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SMEs in the Philippine manufacturing industry and globalization: meeting the development challenges*

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In view of rapid changes in the international trade and the growing complexity of the global production system, this paper reviews the government's small and medium enterprises (SME) policies in the manufacturing sector. It shows that despite the number of policies and programs to improve firm competitiveness, the performance of SMEs has not been vigorous enough to boost the manufacturing industry. The deepening of high-technology industries has remained weak due to limited backward linkages and low value added of high-technology export products. The paper also draws on the findings of a survey of SMEs in the automotive, electronics, and garments sectors. It highlights the importance of creating a separate government office that would coordinate SME policies and programs to support the integration of SMEs in the global production chain.

JEL classification: L60, L53
Keywords: Small and medium enterprises (SMEs), Philippine manufacturing, competitiveness, global production networks

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1. Introduction

Marked disparities in income across regions have persisted in the Philippines. In 2002-2006, the mean real per capita regional income for the country's 17 regions is about Php 14,000 (based on 1985 level). The highest is that for the National Capital Region (NCR), with a real per capita income of Php 34,000, about 2.5 times the mean value and ten times the lowest value of Php 3,300 registered in the Autonomous Region in Muslim Mindanao (ARMM). Far second to NCR is the Cordillera Administrative Region (CAR), with mean income of Php 18,000. Northern Mindanao and Calabarzon (Cavite, Laguna, Batangas, Rizal, and Quezon) have around Php 14,000; Davao and Central Visayas have Php 13,000 while MIMAROPA (Mindoro, Marinduque, Romblon, and Palawan) follows with mean income of Php 12,000. Given the wide imbalances in regional incomes, gaps between regions increased from 0.06 in 2002 to 0.07 in 2006.

To reduce the regional income gaps and stimulate economic growth, the government strategy, as indicated in the Medium Term Philippine Development Plan (MTPDP), has focused on the development of urban centers outside NCR. These urban centers are encouraged to grow and become attractive investment destinations and alternative investment sites to NCR. To achieve this, the government will promote and develop small and medium enterprises (SMEs), which are seen as the key to boost the country's local and regional economies.

There is wide recognition that SMEs play a critical role in the economic growth and industrial development of developing countries worldwide. SMEs contribute substantially to the economy in terms of number of enterprises and workers. Given the rising globalization trend and increasing economic integration in East Asia, SMEs could serve as potential suppliers of outsourced parts and services. As such, they could provide the link to the export sector and/or global production networks (GPNs), which have increasingly grown in sectors such as automotive, machineries, electronics, and garments. SMEs could also provide nonfarm opportunities, particularly through manufacturing activities that make use of locally available inputs, thus strengthening the country's industrial structure.

Since SMEs compose the bulk of Philippine manufacturing enterprises, any improvement in their capabilities is important in both economic and social aspects. Strengthening the linkages between multinational corporations and SMEs can yield many benefits to the country, e.g., increasing value added and employment; diffusion of new technology, skills, and management; and access to world markets. Linkages can also promote local supplier clusters, which are important in enhancing SME competitiveness and productivity.

The main objective of the research is to review existing government promotion policies and programs and assess their impact on SME competitiveness and performance. The paper also aims to examine the impact of these policies and programs on the creation of linkages between SMEs and multinational corporations (MNCs) along with regional production networks as well as SMEs and large domestic corporations. The National Statistics Office Census and Survey of Manufacturing Establishments are the main data used in the analysis. A survey-interview of SMEs was also conducted to bolster the findings.

The paper is structured as follows: section 2 presents the analytical framework while section 3 reviews government SME policies and programs that helped shape the development of SMEs in the Philippine manufacturing industry. Section 4 assesses the economic performance of SMEs while section 5 looks into the creation of linkages with large domestic corporations, multinational corporations, and global/regional production networks. Section 6 analyses the survey results, and finally, section 7 concludes the paper and recommends policy changes and measures that the government may implement to improve SME competitiveness and develop and strengthen SME linkages.

2. Analytical framework

Two operational definitions of small and medium enterprises obtain in the Philippines: employment-based and asset-based. The former—the most widely used in the country—defines the different size categories as follows:[1]

Small enterprises: 10-99 employees

Medium: 100-199 employees

Large: 200 or more employees

Enterprises with 1-9 workers are considered as microenterprises and they are not covered by the SME definition.

As of January 2003, the SME Development Council defined the size categories in terms of total assets as follows:

Small enterprises: Php 3-15 million

Medium: Php 15-100 million

Large: Php 100 or more

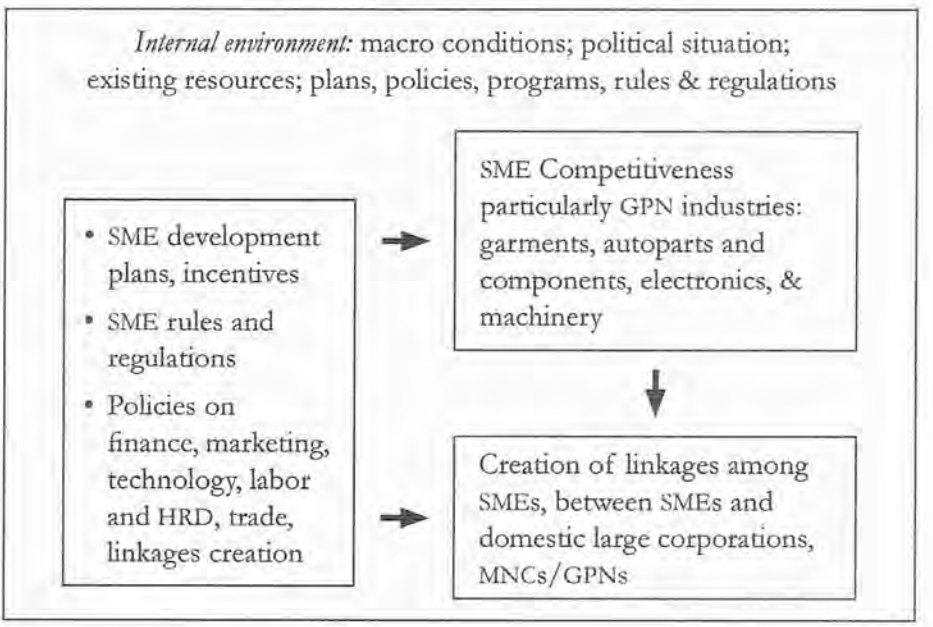
Enterprises with total asset worth of Php 3 million or less are classified as microenterprises.

[1]National Statistics Office and Small and Medium Enterprise Development Council Resolution No. 1, Series 2003.

Figure 1 presents the general framework that will be used in the analysis. It should be pointed out that in order to take advantage of the opportunities arising from globalization, domestic firms must be linked with the global production networks of industries. The creation of these backward linkages would increase the domestic value added of MNCs and lead to significant contributions to the domestic economy. Meaningful participation in GPNs would require domestic-firm competitiveness in terms of price, quality, and delivery along with country-level competitiveness in terms of providing adequate infrastructure and logistics support and good investment climate.

Figure 1. Analytical framework

External environment: Globalization – trade and investment liberalization, increasing economic integration through bilateral and regional trading arrangements, regional/global production networks (GPNs)



Both internal and external environments affect the growth and development of SMEs. The external environment refers to the rising globalization trend characterized by trade and investment liberalization along with the increasing economic integration through regional (ASEAN +3, ASEAN +6) and bilateral agreements (such as the Japan-Philippines Economic Partnership Agreement).

In response to globalization, industrial organizations have been reorganized into regional/global production networks. Under GPNs, the labor-intensive segments of technologically complex production are separated from the capital- and skill-intensive segments. These labor-intensive segments are located in developing countries linked through subcontracting or outsourcing arrangements. GPNs are commonly found in trade in automotive, electronics, machinery, and garments and textile industries. All these external developments can pose both risks and opportunities to SMEs. Outsourcing and subcontracting offer opportunities for developing countries to participate in the complex production chain. But at the same time, with the removal of trade and investment barriers, the entry of competing imports or more competitive global players in the domestic market would increase competition, which might affect the survival of relatively smaller, less competitive, and what used to be highly protected firms in the domestic economy.

Participation in GPNs can provide domestic firms access not only to markets but to newer technologies as well. To increase their overall competitiveness in international markets, lead multinational firms provide their local affiliates and local suppliers with more rapid technological upgrading and greater attention to quality control, cost control, and human resource development. This can, in turn, encourage other foreign investors to cluster in the same area. The interplay of factors such as cutting-edge technology, exporting in competitive markets, and clustering of foreign investors can generate substantial spillovers and externalities [Moran 1998]

While electronics and automotive are classic examples of producer-driven commodity chain, textiles and garments are buyer-driven commodity chain. Producer-driven commodity chains are characterized by capital- and technology-intensive industries, where MNCs play the central role of coordinating production networks, including their backward and forward linkages. The production system is FDI-driven and multilayered, covering thousands of firms, from parent companies to subsidiaries and subcontractors. Each layer in the system is characterized by a specific production process located in a particular country [Gereffi 2001; Austria 2006].

On the other hand, buyer-driven commodity chains are characterized by globally dispersed production networks, predominantly locally owned and typically located in developing countries. Large retailers, branded marketers, and branded manufacturers from developed countries play as strategic brokers in linking overseas factories to product niches in the consumer markets of developed economies [Gereffi 2001]. In the production system, marketers link

retailers to manufacturers, and this results in horizontal integration and trade in differentiated products [Austria 2006].

The internal environment refers to the macroeconomic condition, political situation, resources, infrastructure, peace and order, and economic policies and regulation. All these comprise the overall business environment, which is an important determinant of firm competitiveness and foreign direct investment. Changes in the internal environment will affect the operations, growth and development of SMEs as well as the creation of linkages with large domestic companies and MNCs.

SME policies and programs are formulated and implemented primarily by national government agencies. Local government units (LGUs) also affect SMEs; in particular, they can provide incentives to SMEs by reducing taxes, fees, and other charges. Private-sector groups, industry associations, and nongovernment organizations also affect SME performance, operations, and growth. Close coordination is important among these different groups in order to prevent duplication of efforts toward more efficient implementation of programs and policies.

In assessing the impact of SME policies, it should be noted that SMEs are not a homogeneous group, and policies have different effects on different firms. SMEs may be classified into three, depending on the firms' market orientation and international activity:

- Domestic-oriented SMEs are firms that do not have international activity and are at risk if full trade liberalization is implemented. The government needs to help them improve their competitiveness and be able to compete in a market where there is no tariff protection.
- Internationalized subcontracting or supplier SMEs are firms that have links with MNCs or with large domestic companies that are export oriented. This group can become drivers of economic integration and transfer of skills and technology. The main challenge is how to expand existing links and develop new ones.
- Exporting SMEs are firms that export directly or through intermediaries. The challenge is how to maintain their competitiveness and help them identify and take advantage of opportunities.

Existing SME programs and policies implemented by different national and local government agencies as well as private-sector initiatives all affect SME competitiveness and linkage creation, especially with large domestic corporations, MNCs, and production networks. The competitiveness of SMEs is also crucial in developing linkages with MNCs. In deciding whether to source

locally, import, or bring in their foreign affiliates, MNCs' decision will depend on the existing and potential competitiveness of local suppliers relative to foreign ones. If SME costs are very high and the outcome is uncertain, MNCs would not be willing to enter into local linkages.

The initial base of technical and managerial capabilities and skills in local firms is therefore a crucial determinant of linkages. Also important is the willingness and ability of local firms to upgrade them. This depends not only on the firms but also on the support by government institutions and ability of suppliers to act jointly.

Different types of linkages and spillovers can be created between MNCs and domestic firms. Vertical linkages may be backward or forward. Backward linkages arise when firms source raw materials and intermediate products or services from domestic companies. On the other hand, forward linkages are created when domestic-based companies sell goods or services to other Philippine-based companies. Horizontal linkages arise when firms cooperate in production. Other spillover effects develop through best-practice demonstration and diffusion or when experienced workers move to local companies or form new Philippine-based spin-off firms (see Barry [2005]).

3. Review of the government's SME promotion policies and programs

Since the 1970s, the Philippine government has devoted considerable effort to support and promote SME development through a variety of schemes and agencies and numerous programs and policies (see Tecson [2004] and FINEX and ACERD study) on financing, market improvement, technology transfer, and entrepreneurship. During the '70s, a period characterized by government protectionist policies such as high tariffs and import controls and restrictions, SMEs did not grow as substantially as large enterprises because of two major factors: (a) very few SMEs made use of the incentives and services[2] available to them, and (b) formal lending bodies had very little involvement in SMEs because of the perceived risks and high costs associated in processing and supervising their projects.

