Industrial Growth and Small and Medium-sized Enterprises:

The Case of Taiwan

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Introduction

The role of Small- and Medium-sized Enterprises (SMEs) in Taiwan's postwar economic development has attracted much attention in recent years. Some believe that they have played a more important role in Taiwan than that in elsewhere, and that their relative importance meant that Taiwan's postwar growth path has been close to that of free-market capitalism[1]. The fact that Taiwan has fared much better than her neighbors in the Asian financial crisis has made this view ever more popular. It is further argued that the abundance of SMEs made Taiwan's economy more flexible and hence more resilient to crisis[2]. Some revisionists, of course, have raised doubt about this claim[3]. This paper will try to assess this claim, by examining the role played by the SMEs in Taiwan's postwar economic development.

The differences in policies and their effects on the SMEs in subsequent periods will be investigated as well. The government had been using public enterprises to undertake initial investment and production in heavy industries, where private capital was reluctant to enter at the early period due to high risks at that time. Thus, compared with the way the Korean government promoted its big business, *chaebol*, the Taiwan government had been a bit more reserved in its promotion of large private enterprises. Whether this difference in policy helped the SMEs to prosper in Taiwan relative to Korea needs to be studied in more details. That is, their weight relative to the big business and the role of government policy will be evaluated.

It is usually argued that the overall weight of SMEs will decline as industrialization advances, because large industries favor large enterprises, or as Marx

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[1] For a preliminary discussion, see Wade (1990: 66-70).
[2] See for example, "In praise of paranoia: A survey of Taiwan", *Economist*, November 7, 1998, and "The flexible tiger", *Economist*, January 3, 1998.

said that capital has a tendency to become centralized. It is found, however, that the relative weight of SMEs in Taiwan's economy has not been declining over the last two decades in Taiwan. The possible explanations will also be investigated in the paper.

Policy implications of this study will be discussed. Lessons from Taiwan's experiences in this regard will be derived, so as to see if they are applicable to other economies.

2. The role of the SMEs in Taiwan

2.1 The size distribution of firms

Among small-scale production, it is useful to distinguish three different kinds of operations-- household production, the very small establishments (e.g., less than ten workers), and the small factories, the definition of which varies. As noted in Ho (1980: Ch. 2), non-factory manufacturing employment tends to be dominant at the early stage of transition from an agricultural to an industrialized economy, and its weight declines as the transition progresses. In the case of Taiwan under Japanese colonial rule, the ratio of non-factory to total manufacturing employment declined from 75% in 1915 to 25% in 1940. It became non-significant after the industrialization began in earnest in the 1950s.

Household production became more prevalent again in Taiwan when it first started exporting labor-intensive products in the 1960s and 1970s. However, in the postwar period, the government's industrial census usually does not include this type of

[3] Amsden (1991) and Wade (1990: 66-70).

establishments. The coverage of the second type is better but probably always far from complete. Since the first and second type of small operations is especially abundant in Taiwan, the problem of underestimating the share of SMEs can be particularly great. Since this problem of underestimation probably applies to most countries, especially LDCs, it is difficult to assess its extent and its effect on our results.

There are indeed numerous SMEs in Taiwan. Let us first study a snapshot of Taiwan's economy in 1997. The total number of enterprises in all sectors amounts to a little over one million, and 98% of them are SMEs. On the other hand, the size of the population is a little less than 22 millions, out of which a little less than ten millions are in the labor force. Thus, out of the employed one in ten is a head of an enterprise, however small. This is, of course, a very significant figure. It tells us that the business experience is widespread among the population, and SMEs are prevalent. From Table 2.1, it can be noted that the number of enterprises has increased faster than population from 1983 to 1997.

Table 2.1 Ratio of enterprises to population in Taiwan

		1983	1990	1997
1	Total # of enterprises (in thousand)	706.5	818	1043
2	Total # of SMEs (in thousand)	696.4	794.8	1020
3	Share of SMEs in total (2/1) (%)	99	97	98
4	Total population (in thousand)	18733	20353	21683
5	Size of labor force (in thousand)	7266	8423	9432
6	Ratio of population to # of enterprises (4/1)	26.52	24.88	20.78
7	Ratio of labor force to # of enterprises (5/1)	10.28	10.30	9.04

Source: MOEA (1998), *White Paper on Taiwan's SMEs*.

Out of the more than one million enterprises in 1997, about 15% of them are in the manufacturing sector and 62% in the commerce sector. It shows a commerce sector full of small merchants of various types. This is not unusual for a developing country. Small enterprises were also important in activities other than manufacturing, such as trade, construction and services in this period.

The attention on SMEs, however, is usually focused on those in the manufacturing sector, which is at the center of an economy's industrialization drive. The SME is supposedly better motivated by the profit motive than the bureaucratic large enterprise, while the large enterprise is believed to enjoy both static and dynamic economies of scale and scope. According to Schumpeter (1948), only large oligopolistic enterprises are capable of undertaking sustained R&D activities, unlike the small firms. The SME is more beneficial to the distribution of income, however.

Thus, the size distribution of manufacturing firms is the major concern here, as is the case elsewhere in the literature. Table 2.2 and 2.3 lists the size distribution of firms in the manufacturing sector in Taiwan from 1954 to 1996.

