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THE TAIWANESE EXPERIENCE WITH SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)

Possible lessons for Latin America and the Caribbean

Ricardo Bielschowsky

RESTRUCTURING AND COMPETITIVENESS



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SUMMARY

This paper analyses the Taiwanese experience with small and medium-sized enterprises (SMEs), and draws possible lessons for Latin America and the Caribbean. It first summarizes some of the main aspects of Taiwanese economic evolution since the late 1940s. Then it describes the evolution of SMEs in Taiwan and the policy instruments supportive of SMEs, and suggests some hypotheses on the reasons why SMEs have been very successful. Finally, it sets forth some tentative conclusions on lessons applicable to Latin America and the Caribbean.

The general conclusion of the paper is that SMEs' success is a result of three broad factors. First, Taiwan combined a sound macroeconomic environment with a systemic approach to growth, adequate planning and incentives to export, and commitment to technical progress, education and equity. Of course there is no better support for firms, be they large or small, than sound long-term growth of the economy as a whole. Second, SMEs have specialized in sectors where smallness was turned into a virtue. Among other elements, SMEs have largely benefited from "cooperative capitalism", which in its "Chinese version" (and unlike the Japanese/Korean model) consists of informal networks of firms, linked by regional, family, social and cultural relationships. Third, and less important than the above as a factor of success, SMEs have positively benefited from a set of official institutions and policy instruments that have helped them to cope with the disadvantages of smallness.

RESUMEN

En este documento se analiza la experiencia de la provincia china de Taiwán con las empresas pequeñas y medianas y se extraen posibles lecciones aplicables a América Latina y el Caribe. En primer lugar se hace una reseña de algunos de los principales aspectos de la evolución económica taiwanesa desde finales de los años cuarenta. Luego se describe la evolución de las empresas pequeñas y medianas de Taiwán y los instrumentos normativos que las respaldan, y se proponen algunas hipótesis sobre las razones de su notable éxito. Por último se presentan conclusiones preliminares sobre las lecciones aplicables a América Latina y el Caribe.

La conclusión general del documento es que el éxito de las empresas pequeñas y medianas obedece a tres grandes factores. Primero, Taiwán combinó un entorno macroeconómico sólido con un enfoque sistémico del crecimiento, planificación adecuada e incentivos a la exportación, y adhesión al progreso técnico, la educación y la equidad. Sin duda no hay mejor apoyo a las empresas, sean grandes o pequeñas, que un sólido crecimiento a largo plazo de la economía en general. Segundo, las empresas pequeñas y medianas se han especializado en sectores en que la pequeñez se transformó en una virtud. Entre otros elementos, se han beneficiado enormemente del "capitalismo cooperativo", cuya "versión china" (a diferencia del modelo japonés/coreano) consiste en redes oficiosas de firmas, vinculadas por relaciones regionales, familiares, sociales y culturales. Tercero, y menos importante que lo anterior como factor de éxito, las empresas pequeñas y medianas han sacado buen provecho de una serie de instituciones oficiales e instrumentos normativos que las han ayudado a hacer frente a las desventajas de ser pequeñas.

I. INTRODUCTION

The principal idea behind this paper is to get some preliminary insight from a Latin American and Caribbean perspective into Taiwan's recent economic development. Attention is especially given to the most original and unique feature of Taiwan's remarkable social and economic growth record, namely the central role that small and medium sized enterprises (SMEs) have played in the development of Taiwan.

The extraordinary economic and social achievements of Taiwan have for some time now been a genuine cause for curiosity and admiration all over the world. Taiwan's record from 1950 onwards features high and persistent growth in output, employment and international trade, permanent macroeconomic stability, a steady increase in wages, good income distribution and substantial large improvements in social conditions. All this could not fail to attract the interest of private sector organizations, academia, governments and international agencies.

In recent years the Taiwanese experience has been influential on economic thought in Latin America, because it fits well with increasingly consensual ideas in the region's current political and ideological context. First, it shows that both growth and technical progress can prosper on the basis of a strategy of integration into world competition. Second, it shows that good income distribution is not only a matter of social justice; it can may support rapid economic growth and underpin a credible economic strategy.

Perhaps the most striking call in Latin America look at these two central attributes of the Taiwanese and East Asian experiences was Fernando Fajnzylber's now classic "empty box" (1990). It decisively influenced ECLAC's own emphasis on both principles, analytically combined in a number of arguments and synthesized under the expression "changing production patterns with social equity" (ECLAC, 1990 and 1992).

As those who are familiar with Prebisch's and ECLAC's economic theories may have noticed, this new direction in ECLAC thinking entails much more than mere self criticism; it implies building on the Commission's tradition of economic development analysis, with due space for structural change, technical progress and social equity issues.

A third point of consensus today in Latin America, to which the East Asian experience is also relevant, is that it pays to pursue price and exchange rate stability through sound macroeconomic policies. The so-called "lost decade" of the 1980s in Latin America was a long enough period of distress to convince governments all over Latin America that growth and equity are not possible with macroeconomic instability.

From this point on, consensus seems to become more elusive. As is well known, the debate on what explains success in East Asian economies involves radically different views and remains very controversial.

This is not the proper place to survey the enormous number of papers and books in which neoclassical interpretations of the causes of success in East Asian economies (Balassa, Krueger, Little, Ranis, Scott, and others) are countered by the opposing views

of those who say that growth has been state-led (Wade, Amsden, Bradford, Ohno and Imaoka, and others), or the views somewhere in the middle of those who claim that incentives played the role of simulating the free market (Berger, Bhagwati, and others) or the World Bank's recent concept of a "market-friendly and functional approach to growth" (1993). Nor is this the place to review the lengthy debate on strategies of economic growth, and on the possible superiority of export-led growth over inward-oriented growth or vice-versa.

The point to be made is that it seems that a large part of the interest in Taiwan's experience among policy makers and policy-oriented economists in Latin America lies in the widespread impression that to a great extent success is explained by the following factors in an interrelated framework: a) macroeconomic stability; b) a stable and secure institutional environment; c) selective but effective policy instruments to foster technical progress and international competitiveness; and d) the ability Taiwan has shown to take full advantage of its position as a late industrializing nation (capable of learning from the successes and failures of the developed countries, of skipping stages of development and moving rapidly to "best practice" technologies, and of borrowing and adapting the most apt modern technologies available).

For at least three reasons the mid-1990s are a proper time to disseminate this experience in Latin America. First, and most important after coping with severe macroeconomic imbalances, most countries are now ready to think about resuming a long-term growth path. Thus, one notices among Latin American governments a revival of interest in industrial policies, or rather in "competitiveness policies", that is to say, harmonizing industrial policies and trade liberalization.

Second, Latin America can look now to the experience of Taiwan in order to learn how it has been reacting since the mid-1980s to the recent changes in its international competitive conditions, especially to the nominal appreciation of the national currency in relation to the U.S. dollar, combined with trade liberalization. As is well-known, similar changes in relative price conditions also occurred recently in many Latin American countries, but it seems that the reaction capacity of Latin American firms has been weaker than that of their Taiwanese counterparts.

In spite of this weaker reaction —and here is the third reason why this is a good time for Latin America to draw lessons from Taiwan— "survival" following trade reforms in the face of fierce international competition has led firms in the Latin American manufacturing sector to take a positive attitude towards restructuring. Of course, for large firms it is normally much easier than for SMEs to launch rationalization and modernization processes. There now seems to be a great demand by SMEs for government assistance and support in a number of areas that may greatly help to strengthen their ability to improve competitiveness.

It is interesting to notice that this revived interest in industrial policies in Latin America and the Caribbean lies rather in the "horizontal" modalities of support, less directed to "picking-winners" and more oriented towards generalized support for education, technology, management, exports and infrastructure.

According to ECLAC's renewed analytical framework (the so-called "neo-structuralist" approach), as expressed in the aforementioned documents, good resource allocation demands combining active though cautious liberalization policies with selective government intervention and support for such activities, in order to counteract market failures.

SMEs face a number of market failures, especially in less developed countries (LDCs). For instance, they face price-makers as buyers and are price-takers as sellers; they have comparatively poor access to financing, information, technology and

foreign markets; and they lack management skills and the capacity to upgrade their employees's abilities.

In what follows the Taiwanese experience will be examined in order to describe the ways private firms and government have interacted in Taiwan to alleviate the natural market disadvantages of SMEs and to take most advantage of these firms' potential contributions.

It should be noted that such an exercise has obvious limitations, due to the fact that every historical experience is unique and lessons from it are only applicable partially and to varying degrees in different countries. For instance, it is difficult to imagine an exact replication of Taiwan's firm-size distribution in abundant natural resource countries, where for reasons of scale and scope average firms size is large. Moreover, one should bear in mind that thinking about lessons for the whole of Latin America is in itself a daring simplification, as the region contains a tremendous diversity of countries.

The remainder of this report is divided into three further chapters. Chapter II presents the background and summarizes some of the main aspects of Taiwanese economic evolution. Chapter III is concerned with the evolution of SMEs in Taiwan, policy instruments supportive of SMEs and the reasons why SMEs have been so successful. Chapter IV sets forth some tentative conclusions on lessons applicable to Latin America.

II. BACKGROUND INFORMATION ON ECONOMIC AND SOCIAL DEVELOPMENT¹

This chapter summarizes some basic and well-known aspects of Taiwan's long-run post-war experience of rapid capital accumulation and productivity increases. It presents an overview of the phases of growth, followed by some evidence that highlights its success and a list of factors that seem to have accounted for it.

Of course, the abundant literature on Taiwanese economic development does not always agree on certain key elements of this history, such as of the role of the State and the exact sequence and content of the different phases of the development process. However, surveying the points of controversy would lead this paper away from its limited scope, and taking a position in the debate would lead it even further away. Therefore, the following aim at neutrality in the controversy.

