firms were not required to continue introducing the changes that would lead to improvements in productivity and quality.

The import-substitution development model allowed the countries in the region to create a manufacturing sector. Without it, most countries would presently have a substantially smaller number of industrial firms. This model provided for the learning and evolution that make it possible to turn a workshop into a manufacturing firm. It also contributed to adapting several generations of rural migrants into industrial production workers. Furthermore, an important proportion of the manufactured goods in the region exported now comes from firms that exist because of import-substitution industrialization policies. Nonetheless, by the 1960s, this model had become a constraint on the development of Latin American countries (ECLAC, 1994).

Between the mid-1970s and the late 1980s, most of the countries in the region substantially transformed their macroeconomic and trade policies, as well as most of the regulatory environment. These changes had a sizeable impact on firms in the region, altering the framework they were accustomed to operating in and submitting them to strong import competition pressures. The changes in the behavior of sample firms following the implementation of the new economic model in Latin America are described in the next section.

3. THE IMPACT OF THE NEW ECONOMIC MODEL ON FIRM BEHAVIOR

The interviews with firm executives and private sector representatives showed that the entrepreneurial environment had been very dynamic. In order to survive, the firms included in the surveys have been forced to adapt to their new environment. Most firms had introduced some modifications, and 57% of the firms were undergoing substantial changes. This has required substantial investments, which can be very costly given the limited availability of long-term financing, as well as the high interest rates that have prevailed in the region, particularly under stabilization policies.

The first research project that compared similar industries in Chile, Mexico and Venezuela led to a definition of what could be considered a modernizing pattern of behavior.
in domestic medium-sized and large companies manufacturing consumer goods in present-day Latin America. The key elements of this behavior pattern are presented in Table 1. The main criteria for the modernizing category were, first, the company had adopted all or almost all of the strategies described as highly significant in the first column of Table 1. Second, and more important, a firm was considered to have a modernizing behavior when it had a coherent and comprehensive strategy that led it to be actively involved in upgrading its practices. Modernizing companies were those that were striving to survive and adapt to the new conditions resulting from the NEM and that—as a result of these changes in strategies—are relatively gaining market share, when compared to the other domestic firms in the same industry.

Nonmodernizing firms were characterized by the strategies in the second column of Table 1, even if they had adopted some of the strategies of modernizing companies (see Table 2). At the same time, these firms had a defensive attitude that led them to introduce innovations on a piecemeal basis, as they reacted to changes in their environment. These firms were not following a thorough upgrading strategy.

Nevertheless, the classification of the companies may be arbitrary. Furthermore, more than two clearly distinct sets of firms, there is a continuum along which companies distribute themselves according to their prac-

Table 1. Domestic manufacturing firm strategies under the new economic model

<table>
<thead>
<tr>
<th>Areas in which differences are highly significant</th>
<th>Modernizing firms</th>
<th>Nonmodernizing firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility in continuous introduction of changes in production and distribution in response to changes in demand and in macroeconomic environment; Hiring of external consultants for upgrading; Productivity is measured; Innovative incentive-pay systems; Professional management; Production changes are demand-led; Large increases in subcontracting based on long-term relationships; Strong production/distribution interaction; Closer ties with clients or significant increases in distribution carried out by the firm itself;</td>
<td>Rigid passive behavior; Exclusive reliance on in-house expertise; Productivity data is unavailable; Traditional pay systems; Family-based management; Limited changes in response to demand; Subcontracting is non existent or quite limited; Firm focuses exclusively on production; Loose ties with clients;</td>
<td></td>
</tr>
<tr>
<td>Substantial decrease in vertical integration: related plants become independent firms; Significant increase in use of imported inputs; Efforts to improve design capability; Decreases in inventories; Regular changes in lay-out; Reduction in the number of production lines; Increased product diversity within production lines; Quality is important; Individual worker responsibility for quality; Technological innovations are introduced at key points, after thorough assessment of existing bottlenecks; Technological innovations are introduced regularly on a continuous basis; The firm provides training for its workers</td>
<td>Decrease in vertical integration; Increase in utilization of imported inputs; Limited design capability; Large inventories maintained; Rigid lay-out; Number of production lines maintained; Limited diversity within production lines; Quality is not a priority; Quality control at a few points of assembly line; Technological innovations are bought in a package, not in response to careful assessment of plant’s needs; Technological innovations are introduced on a once-and-for-all basis; The firm does not train its workers.</td>
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This can be seen in the data in Table 2, which presents the shares of modernizing and nonmodernizing companies in the survey that have adopted the new practices described below. The following sections discuss the areas in which the most important changes are taking place, organized according to their relevance for one or both groups of firms.