In the '80s, SMEs started to confront a more competitive business environment due to the trade liberalization policies carried out by the government. During this period, the government adopted market improvement strategies to increase market access and expand the domestic market of SMEs. To achieve this, the government focused on the creation of subcontracting linkages, provision of financing and guarantees to exporters as well as common

[2]Note that investment incentives during this period were biased in favor of large enterprises.

market facilities, market intelligence and information access, and identification of local market centers and rural transport facilities.

In the '90s, the government SME policy concentrated on market access, export expansion, identification of specialization, entrepreneurship and management, technology and quality systems, and domestic linkages. The most important piece of SME legislation, the Magna Carta for Small Enterprises, was passed in January 1991. A landmark legislation, the Magna Carta aimed to consolidate all government programs for the promotion and development of SMEs into a unified institutional framework.

The Magna Carta had three important provisions: (a) creation of the Small and Medium Enterprise Development (SMED) Council to consolidate incentives available for SMEs, (b) creation of the Small Business Guarantee and Finance Corporation (SBGFC) to address SME financing needs, and (c) allocation of credit resources to SMEs by mandating all lending institutions to set aside 8 percent of their total loan portfolio to SMEs (6 percent for small enterprises and 2 percent for medium enterprises).

Notwithstanding the above support provided by the government in the previous decades, SMEs have continued to confront various challenges in the areas of human resource development, technology and research and development (R&D), and access to financing, among others. With the exception of a few export-oriented enterprises, the majority are characterized by low levels of productivity and efficiency, inability to attain economies of scale and power to influence prices, volumes, distributions, and markets.

To address these concerns, the government has embarked on a comprehensive and integrated strategy with focus on critical factors such as technology, product development, finance, training/human resource development, and marketing. According to the 2004-2010 MTPDP, credit, technology and marketing support for three million micro, small, and medium enterprises (MSMEs) will be provided along with increased lending and cluster promotion through the "Big Brother–Small Brother" program. Clustering will also be pursued to develop SMEs in the rural areas.

The most recent SME Development Plan highlights the twin strategies of credit provision and product development. A "One Town–One Product" (OTOP) Program will be pursued to stimulate economic activity especially of the SMEs, with every city or municipality in the country developing a product where it has competitive advantage.

The 2002-2004 Philippine Export Development Plan (PEDP) identified industry clustering as one of its key elements. In the 2005-2007 PEDP, the following national clusters were selected for development: micro electronics,

motor vehicle parts and components, wearables, coconut products, marine and aquatic products, food products, home furnishings, holiday decor and giftwares, construction materials and services, organic and natural products, and information technology (IT) services.

The Department of Trade and Industry (DTI) is the primary coordinator for the development of the Philippine SMEs, including microenterprises. Various government agencies have been set up as DTI-attached offices (14) and line bureaus (20) mandated to support SMEs and SME exporters. The Bureau of Small and Medium Enterprises Development (BSMED) acts as a "one-stop shop" to guide SMEs to specialized support agencies. The BSMED also acts as the secretariat to the SMED Council and is tasked to review policies and strategies for SME development. Another agency, the Center for International Trade Expositions and Missions (CITEM), was also set up to promote information and market access. DTI also has other line bureaus and support offices to assist SME exporters, such as the Product Development and Design Center (PDDC), to improve product quality and competitiveness; the Philippine Trade Training Center (PTTC) to provide trainings on export/import management, entrepreneurial development, and trade exhibition management; and the Bureau of Export Trade Promotion (BETP) to enhance their capabilities as suppliers of quality goods.

To provide SMEs greater access to capital, the SBGFC developed a lending program, known as SME Unified Lending Opportunities for National Growth (SULONG), in 2003. The program is a collaboration among government financial institutions such as the Land Bank of the Philippines, Development Bank of the Philippines, Small Business Corporation, Quedan and Rural Credit Corporation, Philippine Export-Import Credit Agency, and the National Livelihood Support Fund. Interest rates are fixed at 9 percent per annum for short-term loans, 11.25 percent per annum for medium-term loans, and 12.75 percent per annum for long-term loans. More than Php 35.3 billion (US$ 640 million) in loans have been released to 368,000 SMEs since 2003. The program has been credited with having increased credit available to SMEs, although as Tecson [2004] points out, its attractiveness has led to shortages in the supply of credit to SMEs.

Under the OTOP program, the government allocates Php 1 million (US$ 18,200) for lending to SMEs in every locality, through identified funding sources. DTI, in coordination with local government units, identifies a product or service cluster for funding support. SMEs that offer such product or service are eligible to apply for a loan with a maximum effective interest rate of 10 percent per annum.

Various DTI agencies design marketing programs to promote SME products in the domestic and foreign markets. The DTI organizes local and international trade fairs; it holds an annual National Trade Fair (NTF), a five-day, order-taking and retail-selling fair showcasing the best producers in the country. Participants, which are rigorously screened by the DTI, are provided with assistance such as raw material identification, product design, training, marketing, information dissemination, and promotion. The first NTF was organized in 1992 with 156 exhibitors; in 2004 there were 198 exhibitors featuring furniture products, toys, gifts and housewares, fashion accessories, holiday decor, and processed food.

The DTI also organizes international trade fairs like the Manila FAME International, an international exhibition for furniture, gifts and housewares, holiday décor, and fashion accessories. It also organizes the International Food Exhibition Philippines, a trade event that features the competitiveness of Filipino food products; and the E-Services Philippines, an exhibition that focuses on information technology and IT-enabled services industry.

The DTI also has training and entrepreneurship development programs to provide existing and potential entrepreneurs with the necessary skill and knowledge to become competitive players in both domestic and international markets. Business counselors are assigned in SME Centers located in regional and provincial offices to provide assistance and information on government and private-sector programs for SMEs. Business counselors are trained to assist entrepreneurs in their finance, marketing, technology, and HRD needs.

The Department of Science and Technology (DOST) is the main agency responsible for providing technology support. Through its Small Enterprises Technology Upgrading Program, it plans to help SMEs in the following areas: (a) technology needs assessment and technology sourcing; (b) provision of seed funds for technology acquisition; (c) technical training on hazard analysis and critical control points, good manufacturing practices, quality and environment management systems, and other specific skills; (d) technical and productivity consultancy services to participating firms; (e) establishment of product standards; (f) development of networks of accredited regional product-testing laboratories; (g) establishment of a packaging R&D center; and (h) design and fabrication of cost-reducing equipment.

Various agencies are involved in providing product and package design development services and technology intervention. These include the following: Product Development and Design Center of the Philippines, Industrial Technology and Development Institute, Technology Application and Promotion Institute, Metals Industry Research and Development Center, Forest Products Research and Development Institute, Philippine Textile Research Institute,

Packaging Research and Design Center of the Philippines, Bureau of Food and Drugs, Bureau of Product Standards, and Food Development Center.

While there appears to be specific programs dealing with virtually all problems confronting SMEs, several deficiencies have continued to affect efficient implementation. The World Bank [2005] pointed out problems such as poor coordination and overlapping responsibilities across agencies and programs, conflict between social and economic goals in SME policy, and poor quality of the staff in some key positions. The proliferation of agencies with overlapping and unclear responsibilities as well as conflicting interests has led to ineffective implementation. For instance, a policy to streamline SME registration was prevented by some local government authorities because of the revenue losses that it would entail.

Moreover, since SME programs try to combine both social and economic objectives, many programs suffer from lack of focus in identifying key sectors along with financing constraints. For instance, in both the SME and Philippine Export Development Plans, the priority sectors identified range from MNC-dominated high- to medium-technology sectors such as electronics, IT services, and auto parts and components to microenterprise low-technology sectors such as wearables, holiday décor, and home furnishings. As the World Bank [2005] noted, it is difficult to imagine how one agency can efficiently allocate its limited budget and resources to such a wide range of industries.

Similar issues are found in the DOST's science and technology support plan on 15 "leading edge" sectors, which Abrenica and Tecson [2003] described as an odd mixture of industries, processes, and technologies. The authors also pointed out that the plan itself lacked a clear framework, organization, and workable strategy. The World Bank [2005] concluded that while the Science and Technology Agenda for Development (STAND) program looks impressive, much of the effort remains on paper.

There are also problems with the quality of the staff in some key development planning and monitoring offices of the DTI as well as in the DOST. For instance, the DOST staff is poorly compensated and often tends to be out of touch with international scientific trends and with research being done by counterparts abroad [Abrenica and Tecson 2003].

Regarding training programs for SMEs, Fukumoto [1998] observed that many of these are only for entrepreneurs, with little emphasis on productivity improvement crucial for improving SMEs' international competitiveness. These training programs do not necessarily result in increasing SME productivity. The range of these training programs has also been limited by insufficient financial sources and lack of appropriate trainers. Moreover, technology-related

programs—the most important programs for increasing productivity—are not organized to target improvements based on productivity. Finally, the Technical Education and Skills Development Authority (TESDA), the country's main provider of training systems, is found to be poorly managed and underfinanced. As Tecson [1999] noted, the curricula of engineering and technical schools do not address the technological needs of industry and hardly receive inputs from the industrial sector.

4. SMEs in the Philippine manufacturing industry: structure, performance, and development constraints

4.1. Structure and performance

In 2003, the Philippines had a little more than 839,000 registered firms (see Table 1). Over 50 percent of the total number of SMEs are found in only two regions: National Capital Region (NCR) and Calabarzon, which account for 43 percent and 11 percent, respectively, of the total number of SMEs in the Philippines. Microenterprises, on the other hand, are relatively less geographically concentrated. Like SMEs, large enterprises are geographically highly concentrated in the NCR and Calabarzon.

Most establishments are in the wholesale and retail trade sector, notably in the micro category. As Table 2 shows, this sector accounted for 53 percent of the total number of establishments, followed by manufacturing with a share of 15 percent. Hotels and restaurants is third, with a share of 11 percent. Among SMEs, wholesale and retail trade also dominates with a share of 28 percent, followed by manufacturing with a share of 22 percent of the total number of establishments. On the other hand, among large enterprises, manufacturing comprised the bulk at 45 percent of the total number of establishments.

Despite their relatively small number, SMEs employed 32 percent of the total number of workers in all establishments. Table 3 shows that manufacturing jobs accounted for 26 percent while wholesale and retail trade comprised 22 percent of total SME employment. Among large enterprises, manufacturing jobs constituted 48 percent of the total number of jobs generated by large enterprises. For microenterprises, jobs generated by the wholesale and retail trade comprised the bulk of the total. On the whole, the manufacturing sector generated most jobs with a share of 30 percent, followed by wholesale and retail trade with a share of 27 percent of total employment.

Table 1. Total number of establishments in the Philippines by region, 2003

Region	*Total*	*Micro*	*%*	*SMEs*	*%*	*Large*	*%*
Ilocos region	49,409	47,036	6	2,334	3	39	1
Cagayan Valley	25,393	24,337	3	1,032	1	24	1
Central Luzon	91,307	84,966	11	6,080	8	261	7
Calabarzon	119,934	110,884	15	8,185	11	865	23
Bicol region	31,518	29,779	4	1,695	2	44	1
Western Visayas	47,213	43,489	6	3,600	5	124	3
Central Visayas	50,516	45,187	6	4,999	7	330	9
Eastern Visayas	22,444	21,076	3	1,335	2	33	1
Zamboanga Peninsula	28,910	27,290	4	1,580	2	40	1
Northern Mindanao	34,391	31,851	4	2,462	3	78	2
Davao region	36,588	33,304	4	3,143	4	141	4
Soccsksargen	29,817	28,184	4	1,578	2	55	1
National Capital Region	203,316	170,446	22	31,257	43	1,613	43
Cordillera Administrative Region	14,767	13,918	2	821	1	28	1
Autonomous Region in Muslim Mindanao	9,966	9,631	1	316	0	19	1
Caraga	16,584	15,663	2	884	1	37	1
Mimaropa	26,941	25,532	3	1,395	2	14	0
Total	839,014	762,573		72,696		3,745	

Source: National Statistics Office Survey of Manufacturing Establishments (2003).

Table 2. Number of establishments in the Philippines by industry, 2003

Industry sector	*Total*	%	*Micro*	%	*SMEs*	%	*Large*	%
Agriculture, hunting and forestry	5,221	1	3,141	0	1,931	3	149	4
Fishery	1,834	0	984	0	818	1	32	1
Mining and quarrying	533	0	320	0	197	0	16	0
Manufacturing	129,849	15	112,458	15	15,704	22	1,687	45
Electricity, gas and water	1,507	0	629	0	757	1	121	3
Construction	4,432	1	2,575	0	1,716	2	141	4
Wholesale and retail trade	442,312	53	421,488	55	20,465	28	359	10
Hotels and restaurants	90,637	11	82,873	11	7,690	11	74	2
Transport, storage and communications	16,099	2	11,892	2	4,012	6	195	5
Financial intermediation	25,258	3	19,136	3	6,003	8	119	3
Real estate, renting and business activities	41,482	5	35,952	5	5,082	7	448	12
Education	9,731	1	5,137	1	4,360	6	234	6
Health and social work	28,606	3	26,994	4	1,507	2	105	3
Other community, social and personal service activities	41,513	5	38,994	5	2,454	3	65	2
Total	839,014		762,573		72,696		3,745	

Source: National Statistics Office Survey of Manufacturing Establishments (2003).