The definition of SMEs varies among countries and studies. In Taiwan, different government agencies use different criteria and hence show different results[4]. Table 2.2 and 2.3 is derived from the census data, which was taken by the government every five years in Taiwan. The data in these two tables starts from 1954, but data reliability is a problem for the years of 1954 and 1961. For industry classification system had been changed since then. Some activities such as repairs and services were included in the category of manufacturing. Thus, the employment share of enterprises with less

[4] The Bureau of SMEs, the Ministry of Economic Affairs (MOEA), has its series of data on SMEs. It uses the size of capital employed by the enterprise for classification, and the threshold value of paid-up capital has been changed several times during the last few decades[4]. Since the valuation and the capital-intensity of the enterprise change significantly over time, this is not the most reliable way to measure changes in the share of SMEs.

than 10 employees was at 31% in 1961 and declined to 12.8% in 1966. The decline represents more of the change in classification than that of actual share. Thus, only the data from 1966 onward can be utilized with more confidence.

If we define a SME as a firm with less than 100 employees, then from Table 2.3 we can note that the SMEs' share of manufacturing employment in Taiwan was 42.7% in 1966, then declined somewhat in the next five years, and then began to increase continuously from 1971 and reached 58% in 1996. The share of very small firms (with less than 10 employees) has increased significantly in the last ten years as well, from 10.4% in 1986 to 16.4% in 1996. As a result, the average size of the enterprise in terms of the number of employees has been declining in the last two decades.

From some international comparisons as cited in Acs (1992: Table 1) and in Hu and Schive (1998: Table III), the SMEs' share of manufacturing employment in Taiwan was just about average among the sample countries in the 1960s and 1970s. As mentioned above, SMEs' share has been increasing significantly since 1971 in Taiwan, therefore, its figure became close to the top in the late 1980s. This is somewhat contrary to the common perception that Taiwan's SMEs have been especially important in the earlier stage of industrialization. We shall discuss this question further in the next section.

In sum, we find that Taiwan's SMEs indeed have been abundant and its number still increasing. In the manufacturing sector, however, SMEs' share has not been particularly high in Taiwan when compared to that of the other countries in the 1960s and 1970s. What is more peculiar is the fact that this ratio has been increasing and become higher than most of the others in the late 1980s.

Problems with data

Before proceeding to explain this set of stylized fact, it is necessary to discuss the reliability of the data used. For example, the finding discussed above that the employment share of SMEs in Taiwan was not particularly high in the 1960s and 1970s, the period of fast export-led growth, seems contrary to our casual empirical observation. For it was the time that Taiwan's SMEs exported increasing volume of labor-intensive products to the industrialized countries, especially the US. The results may need to be qualified due to data problems, though it will be difficult to tell the extent of the problems.

Coverage. The coverage of the census, of course, is always a problem. Whether the extent of the coverage has been consistent over time and how much is left out each time are always questions that often raised but not easily answered. These questions indeed have been raised in the case of Taiwan's census, but again it is difficult to evaluate the extent of the problems.

Modern putting-out system. It is believed that the importance of non-factory manufacturing has declined to almost non-significance after the 1950s, as suggested by Ho (1980). However, after the export orders arrived in large quantity since the late 1960s, a different sort of non-factory manufacturing emerged. Many of the labor-intensive tasks were done in a putting-out system. The government even had a slogan, "the living room as the factory"[5]. This type of putting-out, of course, differs from that of the more traditional ones that were prevalent in the early 20th century in Taiwan. The product is usually geared for the American or European market, and thus requires more advanced materials, workmanship and management. What matters for our discussions here is that this type of work done in the households may not have

[5] See CEPD (1978).

been counted in the census, and therefore the share of SMEs may have been underestimated. This underestimation may have been particularly great for the period of the 1960s and 1970s, during which labor-intensive products dominated exports.

Business Group. The share of SMEs has been increasing in Taiwan since the 1970s. This is also the time that the importance of labor-intensive production has been declining in Taiwan's exports and industries. Thus, this increasing trend is especially puzzling. One factor, which may partly explain it, is the growth of the business group[6]. The size of the business group has been increasing during this period. (See Table 2.?) For tax and other purposes, the large enterprises in Taiwan tend to spin off new companies when expanding rather than simply enlarge the scale of its core company. Thus, some of the new SMEs may have affiliation, which makes them less than independent. There have been few studies of Taiwan's business groups; therefore it is difficult to assess the extent to which it affects the SMEs phenomenon[7].

SMEs and exports

One of the reasons why it is generally perceived that SMEs have been particularly important in Taiwan's industrialization is because of the role they played in Taiwan's export-led growth. As mentioned above, at this first stage of export-led growth, labor-intensive products make up the major part of Taiwan's exports, and it is believed that many of the labor-intensive works were done by the SMEs and by homeworkers in the putting-out system. The exact extent to which it is true, of course, is not clear, because there is no good data and few studies done on this matter.

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[6] Chou (1988) studies changes in Taiwan's aggregate concentration ratio from 1970 to 1980. He finds that ACR did not change much in that period, but suspects that group affiliation that was unpresented may alter the results.