(a) Innovative strategies adopted primarily by the modernizing firms

The modernizing companies included in the investigation have adopted the practice of regularly introducing changes in layout, instead of assuming that the layout arrangement is fixed in the long run. These changes in layout are frequently designed by external consultants that are hired either in the country or abroad, often following the suggestion of foreign clients. In contrast, nonmodernizing firms most often have a layout designed by one of the firm's managers and that does not vary much throughout time. At the same time, the managers of nonmodernizing firms are often reluctant to finance the cost of hiring industry consultants on a regular basis.

Another key difference in the behavior of modernizing companies compared to that of nonmodernizing ones is the importance of introducing key innovations at critical points of the production and distribution process—so as to address specific bottlenecks—and of doing so continuously. This does not mean that nonmodernizing firms did not introduce technological innovations. Nonetheless, instead of introducing them after a careful assessment of the production process, they tended to buy equipment that turned out to be difficult to introduce in their plant and that in fact was in some cases underutilized. In Venezuela, for example, several companies had bought equipment that they were later unable to use. One firm had bought an entire set of equipment to produce the textile they used to manufacture garments. Nevertheless, when they set up the production line they were unable to use all the machines because of a lack of skilled workers to operate them. Furthermore, the firm managers discovered that it was impossible to have the whole production line function at the same time since this caused failures in the energy system in the plant.

What characterized the most innovative companies, was not the expenditure on capital goods for the whole plant, but their efforts to fine-tune the incorporation of technology in the plant, and to do so systematically, on a regular basis, with the flexibility required to solve bottlenecks as they came up. This allowed the company to upgrade progressively and continuously its production practices.

Table 2. Modernizing and nonmodernizing domestic firms: relative importance of the adoption of innovative strategies (%)

<table>
<thead>
<tr>
<th></th>
<th>Modernizing firms</th>
<th>Nonmodernizing firms</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular changes in layout</td>
<td>100</td>
<td>25</td>
<td>66</td>
</tr>
<tr>
<td>Technological innovations introduced at key points</td>
<td>95</td>
<td>13</td>
<td>58</td>
</tr>
<tr>
<td>Technological innovations introduced regularly</td>
<td>95</td>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td>Hiring of external consultants</td>
<td>90</td>
<td>6</td>
<td>53</td>
</tr>
<tr>
<td>Flexibility in continuous introduction of changes</td>
<td>90</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Quality is important</td>
<td>90</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>The firm provides training</td>
<td>100</td>
<td>31</td>
<td>68</td>
</tr>
<tr>
<td>Significant increase in imported inputs</td>
<td>95</td>
<td>69</td>
<td>82</td>
</tr>
<tr>
<td>Productivity is measured</td>
<td>95</td>
<td>44</td>
<td>74</td>
</tr>
<tr>
<td>Decreases in inventories</td>
<td>86</td>
<td>56</td>
<td>71</td>
</tr>
<tr>
<td>Large increases in subcontracting</td>
<td>52</td>
<td>46</td>
<td>45</td>
</tr>
<tr>
<td>Efforts to improve design capability</td>
<td>86</td>
<td>13</td>
<td>53</td>
</tr>
<tr>
<td>Close ties with clients</td>
<td>81</td>
<td>31</td>
<td>58</td>
</tr>
<tr>
<td>Strong interaction between production and distribution</td>
<td>76</td>
<td>38</td>
<td>58</td>
</tr>
<tr>
<td>Production changes are demand led</td>
<td>76</td>
<td>12</td>
<td>47</td>
</tr>
<tr>
<td>Professional management</td>
<td>81</td>
<td>25</td>
<td>55</td>
</tr>
<tr>
<td>Reduction in the number of production lines</td>
<td>67</td>
<td>25</td>
<td>47</td>
</tr>
<tr>
<td>Increased product diversity within production lines</td>
<td>57</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Individual worker responsibility for quality</td>
<td>62</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>Innovative incentive pay systems</td>
<td>52</td>
<td>12</td>
<td>34</td>
</tr>
</tbody>
</table>
The level of quality control during the production process is another essential difference between modernizing and nonmodernizing companies. Most nonmodernizing companies still routinely have a quality control section at the end of the production line. While their managers will often state that quality is important to them, observations in the plants suggested otherwise. Modernizing firms, in contrast, have incorporated a higher number of quality control checks throughout the production process. Quality control was particularly important for the export companies.