Table 3. Total employment in the Philippines by size of establishment, 2003

Industry sector	*Total*	%	*Micro*	%	*SMEs*	%	*Large*	%
Agriculture, hunting and forestry	160,000	2	11,859	1	64,705	3	83,436	4
Fishery	37,917	1	3,454	0	20,327	1	14,136	1
Mining and quarrying	23,605	0	1,509	0	8,774	0	13,322	1
Manufacturing	1,959,134	30	366,210	17	538,968	26	1,053,956	48
Electricity, gas and water	99,774	2	2,674	0	38,702	2	58,398	3
Construction	189,868	3	10,942	0	61,038	3	117,888	5
Wholesale and retail trade	1,768,269	27	1,125,461	51	456,237	22	186,571	8
Hotels and restaurants	502,155	8	271,376	12	187,678	9	43,101	2
Transport, storage and communications	317,239	5	43,810	2	120,325	6	153,104	7
Financial intermediation	277,039	4	79,702	4	118,243	6	79,094	4
Real estate, renting and business activities	491,483	8	107,876	5	163,573	8	220,034	10
Education	285,274	4	21,531	1	153,255	8	110,488	5
Health and social work	163,084	3	60,812	3	52,683	3	49,589	2
Other community, social & personal service activities	199,953	3	107,062	5	57,589	3	35,302	2
Total	6,474,794		2,214,278		2,042,097		2,218,419	

Source: National Statistics Office Survey of Manufacturing Establishments (2003).

Table 4 shows that within the manufacturing industry, the large bulk of Philippine enterprises are actually microenterprises, which comprise 87 percent in 2003, with SMEs accounting for only 12 percent of the total number of manufacturing enterprises. Large enterprises cover merely one percent of total enterprises.

The number of establishments in the manufacturing industry increased from 56,047 in 1983 to 130,931 in 1999. However, the total number of enterprises declined from year 2000 up to 2002, although in 2003, this increased to roughly 130,000 establishments from 123,000 in 2002.

Despite their relatively small number, Table 5 indicates that SMEs employed around one-third of total employment in the manufacturing industry. In 2003, large enterprises contributed 54 percent while microenterprises accounted for 19 percent of total manufacturing employment. There was likewise a general decline in employment from 2000 to 2002, although a recovery is evident in 2003 as total employment rose from around 1.5 million workers in 2002 to around 2 million workers in 2003.

In terms of value added, the share of small and medium enterprises (SMEs) increased from 23 percent of the total manufacturing value added in 1994 to 28 percent in 1998 (see Table 6). However, this fell to 21 percent in 2003. Large firms contributed 79 percent of the total, an increase from its level of 72 percent contribution in 1998. In 2003, there were certain manufacturing sectors like leather footwear, wood and cork, furniture, printing/publishing, industrial chemicals, other nonmetallic, fabricated metal, and miscellaneous manufactures where SMEs' value-added contribution exceeded 50 percent of their respective industry total value added.

Table 4. Number of manufacturing enterprises in the Philippines

Year	*Micro*	*%*	*Small*	*%*	*Medium*	*%*	*Large*	*%*	*Total*
1983	50,313	90	4,512	8	505	1	717	1	56,047
1988	69,446	88	7,678	10	683	1	828	1	78,635
1994	81,554	88	9,061	10	752	1	913	1	92,280
1995	86,900	89	8,928	9	1,027	1	982	1	97,837
1999	113,861	87	14,611	11	1,137	1	1,322	1	130,931
2000	108,998	87	14,121	11	1,110	1	1,238	1	125,467
2001	108,986	88	12,627	10	988	1	1,194	1	123,795
2002	108,847	89	12,128	10	1,020	1	982	1	122,977
2003	112,458	87	14,448	11	1,256	1	1,687	1	129,849

Source: National Statistics Office Census and Survey of Manufacturing Establishments.

Table 5. Manufacturing employment by size

Year	*Micro*	*%*	*Small*	*%*	*Medium*	*%*	*Large*	*%*	*Total*
1983	186,735	21	127,450	14	70,884	8	503,498	57	888,567
1988	247,173	23	201,553	18	95,994	9	545,389	50	1,090,109
1994	287,630	24	213,979	18	105,464	9	575,809	49	1,182,882
1995	271,699	22	227,949	18	137,384	11	615,874	49	1,252,906
1999	366,689	22	361,514	22	154,992	9	791,277	47	1,674,472
2000	354,025	22	354,328	22	150,734	9	730,127	46	1,589,214
2001	353,415	23	309,952	20	136,648	9	734,088	48	1,534,103
2002	353,255	24	294,487	20	143,003	10	676,443	46	1,467,188
2003	366,210	19	363,756	19	175,212	9	1,053,956	54	1,959,134

Source: National Statistics Office Census and Survey of Manufacturing Establishments.

In the garments industry, while the value-added contribution of SMEs increased from 37 percent in 1994 to 40 percent in 1998, this dropped to 31 percent in 2003. For electrical machinery, the value-added contribution of SMEs remained almost unchanged at 8 percent in 1998 and 2003. For transport, SMEs' contribution declined from 28 percent in 1994 to 24 percent in 1998 and 19 percent in 2003.

Table 7 presents labor productivity as measured by value added per worker in the manufacturing industry for the years 1994, 1998, and 2003. On the whole, although an increase in the labor productivity of both SMEs and large enterprises was registered between the years 1994 and 1998, the same fell in 2003. For SMEs, labor productivity dropped from Php 139,000 to Php 97,000 while for large enterprises, labor productivity declined from Php 227,000 to Php 211,000.

In general, the labor productivity of SMEs has remained only about half the labor productivity of large enterprises. Some narrowing of the gap was evident in 2003. Still, SMEs suffer from low productivity. According to the World Bank [2005], the value added per worker relative to all firms was approximately 46 percent in the Philippines as compared to 64 percent in Indonesia, 65 percent in Malaysia, and 84 percent in Thailand. A closer look at the manufacturing industries would reveal that in 2003, labor productivity of SMEs was higher than that of large enterprises in the following sectors: furniture; pottery, china, and earthenware; iron and steel; fabricated metal products; and miscellaneous manufactures. Note also that in three industries—garments, electrical machinery, and transportation equipment—labor productivity declined in the three years under study.

Table 6. Value added contribution, 1994, 1998, and 2003 (in percent)

		1994		1998		2003	
	Value added contribution	*SMEs*	*Large*	*SMEs*	*Large*	*SMEs*	*Large*
Total		23	77	28	72	21	79
311	Food processing	35	65	41	59	26	74
312	Food manufacturing	28	72	55	45	34	66
313	Beverages	17	83	7	93	18	82
314	Tobacco	0	100	0	100	0	100
321	Textiles	26	74	33	67	44	56
322	Wearing apparel except footwear	37	63	40	60	31	69
323	Leather and leather products	35	65	44	56	12	88
324	Leather footwear	32	68	58	42	62	38
331	Wood and cork products	43	57	77	23	58	42
332	Furniture (wood & metal)	49	51	49	51	65	35
341	Paper and paper products	25	75	45	55	46	54
342	Printing and publishing	49	51	39	61	54	46
351	Industrial chemicals	62	38	65	35	65	35
352	Other chemicals	16	84	25	75	22	78
353	Petroleum refineries	0	100	1	99	0	100
354	Petroleum and coal products	100	0	82	18	100	0

Table 6. Value added contribution, 1994, 1998, and 2003 (in percent) (continued)

		1994		1998		2003	
	Value added contribution	*SMEs*	*Large*	*SMEs*	*Large*	*SMEs*	*Large*
Total		23	77	28	72	21	79
355	Rubber products	21	79	36	64	30	70
356	Plastic products	66	34	49	51	50	50
361	Pottery, china, and earthenware	13	87	23	77	22	78
362	Glass and glass products	22	78	18	82	26	74
363	Cement	0	100	3	97	0	100
369	Other nonmetallic mineral prods	47	53	43	57	56	44
371	Iron and steel	25	75	47	53	57	43
372	Nonferrous metal products	5	95	23	77	19	81
381	Fabricated metal products	50	50	57	43	52	48
382	Machinery except electrical	35	65	23	77	10	90
383	Electrical machinery	9	91	8	92	8	92
384	Transport equipment	28	72	24	76	19	81
385	Professional and scientific eqpt	26	74	19	81	7	93
386	Furniture of metal (1994 only)	44	56	-	-	-	-
390	Miscellaneous manufacture	39	61	53	47	62	38
Value added current prices (in million Php)		324.2		664.2		738.95	
Value added constant prices (in million Php)		147.14		221.9		192.1	

Source: National Statistics Office Census and Survey of Manufacturing Establishments.

Table 7. Value added per worker, 1994, 1998, and 2003 (in million pesos at 1985 prices)

		1994		1998		2003	
	Value added contribution	*SMEs*	*Large*	*SMEs*	*Large*	*SMEs*	*Large*
Total		0.110	0.196	0.139	0.227	0.097	0.211
311	Food processing	0.205	0.173	0.302	0.280	0.124	0.263
312	Food manufacturing	0.114	0.174	0.340	0.191	0.089	0.185
313	Beverages	0.711	0.494	0.230	0.573	0.302	0.535
314	Tobacco	0.044	0.727	0.029	1.026	0.052	0.475
321	Textiles	0.063	0.075	0.054	0.070	0.070	0.074
322	Wearing apparel except footwear	0.076	0.058	0.066	0.061	0.040	0.046
323	Leather and leather products	0.030	0.040	0.050	0.032	0.088	0.137
324	Leather footwear	0.021	0.044	0.040	0.035	0.024	0.025
331	Wood and cork products	0.057	0.062	0.085	0.041	0.041	0.044
332	Furniture except metal	0.042	0.048	0.047	0.065	0.067	0.062
341	Paper and paper products	0.100	0.218	0.135	0.202	0.139	0.160
342	Printing and publishing	0.066	0.203	0.061	0.326	0.042	0.184
351	Industrial chemicals	0.320	0.358	0.214	0.364	0.327	0.420
352	Other chemicals	0.209	0.669	0.226	0.734	0.177	0.580
353	Petroleum refineries	0.000	4.438	1.289	9.973	0.000	28.643

Table 7. Value added per worker, 1994, 1998, and 2003 (in million pesos at 1985 prices) (continued)

		1994		1998		2003	
	Value added contribution	*SMEs*	*Large*	*SMEs*	*Large*	*SMEs*	*Large*
Total		0.110	0.196	0.139	0.227	0.097	0.211
354	Petroleum and coal products	0.100	0.000	0.052	0.023	0.280	0.000
355	Rubber products	0.062	0.095	0.060	0.046	0.055	0.091
356	Plastic products	0.125	0.096	0.097	0.119	0.076	0.085
361	Pottery, china, and earthenware	0.034	0.079	0.034	0.089	0.102	0.068
362	Glass and glass products	0.180	0.371	0.101	0.259	0.131	0.204
363	Cement	0.000	0.447	0.287	0.724	0.562	0.934
369	Other nonmetallic mineral products	0.078	0.149	0.071	0.104	0.059	0.195
371	Iron and steel	0.150	0.485	0.138	0.187	0.142	0.133
372	Nonferrous metal products	0.074	0.578	0.138	0.309	0.164	0.481
381	Fabricated metal products	0.082	0.110	0.072	0.104	0.108	0.083
382	Machinery except electrical	0.053	0.105	0.076	0.229	0.061	0.198
383	Electrical machinery	0.123	0.137	0.144	0.216	0.121	0.141
384	Transport equipment	0.182	0.239	0.137	0.221	0.153	0.375
385	Professional and scientific equipment	0.159	0.056	0.099	0.054	0.091	0.110
386	Metal furniture (1994 only)	0.038	0.049	-	-	-	-
390	Miscellaneous manufacture	0.044	0.066	0.069	0.089	0.104	0.080

Source: National Statistics Office Census and Survey of Manufacturing Establishments.

4.2. Obstacles to SME growth and development

Philippine SME studies have continued to highlight the same major constraints that affect SME development everywhere such as access to finance, technology, and skills along with information gaps and difficulties with product quality and marketing.