[7] Hamilton and others have studied East Asian business group, but from a sociological perspective; see Hamilton (1997). His hypothesis regarding the evolution of family ownership pattern will be discussed

However, many industry case studies show that Taiwan's export industry relies upon a network of SMEs to undertake export production. Some of the studies will be discussed in section 2.4.

If we look at the composition of exports, there is no doubt that labor-intensive products dominated in the 1960s and 1970s. Their relative importance declines as industrial upgrading takes place since the 1970s. The share of some labor-intensive sectors, such as apparels, wood products, footwear, plastic and rubber products and miscellaneous products, began to decline since the 1980s.

There is no official data on the share of SMEs in exports before the 1980s. The MOEA's SME data series began in 1982, using the amount of paid-up capital employed. This series is shown in Table 2.4. It shows that the share of SMEs in manufactured exports declined from 75% in 1982 to 51% in 1997. However, this series seems to give rather high estimate compared to results from other surveys. Nonetheless, it is consistent with our perception that SMEs have been important in the early stage of export-led growth.

The Bank of Taiwan has a series of survey regarding SMEs' export propensity over the years[8], and its results are listed in Table 2.5. It shows that SMEs' export propensity was a little above 50% in the 1970s, and then rose to over 70% in the early 1980, and then declined continuously in the 1990s and reached 32% in 1994. The decline clearly reflects the fact that most of the labor-intensive export production has moved abroad since the late 1980s.

It is, however, not such an easy task to define export propensity. The Industrial Census data is supposedly the most reliable source regarding industrial structure. Unfortunately, the census only asked about the firm's export activity in the census

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in section 3.2.

[8] Bank of Taiwan, *Financial Survey of Taiwan's Industries*, various years, Economic Research Department, Bank of Taiwan.

taken in 1986 and 1991. Table 2.6 lists the firm's export propensity listed by manufacturing sub-sectors with data from the census. It is in general consistent with the findings from the survey data listed in Table 2.5.

There can be a reasonable explanation though. Many of the SMEs are subcontractors to the large enterprise, which export directly. Since they know that the components they produce go into export products, they sometimes classify themselves as exporting firms, that is, indirect exporters. Thus, depending upon whether indirect export is included or excluded, the firm's export propensity can vary greatly. It is plausible that the census data does not include indirect export, while the survey data does.

It should be briefly mentioned here that Taiwan is famous for its network of SMEs. That is, instead of a vertically integrated production under a single enterprise, various SMEs, linked by an informal network, undertake many of the industrial activities. As mentioned above, many SMEs are subcontractors for large enterprises. Their relationship is usually informal, relatively stable but not exclusive[9]. For many labor-intensive products, such as footwear, most of the processing works are done separately by subcontracting SMEs. The producer who finally assembles all components together and exports the final product may or may not be a large enterprise.

It is likely that, as the share of labor-intensive products in Taiwan's exports declines the role of SME as the final assembler and direct exporter is getting less important. For as Taiwan upgrades its industries and raises its technological capabilities, its industry is getting closer to the world frontier. Thus, it probably takes larger enterprises to succeed in the fiercely competitive international market. That is, the direct exporters now are the large enterprises. This helps to explain the decrease in the

[9] TIER (1993, 1994).

share of SMEs in Taiwan's exports and the decline in SMEs' (direct) export propensity in recent years. The rise of their share in total employment, however, needs separate analysis.

Results of some case studies of industries will be presented below, to supplement the data at the aggregate level, which has been shown to be inadequate.

2.4 Case studies

When Levy (1991) studies the footwear industry in South Korea and Taiwan, he finds that both industries have been successful in the global market. He finds, however, that the industrial structure of the footwear industry differs in the two countries; Korea relies upon chaebol (conglomerate), while Taiwan on SMEs. For example, the total export value of footwear in 1983 was US$1.3 billion in Korea and $1.8 billion in Taiwan; while the number of exporting firms was 50 in Korea and 884 in Taiwan[10]. Levy concludes that the two different set of institutions developed in Korea's and Taiwan's footwear industries was each an efficient adaptation to the given initial conditions and circumstances. Why did the SMEs develop more readily in Taiwan? Levy cites more abundant prior commercial experiences in Taiwan as one of the possible explanations. Cheng (1996) studies Taiwan's footwear industry and finds that it relies on a network system to divide up the work.

Taiwan's bicycle sector has been a very successful industry and one that is dominated by SMEs[11]. The industry began under import substitution policy, and grew by leaps and bounds when export opportunities came in the early 1970s. The industry was able to emerge and rise to the occasion, partly because of the learning accumulated during import substitution helped. Moreover, in response to the sudden

[10] From Levy (1991) Table 3, p.154.
[11] See Chu (1997a) and Chu and Li (1996).

arrival of large export order from the US around 1972, numerous SMEs were able to emerge in short notice around the same time to achieve an economy of agglomeration, so that a network of bicycle assemblers and parts producers could be established. This industry of SMEs had also been assisted by the government’s industry-promotion policies, such as setting up and checking product and export standards, and subsidizing R&D, etc.

Chu and Li (1996) compare the development patterns of the bicycle industry in Taiwan and South Korea. They again find that the bicycle industry in Taiwan has been dominated by SMEs, unlike the case in Korea, where the number of firms in the industry is much smaller. Table 2.7 provides some statistics on the bicycle industry in Taiwan and Korea.