Most Latin American firms provide very little training for their workers. This is even the case in Chile, a country in which firms can obtain a tax credit to cover the cost of some training activities, and whose entrepreneurs believe that deficiencies in human capital are among the greatest disadvantages they face (Macario, 1995). In contrast, every modernizing firm in the sample provided training for their workers, while only 31% of the nonmodernizing carried out some training activity (see Table 2).

The Mexican firms, in particular appeared to be much more willing to spend resources on training their personnel, although, on average, the amount spent was quite small. Some of the companies interviewed even had small schools in the plant, where both training and general education programs were provided. The main explanation for Mexican firms’ greater training efforts is their managers’ wish to achieve a substantial increase in productivity to counter the intense competition pressures they face. The companies that are investing more resources and energy in training are precisely those that are going through an overhaul of their entire organization.

(b) Innovative strategies that have been adopted both by modernizing and nonmodernizing firms

There has been a significant change in input procurement for both modernizing and nonmodernizing firms. Sixty-nine percent of the nonmodernizing companies and 95% of the modernizing firms had substantially increased the proportion of imported inputs used in the production process (see Table 2).

This was something that could have been expected after the trade liberalization processes, particularly in the context of exchange rate appreciation. Chilean and Mexican firms tended to use higher percentages of imported inputs than the companies in the other countries, due to their earlier trade liberalization, especially with respect to lowered tariffs and expedited import formalities. The use of imported inputs is particularly high in Chile, given the small size of the economy that limits the variety of inputs manufactured domestically. At the same time, even industries that have traditionally bought their inputs domestically—such as the textile industry in Brazil—have increased their imports of raw materials (Bonelli, 1998). For firms that are not vertically integrated, trade liberalization provides the opportunity to buy a greater variety of inputs, often of better quality and at lower cost than those available in the domestic market. The use of imported inputs has thus played an important role in firms’ strategies to cut their costs.

In another common response to the new environment, most companies (86% of the modernizing ones and 56% of the nonmodernizing ones) are decreasing the level of inventories they carry, both of inputs and of finished goods. This trend is facilitated by the introduction of computerized inventory control. It is also a response to the high cost of stocking inventories.

New information technologies have also allowed many firms to introduce systems that allow them to measure productivity, something that was not a standard practice in many medium-sized domestic firms and even in some large ones. While this trend was more important in modernizing companies (95%), it was also fairly widespread among the nonmodernizing ones (44%). The plants that have been most successful at increasing productivity are those that have been able to systematically apply Fordist production standards and efficiency goals. With regard to whether flexible specialization and greater worker autonomy are replacing Fordist practices, the research confirms the findings of a previous case study in the Brazilian shoe industry that “suggests that more important than the boundaries are the connections between Fordism and flexible specialization” (Schmitz, 1995).

Another practice that has been adopted by many modernizing and nonmodernizing companies is an increase in subcontracting. Fifty-two percent of the modernizing companies and 46% of the nonmodernizing firms interviewed for the surveys had increased the manufacturing operations they subcontracted in recent years. Moreover, most of them expected subcontracting to increase substan-
tially during the years to come. Some of them subcontracted the manufacturing of products they had previously produced internally in the firm, but for which production lines had been closed down. In other cases, firms had decided to centralize product design and subcontract most of the manufacturing process. Even those companies that continued concentrating most of the stages of production in their own plants have increased outsourcing of support activities, from maintenance and security to setting up and managing computerized networks.

While an increase in subcontracting could have been reasonably foreseen at the beginning of the investigation, the extent to which it is practiced is quite stunning. Not only has subcontracting within the country itself become prevalent, but many firms are also subcontracting abroad. In some cases, the principal company subcontracted to a firm in a neighboring country that had a cheaper and better trained workforce, as was the case for two Venezuelan firms that subcontracted operations in Colombia. In other cases, the companies had decided to gain a competitive edge by going to the region that produces the goods that are taking market share from them, that is, they subcontracted directly in Asia. This practice, which is being carried out in a large variety of sectors, is particularly widespread in garment and footwear manufacturing. Rather than letting themselves be displaced from Latin American markets by Asian products, at least 15% of the sample firms have decided to subcontract some production lines directly in Asia.