4.2.1. Lack of access to finance

The lack of access to financing is the most difficult constraint to SME growth. The problem seems to lie not in the supply of funds potentially available for SME lending but in the difficulty of access to these funds. In theory, there should be sufficient funds for SME financing since the law requires banks to allocate 8 percent of their loan portfolios to SME financing. At the same time, government financial institutions have their own financing programs. Nevertheless, private banks are reluctant to lend to SMEs because of their general aversion to dealing with a larger number of smaller accounts [FINEX and ACERD]. Many SMEs cannot access available funds due to their limited track record, limited acceptable collateral, and inadequate financial statements and business plans.

The experience of Planters Development Bank shows that these challenges can be overcome (see Box 1). In lending to SMEs, Planters went beyond banking by providing nonfinancial services to help its SME clients strengthen their operations, which include assistance in preparing accounting records, business advising, and networking. Planters customized and designed its products and services to suit the needs of SMEs. It simplified its loan documentation and tailor-fitted loans to match borrowers' cash flow.

Box 1. Planters Development Bank: successful case of SME finance

Plantersbank is a commercial bank with 35 years of operations in the Philippines. Its experience in SME finance shows that lending to SMEs can be profitable and rewarding. Its manufacturing clients include SMEs from high-end clothing and accessories, parts for automotive and capital equipment, electrical component, furniture, and plastic packaging. Since SMEs are borrowing from a bank for the first time, Planters had to teach them how to access and properly use credit. Planters simplified its loan documentation process, tailor-fitted loans to match the SMEs' cash flow, and made the amortization schedules easy to remember. For long-term funds needed by SMEs, Planters developed the expertise to tap government special program funds to provide SMEs with stable and reasonably priced long-term funds.

Box 1. Planters Development Bank: successful case of SME finance (continued)

Planters requires its loans to be secured by good collaterals. Where loan collaterals were inadequate, guarantees were taken from government agencies. In the early years when SME guarantee facilities were not yet available, Planters set up its own credit guarantee program. With its long years of lending to SMEs, Planters was able to create its own SME credit scoring system, which led to improvements in its loan process system.

It assisted deserving applicants in the preparation of feasibility studies and reconstruction of accounting records. It also helped borrowers to correct business weaknesses that were uncovered in the course of project appraisal. Whenever opportunities arose, Planters referred its clients to prospective buyers and introduced them to suitable investors and business partners. Planters also offered the following services to its SME clients:

- Cash Management Services that were given by commercial banks only to large corporate accounts.
- Pool of consultants and business centers to provide services in the areas of marketing, accounting and finance, legal, human resources management, and taxation.
- *Business Line* is a magazine to help sharpen business knowledge and skills of SMEs
- Regular symposiums and forums to bring together industry players, experts and resource persons, including those from the academe and regulatory agencies.

In partnership with the International Finance Corporation, Planters established SME.com.ph, an Internet company, to allow its clients to sell their products to the local and world markets using web-based technology. SME.com designs and manages the websites of member-SMEs, provides a payment gateway for them, and offers Internet business solutions using the World Bank's SME Toolkit. A number of their clients increased their sales and successfully penetrated the export market via SME.com's facilities. To date, the SME.com.ph website gets an average of 36,000 hits per day.

Planters also introduced SME Proposition, a package of customized facilities offering financial services and technology solutions to help simplify the SMEs' daily administrative tasks. SME Proposition has practical accounting and time-keeping software to help SMEs automate their operations and enhance their productivity and efficiency. It comes bundled with a free desktop computer and printer to encourage SMEs to use technology in their businesses.

Box 1. Planters Development Bank: successful case of SME finance (continued)

The Plantersbank SME Industrial Park, the country's first-ever industrial park dedicated to SMEs, was recently inaugurated. This SME Industrial Park offers a strategic location, the right physical facilities and attractive investment and fiscal incentives to small and medium entrepreneurs, which before were only available to large companies. In partnership with the national and local governments, Plantersbank's vision is for the Park to become not only a regional center but also a center of SME excellence.

Source: Aguenza, Ma. Flordelis (President, Planters Bank) [2007] "Pushing Philippine manufacturing towards sustained growth", Philippine Economics Society Conference, November.

Table 8 shows that banks appear to be generally complying with the mandatory lending to SMEs, with total compliance rate reaching almost 29 percent in 2002. However, anecdotal evidence shows that much of these funds do not actually go to SMEs but to some large firms that deliberately understate their assets to be classified as medium enterprises. As the FINEX and ACERD study reported, these loan funds particularly from large banks and financial institutions hardly benefited small firms. On the other hand, much of the funds from government-sponsored lending programs are directed not to real SMEs but more toward livelihood and microenterprise projects, many of which fail to grow.

4.2.2. Lack of access to technology

Many firms are not knowledgeable on technology, with most SMEs employing poor or low level of technology. Most small enterprises are labor-intensive, while the medium-sized ones are relatively more technology-intensive. With low level of technology, the production methods are generally inefficient, which leads to inconsistent product quality, low level of productivity, and lack of competitiveness. This is also manifested in high materials wastage, high rates of reworks, and inability to meet deadlines.

Product quality and quality assurance of raw materials would be better addressed if more firms followed certified methods and underwent performance or quality tests. However, there is a lack of common support facilities like testing centers and standardization agencies, whether government or private-sector led. With respect to quality management systems standards such as ISO series, SMEs do not invest in these business standards due to the high costs involved along with the high degree of formalization and documentation required.

Table 8. Compliance of banks to mandatory credit allocation loans to SMEs (in billion pesos)

Year	1991	1992	1993	1994	1995	1996	1997	1998
Total net loan portfolio	0.2	0.19	0.28	0.39	0.56	0.79	0.89	1.03
Direct compliance	0.01	0.02	0.03	0.05	0.08	0.11	0.19	0.2
Indirect compliance	0	0.01	0	0	0.01	0	0.03	0.04
Total compliance	0.02	0.02	0.03	0.05	0.09	0.11	0.22	0.24
(in %)	-8.35	-11.09	-12.38	-13.9	-15.72	-14.38	-24.69	-23.42
Year	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006**
Total net loan portfolio	1	0.99	0.99	0.94	1.05	1.07	1.1	1.23
Direct compliance	0.21	0.21	0.23	0.23	0.22	0.22	0.23	0.23
Indirect compliance	0.03	0.02	0.02	0.04	0.01	0.01	0.01	0.01
Total compliance	0.25	0.23	0.25	0.27	0.23	0.24	0.24	0.24
(in %)	-24.78	-23.48	-25.05	-28.82	-22.39	-22.32	-21.99	-19.63

Source: Central Bank of the Philippines as cited in Bureau of Small and Medium Enterprise Development–Department of Trade and Industry, SME Statistical Report (January 2007).

The FINEX and ACERD study identified the following factors that prevent SMEs from acquiring the necessary technology or engaging in research and development:

- *Lack of funds.* Technology including the machinery embodying the technology is expensive and many SMEs do not have the equity to acquire them. Lacking in flexibility, loans are not viable. Financial institutions rarely offer long-term financing for SMEs. There are no available loans for R&D.
- *Insufficient information.* The access of SMEs to information, such as developments in product standards and scanning technology (assessing, quantifying, testing technology), is very limited due to their inadequate E-readiness; ICT is not optimally utilized, particularly E-commerce. Another reason is that government institutions are not regarded as reliable sources of information; there is also lack of information sharing among SMEs, which are characteristically protective of their "trade secrets".
- *Lack of skills in evaluating alternative technologies.* Weak technical and skill competencies of production people due to the overall deterioration in the quality of education and inability of the educational system to respond to the needs of the economy, with the country unable to produce enough scientists and engineers.
- *Difficulty in meeting government requirements for availing assistance.* Government procedures and requirements for incentives like tax exemptions for R&D equipment and availing of loans for technology commercialization are found to be too complicated and tedious. Government institutions providing support for business and technology are also poorly staffed and their knowledge well below the level required [World Bank 2005].

4.2.3. Availability of inputs

SMEs are also confronted with supply chain management problems from the sourcing of their raw materials to problems in processing, packaging, and distribution. They also find it hard and more costly to access raw materials and inputs primarily due to the general problem of sourcing and transporting raw materials, which can be attributed to infrastructure and communication problems. Government tariff policy also raises the costs of key intermediate inputs.

5. Strengthening SME capabilities: creating and expanding linkages and networks

5.1. Existing SME linkages and networks

SMEs represent a large part of manufacturing establishments in the Philippines. The gains from developing strong linkages and networks are greater in export activities than those focusing on the domestic market. Given the rising globalization trend and economic integration in East Asia, linking SMEs with large domestic enterprises and multinational corporations is very important to the economy. Besides increasing domestic value added and export receipts, employment, and tax revenues, linkages creation can help diffuse new technologies, skills, and management practices as well as provide suppliers with better access to world markets. Linkages can also promote supplier clusters, inducing firms to locate close to MNC affiliates and strengthening the technological level and dynamism of existing clusters [World Bank 2005]. Clusters can enhance the competitiveness and productivity of firms, SMEs in particular.

It is also important to note that developing networks of competitive parts and components suppliers and subcontractors is crucial to the development of strong industries. The more competitive the country's suppliers are, the greater the potential for creating and sustaining deeper linkages with MNCs and for engaging in higher value-added activities. MNCs, in general, prefer where possible to source their inputs locally. The costs of local vendors, particularly in developing countries, tend to be lower than those of imports. The proximity of local suppliers also adds to the flexibility in production and scheduling. Whether to source locally, import, or bring in foreign affiliates, the MNCs' decision will depend on the existing and potential competitiveness of local suppliers relative to foreign ones. Most supply contracts involve long-term relations based on knowledge of and confidence in vendors' reliability and technological competence. All the advantages of sourcing locally will be dissipated if local suppliers are unable to develop capacities to manufacture components at world-levels of quality, cost, and reliability and to keep up with constantly changing technical specifications [World Bank 2005].

The World Bank report indicated that besides the initial base of technical and managerial capabilities and skills in local firms, the critical determinants of linkages also include the willingness and ability of firms to upgrade their competencies. This will be determined not only by the firms themselves but also by the level of institutional support—such as technical extension, technology

development, worker training, etc.—provided by the government. At the same time, this will also depend on the ability of suppliers to act jointly or cooperate in forming supplier clubs or using industry associations to carry out skill and technological development.

Raising productivity and competitiveness through technology upgrading (better machinery, improvements in workplace organization, inventory handling, product design, etc.) can be achieved through various ways. The most popular mode in the Philippines is through outright sale of machinery and equipment. The other mechanisms involve licensing of technology, imitation of other products, licensing agreements, and direct purchase of technology. Subcontracting and clustering arrangements are seen as possible mechanisms to help improve the competitiveness of SMEs and their ability to create and upgrade backward linkages. In subcontracting arrangements, larger companies provide subcontractors certain technologies through specific guidelines on the use of machines or production processes to follow.

In the Philippines, subcontracting appears to be low compared to other Asian economies [Berry and Rodriguez 2001], especially Taiwan and South Korea. The high levels of protection in the past apparently did not improve the competitiveness of many manufacturing industries in the country. Table 9a shows the declining number of small, medium, and large subcontractors. In 1994, small and medium subcontractors in manufacturing numbered 1,551 enterprises. This went down to 1,210 in 1998 and dropped further to 278 enterprises in 2003. The same pattern is observed among large subcontractors, which increased from 105 in 1994 to 153 in 1998, but fell to 45 enterprises in 2003. Micro subcontractors, meanwhile, increased their number from 384 to 544 between 1994 and 1998, respectively. In 2003, the number of micro subcontractors increased to 7,684, the bulk of which were in garments and fabricated metal products.

Using the firm-level data from the survey and census of establishments, subcontracted work is measured as the percentage of industrial work carried out for others. Table 9b shows that in 1994, 1.8 percent of total manufacturing output sold was subcontracted by microenterprises, SMEs, and large enterprises. This declined to 1.5 percent in 1998 and in 2003, the ratio further dropped to only 0.7 percent. Measured as percentage of industry value of output sold, micro and SME subcontracted work declined from 0.8 percent in 1994 to 0.5 percent in 1998 and to 0.2 percent in 2003.