Table 2.7 The Bicycle Industry of Taiwan and South Korea

	# of enterprises		Exports (000sets)	
	Taiwan	Korea	Taiwan	Korea
1970/71	279	89(3)	270	4
1980/81	541	74(6)	3338	276
1990/91	1307(92)	67(4)	10686	849

Note: The # of enterprises include bicycle assemblers and parts producers, the number in bracket refers to that of assemblers.

Source: Chu and Li (1996).

Causes of Taiwan’s SMEs phenomenon

Even though the exact extent of SMEs' importance may be hard to pin down, there is no doubt that they have been particularly active in Taiwan's postwar development.

Thus, the question arises as to what causes the Taiwan's SMEs phenomenon. When Levy (1991) studies the footwear industry in South Korea and Taiwan, he finds the industrial structure of the footwear industry differs in the two countries; Korea relies upon chaebol, while Taiwan on SMEs. Why did the SMEs develop more readily in Taiwan? Levy cites more abundant prior commercial experiences in Taiwan as one of the possible explanations. Thus, we shall now turn to a discussion of the initial conditions.

Initial conditions

It is known that one crucial prior condition for successful industrialization is that the agricultural sector has to undergo substantial productivity growth so as to make possible substantial surplus transfer to the industrial sector. In capitalist economy, it also implies significant commercialization of the agricultural sector. The composition of the landlords versus the farmers will have an important influence on the character of the consequent industrialization.

Merchant tradition. Overseas trade has always been an important part of Taiwan's economy for the period before the Japanese occupied the island in 1905. The Dutch set up a trading post in the south of the island for a brief period in the 17th century. Other Western merchants entered after the Ching dynasty was forced to open up ports for trading since 1858. Besides, smaller-scale junk trade had been active among Chinese merchants between Taiwan and other parts of southern China and Southeast Asia for this period. Sugar and tea were the most important items traded.

Rice and sugar colony. During the Japanese occupation period, significant productivity improvement occurred in Taiwan’s agricultural sector from mid-1920s to

the 1940s[12]. When it first occupied the island, the colonial government undertook a cadastral survey and established private ownership of land, paving the way for subsequent marketization. Japanese government first wanted to use Taiwan as the production base to supply sugar to Japan; and later also as the base for providing rice to Japan. Both attempts had been successful.

Rice and sugar accounted for about 50-70% of Taiwan's total exports. Over 90% of Taiwan's sugar were exported, and by 1930s, about half of Taiwan's rice output was also exported; and almost all of them went to Japan. What concerns us here is the increasing degree of commercialization of the agricultural sector in Taiwan during this period. Since rice is a staple food locally, exporting almost half of it implies that there is a substantial amount of surplus produced due to productivity increase, and that agricultural production has been heavily commercialized.

Marketization. Ho (1978: 67) calculated the ratio of agricultural surplus as a percentage of total production from 1911 to 1940. Agricultural surplus is defined as total agricultural output minus farms' own consumption. Part of his results are represented below:

Table 3.1 Agricultural Surplus, 1911-40

	1911-15	1916-20	1921-25	1926-30	1931-35	1936-40
AS/Output	54.5%	53.3%	60.5%	65.2%	70.9%	70.8%

Source: Ho (1978: 67)

In a traditional or self-sufficient agricultural economy, peasants would consume a major portion of their own output and supply very little to exchange with others. Thus, their livelihood does not depend upon the market. Commercialization or

[12] See Ho (1978: Ch. 4).

marketization means producing and supplying for the market, and abandoning self-sufficiency. From the results shown in Table 3.1, we can see that the degree of commercialization has been increasing rapidly and reached a very high level under the Japanese occupation. This experience of commercialization is also widely and evenly spread due to the smallholder system of Taiwan's agricultural sector.

Postwar surplus transfer. After the Nationalist government came after the WWII, the agricultural sector continued to be highly marketized, though in a different manner. The government's land reform, especially the "land to the tiller" program, made the land ownership more evenly distributed among numerous small holders. It taxed the farmers heavily to extract and transfer the surplus out into the industrial sector. Besides direct taxation, the government also had a compulsory fertilizer barter program, which required the farmer to obtain fertilizer from the government and to pay for it by selling back rice at a barter rate of exchange unfavorable to the farmers[13]. The farmer had to purchase other inputs from the market.

Though the agricultural sector did successfully provide the surplus necessary for industrialization, the financial situation of the farming sector was not particularly well off. As industrialization began to spread, the farming sector also began to supplement its income from non-farm activities.

Spatial dispersion. For the rural infrastructure was well developed in Taiwan, many rural communities had easy access to manufacturing employment or putting-out opportunities[14]. Many of the very small-scale enterprises really are family businesses. Therefore, the widespread commercial experiences and a system of smallholder certainly should have helped to pave the way for the emergence of SMEs.

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[13] Kuo (1983: Ch. 3) called this "hidden rice tax". She found that this "hidden rice tax exceeded the total income tax of the whole economy many years before 1963" (p. 34).

[14] See Ho (1979).