(c) Other changes in company strategy

There are other changes that have been important to one or both groups of firms, although are not as widespread as the ones discussed above. For example, the sample modernizing companies are making efforts to improve their ability to design products, an area that has traditionally been a weak point of Latin American manufacturing firms. The efforts to improve product design often respond to requests from the clients, who have become more demanding as there is greater import competition in the domestic markets.

The close ties that manufacturing companies have with clients (81% of the modernizing firms and 31% of the nonmodernizing ones) are related to the stronger interaction between production and distribution, either the distribution of the products by the manufacturing company itself or closer links with the distribution networks of the clients. In turn, this has had a feedback effect on production in the case of modernizing firms, where production changes have become increasingly demand-led.

There were some areas where the results of the investigation were different from what was expected initially. This may be because the sample companies are not representative of Latin American firms. The first is the still relatively high proportion of nonprofessional management, at least higher than was expected (19% of modernizing firms and 75% of nonmodernizing companies). This most probably results from the fact that the domestic manufacturing firms are still dominated by family-owned businesses. Yet, there was a trend toward a greater presence of professional management, particularly when there was a generational change within the ownership of the firm.

Another surprising result was that the reduction in the number of production lines and the increased product diversity within production lines was lower than expected given that it was often the first modification introduced by companies after trade liberalization. Here again, this may be because of the selection bias. It may also be explained by the fact that it was an earlier change that is not reflected in the interviews, which covered the most recent period.

Finally, there were two trends that are probably not representative of the practices of a large majority of domestic manufacturing firms in Latin America, but that will gain greater importance as updated production practices are introduced. These are making individual workers responsible for the quality of the tasks they have performed (62% of the modernizing companies) and the introduction of innovative incentive pay systems with the goal of increasing productivity (52% of these firms). Most of the highly export-oriented firms, in particular, were using new schemes to pay their production workers, schemes that are innovative with respect to current practices in the region. These include incentives for attendance and achieving quality, such as making the worker’s pay depend partly on the defect rate of his product, as well as productivity goals based on international industrial standards.

Efforts in this direction were most frequent in Mexico. Half of the firms interviewed in that country had innovative pay schemes in which
attendance and quality incentives could amount to up to half the workers’ monthly wage. The purpose was clearly to find the pay system that would best enable the firms to improve their productivity, as well as the quality of their products. There are even a few companies in Mexico that are paying an extra bonus for the worker’s willingness and ability to work in different positions within the plant.

The companies that were introducing new ways to pay their workers were also among the most dynamic, as well as the most innovative in other areas, such as in the introduction of new management techniques. In fact, this last characteristic is almost a prerequisite for incentive pay, since setting up more sophisticated pay systems than those most frequently used in Latin America requires procedures that allow careful monitoring of the productivity and the quality of the work of individual workers. The managers of these modernizing firms say that one of their most important advantages is precisely their human resources practices. While it is not yet apparent which systems are the most efficient, companies are clearly aware that improving productivity and quality requires innovations in incentive schemes.

4. EXPORT FIRMS: ECONOMIES OF SCALE AND LEARNING-BY-EXPORTING

One of the issues addressed by the research that compared exporting and nonexporting firms was to establish whether exporting allows manufacturing firms to benefit from economies of scale and from greater learning opportunities. This section summarizes the results of the second project, an investigation of domestic large and medium-sized manufacturing companies. The industries included in this research project represented a small—but not negligible—and growing share of the corresponding country’s exports. The industries included firms that were successful at exporting nontraditional manufactured goods with a level of value-added that was higher than the average of the region’s exports. In a few cases, the industry was chosen because the entry into export markets resulted from a significant upgrade in the quality of the product being exported. All of the export firms included in this investigation can be characterized as modernizers, since it appears that being a modernizer is a precondition for a company to have the ability to export regularly. The goal was to study leading firms in order to derive policy recommendations aimed at fostering growth of exports with higher value-added. Therefore, although the companies included here are not a representative sample of the average export firm, the results suggest the best practices that policy should aim to encourage.

The investigation in Chile and Colombia provided indirect evidence that the modernizing export firms surveyed in those countries have access to greater economies of scale than companies that focus mainly on the domestic market. The results are particularly robust in the case of Chile, where eight export firms were compared to the same number of nonexport firms in the printing and footwear industries. In the footwear companies, lot sizes were systematically larger in export firms than in nonexport firms, even when the volume of total output was not significantly different. In those cases, the export company could decrease costs by manufacturing a smaller number of products owing to the larger size of the orders for export as compared to the orders for the domestic market. The larger lot size allowed the firm to decrease the down times while equipment was adapted to the different models, and to increase product-specific economies of scale. Moreover, when several of these companies lost export markets due to exchange rate appreciation, they faced significant increases in costs as their lot size decreased. Concurrently, export companies had access to pecuniary economies of scale, as their large production volume enabled them to purchase cheaper inputs.