1. Phases of continuous success

There is an interesting and rather didactic tradition among academics and local government officials of referring to Taiwan's economy as the result of a logical sequence of historical phases of rapid growth. Whatever the specific issue under discussion, reference to sequential periods will always be made.

Reviewing some of the relevant literature, one finds that although authors may differ on the content and explanatory factors behind each phase, they broadly concur on periodization. In addition, policies play a prominent part in the various explanations of the process, both when authors think that policies kept prices "right" (i.e., that export incentives offset import substitution incentives) and when they think prices were kept "wrong". Finally, there is a tendency to explain each new phase as the result of both past achievements and some urgent new international challenge the country was facing, on political and/or on economic grounds, at the time the changes took place. Especially Taiwanese analysts in particular seem to be convinced, no doubt on good grounds, that success was a direct result of a fierce struggle for survival.

A reference to Japanese colonialism is always useful as an introduction to post-war events. During the 1895-1945 period of Japanese occupation progress was not absent. An initial land reform was accomplished, and transport and communication infrastructure was built, leading to agricultural growth. There are also records of some manufacturing growth, as well as of some progress in education and social welfare.

From the point of view of economic development, Taiwan's history, beginning with the arrival of Chiang Kai-shek's Kuomintang Party from Mainland China in 1949, can be divided into five periods.

The 1949-1952 period was devoted to reconstruction, land reform and price stabilization. War had partly destroyed the assets accumulated during the Japanese colonial period, but rapid reconstruction followed. By 1952, pre-war levels of real per capita output in agriculture and industry had been re-established. Land reform, which

thoroughly distributed land to small peasants all over the island, served as a basis for enhancing rapid growth in agricultural output. Full priority was given to eliminating hyperinflation, and prices actually went down from over 3,000% in 1949 to 9% in 1953.

During this initial period, a fierce struggle for survival in very difficult economic and political circumstances certainly was the essential inspiration. Military tensions with mainland China and very recent memories of the political damage caused there to the Kuomintang Party by hyperinflation were very present. Survival meant a strong commitment to stability and to building up growth conditions.

It also meant, as a next step, fostering industrial development. Isolation, poor natural resources, lack of foreign reserves and an awareness of the vacuum left at the end of Japanese colonialism in management, capital and foreign markets led the government during the 1950s to promote self-sufficiency in labor-intensive consumer goods, following a typical import-substitution and protectionist policy. High import duties, quantitative restrictions and multiple exchange rates were heavily used. Textiles, garments, wood, leather and light plastic products were among the faster growing branches.

Taiwan's small market soon became saturated. As a reaction to this, and anticipating the end of U.S. Foreign aid, scheduled for 1965, by late 1950s/early 1960s the government switched priorities to export promotion of these branches and others producing export inputs, such as chemicals and basic metals. Consumer electronics and electrical appliances were also among the fast-growing branches. During this third phase exchange rates were unified, and were kept at a devalued level; export inputs were granted import tariff exemptions, and export activities were granted large tax and financial investment incentives as well as pre- and post-shipment financial support. In all this, careful follow-up of firms' export performance seems to have been carried out by a determined local economic bureaucracy, and non-performing firms were banned from incentives. From then on, "survival" meant aggressiveness in international markets, which, incidentally, were growing fast in the 1960s. As part of the strategy, three export zones were created. The overall result was an extraordinary increase in exports between 1960 and 1973.

Export orientation was by far the main priority until the mid-1970s, when the first oil shock struck the economy, calling for quick adjustment. The new oil prices and the prospects of recession in the major world markets and of emerging international trade protectionism led the government to combine export orientation with a second phase of import substitution. A large integrated steel plant was by then being finished, and large investments in other intermediate goods such as chemicals and petrochemicals and in the machine tools and electronics industries followed. Protection for these industries was carefully controlled by a "carrot-and-stick" policy, aimed at avoiding inefficiencies and especially at preventing cost increases to exporters. The result was a complex, modern and extraordinarily competitive industrial structure. In spite of substantial wage increases, huge export surpluses arose, resulting from the combination of productivity gains and an undervalued currency.

The present phase combines trade liberalization with radical changes in the comparative advantage conditions that inform the economy and in the ways it integrates into the world economy. The phase can be said to have started in the mid-1980s in response to international pressures to appreciate the exchange rate and to liberalize imports. But it also can be said to have started a few years earlier. Looking at the industrial policies of the early 1980s and at efforts to stimulate technological upgrading and high-tech branches or "strategic industries", one can already see at work the traditional anticipatory capacity of the government to deal with future problems.

The competitive picture of Taiwan's industrial structure was indeed to change dramatically during the 1980s, due not only to exchange rate appreciation, but also to steady increases in wages and other labor costs, sky-rocketing land prices and new costs related to pollution control. By 1994 the trade surplus had declined, but was far from having disappeared. When Taiwan was hit one decade ago by changes in its competitive conditions, two solutions to the new challenge were already in place.

First of all, Taiwan was already upgrading its export mix towards technology-intensive goods such as integrated circuits, computers and peripherals, telecommunication and precision machinery and materials). And, second, a diversification of export markets was taking place, mostly through an accelerated penetration into mainland China. A new trade surplus with the latter more than offset a large decrease in the trade surplus with the United States. Parallel to this market diversification, there was a very large outflow of direct investment seeking cheap labor and foreign markets in Thailand, Indonesia, Malaysia, Vietnam and, largest of all, mainland China.

This does not mean, however, that the changing conditions have had no negative impact on rapid growth over the long term. The rate of growth of the manufacturing sector fell below 4% in the 1988-1993 period, and investments in manufacturing are growing at a slower pace than in the past. A substantial increase in government investment is going on, directed at "systemic competitiveness" (roads, communication, urban infrastructure, etc.), and towards fulfilling an "anti-cyclical" function, as well, since private investment as a whole has been slowing down recently.

2. Evidence of success

Tables 1 to 3 show a number of selected variables that highlight the extraordinary success of Taiwan's economic and social development. Table 1 presents figures on growth, and on two supporting platforms for growth, namely continuous macroeconomic stability and increasing availability of technology. Table 2 provides evidence of structural change. Table 3 shows selected variables that demonstrate achievements in income distribution and social conditions.

This set of evidence speaks for itself. Perhaps with the exception of Korea, no other developing country in the world has been able to show such a record.

3. Causes for success

These achievements were obviously due to multiple factors, none of which can be singled out. On purely subjective grounds, people tend to rank them one way or another in relative importance. But since there can be no adequate way of measuring it, the wisest course is simply to list the explanatory factors. The list that follows gives ten factors explaining success; the sequence is not indicative of their possible relative importance.

1) Post-war development started with quite favorable conditions inherited from the past. Though very badly endowed with natural resources, by the end of the 1940s Taiwan enjoyed a level of development hard to find in other parts of China. It had a physical infrastructure built during the decades preceding the war; it had a population with living and educational standards that were not as low as most other developing regions in those days; and it was receiving a large inflow of entrepreneurial capacity from mainland China.

Table 1

**TAIWAN: SELECTED VARIABLES ON GROWTH AND PRODUCTIVITY, MACROECONOMIC
CONDITIONS AND TECHNOLOGICAL EFFORTS IN SUPPORT OF GROWTH,
SELECTED PERIODS**

I. Growth (yearly average % growth rates):				
Total GDP		8.7		(1952-1993)
Total per capita GDP		6.3		(1952-1993)
Manufacturing value added		12.3		(1952-1989)
Stock of capital, manufacturing		8.5		(1952-1989)
Employment, manufacturing		5.3		(1952-1989)
Total factor productivity, manufacturing		5.6		(1952-1989)
Wages, manufacturing		7.6		(1975-1993)
II. Macroeconomic conditions				
Inflation rate (consumer price yearly)				
Average, excluding 1974's 47% increase)		4.2		(1960-1993)
Savings/GDP %, average		28.0		(1965-1993)
Investment/GDP %, average		24.0		(1965-1993)
Fiscal balance, 1952-1993				"under control"
Exchange rate fluctuation, 1952-1993				"low"
III. Indicators of technological development				
R&D spending/GDP %	0.95	(1984)	1.70	(1991)
Patents awarded (thousands)	7.1	(1983)	22.3	(1993)
Patents awarded to Chinese				
(thousands)	3.7	(1983)	15.4	(1993)
Capital goods imports/GDP %	32.3	(1970)	15.4	(1993)
Students returned from abroad	640	(1980)	6 172	(1993)

Source: *Taiwan Statistical Data Book, 1994*, Council for Economic Development; Howard Pack, "The role of industrial policy in Taiwan, China's Development", 1992, unpublished.

Table 2

**TAIWAN: SELECTED INDICATORS OF STRUCTURAL CHANGES
(1952-1993)**

	1952	1993
Agricultural output/GDP %	32.5	3.5
Industrial output/GDP %	21.3	40.6
Manufacturing output/GDP %	14.8	31.6
Output of technology intensive manufacturing branches/total manufacturing output %	0.0	33.5
% of total labor force employed in primary activities	56.1	11.5
% of total labor employed in manufacturing activities	12.4	28.4
Exports/GDP %	6.9	38.2
Imports/GDP %	11.2	35.0
Savings/GDP %	15.3	28.0
Investment/GDP %	15.3	24.8

Source: *Taiwan Statistical Data Book, 1994*, Council for Economic Development.

2) Land reform and concerns with equity were very effective both economically and politically. Land reform raised agricultural output and productivity, alleviated excessive rural migration to urban areas throughout the decades, and increased the government's capacity to create social cohesiveness. Commitment to education, health, housing and other social investment contributed greatly to the high productivity of the local labor force.