Table 9a. Number of subcontractors in the Philippine manufacturing industry

	1994				1998				2003			
Code	*Micro*	*SMEs*	*Large*	*Total*	*Micro*	*SMEs*	*Large*	*Total*	*Micro*	*SMEs*	*Large*	*Total*
Total	384	1551	105	2040	544	1810	153	2507	7684	278	45	8006
311	51	98	2	151	121	191	6	317	1193	20	2	1215
312	6	18	6	30	6	109	2	117	32	11	4	48
313		3	1	4		3		3		1	3	4
314		1	3	4		2	2	4		0	1	1
321	11	58	16	85	1	221	22	244	57	7	2	67
322	179	586	34	800	85	347	37	469	2469	30	8	2507
323	2	3	1	6		5	3	8		0		
324		6		6	1	22		23		0		
331	6	33		40		65	2	67		11	2	13
332	15	28	1	43	24	94	4	123	600	5		605
341		25	3	28	6	15	6	27		10	3	13
342	22	101	4	127	57	88	2	147		12	2	14

Table 9a. Number of subcontractors in the Philippine manufacturing industry (continued)

	1994				1998				2003			
Code	*Micro*	*SMEs*	*Large*	*Total*	*Micro*	*SMEs*	*Large*	*Total*	*Micro*	*SMEs*	*Large*	*Total*
Total	384	1551	105	2040	544	1810	153	2507	7684	278	45	8006
351		11		11		70	1	71		3		3
352		22	5	27		20	4	24		9	3	12
355	1	16	1	18		24		24	98	8		106
356	4	21	5	30		0	5	5		6	2	8
361		3	1	4		0				0		
362	2	5		7		2		2	12	1		13
369	5	13	1	18	23	32	22	76	230	2	1	233
371	1	16	1	18	22	54	1	77		57		57
372	3	8	1	12		3	2	5		1	1	2
381	9	87	1	97	40	157	5	202	2433	20	1	2454
382	46	262		308	127	172	1	300	335	22		357
383	1	23	8	32	10	32	14	56	2	20	5	27
384	12	63	8	83		62	8	70	116	17	5	138
386	1	7		8		3	2	5		0		
390	6	34	2	42	22	19	3	44	106	4		110

Source: National Statistics Office Census and Survey of Manufacturing Establishments, 1994, 1998, and 2003.

Table 9b. Subcontracting in the Philippine manufacturing industry, 1994, 1998, 2003

	Manufacturing sector	*SME subcontracting work as % of SME value of output sold*			*SME subcontracted work as % of industry value of output sold*			*Total subcontracted work as % of industry value of output sold*		
		1994	*1998*	*2003*	*1994*	*1998*	*2003*	*1994*	*1998*	*2003*
	Manufacturing	3.57	1.79	0.72	0.81	0.49	0.16	1.81	1.58	0.72
311	Food processing	0.95	0.89	0.26	0.4	0.46	0.11	0.41	0.51	0.18
312	Food manufacturing	0.11	0.32	0.65	0.03	0.13	0.31	0.12	0.27	0.36
313	Beverages	3.24	1.13	0.01	0.52	0.12	0	0.52	0.12	0.1
314	Tobacco	0.46	16.77	-	0.01	0.04	-	0.56	0.48	0.46
321	Textiles	3.26	6.74	1.21	0.87	2.29	0.5	1.48	4.85	0.61
322	Wearing apparel except footwear	29.67	6.91	1.29	10.74	3.15	0.52	18.56	10.52	0.89
323	Leather and leather products	5.35	3.64	-	1.56	1.32	-	6.93	3.3	-
324	Leather footwear	0.14	0.41	-	0.04	0.18	-	0.04	0.18	-
331	Wood and cork products	1.35	1.59	0.18	0.63	1.24	0.1	0.63	1.26	0.1
332	Furniture except metal	0.83	1.59	0.22	0.46	0.85	0.14	0.55	1.18	0.14

Table 9b. Subcontracting in the Philippine manufacturing industry, 1994, 1998, 2003 (continued)

	Manufacturing sector	*SME subcontracting work as % of SME value of output sold*			*SME subcontracted work as % of industry value of output sold*			*Total subcontracted work as % of industry value of output sold*		
		1994	*1998*	*2003*	*1994*	*1998*	*2003*	*1994*	*1998*	*2003*
	Manufacturing	3.57	1.79	0.72	0.81	0.49	0.16	1.81	1.58	0.72
341	Paper and paper products	2.26	0.76	2.28	0.63	0.37	1.09	0.66	1.24	1.87
342	Printing and publishing	6.15	3.02	0.25	3.41	1.12	0.14	19.73	1.13	0.64
351	Industrial chemicals	0.39	1.64	0.04	0.2	1	0.03	0.2	1.08	0.03
352	Other chemicals	1.08	0.47	1.77	0.26	0.13	0.59	1.35	0.42	7.94
353	Petroleum refineries	-	0	-	-	0	-	-	0	-
354	Petroleum and coal products	-	0	-	-	0	-	-	0	-
355	Rubber products	2.99	10.82	0.82	0.75	3.47	0.31	0.99	3.47	0.31
356	Plastic products	0.33	0	0.06	0.21	0	0.03	1.32	0.56	0.24
361	Pottery, china and earthenware	0.68	0	-	0.11	0	-	0.13	0	-
362	Glass and glass products	0.19	0.14	2.48	0.05	0.04	0.51	0.05	0.04	0.51
363	Cement	-	0	-	-	0	-	-	0	-

Table 9b. Subcontracting in the Philippine manufacturing industry, 1994, 1998, 2003 (continued)

	Manufacturing sector	*SME subcontracting work as % of SME value of output sold*			*SME subcontracted work as % of industry value of output sold*			*Total subcontracted work as % of industry value of output sold*		
		1994	*1998*	*2003*	*1994*	*1998*	*2003*	*1994*	*1998*	*2003*
	Manufacturing	3.57	1.79	0.72	0.81	0.49	0.16	1.81	1.58	0.72
369	Other nonmetallic mineral prods	1.82	2.39	1.05	0.94	1.21	0.68	0.95	4.47	1.41
371	Iron and steel	0.32	1.22	0.61	0.14	0.49	0.36	0.19	0.49	0.36
372	Nonferrous metal products	4.23	0.07	1.44	0.1	0.01	0.16	15.97	19.46	7.85
381	Fabricated metal products	5.93	4.78	0.85	2.39	3.01	0.5	2.92	8.39	0.51
382	Machinery except electrical	29.99	5.52	1.17	5.81	0.54	0.08	5.81	0.55	0.08
383	Electrical machinery	3.66	1.67	0.44	0.29	0.15	0.03	0.81	2.09	0.07
384	Transport equipment	3.83	3.08	2.13	0.48	0.75	0.25	0.61	1.99	0.53
385	Professional and scientific eqpt	-	0.37	-	-	0.08	-	-	1.29	-
390	Miscellaneous manufacture	3.85	1.9	0.26	1.33	1.11	0.17	2.83	3.47	0.17

Source: National Statistics Office Census and Survey of Manufacturing Establishments, 1994, 1998, and 2003.

For SMEs as a whole, 3.57 percent of their output sold was subcontracted in 1994. This, however, fell to 1.8 percent in 1998 and further to 0.7 percent in 2003. Across sectors in 2003, textiles, wearing apparel, paper and paper products, other chemicals, rubber, glass, other nonmetallic mineral products, fabricated metal, machinery except electrical, and transport equipment have higher than average subcontracting activity. But note that a decline in subcontracting ratios was observed in the following GPN sectors: wearing apparel (from 30 percent to 1.3 percent), machinery except electrical (from 30 percent to 1.2 percent), electrical machinery (from 4 to 0.4 percent), and transport (from 4 percent to 2 percent).

These figures tend to indicate that the local content of the country's leading exports has remained low and has declined substantially during the period 1994-2003. It is important to point out that it is in these GPN industries where subcontracting could provide a promising route for SMEs to access export markets. Linking with GPNs offers possibilities of technology transfer and quality control along with the creation of backward linkages leading to a deepening of our industrial structure.

Table 10 presents the export orientation of SMEs in the different manufacturing industries. On the whole, SMEs exported almost 19 percent of their value of output sold in both years 1994 and 1998. Wearing apparel dropped from 55 percent to 29 percent while textiles increased from 27 percent to 54 percent. Other sectors whose ratios went up significantly included fabricated metals (from 4 percent to 23 percent), electrical machinery (from 23 percent to 44 percent), transport (from 5 percent to 13 percent), and professional and scientific equipment (from 26 percent to 39 percent). Miscellaneous manufactures registered a high ratio of 55, but this dropped to 44 in 1998.

The performance of SMEs in the last decade has not been vigorous enough to boost the Philippine manufacturing industry. As such, the deepening of high-technology industries, such as electronics and auto parts and components, in terms of the creation of backward linkages within the Philippine manufacturing industry has remained weak. Table 11 presents Philippine exports from 2003 to 2006. While the Philippines is a small exporter by regional standards, its exports of high-technology products have grown rapidly. However, as the table shows, the country's export structure is highly concentrated in a few products; hence, the country's exports are vulnerable to downturns in individual product exports and to location shifts by lead firms.

Table 10. Export orientation of SMEs, 1994 and 1998

Code	*Industry*	*SME exports as % of SME value of output sold*		*SME exports as % of industry exports*		*Industry value of output sold*	
		1994	1998	1994	1998	1994	1998
	Manufacturing	18.49	19.08	22.16	16.81	4.18	5.21
311	Food processing	32.71	27.5	52.07	65.58	13.74	14.11
312	Food manufacturing	3.21	1.27	21.83	17.9	0.87	0.52
313	Beverages	0.28	1.83	93.39	46.14	0.04	0.19
314	Tobacco	25.81		18.73		0.3	
321	Textiles	27.5	54.22	25.03	35.49	7.34	18.44
322	Wearing apparel except footwear	55.2	29.27	31.02	25.6	19.98	13.34
323	Leather and leather products	12.14	30.47	7.27	18.65	3.53	11.03
324	Leather footwear	3.97	12.55	6.02	18.05	1.04	5.49
331	Wood and cork products	40.81	47.88	55.57	87.35	18.93	37.31
332	Furniture except metal	53.73	47.47	46.45	44.58	29.75	25.39
341	Paper and paper products	16.5	9.53	64.14	35.27	4.58	4.59
342	Printing and publishing	2.08		24.68		1.15	
351	Industrial chemicals	16.38	19.36	33.67	41.95	8.58	11.82
352	Other chemicals	4.09	6.11	40.4	53.17	0.98	1.7
353	Petroleum refineries		13.16		21.12		0.37

Table 10. Export orientation of SMEs, 1994 and 1998 (continued)

Code	Industry	*SME exports as % of SME value of output sold*		*SME exports as % of industry exports*		*Industry value of output sold*	
		1994	1998	1994	1998	1994	1998
	Manufacturing	18.49	19.08	22.16	16.81	4.18	5.21
354	Petroleum and coal products						
355	Rubber products	11.79	38.41	11.53	19.65	2.96	12.3
356	Plastic products	7.6	4.22	60.81	18.09	4.73	2.27
361	Pottery, china and earthenware	63.83	20.93	21.7	18.73	10.3	5.28
362	Glass and glass products	16.42	71.44	33.71	69.94	4.05	18.62
363	Cement						
369	Other nonmetallic mineral products	14.53	20.42	60	89.98	7.55	10.3
371	Iron and steel	4.7	10.53	34.52	56.32	2.1	4.21
372	Nonferrous metal products	28.16	26.55	62.43	3.17	0.64	2.45
381	Fabricated metal products	3.77	10.65	12.5	57.92	1.52	6.72
382	Machinery except electrical	9.71	23.46	2.82	2.81	1.88	2.28
383	Electrical machinery	23.01	43.82	3.2	4.67	1.84	3.98
384	Transport equipment	5.1	12.83	14.9	26.23	0.64	3.13
385	Professional and scientific eqpt	25.57	38.93	13.59	14.61	9.71	8.91
386	Metal furniture	39.53		18.38		14.35	
390	Miscellaneous manufacture	54.99	43.62	32.64	49.96	19.05	25.4

Source: National Statistics Office Census and Survey of Manufacturing Establishments, 1994, 1998.

