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TECHNOLOGY AND SKILLS IN THE PHILIPPINES

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The ASEAN Secretariat
and
Japan Institute of International Affairs
in collaboration with
ASEAN Economic Research Unit
Institute of Southeast Asian Studies

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EFFECTIVE MECHANISMS FOR THE ENHANCEMENT OF TECHNOLOGY AND SKILLS IN THE PHILIPPINES

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The **ASEAN Secretariat**, based in Jakarta, was formally established by an agreement signed by the ASEAN Foreign Ministers during the First Meeting of ASEAN Heads of Government in Bali in February 1976. The Secretariat provides a central administrative organ for the co-ordination of the activities of ASEAN bodies and the implementation of ASEAN projects and activities. It is headed by a Secretary-General, appointed on a rotational basis among member countries. The Secretariat has three functional bureaus — Economics, Science and Technology, and Social and Cultural — each headed by a Director.

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Foreword

One of the central objectives of the Association of Southeast Asian Nations (ASEAN), as embodied in the Bangkok Declaration under which ASEAN was founded, is the promotion of Southeast Asian studies. In this context, ASEAN warmly welcomed the offer of Mr Zenko Suzuki, the Prime Minister of Japan, in early 1981 to support the launching of an ASEAN Regional Studies Promotion Programme.

After extensive consultations among ASEAN member countries and between ASEAN and Japan, it was agreed that the ASEAN Regional Studies Promotion Programme, initially to extend over a period of five years, should focus on policy-oriented socio-economic research. Given the overriding importance that ASEAN attaches to economic development and the vital role of ASEAN-Japan economic relations in this regard, ASEAN-Japan Industrial Co-operation was adopted as the first topic of research under the Programme. The second topic chosen was Effective Mechanisms for the Enhancement of Technology and Skills in ASEAN. An integrated ASEAN-Japan Overview, together with volumes on the individual ASEAN countries, are the fruits of this second phase of research.

The recent history of ASEAN-Japan relations has been marked by a degree of ambivalence. As the first Asian nation to industrialize successfully and to have risen as a phoenix from the ashes of war-time destruction to the leading heights of industrial and technological power, Japan has always been held with a degree of awe and admiration by its southern ASEAN neighbours. Such awe and admiration have, however, been tinged with a certain amount of suspicion derived from war-time memories, especially as the impact of Japan's post-war economic expansion becomes increasingly felt in the ASEAN region.

On the Japanese side, historical circumstances and the need for economic reconstruction in the early post-war years made it unavoidable that, initially, its external relations were largely oriented towards the West, especially the United States. However, as Japan rose to global economic prominence, and its economic presence in Southeast Asia grew, it increasingly came to attach greater importance to its relationship with the ASEAN countries.

ASEAN first approached Japan collectively in the early 1970s on the question of Japan's production of synthetic rubber and its adverse impact on the ASEAN economies. From such narrow beginnings, the dialogue has quickly expanded into the present broad-based consultative framework of the ASEAN-Japan Forum. Given the historical background, there is a general recognition that while economics must remain the central pillar of ASEAN-Japan relations, the socio-political context under

which such economic relations evolve is also of prime importance. Thus, a central objective of the ASEAN-Japan dialogue is the development of greater mutual awareness, understanding, friendship, and trust between the peoples of ASEAN and Japan, especially among the younger generation. In this regard, it is particularly heartening that the present Programme has begun to bring together many young researchers from both ASEAN and Japan in collaborative research on various important and pressing issues of mutual concern. The interactive thought process involved in such research, and the development of common perceptions on a wide range of issues, cannot but help improve the effectiveness of the dialogue and establish ASEAN-Japan relations on a firm basis. The ASEAN Secretariat and the Japan Institute of International Affairs, as the ASEAN and Japanese co-ordinating units for the Programme respectively, are happy and honoured to be playing a part in this process.