3) Political stability throughout the decades —no doubt at the expense of democracy— is part of the explanation, as is the fact that the government continuously ran a developmentalist State. It harmoniously and systematically led to a qualified and honest bureaucracy committed to growth and competitiveness. Adherence to the guidelines established by the government seems to have been a key characteristic of entrepreneurial behavior.

4) Cooperative behavior among firms also predominated over "conflictive" attitudes. Low inflation helped to avoid price conflicts, and rapid growth meant bustling to fulfill growing orders from buyers, reinforcing cooperation. Networks of small- and medium-sized firms tied by family and cultural links seem to have been a distinctive feature of the economy's entrepreneurial system, and to have contributed to the cooperative attitude.

Table 3

**TAIWAN: SELECTED INDICATORS OF INCOME DISTRIBUTION AND OF
LIVING STANDARDS, 1952 AND 1993**

	1952	1993
Per capita GDP (US\$)	200.0	10.600
Population growth %	3.3	0.9
Life expectancy at birth	65.0 (1961)	75.0
Unemployment rates	4.4	1.4
Wages/national income	38.2	56.9
20% highest household incomes/20% lowest household incomes	4.4 (1974)	5.3
% of illiterates	42.0	6.0
% of population having only primary education	44.0	31.0
% of population having secondary education	8.8	48.7
% of population having higher education	1.4	13.1
% of population served by tap water	30.8 (1961)	86.2
Number of health personnel per 10,000 persons	11.4 (1961)	55.2
Living space per capita (square feet)	75.6 (1965)	316.8

Source: *Taiwan Statistical Data Book, 1994*, Council for Economic Development.

5) Macroeconomic stability provided the necessary environment for rapid capital accumulation by the private sector. In the difficult economic and political circumstances in which development took place, eliminating the "uncertainties" deriving from macro-imbalances was absolutely indispensable in all phases of the process. Low inflation was ensured by careful monetary and fiscal policies, and by rapid adjustment policies whenever needed, as was the case with the two oil shocks.

6) Savings and investment rates from roughly 15% of GDP during the 1950s to over 30% during the 1970s and early 1980s. Rapid growth and stable domestic prices have been at a time cause and effect. High interest rates are among the factors that have

stimulated savings, and seem to have had little negative effect on investment. And financial markets have been well oriented towards channelling savings into productive investment.

7) Political isolation and a small domestic market have made an outward orientation imperative, laying the groundmark for cost and quality concerns. A very pragmatic industrial policy has consistently helped to drive the economy towards international competitiveness. In some periods it has combined an export orientation with import substitution policies, but strict competitive performance requirements seem to have always been present. Changing conditions have inspired anticipatory policy responses, as was the case with efforts towards "high-tech" products in the 1980s.

8) Human resource development has been given high priority in Taiwan, greatly contributing to the upgrading of labor force capabilities. Educational and technical skill standards have been steadily improving. The level of high education has been greatly enhanced by sending thousands of students abroad every year. By now, the overall level of education equals that of developed economies.

9) Taiwan took advantage of its position as a "late-comer" and maximized technology absorption, using multiple and very pragmatic methods of technology transfer. They included large imports of equipment, the attraction of foreign firms, the purchase of foreign technology through licensing agreements, the use of subcontracting relationships to foreign firms as a means of acquiring technology, large scale technical and vocational training, a large flow of students to the USA and, last but not least, the ability to copy, borrow and adapt hard and soft modern technology.

10) SMEs seem to have been largely responsible for the responsiveness of Taiwan's industrial structure to changes in competitive conditions, due to their productive flexibility and to their "economies of specialization". In addition, they are also partially responsible for good income distribution and for cooperative attitudes within the industrial system. To this we turn now, in the following chapter.

III. THE UNIQUENESS OF THE TAIWANESE EXPERIENCE: THE ROLE OF SMEs AS EXPORTERS

Most of the aforementioned factors of the success of Taiwan's development cannot really be said to be peculiar to that country, since they are also factors in other East Asian experiences. Searching for distinguishing characteristics, one might say that the most exceptional feature has been the key role played by SMEs, which have accounted for most of the exports in Taiwan's "export-led" model of growth.

This chapter starts off with two warnings about the difficulties of demonstrating the relative weight of SMEs in the economy of Taiwan. First, we raise the problem of establishing how important SMEs have been in Taiwan for purposes of international comparison; then we raise doubts as to the appropriateness of using the available data to study the origins and evolution of SMEs.

Section 2 presents some evidence about the relative weight of SMEs in the economy of Taiwan in terms of their share in total output, employment and exports. The emphasis is on the manufacturing sector, which accounted for 37% of GDP and nearly 90% of exports during the 1980s.

There follows an exploratory discussion on the factors that explain the performance of SMEs as exporters. Interestingly enough, although the literature in English on the economy of Taiwan is extensive, literature on industrial organization and the microeconomics of SMEs seems to be rather scarce. Therefore, and considering the very limited scope of this report, the discussion on this topic can only be speculative.

Finally, a description is presented of the aspect of Taiwan's experience which is of major interest for this report, namely the network of institutions supportive of SMEs. Though government support specifically directed towards SMEs does not appear to have been one of the major factors behind the outstanding performance of these firms, it does seem to have made a positive contribution to it.

1. Data problems on SMEs in Taiwan

The idea that SMEs currently are extraordinarily important to the economy of Taiwan is normally taken for granted. This is strengthened by the common sense explanation of their historical origins. The abundance of labor, the lack of natural resources and the lack of capital (in the early stages), combined with the small size of the domestic market and consequent problems of scale, created an ideal setting for product specialization in branches where SMEs have relative advantages. In other words, the relative weight of SMEs in the economy is a consequence of specialization to adapt to resource availability and market size, or so the common sense explanation goes.

However, there are some problems with the above statement of the case. None of it is necessarily wrong, but much remains to be explained or qualified, as it leaves one in some genuine doubts.

A brief look at the statistics on SMEs leads to two main questions. The first relates to international comparison. When Taiwan is called "the kingdom of SMEs", the implicit reference obviously is the international standard. But since international comparisons based solely on aggregate statistics are hard to do, because each country's statistics are based on a particular definition of SMEs, so far specialists on Taiwan's SMEs seem to have avoided international comparisons. Therefore, and strictly speaking, they have not been able to demonstrate the magnitude of the so-called "singularity" of Taiwan's experience with SMEs. In this chapter some international comparisons for SMEs are "improvised", on the basis of statistics for manufacturing SMEs employing less than 100 people.

The second problem concerns the consistency of statistics over time. The official definition of SMEs, and consequently official statistical criteria, changed five times between 1967 and 1982, first changing from "less than 100 employees" to "less than 300 hundred employees" (combined with changing criteria for ceilings on paid-in capital and assets) and finally ending up expressed as ceilings for paid-in capital and assets (manufacturing and mining) and ceilings on sales (services). This can introduce some confusion into the understanding of the SME phenomena in Taiwan, unless due care is taken. For instance, according to the official definition the output share of manufacturing SMEs increased from 27% in 1971 to 47% in 1976 —a historical impossibility unless something very extraordinary had occurred, which was not the case. The case was simply that the definition had changed.

However, even after adjustment, the data series remains intriguing. For instance, there are long-term series showing the share in manufacturing value added of SMEs employing less than 100 people. No definitional problems seem to exist, in this case. However, between 1971 and 1991 this share increased from 21% to 41%. Such an intriguing evolution suggests two possibilities. First, it may be that the series is inconsistent, due to the fact that comprehensiveness may have been very small in the earlier stages. Second, it may be that the series are consistent. In that case, as the magnitude of the change is extremely large —"flexible automation" alone could not begin to explain it— all one can say is that this extraordinary phenomena demands more research and analysis.²

Needless to say, if the statistics are correct, then the "commonsense" explanation about the origins of SMEs in Taiwan can be strongly challenged. An interesting exploratory attempt in this direction has recently been made by Amsden (1991). She presents comparative data for the output shares of manufacturing SMEs in Taiwan and other countries in the early 1970s, showing that Taiwan was not a special case at that time. She does not discuss the quality of the data, and accepts that SMEs had a rising importance thereafter —and she may have been insufficiently skeptical about the data. Accepting statistics at face value, her thesis is that SMEs' current strength was originally the creation of large firms and business groups. By a variety of means, so the argument runs, business groups have supplied SMEs with capital and technology; also, very frequently what appears statistically as an isolated small firm is actually part of a large group, and the official status is maintained to avoid taxes.

Historical origins and statistical problems aside, the present state of the argument seems to be a general acceptance of the idea that SMEs' importance in Taiwan at the present time is unique, in a worldwide comparison. Data that seem to confirm that statement is presented hereafter.

2. Some evidence

Table 4 shows the contribution of SMEs to the economy as a whole and in its major sectors, in terms of the number of firms, the number of employees and output for 1989. It can be seen that by the end of the 1980s 97.4% of all firms were SMEs, and that they accounted for 71% of employment and 46% of economic output. Except for electricity/gas/water and for construction, in all other major sectors small firms are heavily represented in terms of number, employment and output.

Table 4

SMEs PERCENTAGE SHARES IN TAIWAN, SELECTED SECTORS, 1989

	% of firms	% of employees	% of output
Mining	97.9	83.6	83.0
Manufacturing	98.5	68.4	44.7
Electr., Gas & Water	89.4	4.9	1.7
Construction	93.9	58.0 ^a	n.d.
Commerce	97.2	79.5	72.4
Transport & Commun.	94.4	71.2	50.6
Total	97.4	70.8	46.3

Source: C.L. Lee, "Small and Medium Enterprises and Taiwan's Economic Development", Taiwan, Chung-Hua Institute for Economic Research, 1994, unpublished, elaborated on the basis of *SMEs Overview in Taiwan*, 1989.