Table 11. Philippine exports, 2003-2006 (in million US$)

Group	2006	2005	2004	2003	*Average share (%)*
Total exports	49,457	43,109	41,449	38,060	
Garments	2,783	2,411	2,266	2,373	5.73
Housewares	169	176	187	208	0.44
Holiday decorations	60	60	60	59	0.14
Toys and dolls	19	17	17	16	0.04
Fashion accessories	274	242	228	261	0.59
Furniture	313	338	327	310	0.76
Builders' woodworks	655	118	100	119	0.54
Wood products, NES	2	2	2	3	0.01
Footwear	26	28	37	49	0.09
Giftware	101	100	94	84	0.22
Other consumer manufactures	587	497	416	386	1.09
Food and food preparations	2,302	2,097	1,989	1,962	4.87

Table 11. Philippine exports, 2003-2006 (in million US$) (continued)

Group	2006	2005	2004	2003	*Average share (%)*
Total exports	49,457	43,109	41,449	38,060	
Electronics	29,736	27,536	27,023	24,494	63.39
Components/devices (semiconductors)	22,461	20,336	18,833	17,152	45.78
Electronic data processing	5,612	5,575	6,309	5,786	13.68
Office equipment	277	199	215	196	0.52
Medical/industrial instrumentation	13	7	4	4	0.02
Control and instrumentation	18	16	10	5	0.03
Communication and radar	238	274	456	345	0.78
Telecommunications	222	142	181	99	0.37
Automotive electronics	419	401	384	348	0.91
Consumer electronics	476	586	632	558	1.33

Table 11. Philippine exports, 2003-2006 (in million US$) (continued)

Group	2006	2005	2004	2003	*Average share (%)*
Total exports	49,457	43,109	41,449	38,060	
Machineries/transport equipment/apparatus and parts	2,718	2,694	2,495	1,918	5.7
Machineries/equipment/apparatus	127	105	124	101	0.27
Metal machinery/equipment/apparatus	249	245	214	180	0.52
Transport equipment	2,342	2,345	2,156	1,638	4.92
Motor vehicles	92	171	161	158	0.35
Automotive parts	2,142	1,964	1,811	1,382	4.22
Others	108	210	184	97	0.35
Metal manufactures	406	184	133	81	0.45
Construction materials	472	256	259	202	0.68
Chemicals	747	560	457	400	1.24
Other industrial manufactures	1,137	839	662	523	1.81
Special transactions	2,046	1,558	1,765	1,955	4.29

Source: Bureau of Export Trade Promotion–Department of Trade and Industry (processed based on data from the National Statistics Office).

Electronics comprised the bulk of Philippine exports, with an average share of 63.4 percent; far second is garments with an average share of almost 6 percent, followed by auto parts with an average share of 4 percent. Exporting in these industries is done mostly by large enterprises. SMEs comprise only a small share of total exports, particularly in electronics and automotive parts, with shares of 4 percent and 3 percent, respectively (see Table 10).

In the electronics industry, our exports are mainly concentrated in semiconductors. Studies show that the country's participation in the global production network has hardly progressed beyond the lowest level of the production chain. Given the limited role of Philippine electronics in the labor-intensive assembly and testing segment of the production process, our electronics exports have become import dependent and, hence, domestic value added is minimal. According to Austria [2006], backward linkages in the electronics industry remain weak because local suppliers are few and immature. Santiago [2005] attributed this to the following problems: unavailability of raw materials, difficulty of finding local suppliers, unreliability of local suppliers, high cost of local raw materials, and failure to meet required quality standards. Given these constraints, MNCs are forced to import their intermediate inputs. As Tecson [1995] indicated, Japanese firms procure fewer inputs locally in the Philippines than in any other ASEAN countries where they operate.

In the auto parts industry, the same problem of limited backward linkages confronts the industry. The linkage between the automotive assembly sector and local parts and components has remained weak. After almost three decades of import substitution, which was centered on local content policy, a large part of the parts and components industry still remains underdeveloped. At best, the local content program only had a limited impact on the growth and development of the parts and components industry. As indicated earlier, very little parts and components are locally sourced, with the domestic parts sector accounting for only 10-15 percent of the total number of parts and components needed by local assemblers. In contrast, the Thai auto industry sources close to 85-90 percent of their parts domestically.

While auto parts, such as wiring harnesses and transmissions, are among the country's major exports, no backward linkages develop because these exports are labor-intensive and highly import-dependent. In other words, the link of multinational enterprises (MNEs) to the domestic economy is limited, thus the value added of these exports is low. There are risks in relying in this existing pattern of production, investment, and trade, which depends largely on low-skilled, labor-intensive segment of the international production network of MNEs. Foreign investments in these activities are highly mobile, and with

the presence of competing locations offering relatively cheaper labor, the Philippines becomes less attractive.

For instance, the number of Japanese auto parts companies operating in the Philippines declined from 43 in 2001 to only 34 in 2005 while those located in our neighboring East Asian countries went up [Yamamoto 2006]. In 2001, Thailand was the preferred supply base of Japanese companies, although this changed in 2005 with the shift of the supply base to China. The number of Japanese auto parts in China increased from 134 to 294 between 2001 and 2005; in Thailand this went up from 151 to 185 during the same years. In Indonesia, this rose from 75 to 84; in Malaysia, from 38 to 43 companies.

In the case of the Philippine garments, the industry has been dominated in the past decades by the assembly portion of the production system with a relatively few firms like Luen Thai, Eastland, and Fil-Pacific providing full package supply or OEM [Antonio and Rodolfo 2006]. Basically, the industry is part of what is called triangle manufacturing [Gereffi 2003], where a foreign buyer deals with an agent in a newly industrialized economy, which then outsources production in the Philippines. The triangle is completed once the Philippine supplier ships the products to the buyer. In recent years, however, mass retailers have shifted from the Philippines to low-labor-cost countries such as Cambodia, Sri Lanka, China, and Vietnam.

The Philippines does not have an integrated textile industry that can support the requirements of the garments industry. In the absence of an integrated textile industry, textile millers in the Philippines also face difficulties sourcing their raw materials, importing about 80 percent of their input requirements like polyester fiber, cotton, rayon, and acrylic. Given today's competitive environment, it is crucial that the Philippine garments industry move up the value chain and work toward becoming original equipment manufacturer (OEM) and original brand manufacturer (OBM) by enhancing its capabilities. To do this, the following problems [Antonio and Rodolfo 2006] must to be addressed:

- High cost of labor and power; labor cost in the Philippines is US$ 1.10 per hour, double of what Vietnam and Bangladesh offer.
- Slow productivity growth due to lack (decline) of investments.
- Lack of ICT applications (e-mail and Internet).
- Lack of locally sourced quality raw materials and dependency on imported raw materials (fabrics and accessories), which lead to longer lead times; our buyers nominate suppliers of fabrics and accessories from China, Taiwan, Hong Kong, India.
- Lack of design capabilities and minimal linkages between local designers and manufacturers.

5.2. Initiatives to create linkages

Developing the domestic supplier industries would be crucial not only to increase the local content of MNCs in the country but also to ensure that the MNCs currently operating in the country will stay and expand their operations as well as to ensure the participation of the country in the global production network. In the automotive industry, an attempt to enhance the productivity of local auto parts suppliers is being made through a public-private program called ECOP-Big Enterprise Small Enterprise (EBESE). Toyota is the most active participating company, and Ford to some extent. EBESE is a partnership among the Employers Confederation of the Philippines (ECOP), Department of Science and Technology (DOST), and Department of Trade and Industry (DTI).

EBESE aims to develop a network of partnership where big enterprises can mobilize their resources to help SMEs to learn and undertake productivity-improvement strategies. This is carried out in two levels: the basic level teaches know-how in basic tools such as 5S or good housekeeping, process flow, plant layout, and human values related to productivity improvement. The next level teaches Just-in-Time (JIT) concept of eliminating and preventing anything that does not add value to the product in compliance with the quality, cost, and delivery (QCD) requirements of customers. So far, the program has created significant impact in terms of productivity improvements and revenue increases among its SME participants (see Box 2).

Box 2. EBESE-Toyota cluster development program

In the automotive industry, suppliers are classified into three tiers; the first tier supplies to the assembler, the second supplies to the first, and so on. The Toyota Cluster aims to expand the supplier value chain by strengthening its suppliers down to the lowest level through improvements in their productivity, quality, efficiency, cost competitiveness, and waste reduction and elimination.

The program focuses on the 5S and productivity improvement concepts and takes six to eight months to be completed. After selection and business diagnosis of the participants recommended by first-tier big enterprises, orientation and training follow. Plan implementation comes next, then monitoring and evaluation, after which project turnover is carried out. Through the program, benchmarking and knowledge-sharing activities are also carried out. Prior to plan implementation, the participants visit other companies for benchmarking and knowledge-sharing purposes.

Box 2. EBESE-Toyota cluster development program (continued)

Starting in 2005, Toyota Motor Philippines joined the EBESE with five other big enterprises belonging to the first tier and 13 SMEs belonging to the second tier. In 2006, Toyota added two more big enterprises and 19 SMEs. In 2007, one more big enterprise was added along with 19 SMEs.

The following are the first-tier big enterprises that are participating in the program: Aichi Forging (Metal Casting/Forging), Fujitsu Ten (Audio/Electronics), Philippine Auto Components (Electrical/Meters), Technol Eight (Metal Parts), Tokai Rica Philippines (Electrical/Mechanical), Toyota Autoparts Philippines (Transmission), Toyota Boshoku Philippines (Interiors / Seat Assembly), and Toyota Motor Philippines (Auto Assembly).

So far, the program has been successful in attaining its objectives. As of 2007, 51 SMEs belonging to the second tier have benefited from the program. In 2006, one SME (MMET) was able to graduate as a big enterprise. During the same year, one SME (Malugo Philippines) was able to move up and enter the third-tier level.

K&K Molding Inc. is a manufacturer and assembler of plastic components for printer and automotive industries. Through the program, the firm carried out some changes such as re-layout and product chute installation for its Bracket Turn finishing process. With these improvements, travel time is down from 24 sec/case to 4 sec/case—an 86 percent improvement. Output per man-hour is up from 138 pcs to 166 pcs/man-hour—a 19 percent improvement. From 276 parts leftover per shift down to zero. In the Case Turn finishing process, the same improvements were achieved. Travel time is down from 26 sec/case to 5 sec/case—an 83 percent improvement. Output per man-hour is up from 109 pcs to 126 pcs/man-hour—a 16 percent improvement. From 218 parts leftover per shift down to zero.

Another SME, VJF Precision Tooling Corporation specializes in tool and die, carbide parts, jigs and fixtures, and other precision machining. Through the program, it was able to improve its lead time by adopting 5S in its stockroom area and providing demarcation lines in the production area to enclose exclusive areas for machines, walkways, and location of safety devices. Audits are conducted every month and further expansion of 5S into other areas. All these resulted in a significant reduction in cycle time and faster turnover, which enabled the company to accept more orders for toolsets. With the reduction in manpower overhead cost per toolset due to the faster time to manufacture it, the company was able to increase its efficiency and reduce wastage, returns, and rejects, which created a large impact on their revenues.

Source: Toyota Motors Philippines.

The lack of information by SMEs on the opportunities available in MNCs and vice versa is perhaps the most important constraint to linkage development. The DTI's Bureau of SME Development is still in the process of creating its SME database. It is currently coordinating with the National Statistics Office to have access to the firm-level data that NSO collects. Maintaining an SME database is important for matchmaking purposes.

In the electronics industry, trade fairs and industry associations provide opportunities for networking and linkage development. The industry association known as Semiconductor and Electronics Industries in the Philippines Inc. (SEIPI) maintains a database on suppliers for its member firms, although these are mostly large domestic and foreign-owned companies. SEIPI has also set up a "Center for Excellence"—the Advanced Research and Competency Development Institute—offering advanced training for electronics employees. Moreover, the presence of new companies like BayanTrade and Transprocure, which specialize in supply chain management, helps in creating linkages across a range of industries (see Box 3).

Box 3. BayanTrade: assisting strategic sourcing and e-procurement

BayanTrade was founded in 2000 as a joint venture between six large conglomerates. Over the years, its business focus has shifted from electronic marketing to supply-chain optimization.

Though initially a buyers' club, BayanTrade now works on behalf of both buyers and sellers. It has around 2,500 suppliers on its books and some 260 buyers. Ninety-five percent of bidding suppliers are based in the Philippines and about 85 percent are domestic-owned. Around 25 percent of purchasers are foreign-owned, although almost all are based in the Philippines.

The company has an in-house supplier-accreditation scheme. Firms failing to make it onto the list tend to suffer from problems of scale, financial health, track record, or quality accreditation.

Suppliers register for free and are informed of upcoming relevant auctions, although they must pay if the server is to host their catalogue. Buyers pay a setup charge and monthly subscription along with the fee arising from the auction.

The company has 65 employees and has managed more than 1,500 e-bidding events, helping customers process close to US$ 700 million worth of commodities, sourced locally and globally.

Source: World Bank [2005] and BayanTrade website.

In the garments industry, some garments manufacturers have teamed up with textile companies to address the negative impact of the absence of good quality domestic textiles on their competitiveness. These firms have linked up with local yarn and textile producers and are now sourcing 10-20 percent of their textile requirements locally. Such clustering allows textile producers to niche and upgrade their capabilities.

6. Survey results

A survey of 23 companies in three manufacturing industries—electronics, auto parts, and garments—was conducted to analyse the effects of the government's SME promotion policies on networking in the three industries. In particular, the survey aimed to elicit responses on the nature of the company's networking activities with the government, other SMEs, large domestic companies, and MNCs. It also aimed to gather information on the effects of these networking activities on the company's growth and development.