Phan Wannamethee
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Tokyo

March 1986

Preface

The study on "Effective Mechanisms for the Enhancement of Technology and Skills in ASEAN" was undertaken as the second phase of research under the ASEAN Regional Studies Promotion Programme, the first being "ASEAN-Japan Industrial Cooperation".

Country research teams from the five ASEAN countries and Japan were required to identify and examine problems in their respective countries in technology transfer and skills enhancement. Such a study, involving different countries with varied experiences, naturally poses problems of comparability. Nevertheless, to maximize comparability across countries, the study relied on the use of a common core questionnaire as well as a common analytical framework and data analysis procedure. In addition, the incorporation of country-specific factors salient and relevant to technology transfer and skills enhancement was encouraged. The final research design therefore attempts to accommodate such requirements.

Thus, primary data were collected through sample surveys taken on selected industries located in the ASEAN countries. Conclusions were then drawn and recommendations made from the findings of such surveys. From this exercise, five ASEAN-country papers were produced by the respective ASEAN-country research teams. These together with two papers prepared by the Japanese team giving Japanese perceptions and historical experiences on technology transfer and skills enhancement in ASEAN form the basis of an integrated overview which has been published under the title, *Effective Mechanisms for the Enhancement of Technology and Skills in ASEAN: An Overview*. The five country-papers are also being published separately. The monograph that follows is one in the series.

C. Y. Ng,
R. Hirono,
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Robert Y. Siy, Jr.
General Editors

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Robert Y. Siy, Jr., Ph.D., is currently an Economist with the World Bank, New York. Prior to this he was Associate Professor at the Institute of Management, Philippines. He received his doctorate from Cornell University, Ithaca, New York, in 1982, and has been a consultant to various international organizations among which are the International Labour Organization, the East-West Centre Resource Systems Institute, the Ford Foundation, and the United States Agency for International Development. He has also written extensively on the role of science and technology in development.

The late **Alejandro A. Reyes**, formerly of the University of Life and the Asian Institute of Management, was one of the principal researchers in the "Effective Mechanisms for the Enchancement of Technology and Skills in ASEAN" project.

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Industrialization in the Philippines

The pattern of post-war Philippine economic development has been marked by the growing dominance of the modern sector, namely, manufacturing and services. The broad objectives of industrial policy in the past three decades have been the acceleration in the growth of non-farm employment and income, and a declining reliance on the traditional exports from mining and agriculture. Following the adoption of an import-substitution strategy in the 1950s, the country witnessed the flourishing of light manufacturing industries geared for the domestic market. Towards the later half of the 1960s, however, it was evident that the limited domestic market was imposing unnecessary constraints on the expansion of the industrial sector, thereby prompting the government to adopt a more outward-looking industrialization thrust for the decades of the 1970s and the 1980s.[1] The enhancement of a broad-based technological capability and technical skills associated with this new thrust is expected to provide domestic industries with improved productive capacity and greater competitive strength in both domestic and foreign markets.[2]

Industrial Promotion Policies

In the early 1950s, Philippine industrialization was primarily oriented towards the domestic market as stringent controls on imports and foreign exchange effectively created a bias for the establishment of import-replacing domestic industries. Traders and distributors formerly engaged in direct importation of finished consumer and industrial goods were encouraged to shift into local finishing and assembly of imported semi-manufactured products in view of liberal tax incentives and the availability of foreign exchange for raw material and capital goods imports.

During the later half of the decade, import controls and foreign exchange restrictions were replaced by a highly protective tariff system which imposed higher duties on non-essential consumer and industrial goods relative to capital equipment and intermediate products.

Thus, manufacturing value added expanded vigorously, by an average of 14 per cent per annum from 1949 to 1953 and by 11 per cent a year from 1953 to 1957. Meanwhile, the agriculture and service sectors sustained marked decelerations in growth during the same period; traditional mineral and agricultural exports continued but they were not given as much encouragement as manufacturing for the domestic market.