^a SMEs are here defined according to the official definition, based on capital (paid-in capital of approx. US\$ 1.6 million).

So far, nothing can be said about "uniqueness", since the criteria in Table 4 is ceilings on paid-in capital, assets and sales (varying by sector) in a combination that offers little opportunity for international comparison.

Turning now to the evidence that does allow for international comparison, Table 5 shows figures for employment and output shares by manufacturing SMEs, defined as firms which have less than 100 employees. It can be seen that in terms of both employment and output Taiwan's SMEs have larger shares than other countries. The surprise of the table is the high share of SMEs in Japan, quite close to Taiwan's. The differences between the two countries lie elsewhere, namely in their industrial organization —vertical and formal center-satellite networks in Japan, and informal networks of small firms, vertical and horizontal, in Taiwan— and in the much higher share accounted for by SMEs in Taiwan's exports than in Japan's.

Table 5

**SHARE OF EMPLOYMENT (%) AND VALUE ADDED (%) ACCOUNTED FOR BY
MANUFACTURING FIRMS WITH LESS THAN 100 EMPLOYEES,
IN TAIWAN, 1991, AND IN SELECTED COUNTRIES,
SELECTED YEARS**

	% share of employment	% share of value added
Taiwan (1991)	56.5	40.9
Singapore (1983)	31.7	25.0
Japan (1986)	-55.2	38.7
France (1984)	-50.4	n.d.
Brazil (1985)	-41.3	24.0
Mexico (1985)	38.0	17.1

Source: C. Lee, "Small and Medium Enterprises and Taiwan's Economic Development", Taiwan, Chung-Hua Institute for Economic Research, 1994, unpublished and ECLAC, "Las PYMEs en el Mercosur", Documentos de trabajo series, No. 37 (LC/BUE/R.186), Buenos Aires, ECLAC office in Buenos Aires, 1993, on the basis of official country statistics.

The most extraordinary aspect of SMEs in Taiwan is their performance as exporters. Table 6 shows the shares of SMEs in total exports (nearly 90% of which are manufacturing products). The data is valid for the official definition of SMEs, the criterion being asset value.

International comparisons that might allow one to grasp the meaning of the magnitudes shown in table 6 are scarce and suffer from differences among countries about criteria for the definition of SMEs. Here and there, however, there are data that allow for reasonable comparability, and they show that the share of SMEs in exports is particularly high in the case of Taiwan.

Japan uses a definition of SMEs which is quite compatible with Taiwan's, and the figure for SMEs' share of total exports in 1993 is 12.6%, as against 55.9% in Taiwan. Another good example for comparisons is Brazil. In the latter country, the list of the top 1,000 exporters in 1990 (accounting for over 80% of exports) includes very few firms, if any, that had under 100 employees. Though small firms that sell abroad through trading companies would not appear on the Brazilian list — their exports would appear under the names of the trading companies — it is safe to say that large firms account for a very large majority of exports. In the USA, although 96% of exporters are firms with under 500 employees, they account for only 12% of the total value of exports. And in Korea, which defines SMEs as those having less than 300 employees (therefore including relatively more firms than Taiwan), their export share in 1993 was 42.8%.

Another way of measuring the importance of SMEs as exporters is provided by table 7. It shows that in Taiwan small firms are much more export-intensive than large ones. Between 1981 and 1988 they were on average twice as intensive.

Table 6
EXPORT SHARES (%) OF SMEs IN TAIWAN, 1981-1988*

1981 - 68.1	1985 - 61.2
1982 - 69.7	1986 - 66.4
1983 - 63.4	1987 - 67.1
1984 - 59.2	1988 - 60.0

Source: C.L. Lee, "Small and Medium Enterprises and Taiwan's Economic Development", Taiwan, Chung-Hua Institute for Economic Research, 1994, unpublished, elaborated on the basis of *SMEs Overview in Taiwan, 1989*.

- * SMEs are defined according to official definition; for the manufacturing sector, as firms with a paid-in capital of less than NT 40,000,000 (approx. US\$ 1.6 million), and total assets of no more than NT 120,000,000 (approx. US\$ 4.8 million).

Finally, both tables 6 and 7 reveal a declining trend in the relative importance of SMEs as exporters. It is probable that this downward trend has been maintained into the 1990s due to a very marked change in the export mix. As we mentioned earlier, a 40% appreciation in the local currency after the mid-1980s and simultaneous increases in real wages determined a sharp decline in labor-intensive exports —mainly from SMEs. They have been steadily replaced in Taiwan's export mix by high-tech exports, sometimes produced in firms having less than 100 employees but officially not recognized as SMEs due to their high asset value.

Table 7
EXPORT COEFFICIENTS (%) OF LARGE FIRMS AND OF SMEs IN TAIWAN, 1981-1988*

	Large firms	SMEs
1981	41.9	74.8
1982	39.3	75.9
1983	35.0	73.3
1984	36.6	71.8
1985	34.2	70.0
1986	32.4	66.5
1987	32.3	61.9
1988	32.5	47.0
Average 1981-1988	35.5	67.7

Source: *Industrial Financial Situation Survey*, various issues, Economic Research Department, Bank of Taiwan, elaborated by Lee Chung-Che, Chang Hsing-Mei and Chang Shung Chiao, *The Environment and Development of Taiwan's SMEs*, Taiwan, Chung-Hua Institute for Economic Research, unpublished, 1993.

- * SMEs defined as in table 6.

3. Some hypotheses on SMEs' success as exporters

The reasons for the competitiveness of Taiwan's economy as a whole are mainly given by the formidable set of factors listed in chapter II. The most puzzling aspect of the case, namely, the fact that SMEs have been throughout the decades the largest exporters in the country is dealt with in the following paragraphs. The question will be analyzed on purely hypothetical grounds, to pave the way for eventual future research.

It is currently argued that SMEs' success as exporters is mainly due to the operation of trading companies and foreign importers (e.g., Chou, 1993). Though evidence on the importance of these agents in the channeling of SMEs' exports is not definitive, it does point at this direction.

However, it only explains half of the story, or less than half. It does not explain why far-distant Taiwan's SMEs were relatively more able than those of nearly all other countries in the world (if not all) to get orders from trading companies and large retail distributors. The reason must lie in some kind of "singular competitiveness".

a) *Overall hypothesis*

This "singular competitiveness" can be tentatively defined as follows:

- i) Taiwan's manufacturing SMEs have been highly specialized in a myriad of international market niches of final products (at the low-end of the quality scale). Competitiveness stems from low cost and from flexibility to adapt quickly to changes in demand, within a system of production and an industrial organization where smallness has proven to be a positive factor in competitiveness;
- ii) Quick response to changes in demand is facilitated by intimate integration with "orders" placed by trading companies and other international agents with SMEs, in a systemic practice which has proven to be highly suitable for overcoming the disadvantages and grasping the relative advantages of smallness;
- iii) Limited access to capital has not been an absolute constraint for SMEs and may have been more than compensated for, cost-wise, by the tax evasion typical of SMEs.

This means that the singularity of Taiwanese SMEs stems from their having been able at one and the same time to make intensive use of the advantages of being small and to alleviate the disadvantages of smallness. The formula consists of simultaneous processes at the three major levels of theoretical SME "size constraints", namely in production (by dealing efficiently with lack of scale and of access to technology), in marketing (by dealing efficiently with reduced capacity for selling abroad), and in finance (by coping reasonably well with limited access to financial markets).³

Some exploratory comments are now in order on each of the three processes to support the above argument, starting with the idea that access to finance has not been an absolute constraint on the competitiveness of SMEs. Then comes a discussion of what is considered their export "secret", namely, channeling through trading companies and foreign importers. Finally, the text deals with the factor that, though less acknowledged by specialists, seems to have been the real secret of SMEs success as exporters, namely the development of competitiveness through specialization, flexibility and emphasis on the production of goods where economies of scale are not meaningful.

b) *Brief comments on coping with limited access to financing*

There is no doubt that SMEs in Taiwan have had access to financing on poorer conditions than large firms. They suffer from the same kind of problems as SMEs elsewhere, lacking collateral, sound accounting systems and professional management, etc. Moreover, there is an insufficient supply of loanable funds in the formal market, and SMEs get far fewer long-term loans than large firms (Yang, Kuo and Liu, 1995).

Yang (1994) estimates that domestic banks generally provide 35-40% of their financing to SMEs. She considers it a low figure, "when [it is] recalled that they produce 45% of Taiwan's GDP", and might have added that it is especially low if one considers that the debt/equity ratio in Taiwan is much higher for SMEs than for large firms, and that SMEs have hardly any access to official financial institutions other than domestic banks (scarce access to money and capital markets).

According to the Central Bank of Taiwan, the share of "curb markets" in total financing of all business in Taiwan is estimated at about 24.5% of total financial sources for all business (average for the 1976-1989 period). A crude exercise leads one to conclude that approximately 50% of loans to SMEs come from curb markets.⁴

Notwithstanding all this, the issue is whether limited access has represented a serious constraint for SMEs. Another crude exercise may help to determine the "orders of magnitude" of the constraint. Let us assume, reasonably enough, that the difference between interest rates in formal and in curb markets was in 5% in 1989 and, also reasonably enough, that interest rates for large and small firms were roughly the same in the formal markets (SMEs mainly get loans from state-owned Small Business Banks). As SMEs accounted for 46.3% of that year's GDP, simple calculation shows that the extra interest paid due to having to get half of their loans from the curb market represented in 1989 some 1.9% of GDP. One may conclude it to be a fairly light constraint.