Policy issues and institutional factors

History has repeatedly shown that merchants do not automatically turn themselves into industrial entrepreneurs. Many prosperous European cities in the Middle Ages had thrived on international trade and perished when trade diverted. Many port cities in China had similar experiences during its long dynastic history. Thus, the commercial or market experiences prior to postwar industrialization certainly should have been one of the necessary conditions for subsequent development, but it cannot be a sufficient condition. Government policies unquestionably have played an important role.

Room factors. When the Nationalist government came in 1945, it was able to take over the largest industrial enterprises left by the Japanese, for almost all of them were owned by Japanese. It then turned the more important ones into public enterprises. Thus, the government was able to control a major portion of industrial activities in the earliest stage of postwar industrialization. For political reasons, it was more cautious in fostering private enterprises, unlike the way the Korean government went out its way to promote the private chaebol. Since public enterprises are as a rule much less expansionist than private ones, and the growth of private business groups was somewhat restricted (though still promoted) by the government; there was more room left for the SMEs to grow.

Table 3.2 lists the distribution of industrial production between public and private enterprises. Table 3.3 records the annual growth rates of public and private industrial production. From Table 3.2, it can be noted that the share of public enterprises in manufacturing production started at a very high level, 56% in 1952, and declined to less than ten per cent in recent years.

The case of the petrochemical industry illustrates how the government's policy

works in this regard[15]. The government started promoting the petrochemical industry in the 1960s, when the private sector was still reluctant to participate. It let a public enterprise, China Petroleum Company, to undertake the most upstream naphtha cracking production. The government also was responsible for deciding which private company would get allotted how much feedstock to undertake mid-stream production. In this regard, the government has been consistently egalitarian in its distribution decisions. The feedstock from the CPC's naphtha crackers was distributed among as many independent firms as possible. The Formosa Plastics Company's, the largest conglomerate in Taiwan, request to build its own naphtha cracker was repeatedly turned down (before it was finally granted in the late 1980s). One of the reasons cited for the denial of request was not to allow monopolization of upstream supplies so as to leave rooms for smaller firms.

This policy of preserving large public enterprises continued till the late 1980s. At that time the policy switched to one of gradual privatization. The pace of privatization has been slow though, because of resistance from labor and various other difficulties. Nonetheless, it meant that for all this time SMEs in Taiwan had more room than otherwise, if not for this policy.

When the Nationalist government retreated to Taiwan in 1949, it brought the whole bureaucracy with it. Thus, at that time, other things being equal, rooms left for the local elite to participate in politics were much restricted. Their energy hence was mainly directed toward economic activities.

Export promotion policies. When the government switched policy regime from that of import-substitution to that of export-promotion around 1960, various measures were adopted to facilitate export activities. The whole trade system, including tariff and non-tariff barriers, however, basically remained in place. The major changes

[15] See Chu (1994, 1997b).

consisted of the reform of the exchange rate system and exceptions or expediencies made for export activities[16].

The unification of the dual exchange rate and elimination of exchange quotas increased significantly the exporters' earnings in local currency. The tariff rebate program, bonded factory warehouses, and exemption of various other levies allowed the exporter basically faced international market prices when purchasing equipment and other inputs from abroad, and thus eliminating one major competitive handicap in global competition. Export loan program also made export financing readily available to SMEs. All these expediencies were available to all exporters, large and small. Thus, SMEs, which usually have much more limited resources than the large enterprises, are particularly helped by these export-promotion measures.

Dualistic financial system. Biggs (1991) finds that the dualistic financial system in Taiwan helped it solve several important development problems. "First, the government-controlled banks helped policy makers limit private economic power, foster industrial policy, and control inflation. Second, the curb market helped credit intermediaries allocate fund to 'information-intensive' borrowers at a lower cost and more efficiently than would have been possible in all investable resources were channeled through formal sector banks". (168-69)

A three-tiered credit market emerged. At the top were exporters, which get subsidized rates, then the large firms, which paid the bank general loan rates, and on the bottom were the majority of the SMEs, which had to seek relatively high-cost finance in the informal credit market. (p. 176) Exporting SMEs could get subsidized export loans though.

Even though the formal credit market kept out the SMEs, the government made efforts to make sure the informal market would effectively provide financing to this

[16] See Lin (1973: Ch. 3).

thriving part of the economy. The government “acquiesced to the unrestricted development of an active curb market” (p. 180), and intervened on various occasions to secure the efficient working of this market.

Flexible regulations. As mentioned above, in the early stage of export-led growth, the government even advocated “the living room as the factory” to encourage homeworkers to participate in the export processing production. Actually, a lot of other production activities, such as small-scale metal works, plastic products, and other polluting type of production activities, also took place in some family living rooms, some legally some not. Many of the industrial establishments were in the rural area as well. The government essentially had been extremely flexible in terms of zoning regulation. The government was remarkably accommodating toward any profit-making activities, especially export oriented ones.

There was almost no environmental regulation until the late 1980s. It occurred only after the local environmental movement erupted on a large scale and forced the government to draft regulations for the first time. The labor front has similar stories. The government had tight controls over labor unions until the labor movement erupted in the late 1980s. The government also only began to slowly build up the social welfare system since the late 1980s. In sum, the state paid most attention to make sure export activities could proceed smoothly, while ignoring most other aspects of social life. The government's export-promotion efforts did not discriminate against SMEs at all, thus helping them to prosper in Taiwan's postwar export-led growth.