The printing companies included in the investigation in Chile showed evidence of a link between exporting and economies of scale that was of a different nature. These firms had to start trying to break into markets abroad to cover the costs of having introduced updated equipment in their plants in order to face import competition in the domestic market. The updated technologies they adopted implied a larger scale of production and therefore forced them to export. Hence, the causality link goes in both directions. For the companies included in the survey, the export firms have access to economies of scale as compared to those companies that sell mainly on the domestic market because they export. At the same time, economies of scale at the plant level push firms to export (Macario, 1998).
Thus, manufacturing in a small open economy the size of the Chilean one often appears to require exporting. Similar results were found in case studies of exporting firms in the other small countries in the study, although the research in these countries was less thorough owing to time constraints. For a large number of industries, manufacturers have to choose between investing substantial sums in the production process to be able to defend their market share, or losing market share to imported goods and closing down their plants. These updated technologies frequently imply larger plants. When the domestic market is not big enough, sustained manufacturing activity requires firms to export.

These results contrast with those that can be drawn from the research in Brazil and Mexico, which focused on medium and large-sized domestic firms that had initially been set up to manufacture for the domestic market (i.e., not including TNCs or maquila firms). Economies of scale were not a significant factor for the export decisions of these companies. Rather, the interviews in both of these countries showed that the determinant market was the domestic one. All of the Mexican firms included in the project began to export in order to offset a drop in demand in the domestic market. The larger size of these economies implies that for many firms the domestic market is large enough for them to have economies of scale (this is not true in all industries, of course: car manufacturing, for example, requires a market size much larger than the Brazil’s or Mexico’s).

Therefore, if the results of the investigation are an accurate reflection of a general trend, it may be concluded that there is a link between exporting and economies of scale for import-competing manufacturing firms in small and medium-sized economies. These firms will increasingly have to consider exporting if they want to survive as their economies open up under the NEM. Exporting can enable the firm to attain the scale that allows it to preserve its market share in the domestic market. Simultaneously, a solid standing in the domestic market allows the firm to bear the cost of going into new export activities. Thus, exporting and selling in the domestic market should not be viewed as involving a tradeoff. On the contrary, they are often interrelated choices, particularly in small economies.

At the same time, the research tried to determine whether it is true that exporting—by exposing firms to international competition and to greater information on product characteristics, updated technologies and market trends—provides companies with learning opportunities that allow them to get on a steeper learning curve than firms that sell mainly on the domestic market. If this were true, then export promotion policies would allow companies to accelerate their learning process and have access to dynamic economies of scale. Exporting would simultaneously encourage firms to upgrade and provide them with greater information to do so.

Learning as a source of dynamic economies of scale is at the center of some of the New Trade Theory models (Krugman, 1987; Krugman & Obstfeld, 1994). At the same time, some econometric studies have concluded that there is no evidence that firms learn from exporting (Clerides, Lach & Tybout, 1998; Roberts & Tybout, 1997 discussed by Westphal, 1998). Westphal, however, questions the results from these aggregate data studies by pointing out that they contradict the evidence from an abundance of case studies that lead one to conclude that there are “unrivaled benefits in the form of accelerated and efficacious technological development that can be derived through aggressive export activity” (Westphal, 1998, p. 2225).

Our own research—based on studies carried out in the 61 exporting and nonexport firms in Brazil, Chile, Colombia and Mexico—strongly corroborates Westphal’s point of view. The case studies provide substantial evidence to confirm that export firms do have significantly greater learning opportunities than nonexporting ones. This additional learning takes place both in export-related activities, as could have been expected, as well as in activities that are not directly related to exporting (Bonelli, 1998; Macario, Niels & Kate, 1998; Macario, 2000). The interviews with the firm executives showed that exporting had allowed them to have greater access to information on topics such as trends in world markets, product specifications, input procurement sources and the most updated manufacturing and marketing practices. Furthermore, export firms, as they are pushed to change their production and distribution procedures, learn to do things in different ways.