By the early 1960s, the limited size of the domestic market soon outweighed

policy inducements for the continued growth and expansion of new manufacturing industries. In addition, balance of payments pressures, created by the heavy import dependence of the local manufacturing sector, necessitated the dismantling of import controls and the formal devaluation of the peso from 2 pesos to 3.9 pesos per U.S. dollar.[3]

The withdrawal of protective barriers previously enjoyed by domestic manufacturers led to a significant decline in the growth of industrial output. Growth in the manufacturing sector fell to 5.7 per cent per annum from 1957 to 1961, decelerating further to 4.8 per cent during the first half of the 1960s. Meanwhile, the adoption of a more flexible exchange rate policy spurred the expansion of exports, notwithstanding the imposition of export taxes and other measures designed to redistribute windfall profits reaped by exporters on account of the devaluation.[4]

The Philippine industrialization policy took a more definitive turn with the enactment of two major laws — the Industrial Incentives Act (RA 5186) in 1967 and the Export Incentives Act (RA 6135) in 1970. These two legislations opened priority areas of the economy to foreign investment and conferred specific benefits for the establishment of pioneer and export-oriented enterprises.[5] Joint ventures were strongly encouraged and full foreign ownership was allowed in preferred areas, provided that Filipino equity participation would eventually be admitted to the extent of 60 per cent within a span of thirty years. Meanwhile, employment generation and backward integration were given emphasis through special tax deductions and other incentives. In addition, export processing zones were set up in various parts of the country to attract foreign investments into labour-intensive export operations and to effect a regional dispersal of industries.[6]

The entry of foreign capital and the promotion of exports benefited not only the manufacturing sector but also the allied construction, utilities, and service sectors as well. Industrial contribution to national output posted a considerable expansion in the 1970s, particularly with the emergence of garments, electronics, handicrafts, and other non-traditional export industries. Meanwhile, the aggressive infrastructure development programme of the government further boosted the growth of construction and the utilities.[7]

This renewed pace of industrial activity likewise created new demands for financial and trade-related services, leading to an increase in gross value added from the service sector, accelerating from an average annual growth rate of 4.6 per cent in 1969–73 to 5.2 per cent in the second half of the 1970s (Table 1). Net national product grew by an average of 6 per cent a year, led by non-traditional manufactured exports which advanced at an average real rate of 30 per cent per annum from US$116 million in 1972 to US$718 million by 1977.[8]

Unfortunately, however, this lively pace of economic activity could not be sustained through the 1980s. The Philippine economy was hard hit by a series of oil price shocks and the ensuing global economic recession. Stiff competition among producers from less developed and newly industrializing countries effectively precluded the possibility of raising selling prices to offset escalations in energy cost and increases in interest rates. Opportunities for expanding export volume by penetrating new markets in the Western economies dimmed in view of protectionist

TABLE 1
Average Annual Growth Rates of Domestic Product at 1972 Prices, by Industrial Origin, 1949–82 (In percentage)

Economic Sector	1949 –53	1953 –57	1957 –61	1961 –65	1965 –69	1969 –73	1973 –79	1979 –83
Agriculture, fishery, and forestry	7.7	4.3	4.2	4.6	4.0	3.4	5.4	2.4
Industrial sector	8.8	8.1	3.7	5.8	5.5	7.3	8.1	3.2
Mining	23.5	7.7	1.0	2.7	14.6	11.4	4.3	−0.5
Manufacturing	14.1	11.1	5.7	4.8	6.6	7.5	5.0	2.8
Construction	0.3	2.6	−1.6	10.8	−0.6	5.2	21.8	5.3
Utilities	3.6	5.7	2.5	3.0	5.3	7.9	11.2	8.5
Services	9.4	0.6	4.6	4.6	4.7	4.6	5.2	4.1
Net Domestic Product (NDP)	8.6	6.2	4.2	4.8	4.6	4.9	6.1	3.1

SOURCES: For 1949–73, Bautista et al., *Industrial Promotion Policies*, Table 1, p. 6; and National Economic Development Authority, *Philippine Statistical Yearbook*, various years (Manila: NEDA).

measures erected by these governments to protect their own domestic industries during this period of slower growth.