Evolution of family ownership pattern. Hamilton (1997) finds that kinship dynamics affects the size and strategy of Taiwan’s business group firms. According Chinese customs, males in the family may often decide to divide up the inheritance, and the core businesses of the family group may become disintegrated as a result. Thus, to avoid such likely disintegration, the founders of firms may elect to diversify

by establishing new firms in unrelated area, and allocate inheritance accordingly. One side effect of this kinship dynamics is that the number of SMEs may keep increasing, while the size of the business group may not increase as much.

Conclusion

It has not been easy to assess the role played by the SMEs in Taiwan's postwar development. Consistent data series are lacking for us to discern the trend of changes clearly. The overall importance of SMEs is supported by various evidence, but the details vary. During the late 1960s and 1970s, Taiwan's export growth relied very much upon labor-intensive products, which were mainly produced by the SMEs. Numerous case studies of labor-intensive export industries all confirm that. The Small Business Bureau statistics also show that the SMEs were mainly export-oriented during this period.

In recent years, the Small Business Bureau statistics show that the SMEs have switched from export-oriented to domestic-market-oriented. Survey data from the Bank of Taiwan also confirm this change. It is consistent with the fact that labor-intensive production has mostly moved overseas since the late 1980s. However, the census data shows that the share of SMEs in total manufacturing employment has been rising continuously since the 1980s. This is somewhat perplexing. The census data ignores the business group connection though, which has been growing in recent years. Globalization and labor shortage may also lead larger firms to reduce the size of their local operation. This requires further investigation, of course.

Case studies of certain industries, such as footwear and bicycle, clearly show that SMEs played an important role. Compared with the Korean industrial structure,

Taiwan's corresponding part has greater number of small firms.

As to the causes of Taiwan's SME phenomenon, there are two important factors. The one is the initial conditions. The other is the influence of policies.

Due to its geographical position, trade has always been an important part of Taiwan's economy in the last few centuries. Thus, the merchant tradition started early. It was also found that Taiwan's agricultural sector was transformed and became not only commercialized but also export-oriented during the later half of the Japanese occupation. The sector was also composed of numerous smallholders; thus making the market experiences widely felt. The postwar land reform made the pattern of land holding even more fragmented. The well-developed rural infrastructure also made industrial employment opportunities easily available to rural communities.

On the other hand, merchants do not turn into entrepreneurs naturally. Government policies also played a role in making rooms for the SMEs to grow in Taiwan's postwar development. The government used public enterprises to promote heavy industries and restricted the growth of large enterprises. This policy helps to leave more room for the SMEs, for the public enterprises are much less aggressive than large private firms. The export-promotion policy measures were also available to small firms. The government's effort in accommodating export activities helped small firms particularly. Thus, even though the government may not have helped SMEs directly and individually, like it did to some large firms, it certainly created room and opportunities for the SMEs to prosper by exporting.

Besides these two factors, the openness of the global market (especially the American market) to labor-intensive exports also matters. It gave room for the other factors to take effect. It probably took the interaction of these three factors to give rise to the Taiwan SME phenomenon. The policy issue can be studied and emulated, but the other two may not.

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Table 2.2 Size Distribution of Manufacturing Firms in Taiwan- by number of enterprises

Year	No. of Employee (%)						Total Number of Enterprises
	1-9	10-29	30-99	1-99	100-499	500+	
1954	90.73	6.87	1.84	99.44	0.50	0.07	42,288
1961	89.49	7.51	2.26	99.25	0.62	0.13	51,567
1966*	72.11	13.45	11.66	97.22	2.31	0.47	27,709
1971	68.66	18.26	8.51	95.43	3.82	0.75	42,636
1976	68.12	18.02	9.11	95.26	4.10	0.64	69,517
1981	69.88	16.99	8.93	95.80	3.63	0.57	93,225
1986	63.60	21.92	10.50	96.03	3.54	0.43	113,639
1991	66.06	22.91	8.61	97.58	2.12	0.30	140,572
1996	70.00	21.04	7.03	98.07	1.67	0.26	154,872

Source: Industrial and Commercial Census of Taiwan-Fukien District of the R.O.C., 1954, 1961, 1966, 1971, 1976, 1981, 1986, 1991, 1996.

Note : Data refers to manufacturing enterprises; only those of 1981 use the number of plants. For each years, the data refers the size distribution of enterprises in terms of the number of enterprises.

*Due to change in size distribution used in the census, the data of 1966 is classified into 1-9, 10-19, 20-99, 100-499 and 500+.