A hypothesis can now be properly formulated: the extra cost of SMEs due to limited access to formal financial markets in Taiwan has not represented an important obstacle to the development of SMEs, and especially of manufacturing SMEs. Not only are half of the loans needed by SMEs channelled through the official market at roughly similar interest rates as loans to large firms, but the quality of the access of SMEs to the local informal market for the other half has also been much better than what is observed in other developing countries. Curb markets in Taiwan are more flexible, more "permanent" and "reliable" and, most important of all, cheaper than, for instance, in Latin America. This is explained by family and neighborhood relations, by firm networks and by inter-firm loans. This means that although in Taiwan small firms have had poorer access to finance than large ones, the general conditions have not been a basic impediment to international cost competitiveness.

A complementary hypothesis is here at issue, namely, that higher interest rates have probably been more than compensated for by low taxation due to tax evasion by SMEs, which is known to be very high in Taiwan. Assume that in 1989 SMEs paid only 15% of all business income tax in 1989, a hypothesis that according to officials at the Tax Department of the Ministry of Finance should not be far from reality. Their share in GDP is 46.3%. Simple calculation leads to an interesting result: had SMEs in Taiwan paid as much business tax as large firms (say, proportionately to their shares in GDP), they would have paid more tax amounting to some 3% of GDP; this contrasts very positively with the 1.9% of GDP obtained from the above exercise on the cost of interest rates differentials.

c) ***Brief comments on surrounding international marketing limitations***

There is a general agreement among specialists that knowledge about marketing of Taiwan's exports is insufficient. For instance, Chou (1993, pp. 6-9), when pointing to the importance of trading companies as the secret that has allowed SMEs to avoid the problem of scale in international marketing, adds that "still a complete answer to this question has not been found". In his outstanding "Governing the Market", Wade (1990, p. 148) also refers to this topic when discussing the operation of Japanese trading companies in Taiwan: "How they operate remains a mystery, as, indeed, does much else about the marketing side of Taiwan's export growth".

No overall statistics seem to exist on the export channels for Taiwan's exports. Fortunately, some revealing figures on this were provided by a recent questionnaire survey responded to by 444 SMEs and 75 large firms (Kuo, Wang and Liu, 1993).

The results are shown in Table 8. It can be seen that three-quarters of SME exports were handled through by trading companies, foreign importers and outsourcing by foreign firms, and only one-quarter through direct marketing. In the case of large firms, trading agents accounted for some 60% of export channeling, and the remaining 40% was the result of direct international marketing.

Another interesting piece of information is that unlike large firms, SMEs operate chiefly through domestic trading companies. They seem to be mainly small offices which are contacted by foreign buyers before manufacturers, or are contacted directly by SMEs facing some secure flow of exports to handle orders, customs clearance, negotiation of payment terms. Large firms, unlike small ones, export directly or use a foreign importer as their main channel, and only some 20% of what they export goes through domestic traders.

Table 8

COMPOSITION (%) OF EXPORT CHANNELS IN TAIWAN, 1989^a

	SMEs	Large enterprises
Domestic traders	57.0	16.0
Foreign traders	3.2	13.7
Foreign importers	9.9	21.3
Foreign firms' outsourcing	4.0	7.8
Direct sales to foreign users	23.4	35.9
Other	2.6	5.3
	100.0	100.0

Source: Wen-jen Kuo, Lee-rong Wang and Meng-chen Liu "The Marketing Ability of Small and Medium-Sized Enterprises in Taiwan", Taiwan, Chung-Hua Institute for Economic Research, Ministry of Economic Affairs, 1993, unpublished, p. 82.

^a Survey comprising 444 SMEs and 75 large firms (respondents).

The exact way SMEs relate to domestic trading companies is a matter of great interest for understanding the export aggressiveness of small firms in Taiwan. It seems that not enough research has been done on this subject. It is probable that domestic traders are the bridge that allows for speedy connections between international buyers and small local manufacturers.

If this is true, it means that *some kind of systemic integration between small flexible manufacturers and small active domestic traders explains the aggressive export marketing by Taiwanese SMEs*. Domestic traders play the role of coordinating rapid local supply responses by small firms to fast-changing international demand typical for the kind of final products in which small firms specialize.

A systemic integration like this must entail a tremendous reduction in information and transaction costs to exporters, relieving small firms of costs incompatible with their size. Obviously, the system saves the firms the jobs of identifying clients, promoting goods, getting orders, signing contracts, overseeing transactions, etc.

But there is a second and less obvious virtue in this system, which may also have been of extraordinary importance. It is well-known that the marketing executives and sales representatives of large firms are much less able to handle smooth transactions than those who do the marketing for SMEs, normally their owners. Unlike the marketing staff and agents of large firms, SMEs' owners have an overall, clear picture of all the factors that go into decision-making, such as production costs, availability of labor and inputs, financing and short- and long-term priorities. They also have the authority to make deals and do not have to get approval for unusual arrangements back at the firm, as is the case with the marketing agents of large firms. SMEs are therefore able to negotiate much faster and more efficiently than large firms.

In principle, the problem owners of SMEs face is to find the proper market in which to perform this function, and international export markets are too costly for small firms. Some of Taiwan's markets may have been accessed as the traditional story goes, by businessmen searching for markets around the world with the help of firm catalogues and very poor English. This adventure may have more than purely anecdotal significance and may explain the establishment of some small trading companies, which made their first international contacts this way. But the export business developed into an efficient market-place of trading companies which established themselves in Taiwan and have long been operating through modern telecommunications channels. They perform the role of "contact point" for the owners of thousands of small manufacturing looking for international orders.

Of course part of the secret of this unusual mode of operation lies in the way small firms are able to supply international demand at competitive conditions.

d) ***Brief comments on "singular competitiveness" at the production level***

Even if the common explanation that trading agents do the international marketing job for SMEs is accepted, the biggest part of the puzzle about the international competitiveness of small firms in Taiwan still remains to be explained. One is left with the question of what is so special about Taiwan's SMEs that has enabled them to supply these trading agents with large volumes of internationally competitive products.

The puzzle might be solved by studies that would consider a number of peculiar features of Taiwan's industrial organization, the first of which would appear to be the above-mentioned importance of domestic trading companies as "contact points" for a myriad of small exporters. An exploratory list of other factors that may

explain the competitiveness of Taiwanese SMEs from the standpoint of production costs follows.

- i) *The predominance of cooperative behavior among firms through business networks plays a central role in SMEs' competitiveness*

The cooperative relationship among firms is said to be a crucial element in Taiwan's industrial organization and to produce externalities that form the basis for international competitiveness. Unlike the Japanese center-satellite and formal association model linking large and small firms, what exists in Taiwan is a Chinese mode of cooperation between small firms, which resembles some European models, especially the Italian.

Its real efficiency is hard to measure, and it seems that no microeconomic study has so far been done on this subject in Taiwan, although there are a few sociological studies on the origins and workings of networks under way. However, specialists are not sparing words in praise of its efficiency:

"Generally speaking, SMEs are undeniably more flexible in production than other enterprises —whether or not they are more efficient is an open question. Yet Taiwan's SMEs have formed a production network that is both flexible and efficient. Because of close relationships among relatives, schoolmates, and colleagues, family-type SMEs cooperate in a systematic way based on the principle of mutual benefit. Everything from internal production coordination to material purchasing, orders, OEM, and even sales and marketing channels, is composed of complex layers of personal, productive, OEM, and marketing networks. Such special network relationships not only reduce the cost of outsourcing activities, but also smooth the flow of SME management decision-making information. Thanks to their flexibility, SMEs can quickly come to an effective decision soon after receiving relevant information (this is the information feedback reaction). Also, they are better able to overcome operational difficulties in hard times by working together. SMEs developed from family-like groups enjoy better network economic efficiency than do other types of organizations when there is a triple instability of production, technology, and market in the macroenvironment. Small in scale though they are, they are solid, flexible and efficient" (Lee, Cheng and Chang, 1993, p. 54).

- ii) *SMEs have been highly specialized in labor intensive products which do not require economies of scale and which are not technology intensive*

A study on this point would have to do a full "X-ray" of Taiwan's exports, if possible looking at the export mix on an ISIC four-digit level and comparing it to the mix of other countries' exports. One should preferably include consideration of the period prior to the mid-1980s, because since then the effects of exchange rate appreciation, wage increases and policies for technology up-grading have radically changed the export mix (and have reduced the share in Taiwan's total exports accounted for by SMEs).

It is probable that the result will show a clear specialization in non-durable consumer goods (shoes, garments, plastics, watches, toys, ceramics, ordinary metal products, etc.) that are labor-intensive, since labor costs were for a long time

relatively very low (as late as 1989 they were still roughly one-third of USAs' and European labor costs); they will also be goods that allow for production in small lots without substantial cost increases, and that do not entail process and product sophistication.

Some design sophistication might be found, in which case it would probably be explained by the fact that large international retailers supply design along with "orders". Less importantly, government support for design may have had some positive impact, mainly in recent years.

Studies should examine whether there has been some kind of "super-specialization" on the firm level in Taiwan. The international trend during the 1980s and 1990s has been productive deverticalization and specialization in "core-business" and "core-products". This has been part of a phenomena in which flexible automation has played an important part. The difference between this trend and what happened in Taiwan's may be that in the latter case gains from specialization at each plant level have long been a characteristic of its industrial organization.