No database containing a list of SMEs in the manufacturing industry is available, specifically those operating in GPN industries such as electronics, automotive parts, and garments. The DTI's Bureau of Small and Medium Enterprise Development (BSMED) has a compilation of members from various industry associations; however, this was prepared way back in the '90s and has not yet been updated. Moreover, BSMED, the designated center of assistance for the National SME Development Plan, has no website (under construction) that can easily be accessed for SME information.

The NSO has a list of SMEs based on the survey and census of manufacturing establishments that it regularly conducts, but the information could not be provided to us because this is treated as confidential. Industry associations could only provide the general listing of their members, which included large enterprises.

More than 70 firms were invited to participate in the survey but only 23 responded positively, majority of which are from the garments sector with nine respondents, nine from automotive parts and components, and five from the electronics industry. Interestingly, over 80 percent of the firms surveyed are engaged in subcontracting work, servicing mainly big domestic companies and MNCs. The years of incorporation or the years when firms first started their operation vary, with 1971 as the earliest and 2007 as the most recent. Table 12 below presents a profile of the surveyed firms while Table 13 shows some basic characteristics of the subcontractors.

Table 14 presents a summary of the firms' major responses to the questions on networking activities of SMEs. The major findings follow.

Table 12. Profile of all company-respondents

Company	*Year founded*	*Number of employees*	*Sales (annually)*	*Major products*	*Supply chain segment*	*% Equity*	*Legal status*
Firm A	1974	40	P25 million in 2006	Systems for time and attendance	Downstream	100% domestic-owned	Corporation
Firm B	1994	85	2005-$900,000; 2006-$45,0000	Wiring harness for motors and robots and cable connectors	Midstream	100% foreign-owned	Corporation
Firm C	1991	120	Didn't give information	Energy-saving devices, electronic scoreboards, electronic ballasts, Power on Delay (POD10)	Downstream	100% domestic-owned	Corporation
Firm D	1995	less than 30	less than P10 million in 2005 and 2006	SMT diode marking machine, capping machine, electronic modules	Midstream	100% domestic-owned	Corporation
Firm E	1981	55	Sales declined in 2005 but increased in 2007	electronic parts for auto and consumer electronics	Midstream	100% domestic-owned	Corporation
Firm F	1993	157	Didn't give information	Stamped auto parts	Midstream	100% domestic-owned	Corporation
Firm G	1999	78	Didn't give information	Precision tooling kits	Midstream	100% domestic-owned	Corporation

Table 12. Profile of all company-respondents (continued)

Company	*Year founded*	*Number of employees*	*Sales (annually)*	*Major products*	*Supply chain segment*	*% Equity*	*Legal status*
Firm H	1998	200	Didn't give information	Plastic	Midstream	100% foreign-owned	Partnership
Firm I	1980	75	2005-P64.3M; 2006-P62.7M; 2007-P77.1M	Brake and fuel tubes	Midstream	60% Japanese and 40% Filipino	Corporation
Firm J	2000	30		Mag wheel caps for cars and motorcycles	Midstream	100% domestic-owned	Corporation
Firm K	1995	150	2005- P165M; 2006-P180M; 2007-P220M	Seat frame and stamped auto parts	Midstream	100% domestic-owned	Corporation
Firm L	1992	90	2005-P80M; 2006-P65M; 2007-P55M	Soft trim parts and stamped metal parts	Midstream	100% domestic-owned	Corporation
Firm M	1980	104	2005-P212M; 2006-P116M; 2007-P75M	Shock absorbers, automotive exhaust, and muffler systems	Midstream	100% domestic-owned	Corporation
Firm N	1988	42	2005- P10M; 2006-P9M; 2007-P11M	Metal and rubber brackets	Midstream	100% domestic-owned	Corporation
Firm O	1971	175	≈P82M (2M US$)	Children's wear	Downstream	100% domestic-owned	Corporation

Table 12. Profile of all company-respondents (continued)

Company	*Year founded*	*Number of employees*	*Sales (annually)*	*Major products*	*Supply chain segment*	*% Equity*	*Legal status*
Firm P	1994	24	P0.5-1M	Shorts, pants, and T-shirts	Downstream	100% domestic-owned	Single Proprietorship
Firm Q	1984	15	-	T-shirts	Downstream	100% domestic-owned	Corporation
Firm R	1993	60	P2.5M	Children's wear	Downstream	100% domestic-owned	Corporation
Firm S	2005	35	P200,000	Sweaters	Downstream	100% domestic-owned	Corporation
Firm T	2007	5	-	Office wears	Downstream	100% domestic-owned	Single Proprietorship
Firm U	1993	4	-	Pants and T-shirts	Downstream	100% domestic-owned	Single Proprietorship
Firm V	1995	135	-	Undergarments	Downstream	100% domestic-owned	Corporation
Firm W	1980	150	-	Children's wear	Downstream	100% domestic-owned	Corporation

Table 13. Basic characteristics of subcontractors

Subcontractor name	*Primary customers*	*% of subcontracted work to total production*	*No. of years working as subcontractor*
Firm D	Large domestic firms and MNCs	100%	12
Firm E	Large domestic firms and MNCs	100%	26
Firm F	Large domestic firms and MNCs		15
Firm G	Large domestic firms and MNCs	100%	8
Firm H	Large domestic firms and MNCs	100%	9.5
Firm I	MNCs	100%	27
Firm K	Large domestic firms	100%	10
Firm L	MNCs	100%	15
Firm M	MNCs	60%	8
Firm N	MNCs	65%	20
Firm O	Large domestic firms and MNCs	100%	31
Firm P	Large domestic firms	100%	17
Firm Q	Large domestic firms	50%	23
Firm R	Large domestic firms	100%	2
Firm S	MNCs	100%	14
Firm T	Large domestic firms and MNCs	100%	1
Firm U	Large domestic firms	50%	14
Firm V	Large domestic firms and MNCs	100%	12
Firm W	MNCs	100%	27

Table 14. Summary of the firms' major responses

ELECTRONICS AND AUTOMOTIVE PARTS AND COMPONENTS	
(a) Large companies and MNCs	
Survey question	*Firm responses*
Strategies to diversify subcontracting activities	Strengthening automotive business transactions from 10 percent in 2006 to 50 percent in 2007
	Reviewing its current production capacity
Main reasons for engaging in subcontracting activities	Long-term growth and profitability
	Partnership with MNC
	Network of subcontractors
	Participate in government programs
	Knowledge of foreign market
Critical factors in maintaining good subcontracting relationship	Product cost
	Delivery
	Quality
Support expected from contractor	Design support
	Technology
	Product development and innovations
	Increase in the volume of job orders
	Management and production techniques
	Improved networking

Table 14. Summary of the firms' major responses (continued)

ELECTRONICS AND AUTOMOTIVE PARTS AND COMPONENTS	
(b) Government	
Survey question	*Firm responses*
Support received from the government	Worker's training such as 5S and productivity improvement
	Access to financing
	Tax credit
	Marketing and promotion programs
Effectiveness of government assistance in addressing needs of SMEs	Satisfactory
Ways to improve government SME programs,	Creation of organization that will focus on SMEs
	New government department or bureau that will oversee the operation of manufacturing SMEs
	Protection from cheap imports
	Inviting more MNCs and making SMEs more visible
	Government support in sourcing raw materials and tapping new technology
	Database of buyers
Government programs linking SMEs with MNCs	EBESE and DTI-CICs search for proactive companies
Effectiveness of these linkage programs	No reply
Ways to improve these government linkage programs	One-stop shop that provides information on export market opportunities, raw materials, and new technology
	Clear and consistent government requirements, including fees and other relevant business documents

Table 14. Summary of the firms' major responses (continued)

ELECTRONICS AND AUTOMOTIVE PARTS AND COMPONENTS	
(c) Other SMEs	
Survey question	*Firm responses*
Cooperation programs among SMEs	EBESE, Toyota Cluster Development Program
Benefits from participating in these programs	Presence of suppliers of raw materials, parts, and components
	Exchange of information with other SMEs
	Visibility to other MNCs
	Link with other SMEs and, in some cases, establish production agreements with them
	Exchange of information with other SMEs
	Access to market information and best practices
	Incentives like nonpayment of duties and taxes
Benefits from participating in these programs	Presence of suppliers of raw materials, parts, and components

Table 14. Summary of the firms' major responses (continued)

GARMENTS	
(a) Large companies and MNCs	
Survey question	*Firm responses*
Strategies to diversify subcontracting activities	Maintain high-quality products (since garment firms get orders mainly through referrals)
	Business registration and accreditation
	Creation of a subcontractors' database
	Creation of a database of all government registered and accredited subcontractors to be readily available to traders and buyers
Main reasons for engaging in subcontracting activities	Long-term growth and profitability
	Manageability
	Knowledge of the foreign market
	Dependence on contractor
	Minimal capital requirement
	Creation of jobs
Critical factors in maintaining good subcontracting relationship	Quality (avoid rejects)
	Delivery (on time)
	Product cost
	Quantity
Support expected from contractor	Management and production techniques
	Product innovation/development
	Improvement of technology
	Financial assistance
	Reasonable payment

Table 14. Summary of the firms' major responses (continued)

GARMENTS	
(b) Government	
Survey question	*Firm responses*
Support received from the government	Participation in trade fairs
	One-stop shops providing information on export market opportunities, raw materials
	Access to credit, financing
	Technical assistance
Effectiveness of government assistance in addressing needs of SMEs	Not effective
Ways to improve government SME programs	Advertise products through fairs by coordinating with local government units
	Discourage free trade or globalization
	Easy access to credits
	Creation of laws or policies for subcontractors by protecting workers and wages
	Organizing venues where subcontractors can come together to discuss their concerns/ problems and practical solutions
Government programs linking SMEs with MNCs	None
Ways to improve these government linkage programs	Promotion of products to other countries
	Government initiatives to link subcontractors with buyers
	Accreditation of subcontractors
	Creation of database that will be readily available to buyers

Table 14. Summary of the firms' major responses (continued)

GARMENTS	
(c) Other SMEs	
Survey question	*Firm responses*
Cooperation programs among SMEs	None
Benefits from participating in these programs	Participation in trade fairs
	Easy access to credits
	Availability of workers with specific skills

6.1. Networking of SMEs with large domestic corporations and MNCs

Most of the interviewed subcontractors gear 100 percent of their production to subcontracted work. They indicated that they engage in subcontracting work due to their knowledge about foreign markets and to attain long-term growth and profitability. The most important factors in maintaining good relationship with contractors are product quality, on-time delivery, and cost. They expect the following support from contractors: technology, management and production techniques, product innovation, and financing.

Respondents from the garment sector, on the other hand, also expected MNCs and large domestic companies to provide them with financial assistance.

6.2. Networking of SMEs with the government

In general, most firms in the three industries received some benefits from the government programs on SME financing and credit, trainings, participation in fairs and exhibits, and technical assistance. Majority of the respondents from the garments industry indicated that they did not receive any form of government assistance, but the primary reason for this seemed to be the firms' lack of awareness due to the absence of information about these programs. More needs to be done, particularly in improving training and human resource development programs of the government to become more useful and responsive to the needs of industry recipients.

It is evident from the firm-interviews that the government programs linking small and medium enterprises/subcontractors with multinational corporations and large domestic corporations are apparently weak. Firms in the electronics, automotive parts, and garments are not aware of any government support program that links them with contractors and buyers in their respective industries. Most of the firms suggested that the government should formulate a program that would create these linkages to facilitate the seller and buyer matching process.

In the garments industry, the surveyed firms indicated that links are made based on a referral system, which has been their standard practice in the industry. They have been doing this on their own and have not received any assistance from the government in establishing contacts and finding their buyers and contractors. The same referral system is also applied in the electronics and auto parts industries. One firm also indicated the need for a separate government office that would specifically handle the affairs and programs of export-oriented high-tech SMEs in the manufacturing industry.

6.3. Networking among SMEs

The survey showed that except in the automotive parts industry, where a government–private sector cooperation program known as EBESE is being implemented, clustering activities in the electronics and garments remain very limited. In the automotive industry's EBESE program, a total of 51 SMEs belonging to the second tier benefited from the program. The program's sustainability, however, is an issue related to the reduction in the financial support from the DOST.

No SME or subcontractors' associations were found in any of the three industries. One interviewee noted that the lack of cooperation among SMEs may be due to the adversarial attitude with firms treating other companies as competitors. They are also not willing to share industry information with other SMEs, perhaps due to their characteristic of being protective of their own "trade secrets".

7. Government policy recommendations

7.1. Separate government office to implement and coordinate SME policies and programs

The Department of Trade and Industry has an important role to play in meeting the many and complex development challenges confronting SMEs. It has to act not only as organizer and coordinator, but as a partner of the different players including academe and research, professional and industry associations, as well as the suppliers themselves. Currently, SME policies are guided by both social and economic objectives targeted at the poorest members of society. On the other hand, backward linkages programs aimed at developing SMEs as suppliers are driven by industrial efficiency and competitiveness targeted at the most capable SMEs. The survey interviews indicated that SME subcontractors feel that the government prioritizes the needs of microenterprises.