Table 2.3 Distribution of Manufacturing Firms in Taiwan- by Share of Employment

Year	No. of Employee (%)						Employment	Average Number of Employees Per Firm
	1-9	10-29	30-99	1-99	100-499	500+		
1954	-	-	-	-	-	-	-	-
1961	31.07	14.09	12.43	57.58	14.03	28.39	454,272	-
1966*	12.82	8.53	21.37	42.72	22.52	34.77	589,660	21.28
1971	9.45	10.52	15.65	35.62	28.25	36.13	1,201,539	28.18
1976	10.11	10.78	17.66	38.55	30.20	31.25	1,907,581	27.44
1981	10.68	11.62	19.54	41.84	30.11	28.05	2,247,381	24.11
1986	10.42	14.95	22.49	47.86	28.09	24.05	2,753,944	24.23
1991	14.06	19.66	22.76	56.49	21.29	22.23	2,665,435	18.96
1996	16.35	20.42	21.17	57.94	19.21	22.85	2,553,107	16.49

Source: Industrial and Commercial Census of Taiwan-Fukien District of the R.O.C., 1954, 1961, 1966, 1971, 1976, 1981, 1986, 1991, 1996.

Note : Data refers to manufacturing enterprises; only those of 1981 use the numbe of plants. For each years, the data refers the share of the number of employ

*Due to change in size distribution used in the census, the data of 1966 is classified into 1-9, 10-19, 20-99, 100-499 and 500+.

Table 2.4 The Share of SMEs in Taiwan's Manufactured Exports

Unit: 100 millions of US $

Year		All Industries	SMEs	The Share of SMEs(%)
1982	Total	222.04	154.71	69.68
	Manufacturing firm	144.33	106.13	73.53
	Trading firm	77.71	48.58	62.51
1983	Total	251.22	159.27	63.39
	Manufacturing firm	163.29	109.26	66.90
	Trading firm	87.93	50.01	56.87
1984	Total	304.56	180.45	59.24
	Manufacturing firm	197.96	123.79	62.53
	Trading firm	106.60	56.66	53.15
1985	Total	307.17	188.00	61.20
	Manufacturing firm	199.66	128.97	64.59
	Trading firm	107.51	59.03	54.91
1986	Total	397.89	264.09	66.37
	Manufacturing firm	258.63	181.17	70.05
	Trading firm	139.26	82.92	59.54
1987	Total	535.34	358.99	67.06
	Manufacturing firm	347.97	246.27	70.77
	Trading firm	187.37	112.72	60.16
1988	Total	605.85	363.53	60.00
	Manufacturing firm	393.80	249.39	63.33
	Trading firm	212.05	114.14	53.83
1989	Total	662.01	407.67	61.58
	Manufacturing firm	430.31	278.98	64.83
	Trading firm	231.70	127.69	55.11
1990	Total	672.14	385.22	57.31
	Manufacturing firm	436.89	264.26	60.49
	Trading firm	235.25	120.96	51.42
1991	Total	761.78	433.33	56.88
	Manufacturing firm	495.16	297.27	60.04
	Trading firm	266.62	136.06	51.03
1992	Total	814.70	455.56	55.92
	Manufacturing firm	529.56	312.52	59.02
	Trading firm	285.14	143.04	50.16
1993	Total	850.91	465.10	54.77
	Manufacturing firm	551.96	319.07	57.81
	Trading firm	297.21	146.03	49.13
1994	Total	930.49	489.08	52.56
	Manufacturing firm	604.82	335.52	55.47
	Trading firm	352.67	153.56	47.15
1995	Total	1,116.88	565.67	50.65
	Manufacturing firm	725.97	388.06	53.45
	Trading firm	390.91	177.61	45.44
1996	Total	1,159.42	576.80	49.75
	Manufacturing firm	753.62	395.69	52.51
	Trading firm	405.80	181.11	44.63
1997	Total	1,220.98	595.43	48.77
	Manufacturing firm	793.64	408.47	51.47
	Trading firm	427.34	186.96	43.75

Source: Table 5-1, White Papers on Taiwan's SMEs.

Table 2.5 Export Propensity of the Manufacturing Firm

Unit: %

Year	Export Ratio of All Firms	Export Ratio of SMEs
1985	30.73	68.89
1986	30.46	66.49
1987	29.32	62.31
1988	26.44	46.07
1989	22.49	35.41
1990	22.90	39.78
1991	23.21	38.59
1992	20.62	34.88
1993	22.30	33.69
1994	23.49	37.43
1995	26.58	32.52

Source: Financial Surveys of Taiwan's Industries, Bank of Taiwan, various years.

Table 2.6 Export Ratio of the Manufacturing Firms by Sectors

Unit: %

Manufacturing Sectors	1986	1991
Food Manufacturing	26.29	19.41
Tobacco Manufaturing	0.10	0.62
Textile Mill Products	48.14	36.49
Wearing Apparel & Accessories	78.81	58.18
Leather & Fur Produdcts	71.39	55.12
Wood & Bamboo Products	40.81	24.61
Furniture & Fixtures	70.99	49.68
Pulp, Paper & Paper Products	7.66	10.57
Printing Processings	5.42	4.05
Chemical Matter Manufacturing	22.12	26.79
Chemical Products	11.02	13.43
Petroleum & Coal Products	5.56	3.27
Rubber Products Manufacturing	45.56	42.73
Plastic Products Manufacturing	52.50	32.99
Non-Metallic Mineral Products	19.77	10.40
Basic Metal Industries	11.68	9.69
Fabricated Metal Products	39.40	24.54
Machinery & Equipments	34.58	25.86
Electrical & Electronic Machinery	66.80	53.83
Transport Equipments	26.60	17.40
Precision Instruments	64.83	59.71
Misc. Industrial Products	70.74	56.34

Source: Industrial and Commercial Census of Taiwan-Fukien District of the R.O.C., 1986, 1991.