Hence, exporting has a strong impact on firms, pushing them to upgrade, and providing them with better information on the steps to take in that direction. Therefore, export firms are able to get on a steeper learning curve than
companies catering only to the domestic market. The exposure to competition in international markets allows them to have an advantage over their nonexporting competitors. Moreover, since most companies are increasingly manufacturing export products on the same production lines as the products for the domestic market, exporting has a positive spillover effect on the quality of the goods on the domestic market.

In addition, the research found that there are other enhanced learning opportunities for companies. These are opportunities resulting from selling in a domestic market that has a strong degree of competition or from being suppliers to industries that are striving in export markets. For example, the research in Mexico showed that while direct exporters had greater learning opportunities than firms that catered mainly to the domestic market, there were also significant learning opportunities in being a supplier to companies that are world-class exporters. The firms included in the research project that have managed to be successful suppliers to companies manufacturing automobiles for the export market in Mexico were then capable of exporting without having to substantially modify their products. In that sense, the hypothesis that manufacturing for export is the best way to encourage learning and enable upgrading remains valid. The exporting need not be direct, but may also be indirect. Nevertheless, it must be pointed out that the usefulness of this result for Latin American countries is probably restricted to a few industries in the region, mainly in Brazil and in Mexico. Most other countries have yet to develop high-tech industries that manufacture products capable of satisfying international standards. On the other hand, it strongly confirms the idea that attracting investment in high-tech industries can have positive externalities.

The research on this topic can be summarized as follows: learning is stimulated by competition and exposure to demanding product standards. This can result from intense domestic competition and from the possibility of being suppliers to world-class exporters. Thus, increasing competition in the domestic market and attracting companies that are among the top players in manufactured-products export markets is a good way to encourage firms to learn and to upgrade. Notwithstanding, exporting by itself does seem to provide companies directly with higher learning and upgrading opportunities. Therefore, encouraging firms to export and providing them with support to do so is a way of inducing companies to upgrade and of enabling them to have access to the information needed to do so.

Another conclusion that can be drawn from the comparison between exporting and nonexport firms is the greater concern that the former companies have for improving the quality of their products. The export firms are increasingly exporting goods manufactured according to export market specifications, instead of simply exporting goods that are identical to the products they sell on the domestic market. The importance of quality for export firms has implications for layout specifications, as well as for training and incentive pay systems. The export firms included in the research provided training more frequently than nonexporters and tended to have introduced more innovations in pay systems. The firm executives interviewed for the investigation believed that their firms needed to have updated practices in order to be able to have a regular presence on export markets.

A word of caution is warranted, however. While the modernizing practices reported in the study appear to be a general trend in the higher value-added industries selected for the investigation, this may not be occurring in the more traditional, lower value-added export industries of the region. It would be useful to conduct a comparative study of these two sets of export industries, to explore the generalizability of the findings of the current research.

5. MACRO–MICROLINKAGES UNDER THE NEM

It is clear that there is considerable variation in the response of firms to the NEM. Two policy issues emerge as critical for companies’ investment decisions: exchange rate stability and uncertainty with respect to economic policy. The key importance of the evolution of the exchange rate for investment decisions was a central topic in an overwhelming proportion of the interviews with the managers of the firms interviewed in the different countries at various periods of the 1990s. Whether the short-term problem was a significant appreciation of the exchange rate that hindered export activity (Mexico prior to 1994, Chile since the mid-1990s and Brazil up to recently), a plummeting devaluation that cut access to imported inputs
(Mexico 1995) or simply severe uncertainty with respect to the future evolution of the exchange rate (Venezuela over several years), the fact is that the exchange rate policy appears to be one of the policies that has the strongest influence on firms’ decisions to invest or not in upgrading.

The impact of exchange rate policy appears to have become even more relevant for manufacturing firms after trade liberalization. This is because an appreciation of the exchange rate results in a substantial increase in import competition, in a very short period of time. For example, the interviews in Brazil demonstrated that

the microeconomic impact of macroeconomic policy should not be minimized: all the firms surveyed felt that the overvalued exchange rate was one of the main barriers to export growth (Bonelli, 1998).

At the same time, the key importance of the evolution of the exchange rate for the manufacturing firms was confirmed in the studies in every one of the other countries included in the research. It is the single most important variable that influences companies’ choices in the short run, as well as long-run investment decisions between tradable and nontradable sectors.

At the same time, the investigation showed that the uncertainty surrounding economic policy leads to a substantial decrease of the investment carried out by the firms included in the investigations. There is no incentive for firms to invest in long-term projects when policy reversals and macroeconomic instability render the rate of return unpredictable. Uncertainty is one of the factors that explains why more firms do not modify their strategies and why those that do so, often do not change faster. Uncertainty has a twofold negative effect on entrepreneurs’ decisions to transform their firms. There is uncertainty about what they should do, as well as with respect to the sustainability of the economic policy.