As a matter of fact, it is widely agreed by specialists that Taiwan has a "highly specialized division of labor". And it is well-known that in some branches the division of labor among small firms is taken to the extreme. For instance, the export of a certain volume of as simple a product as a doll is generally the result of a production network of totally independent firms, involving some firms that produce only the arms and legs, others that make only the torsos, others that produce the heads, others that make the clothes, others that work as final assemblers, etc. Studies should determine how general this is, in order to evaluate the magnitude of cost savings from this extreme specialization, a phenomena which may have contributed significantly to international competitiveness.

iii) *SMEs have been very flexible in adapting to "orders" (demand), easily expanding volumes and easily changing product specifications*

Flexibility is said to be a key characteristic of SMEs in Taiwan. Firms seem to be able to adapt quickly to changes in demand volumes and specifications, without adding to cost.

Notice that one should expect the kind of non-durable consumer goods that seem to characterize Taiwan's export specialization to be highly intensive in "product differentiation". Here, of course, one would be far from the costly R&D/fixed capital/marketing model of differentiation of cars, other durable goods, cosmetics and pharmaceuticals. Taiwan's model of product differentiation seems to consist of ready and costless adaptations by SMEs to new models and designs that appear in the major European and US retail markets and flow into Taiwan along with new orders, most probably accompanied by specifications that include design.

Flexibility seem to be based on three factors. The first is systemic integration with trading houses and international retailers. As mentioned above, exporters are in permanent contact with traders, and the norm appears to be readiness to seize new orders and opportunities, new specifications being the rule, not the exception.

Second, and this was also mentioned above, the capacity to adapt to new orders and specifications has been greatly facilitated by business networks. When the firm wants to seize a new opportunity in the very short run, it requires some emergency procedures, related both to ongoing contracts and to the new opportunity it is aiming

to seize. It can rely on other firms in its vertical chain of production to respond to changes in its inputs, and it can rely on other firms that make goods similar to its own to enable it to form out ongoing orders without losing the original clients. The following is a good description of the contribution to flexibility made by "vertical" and "horizontal" network relationships:

"With the help of the network systems, business can simplify the jobs locating customers or supply sources. With personal friendship or connections, they can rely upon customers and contractors, unlike large scale business which could not help but purchase only from their own subsidiaries. Such flexibility is the very foundation for the small & medium businesses in vibrant and flexible operations (...) Other than vertical relationships, horizontal relationships exist amidst networks as well. The businesses will adjust their purchase orders with one another. To put it in more understandable terms, when any company gets its purchase orders exceed its productivity, it will pass its purchase orders to fellow companies" (Stwo, 1994, pp. 4 and 10).

Third, "labor willingness" and "bosses dedication to business" must have been very important elements in flexibility. First, and unlike in developed economies, in Taiwan extra hours of work do not increase hourly wages. Besides, at least until very recently labor was abundant and submitted to a discipline that would not be tolerated in, say, most western countries. So, whenever needed, SMEs could make easy use of extra hours, with no increase in average labor cost. Second, long weekly journeys by small businessmen seem to have been the rule in Taiwan —of which, incidently, they seem to take great pride. Now, as mentioned before, centralization of decision-making is a relative advantage of SMEs that was largely used in Taiwan. Extra working hours by businessmen is part and parcel of the centralized decision-making, and therefore of flexibility.

- iv) *SMEs benefit from a systemic capacity of buying and selling competitively on small volumes, including effective access to tariff exemptions and export incentives*

Lastly, SMEs seem to have had an unusual capacity to overcome the disadvantages of smallness in buying and selling, in terms of both price and delivery time.

Taiwan has developed a strong industrial system, including the basic inputs used in the bulk of production for export. It would be interesting to know what exactly market behaviour of large firms have historically been towards SMEs at petrochemicals, basic metal products and other basic inputs, to insure them competitive prices at low volumes.

Such goods have long been protected from foreign competition through tariffs, and the functioning of these industries has long been closely monitored by the government. Concern with international competitiveness seems to have been a consistent attitude of the government, and it seems that surveillance of the supply by upstream firms on competitive terms was an integral part of the economic agenda of the Taiwanese government.

It should however be noticed that the presence of government has not necessarily been the major determinant of the supply conditions by large firms to SMEs. Direct export coefficients of large firms located at the primary stages of the productive chains are small, but indirect export coefficients are high, the export channel having mainly been SMEs. Squeezing SMEs should therefore be highly counterproductive for

large firms in Taiwan, as supplying them goods at competitive prices and quality regardless of the volumes must have been strategic, due to smallness of the domestic market.

It should therefore be expected that inputs supplied to SMEs have not been priced in discriminatory fashion, by the large state-owned enterprises and the closely monitored large foreign and local firms that conform the productive structure of basic inputs. If this has been the case, then not only have SMEs been able to buy inputs at reasonable prices, they also have been able to minimize stocks with few constraints in terms of purchase quantities.

It should also be expected that such a capacity to buy small lots on reasonable terms to have been enhanced by the existing networks. Though less formally than in the Japanese model, vertical integration in the Taiwanese version of business networks entailed integrated chains of production. Moreover, it can be imagined that the formation of SMEs purchasing pools has been a frequent procedure for small firms in networks.

Similarly, one should expect potential difficulties in selling in small lots to have been neutralized, in this singular export-biased industrial organization. Networks and the intimate relationship to trading companies must have done the largest part of the job. But some of it may be due to the fact that unlike most of SMEs in developing countries Taiwan's small firms seem to have had good access to export incentives and other government promotional support.

4. The institutional set-up for SMEs' support

The first institutions directly to deal with support to SMEs in Taiwan were created in the sixties, as was the case in 1967 with the Small and Medium Enterprises Assistance Administration, established under the Council for Economic Cooperation. Improvements have been only gradually introduced, and it was only during the eighties that a more systemic approach was adopted. Its cornerstone was the creation of a "Small and Medium Business Administration" and the enforcement of a "Guidance Program", under the control of the Ministry of Economic Affairs (MOEA).

A description of the so-called "Guidance system" for SMEs institutional support is presented in Diagram 1. It can be seen that besides the typically private sectors' organizations (chambers of commerce, federations of industries, etc.), the system is functionally divided into five groups: marketing, technical guidance, management, finance and cooperation system.

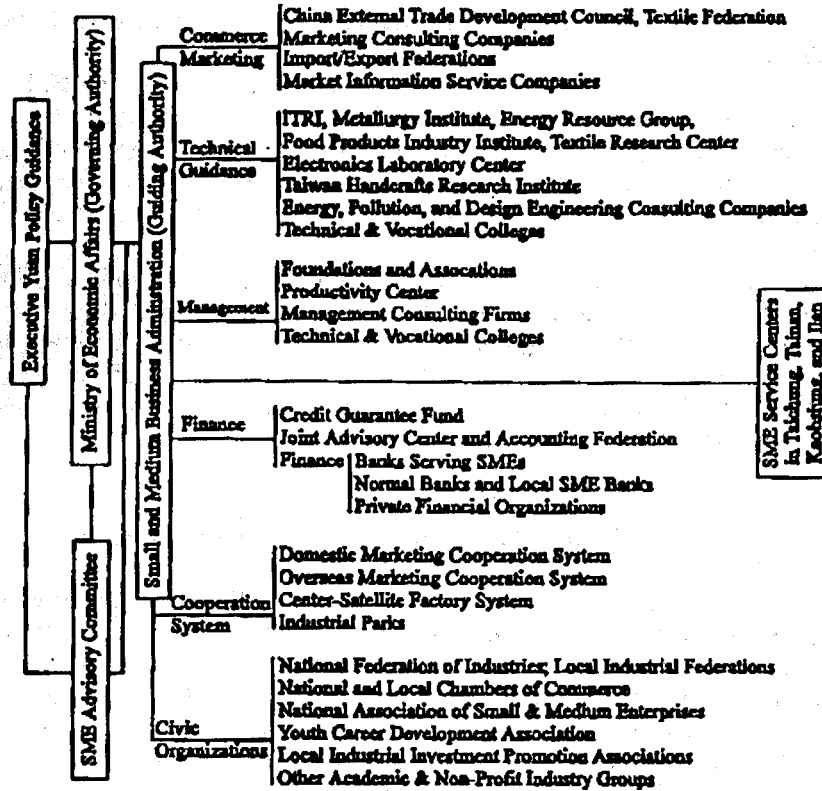
Comments on each of the main organizations are made in the next chapter, along with possible lessons to Latin America from the Taiwanese experience with SMEs. Before entering into that topic, two warnings are at issue.

First, Diagram 1 depicts what is mainly an ex-post rationalization of a number of quite independent initiatives regarding the support to SMEs. Lessons to Latin America can therefore come from the observation of individual experiences on each of the five functions, as there was no anticipated "systemic approach". As a matter of fact, and as specialists have observed, this guidance system has never attained the comprehensiveness of, say, the Japanese system of SMEs support, and its "administrative system has never been defined" (Lee, Cheng and Chang, 1993, p. 132).

Second, though government support specifically directed to SMEs seems to have given a very positive contribution to the success of these firms, it would probably be an exaggeration to say it has been a major factor behind the outstanding performance of

these firms.⁵ Lessons from the experience of Taiwan with SMEs go beyond this institutional set-up, and include the opportunity of simulating some of the conditions that transformed SMEs into very dynamic agents of economic development.

Diagram 5-1 Guidance System for SMEs



Source: Chung-Hua Institute for Economic Research, Taiwan.

IV. CONCLUSIONS: POSSIBLE LESSONS FOR LATIN AMERICAN AND CARIBBEAN POLICIES TOWARDS SMEs

The general conclusion of the present paper is that SMEs' success is a result of three broad factors. First, Taiwan combined a sound macroeconomic environment with a systemic approach to growth, adequate planning and incentives to export, and commitment to technical progress, education and equity. Of course there is no better support for firms, be they large or small, than the sound long-term growth of the economy as a whole. Second, SMEs have specialized in sectors where smallness was turned into a virtue. Among other elements, SMEs have largely benefitted from "cooperative capitalism", which in its "Chinese version" (and unlike the Japanese/Korean model) consists of informal networks of firms, linked by regional, family, social and cultural relationships. Third, and less important than the above as a factor of success, SMEs have positively benefited from a set of official institutions and policy instruments that have helped them to cope with the disadvantages of smallness.