Table 3.2 Distribution of Industrial Production by Ownership

Unit: %

Year	Industrial Production		Manufacturing Production	
	Private	Public	Private	Public
1952	43.40	56.60	43.80	56.20
1953	44.10	55.90	44.10	55.90
1954	47.30	52.70	50.30	49.70
1955	48.90	51.10	51.30	48.70
1956	49.00	51.00	51.70	48.30
1957	48.70	51.30	51.30	48.70
1958	50.00	50.00	52.80	47.20
1959	51.30	48.70	54.80	45.20
1960	52.10	47.90	56.20	43.80
1961	51.80	48.20	54.70	45.30
1962	53.80	46.20	57.70	42.30
1963	55.20	44.80	59.40	40.60
1964	56.30	43.70	61.10	38.90
1965	58.70	41.30	63.20	36.80
1966	61.80	38.20	66.70	33.30
1967	65.30	34.70	71.20	28.80
1968	68.90	31.10	75.30	24.70
1969	70.60	29.40	77.30	22.70
1970	72.30	27.70	79.40	20.60
1971	79.50	20.50	84.70	15.30
1972	80.90	19.10	86.00	14.00
1973	81.10	18.90	86.20	13.80
1974	80.40	19.60	85.90	14.10
1975	81.20	18.80	85.80	14.20
1976	81.30	18.70	86.60	13.40
1977	80.80	19.20	86.00	14.00
1978	81.50	18.50	86.20	13.80
1979	81.50	18.50	86.00	14.00
1980	81.80	18.20	86.20	13.80
1981	82.50	17.50	87.00	13.00
1982	80.30	19.70	85.50	14.50
1983	81.35	18.65	86.58	13.42
1984	82.28	17.72	87.41	12.59
1985	82.31	17.69	87.67	12.33
1986	83.54	16.46	89.00	11.00
1987	83.69	16.31	89.23	10.77
1988	82.93	17.07	88.62	11.38
1989	82.93	17.07	88.71	11.29
1990	83.16	16.84	89.40	10.60
1991	83.96	16.04	90.31	9.69
1992	83.76	16.24	90.09	9.91
1993	83.07	16.93	89.49	10.51
1994	83.51	16.49	90.00	10.00
1995	84.30	15.70	91.12	8.88
1996	84.43	15.57	91.64	8.36
1997	84.90	15.10	92.12	7.88

Source: Taiwan Statistical Data Book, various years.

Table 3.3 Annual Growth Rate of Industrial Production

Unit: %

Year	Industrial Production		Manufacturing Production	
	Private	Public	Private	Public
1953	36.80	25.70	42.90	32.10
1954	15.40	0.80	25.00	-5.10
1955	16.70	10.50	16.00	11.90
1956	5.70	5.40	3.40	4.30
1957	13.50	12.30	10.00	12.20
1958	7.10	4.00	9.10	2.30
1959	15.60	8.30	16.70	8.40
1960	11.50	9.20	14.30	6.60
1961	31.00	10.70	35.40	10.40
1962	11.80	3.80	12.30	-
1963	11.80	5.70	13.70	5.60
1964	24.20	18.10	27.70	18.50
1965	21.20	10.10	19.80	10.30
1966	21.70	6.80	22.80	4.80
1967	23.60	6.10	25.00	1.70
1968	28.80	9.70	32.30	7.10
1969	22.70	13.10	25.60	12.40
1970	23.20	13.70	25.60	11.00
1971	28.60	11.90	30.50	9.80
1972	23.40	12.40	24.70	11.60
1973	16.50	15.00	17.80	16.80
1974	-5.30	-0.90	-6.20	-4.20
1975	9.40	4.40	9.00	1.60
1976	24.50	23.80	25.30	27.40
1977	12.40	15.90	12.40	19.70
1978	26.20	19.50	26.50	22.00
1979	8.50	8.40	7.00	8.50
1980	7.60	6.20	6.90	5.10
1981	5.20	-0.30	4.70	-2.40
1982	-4.20	1.90	0.80	2.30
1983	13.11	10.93	14.18	11.44
1984	13.21	6.24	13.46	5.52
1985	2.68	2.52	2.85	0.37
1986	15.86	6.10	16.99	2.87
1987	10.82	9.55	11.36	8.77
1988	3.26	9.13	2.91	9.51
1989	3.85	3.24	3.87	2.24
1990	-0.01	-1.19	-0.02	-6.39
1991	8.45	2.51	8.58	-1.60
1992	4.36	5.11	3.78	5.55
1993	2.70	8.82	1.57	9.33
1994	7.29	3.93	6.46	0.69
1995	5.18	-0.80	5.76	-7.25
1996	1.63	0.90	2.62	-3.68
1997	8.06	3.63	9.06	1.54
Ave. 1953-1960	15.29	9.53	17.18	9.09
Ave. 1961-1969	21.87	9.34	23.84	8.85
Ave. 1970-1986	12.99	9.28	13.68	8.79
Ave. 1987-1997	5.05	4.08	5.09	1.70

Source: Taiwan Statistical Data Book, various years.
Industrial Production Statistics Monthly, various years.