Regardless of the significant impact the macroeconomic environment has on the firms included in the survey, the research also suggests that there is a margin for company strategy. For example, for all the exposure to competition and to stable macroeconomic and trade policies, there were many companies in Chile that continued following the practices they had been following over many years. At the same time, some firms can manage to gain market share in spite of an adverse environment and of being in industries where there is very strong import competition. For example, two of the Venezuelan firms included in the first project had managers who were willing to continue investing, training their personnel and adopting innovative strategies while most companies in that country were seeing their output drop and their market share dwindle owing to the recession and to import competition. The company executives had gambled that their firms would survive and they were following an active upgrading strategy in order to preserve or increase their market share.

Another example comes from several of the Mexican companies included in the investigations, which belonged to industries characterized by particularly strong import penetration, such as the garment and footwear industries. While many firms in these industries had closed down, 11 of the 15 companies covered by the first survey were doing remarkably well, thanks to their efforts to adapt to the new environment. More research should be carried out on individual firm strategies and the capability that some companies have to adapt to a new environment. Knowing more about their strategies would be useful for policy design. Efforts should also be made to provide economic theory with a more solid theoretical framework for analyzing the scope for microeconomic behavior (Nelson, 1991).

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

The companies included in the surveys are undergoing substantial transformations in order to hold their ground under the trade liberalization, globalization and general economic transformations of the NEM. Many firms still have a passive or reactive attitude with a behavior quite similar to that described in the second section. Nevertheless, the overwhelming majority of entrepreneurs interviewed for these studies are aware that they must change the way they operate and have already begun to do so: the behavior of most companies is completely different now from what it was 10 or 15 years ago.

The findings of the two research projects described here, however, are not necessarily representative of the behavior of the majority of manufacturing companies in Latin America.
The research on successful export firms, in particular, has a strong selection bias. This is because the main goal of these investigations was to contribute to the design of policy recommendations aimed at upgrading the productivity of manufacturing companies and at fostering export growth. Yet, these findings do provide insights regarding the changes that are being carried out by the most innovative domestic medium and large-sized manufacturing firms as they strive to adapt to the NEM. They also provide information that is useful for designing policies that encourage firms to upgrade.

The innovative manufacturing firms covered by the investigations have adopted a flexible behavior and are upgrading their production and marketing capabilities. But, in spite of the evidence on the importance of the changes that are taking place in the large and medium-sized domestic manufacturing companies covered by the investigations, even the modernizing entrepreneurs frequently believe that they need to make more efforts to upgrade their firms. The cost of doing so and, more importantly, the difficulties in obtaining appropriate information as to what is the best practice in a given industry, are a constraint to the introduction of large-scale transformations in a short period of time.

Of course, these constraints are even greater for nonmodernizing firms. Their managers know they have to change the way they operate, but are uncertain about what needs to be done and how. While some entrepreneurs will remain passive and will continue operating as they did under import substitution as long as they can, there are many managers who would like to upgrade their firm, but who lack the appropriate information to do so.

This suggests that there is a role for government support for programs providing firms with information on best practices. These programs should be designed for effective implementation and be submitted to regular evaluation. If not, they may be ineffective and thus foster distrust in the private sector with respect to the government. Furthermore, to be effective, policies should be designed and implemented in close coordination with the private sector. At the same time, care should be taken that policies explicitly seek to promote the upgrading of firms and are not a disguise for a return to protectionism. The exposure to competition pushes firms to upgrade. The role of policy is to ease the way for companies to become more productive.

Another kind of policy that has the potential for strong positive externalities is export promotion policy. In effect, there is evidence that—at least in relatively small economies—there is a link between exporting and achieving economies of scale. Whether firms need to export in order to progressively change plant size and achieve economies of scale, or if, instead, exports allow the company to finance an investment that already has implied economies of scale, the link between exporting and economies of scale in small economies remains. While the research showed that this was not a relevant issue for the companies interviewed in the larger economies of Brazil and Mexico, the fact is that most economies in the region are small and medium-sized.