The Taiwanese experience as described in this report can be a source of inspiration to Latin American policy makers in many ways. This chapter concerns possible lessons regarding the strengthening of SMEs' contribution to economic development.

Of course, one country's experience is only partially reproducible in others. This basic principle fully applies to the exercise presented in this chapter. There are huge differences between current Latin American economic, social, cultural, political, geopolitical and institutional conditions, and those which led Taiwan down to its particular economic path. Economic conditions, for instance, involve not only differences in resource endowments and other rigid aspects, but also differences in industrial organization and entrepreneurial systems, which for reason of structural rigidity are hardly a matter for possible emulation. Moreover, Latin America is made up of very different countries, and the applicability of the various aspects of Taiwan's experience will differ from one country to another.

It is therefore important not to confound explanatory factors of success with lessons that at least to some extent can be reproduced in other countries, as not all such factors can serve as lessons to Latin America. This chapter concentrates on those that may have some reasonable applicability, if not to every Latin American country, at least to some of them.

A list of twelve possible lessons is presented in this chapter. The first four are not specific to SMEs, and refer to the first of the success factors just mentioned, namely the general economic environment that has been of the utmost importance for the performance of all firms, SMEs included.

The next seven refer to the third of the explanatory factors of success. Two are introductory lessons regarding the workings of government agencies specifically directed at supporting SMEs. Then come five lessons regarding five specific areas of support, namely marketing, management assistance, technological assistance, finance and cooperative systems.

Finally, "business networks", the spontaneous (non-government supported) form of cooperative capitalism in Taiwan, is taken as a lesson for possible emulation by governments and private agencies in Latin America.

1) On the general economic environment level, three basic lessons can be drawn from the Taiwanese case. First, a "virtuous circle" of rapid growth requires macroeconomic stability, based on sound monetary, fiscal and exchange rate policies. Positive rates of interest can stimulate savings with apparently no great harm to investment, within a restricted financial system that allows for control of international flows of financial capital and maintenance of a stable rate of exchange. Second, seeing to the welfare of rural workers through some sort of land reform and through agricultural investments and extension services may be not only conducive to equity but also functional for growth. Third, investing in human capital —education, technical training, health, housing, nutrition— provides high rates of economic return and productivity increases in the long run, in addition to equity and social stability.

2) Commitment to continuous growth through a developmentalist state that carefully manages a diversified and dynamic system of selective incentives helps to reduce market failures and uncertainties and to orient economic activities toward growth and competitiveness. For a long time the lack of foreign exchange was a key factor in selective government intervention, and in this area much can be learned by Latin American countries that are recurrently short of foreign exchange. Anticipatory evaluations of foreign exchange problems and a basic concern with international competitiveness have been central elements of economic policies in Taiwan.

3) "Outward orientation" can be an important tool for competitiveness. In the case of Taiwan, it has meant continuous product and market diversification, increasing domestic value-adding and technological upgrading of the export basket, and has greatly helped Taiwan to cope with international market fluctuations and with changes in international competitive conditions. Though Taiwan's "outward orientation" may be more applicable to Latin American countries with small domestic markets than to countries like Brazil, the real lesson here may apply to all countries, and consists of carefully planned exposure to international competition. Taiwan's experience may inspire all Latin American and Caribbean countries towards a "competitiveness orientation" —rather than an "outward orientation", a strategy that may better suit smaller countries— no matter what weight the domestic market may have in growth strategies vis-à-vis exports.

4) Three aspects of the Taiwanese institutional set-up for selective intervention should be kept in mind by Latin American policy makers. First, incentives have been provided on a temporary basis and made conditional on performance, on which there is a reasonable follow-up. Second, the nature and the array of promotional incentives change constantly, based on a dynamic and pragmatic attitude towards past success and errors, and towards current and anticipated new needs. Third, government institutions that formulate the proposals for incentives and carry out promotional activities are formed by well-trained officials, tend to be small and efficient, and tend to be restructured from time to time to adapt to changing circumstances and needs.

5) Specific government support to SMEs cannot be said to have been a determining factor in the overall success of their performance in Taiwan, as the major reason lies in the general environment (economic, social, institutional, etc.), and in the singular entrepreneurial system existing in Taiwan (networks, sub-contracting, center-satellite, etc.). Moreover, specific policies directed to SMEs in most cases have affected only part of the universe of SMEs. Notwithstanding, government support seems to have been efficient in its various areas of application and to have alleviated market failures that

hinder access of SMEs to fundamental productive factors. There are three complementary lessons here. First, one should not have excessive expectations regarding the role of SMEs policies. Second, one can nevertheless expect such policies to increase efficiency in the economic system when they are properly applied. And, third, the fact that SMEs in Taiwan can count on a very supportive entrepreneurial environment (networks, center-satellite systems, etc.) leads one to assume that SMEs policies may be more needed in Latin America than in Taiwan, and, perhaps most important of all, that such policies should include simulating a proper entrepreneurial environment when that does not already exist or is underdeveloped.

6) As mentioned before, policies specifically directed at SMEs have been gradually developed over time. SMEs' guidance system now includes a legal statute approved by Congress, establishing rules and instruments for assistance, and a set of agencies that are responsible for planning, supervising and/or executing initiatives. Private-sector participation in the supervisory boards of these institutions is a common practice, as recovery of costs for service rendering.

In order to access lessons from the operation of the agencies that belong to this institutional set-up (see Diagram 1 in chapter III for a description of this set-up), it is useful to look at it according to the five basic functions it performs, namely *marketing, technical guidance, management, finance and cooperation system*.

7) *Marketing*. As noticed before, a vast array of economic and institutional factors explain the great success of SMEs in exports. Though there is no set of export policies specifically directed at SMEs, the existing ones have been helpful to all exporters, including SMEs. Such is the case with the *China External Trade Development Council, CETRA*. It is the most important trade institution in Taiwan, and deserves careful study by Latin American countries that wish to promote exports. It is especially useful to SMEs.

CETRA is jointly sponsored by the government and by industrial and commercial associations and provides services in market development, research and trade-related consulting services, information services, exhibitions, convention services, design promotion and trade education. Services are not free, but CETRA provides them on a non-profit basis. As scale counts in building up an infra-structure like CETRA's (approximately eighty liaison offices around the world, a large building for permanent trade exhibition by taiwanese firms in Taipei, etc.), it might be useful for groups of Latin American countries to combine their efforts on sub-regional basis. For instance, the Mercosur countries and the Andean-Pact countries might build up similar systems in joint efforts that might well have the financial assistance of multilateral financial agencies such as the World Bank and the IDB.

8) *Management assistance*. There are various ways SMEs can get management assistance in Taiwan in the 1990s, as in this field private firms and individual consultants have been gradually establishing themselves in Taiwan and now operate on large scale. The most important government agency directed at this kind of assistance is China Productivity Center (CPC). It was established in the 1950s to disseminate know-how on management and on technical matters, and has been a prominent center for excellence in consultancy on productivity and quality issues at times when this kind of knowledge was scarce in Taiwan; it provides training and consulting services to government and firms. It still performs a number of governmental tasks concerning planning, institutional-building, training and information dissemination in the areas of productivity and quality control. With regard to direct consultancy to firms, competition with private consultants and the rapidity of technical progress and of changes in management know-how obliged CPC to do a thorough restructuring in the early 1980s, and to up-date its services. At present, it is considered a model of competitive consultancy provided by a government

institution. A 50% grant is provided in special cases to SMEs, through a special government budget. But apart from that, day-to-day operations aim at avoiding subsidies, and staff wages are basically paid out of the revenues from the services that are provided. Two lessons to Latin American policy makers stem from this experience. First, an institution similar to CPC may be a very useful tool for disseminating the best management practices in the productive system. Second, institutions have to change over time to adapt efficiently to the needs of changing environments.

9) *Technical assistance and vocational training.* SMEs in Taiwan also receive a quite substantial support in technical assistance and in vocational training. It should be noticed that these are the two elements in their "production function" at which they mostly require support, as they are rarely involved with R&D —to the exception of some highly capitalized medium-sized firms at high-tech industries.

There is a satisfactory supply of technical assistance to SMEs in Taiwan. Apart from private consultants, many governmental R&D centers are one way or another involved in different kinds of technical assistance, including "on-site" technical support on current production difficulties, information services, laboratory tests, design support, etc. The government runs four main centers that have among their central targets industrial extension purposes: The Taiwan Electrical & Mechanical Engineering Services, the China Technology Consultants, Inc., the Metal Industry Research and Development Center and, most important of all, the Institute for Technology Research, ITRI.

Taiwanese take great pride in ITRI, on good grounds. It operates a large part of the government research in Taiwan. Six thousands employees, of which nearly half have either master's or doctoral degrees, covering eleven major technological fields: Electronics, Opto-electronics, Computer & Communications, Chemicals, Energy, Mechanical Industries, Materials, Measurement Standards, Pollution Control, Safety & Health and Aviation & Space.

Though its major task is research —in 1993 alone it was granted 186 patents in Taiwan and another 91 patents abroad— it accomplishes a wide range of training and technical services, in all of its major fields. In 1993 ITRI provided 42 thousand persons with technical training, and performed 38 thousand technical services to over 9 thousand companies, a great number of which were SMEs.