Given its limited resources, the DTI should separate these two objectives and avoid lumping together traditional and nontraditional activities in designing its promotion policies and programs. The World Bank [2005] suggested that the Bureau of SME Development should focus only on microenterprises and a separate agency or bureau should be assigned solely to SMEs. The same suggestion also emerged from the survey results where firms expressed the need to create a separate office for export-oriented high-tech SMEs in the manufacturing industry. It is important to note that the needs and problems of traditional industries like food and home décor are different from those

of nontraditional activities, particularly the high-tech GPN industries in which SME local suppliers play a crucial role in the growth and development of industries.

Creating a separate SME agency is important to better address conflicting and overlapping lines of authority in implementing SME programs and policies as well as the fragmented overall policy responsibility and implementation among many different government agencies. In a number of countries including Thailand and Malaysia, SME responsibilities are concentrated in one office to ensure better coordination and greater coherence and consistency in SME policies and regulation. Equally important is the need to upgrade the people handling SME programs with professionals that have the appropriate skills, knowledge, and background.

7.2. Create and maintain a database on SMEs

This is crucial in formulating policies and programs as well as in matching firms to develop and expand linkages between SMEs and MNCs. The surveyed firms suggested using an accreditation system as an initial step in creating a directory of SMEs.

7.3. Promotion of local parts and supplier industries and clustering

To upgrade the production process and capture a larger share of value added, the government should prioritize the development of the local parts and supplier industries. As Austria [2006] pointed out, this is the only avenue to increase the domestic content of MNCs operating in the country. The development of domestic suppliers would require a package of technical assistance, training to develop skills of local suppliers, access to and availability of finance, and increased linkages between SMEs and large enterprises.

The past years have witnessed efforts by the government to address this problem by pursuing supplier clustering in export processing zones and industrial parks. Clustering, however, remains limited to foreign suppliers of parts and components. Fujitsu's experience in the Philippines shows that a large number of upstream suppliers from Japan and other developed countries established their affiliates here and supply the company's parts and components requirements [Kimura 2001]. Austria [2006] noted the case of Wistron Infocom (formerly ACER International), which manufactures motherboards and computer notebooks for export. Located at the Subic Bay Industrial Park, the excellent infrastructure attracted its suppliers in Taiwan to follow and locate as well in Subic. This enabled Wistron to overcome the unavailability of local suppliers for its parts and components. The foreign suppliers tried to establish

linkage through outsourcing with local suppliers. However, minimal linkages were created due to the poor quality of output and high costs of outsourcing locally.

7.4. Promotion and development of outsourcing arrangements

The surveyed firms indicated that they engage in outsourcing/subcontracting arrangements due to their knowledge of foreign markets and as their way to attain long-term growth and profitability. They expect the following support from contractors: technology, management and production techniques, product innovation, and financing.

Given the potential opportunities arising from the growth of GPN industries through subcontracting and outsourcing, policies aimed at improving these relationships between SMEs and large corporations and MNCs are crucial for SME development. Subcontracting and outsourcing arrangements can be promoted by linking up or matching up companies, providing subcontracting and outsourcing advice to SMEs, and organizing fairs for subcontractors.

7.5. Technology and industry upgrading to boost SME competitiveness

Improving the competitiveness of SMEs is important in addressing capabilities gaps that currently hinder the development of linkages. As the surveyed firms indicated, product quality, cost, and delivery are the most important factors for maintaining a good relationship with MNCs. Improving SME competitiveness is thus necessary to ensure that existing MNCs remain and expand operations as well as to attract new global players to locate in the country. The experiences of South Korea, Singapore, and Taiwan on how they successfully implemented technology upgrading, human resource development and training, and finance support programs are instructive (see Box 4).

Box 4. Learning from neighboring countries' experiences

South Korea, Taiwan, and Singapore set up central institutions to monitor and diffuse new technologies and provided technological services that SMEs could not provide themselves. These included material testing, inspection and certification of quality, instrument calibration, establishment of repositories of technical information, patent registration, research and design, and technical training. The Singapore Institute of Standards and Industrial Research has an incubator scheme that allows SMEs and innovators to make use of the institute's space, equipment, and technical advice, and provides common facilities for firms to do R&D.

Box 4. Learning from neighboring countries' experiences (continued)

All three countries also provided training and management consultancy facilities for SMEs along with subsidized credit, tax incentives, and financial guarantees to hurdle capital-market imperfections. As with technology upgrading, cost sharing was adopted to ensure that companies took the programs seriously. In Korea, the government also provided financial advice and legal and tax accounting services to SMEs. Subsidized loans were phased out gradually and replaced with schemes where risks and profits were shared with enterprises.

Source: World Bank [2005].

Given the presence of lower-cost competitors in the East Asian region (with stronger technological capabilities and well-developed supply chains), it is important for the Philippines to move up the technology scale. This implies engaging in design and development tasks in all major export products, particularly in electronics.

Industrial upgrading would require a strong base of domestic knowledge. This would need the development of specialized skills and technological capabilities. One possible mechanism is to grant incentives to encourage researchers and university professors and students to closely interact with the electronics and automotive industries. This is being done in the electronics industry through the establishment of a technical training school to improve the technical competencies of workers. SEIPI's Advanced Research and Competency Development Institute (ARCDI) aims to make Philippine high-technology companies more competitive by providing a venue for world-class professional training; advanced research, development, and engineering (RD&E); and new venture incubation. The ARCDI is led by private-sector stakeholders, a visionary group of government industry promoters, and leading academic and RD&E institutions. Recently, the automotive industry has also created an Automotive Technology Excellence Center as a public-private partnership to serve as industry incubator and promote the continuous upgrading of the local parts and supplier industries.

The government also needs to implement substantial reforms in all stages of the education and training system to cope with rising competition from lower-wage countries, particularly China. The quality and completion rates need to be improved and the length of schooling be brought in line with international norms. Moreover, technical training schools should reorient their curricula to serve employer needs and requirements, to address specific skills needed by

both traditional industries like garments and modern ones like electronics. The same need for government support in the training and development of workers was emphasized in the survey.

7.6. Addressing infrastructure and logistics bottlenecks and improvement of overall investment climate

High-technology industries like electronics and automotive are dominated by foreign-owned MNCs. The ability to attract MNCs and FDI is critical to the long-term prospects of the Philippines in both sectors. The relatively poor FDI performance of the Philippines can be attributed to the country's poor investment climate. While we implemented economic reforms similar to those carried out by our East Asian neighbors, what separates our investment climate is the low institutional quality and poor fiscal conditions. Since 2006, substantial fiscal reforms to address the country's huge fiscal deficit have been implemented. This has contributed to improving the country's economic outlook and overall business environment.

Equally important for the global/regional production network operations of MNCs is the presence of good infrastructure and logistics that lower production cost and facilitate the easy supply chain management from the procurement of inputs to the export of outputs. This implies reducing power and communication costs, providing sufficient port systems, reducing travel time, and offering travel and shipment options. Allowing private-sector participation in infrastructure and services provision is a step in the right direction. With the continuing fiscal reforms, the government will be able to invest more in physical infrastructures and utilities.

References

Aldaba, R. M. [2007] "Assessing the competitiveness of the Philippine auto parts industry", Philippine Institute for Development Studies Discussion Paper Series No. 2007-14. Makati, Philippines.

Abrenica, J. V. and R. G. Tecson [2003] "Can the Philippines ever catch up in competitiveness" in: Shūjiro Sanjaya Lall, ed., *Foreign direct investment and technological activity in East Asia.* Washington, D.C.: World Bank.

Agarwalla, G. [2005] "Study of linkages in the Philippines electronics industry", Power Point Presentation. Manila, Philippines.

Antonio, E. Jr. and M. C. L. Rodolfo [2006] "Assessment of competitiveness and logistics infrastructure of the Philippine garments industry", Philippine Institute for Development Studies Discussion Paper Series No. 96-07. Makati, Philippines.

Ateneo Center for Research and Development (ACERD) and Financial Executives Institute of the Philippines (FINEX) [n.d.] "Making SMEs work, making SMEs create work: job creation through small and medium enterprise development", Joint paper by ACERD and FINEX.

Austria, M. [1996] "The effects of the MFA phase out on the Philippine garments and textiles industries", Philippine Institute for Development Studies Discussion Paper Series No. 96-07. Makati, Philippines.

Austria, M. [2006] "Foreign direct investment and economic development: the case of the Philippines" in: S. Urata, C. S. Yue, and F. Kimura, eds., *Foreign direct investment and economic development: lessons from East Asian experience.* Washington, D.C.: World Bank.

Barry, F. [2005] "Meeting challenges in Philippines electronics and IT services", Workshop on Policies to Strengthen Productivity in the Philippines, Department of Economics, University College Dublin.

Berry, A. and E. Rodriguez [2001] "Dynamics of small and medium enterprises in a slow-growth economy: the Philippines in the 1990s". Washington, D.C.: The International Bank for Reconstruction and Development/The World Bank.

Chaminade, C. and J. Vang [2006] "Innovation policy for Asian SMEs: exploring cluster differences", CIRCLE Electronic Working Paper Series. Lund Sweden: CIRCLE Lund University.

Department of Trade and Industry (DTI). SME Development Plan 2004-2010.

Dhungana, B. [2004] "Strengthening the competitiveness of small and medium enterprises in the globalization process: prospects and challenges", *Bulletin for Asia and the Pacific* **1**: 1-32.

Export Development Council and Department of Trade and Industry (DTI). Philippine Export Development Plan 2005-2007.

Foreign Investment Advisory Service, World Bank, and International Finance Corporation [2005] "Fostering linkages between multinational and domestic firms in the Philippines", Conference: Policies to Strengthen Productivity in the Philippines.

Fukumoto, M. [1998] "Development policies for small and medium enterprises in APEC: in the case of the Philippines". APEC Study Center Institute of Developing Economies.

Gereffi, G. [2001] "Global sourcing in the US apparel industry", *Journal of Textile and Apparel, Technology and Management* **2** (1): 1-5.

Gereffi, G. [2003] "The global apparel value chain: what prospects for upgrading by developing countries?" Vienna Australia: United Nations Industrial Development Organization.

Gimenez, A. [1994] "An assessment of the automotive parts manufacturing industry in the Philippines", unpublished report.

Japan International Cooperation Agency (JICA) [2007] "Effective approaches on the promotion of small and medium enterprises (SMEs)", http://www.jica.go.jp/english/index.html. Accessed December 2007.

Kimura, F. [2001] "Intrafirm fragmentation: Fujitsu Ltd.'s production of hard disk drives" in: L. Cheng and H. Kierzkowski, eds., *Global production and trade in East Asia.* Norwell: Kluwer Academic Publishers: 289-293.

Lee, P. [2005] "A tale of two (Philippine) industries", Economic Research Center Discussion Paper. Economic Research Center School of Economics, Nagoya University.

Moran, T. H. [1998] "The new policy agenda for developing countries and economies in transition" in: *Foreign direct investment and development.* Washington, D.C.: Institute for International Economics.

Santiago, E. [2005] "About the Philippine electronics industry: a snapshot", PowerPoint presentation, Manila, Philippines.

Small and Medium Enterprise Development for Sustainable Employment Program [2006] "Analysis of business registration and licensing in the Philippines". PowerPoint presentation, Makati, Philippines.

Tamangan, R., F. Josef, and C. Habito [2004] "Small and medium enterprise development experience and policy in Japan and the Philippines: lessons and policy implications", PIDS Discussion Paper Series No. 2004-30, Makati City Philippines.

Tecson, G. [1995] "Desiderata for future Philippine-Japan economic relations". University of the Philippines, School of Economics, Quezon City.

Tecson, G. [1999] "The hard disk drive industry in the Philippines", Report No. 99-01, Information Storage Industry Center, Graduate School of International Relations and Pacific Studies, University of California, San Diego.

Tecson, G. [2004] "Review of existing policies affecting micro, small and medium enterprises (MSMEs) in the Philippines". Makati, Philippines: Small and Medium Enterprises and Development for Sustainable Employment Program.

Tenorio, A. and L. Lugo [2002] "Automotive parts making: a dying industry", *Business World*, August 1.

World Bank [2005] "Fostering linkages between multinational and domestic firms in the Philippines", Paper presented during the "Policies to Strengthen Productivity in the Philippines Conference", AIM Policy Center, Makati City.

Yamamoto, H. [2006] "Benchmark survey project competitiveness of ASEAN vs. China vs. India on auto parts industry", PowerPoint presentation.