Furthermore, there is strong evidence that exporting allows firms to get on a steeper learning curve. Exporting provides firms with greater learning opportunities in areas that are specifically export related, as well as in other areas, such as product characteristics, updated manufacturing and quality control practices. This greater learning enables companies to gain market share abroad, as well as in the domestic market. Having policies that promote exporting is a way of encouraging firm upgrading and of facilitating the companies’ access to information on best practices, allowing firms to learn at an accelerated pace.

While there has been a strong decrease of the anti-export bias in Latin America over the last decade, most countries still have ineffective or outdated export promotion instruments and their firms face numerous export obstacles (Macario, 2000). There is still room for further cuts in tariffs and in nontariff barriers. At the same time, streamlining the export-related formalities and retaining only those that are justified under the present circumstances would facilitate exporting. Concurrently, investing in improved infrastructure will allow countries to cut the cost of exporting. These investments can be in some cases financed by a reallocation of the funds presently used for subsidizing exports, since export subsidies for nonagricultural goods will—for the most part—have to be phased out by the year 2003 under the Uruguay Round Agreements. At the same time, governments have to make sure that they have policies that allow companies to have access to inputs at competitive prices and quality, irre-
spective of whether they are imported or manufactured domestically. The main instruments for this purpose are effective drawback and duty exemption schemes, which are fully compatible with the Uruguay Round Agreements.

Entrepreneurs attempting to export nontraditional goods should also have access to assistance regarding information, support for trade fair participation and for marketing abroad, and to export financing and insurance. In the past, many trade promotion organizations (TPOs) in Latin America have at some time or another provided assistance in some of these different fields. Nevertheless, they have not always been very effective in supporting export companies, partly due to inadequate funding, to administrative inefficiencies and to a lack of a clear vision of what their main mandate should be. These TPOs need to be overhauled to enable them to be more effective for expanding nontraditional exports and for increasing the number of export companies.

At the same time, governments should contemplate setting up or improving the policies that foster productivity increases and an upgrade of export supply. These policies have—in the long run—the highest potential for contributing to an improvement of the country’s ability to increase exports on a sustainable basis. The importance of giving a higher priority to productivity upgrading programs is a consequence of the new rules of the Uruguay Round Agreements that entail eliminating most nonagricultural export subsidies. These new rules will enhance the importance of policies aimed at promoting widespread productivity increases as a way of promoting export growth.

Exchange rate policy is critically important for the investment decisions of the manufacturing firms included in the research. It is the single most important policy determinant of companies’ decisions to invest or not in upgrading. This implies that—in the long run—the evolution of the exchange rate should be based on the evolution of nationwide productivity levels. Long-lasting excessive appreciation due to stabilization policy is damaging for investment in productive activities. At the same time, a sharp devaluation leads to financial turbulence and limits the access to good quality imported inputs and equipment. Therefore, having an exchange rate policy that is stable over the long run is of the utmost importance.

The significance of having a stable economic environment in which firms can plan long-term investments is true for the exchange rate, but also for the other policy instruments. When the rules concerning trade liberalization, taxes, export promotion instruments, foreign investment regimes and labor legislation are constantly undergoing change, often in conflicting directions, entrepreneurs are reluctant to carry out major investments. Uncertainty promotes nonproductive behavior. Entrepreneurs—whether or not they export—need a long-term horizon in which to plan their investments.

NOTES

1. ECLAC/UNDP RLA/88/039 Project on Innovation and Competitiveness. ECLAC staff members Ms. Martine Guerguil, Mr. Wilson Peres, and the author carried out the interviews.

2. This section is based on Macario (1999). The firm behavior described here is not representative of the behavior of domestic firms belonging to conglomerates, of state-owned enterprises, or of TNC subsidiaries.

3. One of the innovations most frequently observed is the introduction of computerized systems that allow the monitoring of the production flow and of inventories.

4. This is based on Macario (1998, 2000).

5. Pecuniary economies of scale are not always considered properly to be economies of scale since they take place outside the production process. Yet, they are critical for business strategies as they allow companies to cut the cost of purchasing inputs.

6. Many of these new trade theory models presented by economists in industrialized countries appear to be a mere formalized version of issues that have been discussed for years by economists interested in development economics, such as industrialization by import substitution and infant industries. Rodrik (1988) points out that “this new literature is a frustrating reminder to the south that too often ideas become intellectually respectable only when they become congruent with the interest of major northern countries.” Nevertheless, these new models do present the advantage of attempt-
ing to set up in a formal way issues that had up to now not been presented under such a form. They also contribute to putting back into the center of the discussion in mainstream international economics matters that are relevant for less-developed countries (LDCs).

REFERENCES