This capacity of ITRI of keeping a close contact with current —and often quite simple— needs of the industrial sector is a remarkable aspect of its functioning. Latin American countries should implement similar mechanisms of systematic diffusion of technology to SMEs. It should be noticed at this point that there seems to be no reason other than political will for failure of these to develop in Latin America. Most of the services that are needed by SMEs do not require pioneering technology, and there already exists in the region an abundant supply of the technical knowledge that is required to extend such services to SMEs. The crux of the matter seems to be the development of instruments that allow supply and demand of extension services to match. For instance, much can be done to intensify the use of the existing network of Technology Institutes and of independent consultants, especially in the more advanced countries in the region. As to the least developed ones, they could make use of the supply that exist in the neighboring countries of higher relative development.

Vocational training has also been given high priority in Taiwan. It includes the three main categories of services aimed at complementing regular education, namely pre-service, on-job services and job-transfer training programs. A high percentage of the Taiwanese labor force that work in SMEs and in large firms have participated in one way or another in the Vocational programs. The number of training agencies expanded from

160 in 1966 to 837 in 1992, and the yearly number of trainees gradually grew from some 54 thousand to nearly 350 thousand over the period.

The most important lesson coming from the experience of Taiwan with vocational training is that it is a matter of government concern and high priority, under the protection of a "Vocational Training Law", and under the jurisdiction of the "Vocational Training & Development Administration of the Council of Labor affairs, at the Ministry of the Interior. It includes private as well as public vocational training, and is treated as a dynamic area of activity, prompt to expand into new services. A good example of the latter is the case with the drawing-up and implementation of training programs under the request and supervision of the influential Industrial Development Bureau (Ministry of Economic Affairs), which teams with the various industries aiming at future industrial development and in line with human resource development required by the "Industrial Upgrade Statute", the formal Taiwanese Program dedicated at developing high-tech industries.

10) *Finance*. As mentioned before, approximately half of total finance to SMEs comes from the "curb market", and the other half comes from special state-owned "Small Business Banks". Since recommending the replication of such specialized banks in Latin America may sound heretical during the present wave of privatization and financial liberalization, interest is concentrated in an experience that has no major ideological and political constraints, namely the one with the Medium Business Credit Guarantee Fund, SMBCGF.

SMBCGF aims at alleviating the problem of having a very fragmented financial market (and a large informal market), and assists firms having difficulties in putting up collateral for the formal credit market. It functions efficiently with a small staff, operates in a decentralized manner through the Small Business Banks, and contracts out consultancy services from the semi-governmental "Small Business Integrated Assistance Center" (which works for the Credit Guarantee Fund and many other clients) as well as with other consultants. Though it is only partially selective, the SMBCGF model might be adapted to Latin American countries for wholly selective credit purposes. For instance, traditional guarantee problems in financing exports, R&D, automation, and rationalization of the production process could be alleviated through the operation of a Fund molded on the experience of SMBCGF.

11. *Cooperation systems (I)*. Taiwan's highly cooperative capitalism comprehends four major aspects. Three of them are "government-made", namely a set of 74 Industrial Parks (of which three are Exporting Processing Zones), a Science-based Park and a Center-satellite system; the fourth aspect, which was described in chapter III, is the overall existence of informal business networks. We first comment on the government-made ones.

a) Taiwan's 71 industrial parks and 3 export processing zones show that important externalities arise from planning the location of manufacturing firms. Though it represent only part of total manufacturing output in Taiwan, the private and social (regional and national) benefits provided by the externalities they have created are reckoned by specialists to have been very important to Taiwan's economic development. Private benefits relate to appropriate and controlled prices of land, infra structure (electricity, water, roads, etc.) and economies of agglomeration (linkages with neighboring firms, reduction in the cost of special public facilities, collective access to capital, technology, management, etc.); regional benefits relate to increased local fiscal revenue and employment; and national benefits relate to suitable space-distribution of economic activities and coordination of economic policies regarding the spatial distribution of sectors (petrochemicals, shipbuilding, etc.). Latin American policy makers may benefit from this experience by studying the general criteria for the establishment of the industrial

parks and their management methods. Policy makers can also learn from Taiwan's self-criticism of past mistakes, implicitly shown by recent changes in the rules for industrial parks (introduced through the replacement of the 1960 Statute for the Encouragement of Investment with the 1990 Statute for Upgrading Industries).

b) The Hsinchu Science-based Industrial Park (HSIP), the only industrial park managed by the National Science Council, is an extraordinary example of cooperation between government and the private sector in selected branches (a "picking-winners-with-free-entrance-and-exit" sort of industrial policy). The government has attracted high-tech companies by providing the favorable business environment, land at a reasonable price, tax incentives, closeness to two large universities, means of attracting expatriate scientists and technical experts, R&D grants, industrial park administration and a number of management services (in return of 0.25% of sales revenues). Over 160 firms have invested and brought together the physical assets, technology and highly skilled labor for fast-growing production (nearly US\$ 7 billion in 1994), in pioneering industries such as integrated circuits, computers and peripherals, telecommunications, optoelectronics, precision machinery and materials and biotechnology. The most industrialized Latin American countries should study this model (which was based on a selection of similar industrial parks around the world, and is mainly a combination of Silicon Valley in the United States and Taiwan's exporting zones) and adapt it to local circumstances in order to foster some highly promising potential industries.

c) The Corporate Synergy Development Center (CSD) serves the purpose of bringing firms together in cooperative center-satellite systems. As was mentioned above, Taiwan's cooperative networks seem to be similar to Italy's —i.e., family enterprises which integrate on an informal basis— and only to a very small extent emulate Japanese and Korean pyramidal and formal center-satellite networks. CSD is an attempt to expand this other model of cooperative business in Taiwan. The 2,000 firms already registered under 150 systems get basic guidance and assistance services in cooperation, such as quality control activities, training and exchange visits and seminars activities, guidance in cooperative management, quality, cost and delivery. CSD is now going into advisory services on "mergers and acquisitions", a new component of its operations aimed at increasing overall efficiency in each center-satellite system. Latin American policy makers should look carefully at the workings of this CSD. High inflation rates and a number of other historical factors have been responsible for a "conflictive mode of operation" in firms in Latin America, and there is a great need to promote a cooperative business attitude in a number of branches that demands high integration between "center" factories (upstream producers of basic materials or down stream assemblers) and "satellite" factories.

12) *Cooperation systems (III)*. Last, but not least, a powerful motive for emulation might be found in the way firms in Taiwan are informally integrated in cooperative networks other than that of the Center-satellite model. As noticed in chapter III, SMEs in Taiwan make are reckoned to highly increase efficiency and flexibility through region-and-family-types of cooperation networks that very positively affect financing, marketing and productive functions of the firms.

To be sure, this spontaneous Taiwanese version of business networks was not the result of government policies, just as in Italy a similar industrial organization is also largely a result of social and cultural factors for the most part not dependent on government intervention.

However, the fact that such networks are not a natural development of Latin American industrial organization does not mean higher cooperation on an informal basis cannot be promoted. The key to developing such cooperative systems —and achieving

externalities from reduced transaction, information and technology costs— is to use the existing network of business associations, on a regional and sectoral basis, along with direct selected instruments and incentives to coordinate efforts that lead to the best use of the benefits of regional and sectoral cooperation.

Conditions for building up and expanding cooperative systems of SMEs are present in Latin America. Governments, especially with the help of local authorities (regional, municipal, etc.) can do a lot in this area, exercising coordinating and catalytical functions so as to stimulate private association of the different regions to make use of network externalities. Of course the organization of district networks stand as the natural candidate to this exercise, not only because proximity and economies of agglomeration matters in terms of efficiency in productive and marketing functions, but also because firms are more easily organized in business associations at district or city levels.

Notes

¹ This chapter draws heavily on Karl Dahlman and Ousa Sanatikone (1993).

² The phenomenon is described by some authors as "V shape" curve theory on the history of SMEs weight in Taiwan.

³ Theoretically SMEs have limited access to finance, due to a lack of collateral; they have limited access to markets (especially to international markets), due to high information and transaction costs; complementary to the latter, they are price-takers as buyers, frequently facing oligopolies in the markets for their inputs, and they also are price-takers as sellers, frequently facing oligopsonies in their selling markets; they lack scale and scope, a cost factor that sometimes puts them at a big disadvantage against large firms, and frequently acts as an absolute entry barrier to all SMEs; and they have limited access to technology, because they spend relatively little on R&D, and are usually short of technicians and skilled labor.

Notice that lack of scope is not necessarily a disadvantage; theoretically it can turn out to be an advantage. A small firm is not constrained by the need to diversify production to make use of economies of scope, as large firms frequently are. Hence, whenever no economies of scale prevail a small firm can easily specialize in a single product, or in very few products, and therefore have low average production costs for their "product mix".

At least two other theoretical advantages of smallness can be added. First, the size of SMEs tends to give them production flexibility, allowing them to adjust quickly to changes in demand conditions. This is due to characteristics intrinsic to their nature (such as "informality" relating to labor costs and taxation, avoidance of hierarchy in decision-making, low fixed costs, etc.), and automation may help but is not indispensable. Second, whenever they get together in industrial districts or in some kind of network, they can reduce the information and transaction costs typical of small and isolated firms, and they can also increase flexibility.

⁴ Assuming that: a) all curb market loans go to SMEs; b) SMEs only get loans from domestic banks (and none from the money market and the capital markets), and c) 40% of loans by domestic banks go to SMEs (approximately as in Yang's estimation).

⁵ Perhaps more important than government policies specifically directed at SMEs, it seems that SMEs have been able to share with large firms the eventual benefits of successful industrial promotion, as is the case with export incentives given to all firms, irrespective of size, or with education and vocational capabilities which upgraded the quality of labor throughout the industrial system as a whole, both at large and small firms.

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