None the less, the country remains committed to the pursuit of an outward-looking labour-intensive industrialization thrust in the coming years. Trade liberalization measures have been initiated to enhance the competitiveness of Philippine manufactured exports; among them, a general reform of the tariff system, the simplification of export procedures and the deregulation of selected imports. Investment incentives have been consolidated under the Omnibus Investment Act and specific promotion programmes have been lined up for priority non-traditional export products. It is hoped that these policies will rationalize industrial operations and direct new investments towards sectors that possess comparative advantage.[9]

Trends and Patterns

The industrial sector consists of the following groups — mining, construction, utilities, and manufacturing. The performance of the mining industry is closely linked with world market trends of gold, copper, and other leading mineral exports whilst domestic construction activity is largely influenced by government expenditures for infrastructure development as well as by private sector investments in residential and commercial construction. Utilities account for a minor share in industrial output but have none the less maintained a fairly stable rate of growth over the years. Manufacturing forms the core of the industrial sector and contributes significantly to the economy's bid for rapid industrialization.

The distribution of value added in manufacturing initially reflected the bias for consumer goods created by the country's inward-looking industrialization thrust. In 1948, food processing and textile production accounted for about 70 per cent of manufacturing gross value added while capital goods industries contributed a

meagre 1.5 per cent (Table 2). Tariff protection and tax incentives encouraged the establishment of processing and assembly plants but failed to create stimuli for the growth of upstream industries to supply intermediate inputs and capital equipment.[10]

TABLE 2
Distribution of Real Value Added in Manufacturing at 1972 Prices, 1948–80
(In percentage)

Economic Sector	1948	1956	1960	1965	1970	1975	1980
Food, beverage, and tobacco	60.6	43.8	41.2	40.1	40.6	36.3	36.5
Textile, garments, and leather	9.2	9.0	7.9	12.0	10.1	9.0	13.6
Wood, cork, and furniture	11.5	6.3	4.9	6.0	5.6	3.5	4.2
Paper products and printing	3.7	4.8	5.5	6.2	4.8	4.8	2.3
Chemicals and chemical products	2.9	9.9	10.0	9.1	8.5	12.4	11.2
Non-metallic mineral products	2.1	4.7	3.7	4.4	4.0	3.3	2.6
Basic metal and metal products	1.9	4.7	8.0	8.5	8.0	7.2	6.6
Machinery and equipment	1.5	4.3	6.4	7.6	7.0	8.8	7.3
Miscellaneous manufactures	6.3	12.1	11.4	8.1	11.4	14.7	15.7

SOURCES: For 1948–65, Bautista et al., *Industrial Promotion Policies*, Table 2, p. 8; and National Economic and Development Authority, *1982 Philippine Statistical Yearbook* (Manila: NEDA, 1983).

Over time, the relative importance of consumer goods industries gradually diminished as the economy reoriented itself towards the export market. Among the direct beneficiaries of this diversification were non-traditional export industries such as chemicals, electrical and electronic devices, garments, and handicrafts. By 1980, the combined share of food and manufactures and textile products dropped to 50 per cent while that of chemicals almost quadrupled from 2.9 per cent in 1948 to 11.2 per cent by 1980. The contribution of miscellaneous manufactures likewise expanded considerably with the emergence of new export industries.

As expected, the composition of Philippine exports also exhibited a marked shift away from traditional agricultural and mineral commodities with the evolution of new export industries in the 1970s. Foreign exchange receipts from sugar, coconut, wood products, and minerals continued to constitute a major share of Philippine export earnings but non-traditional manufactured exports such as chemicals, textiles, garments, electronic components, and handicrafts posted a creditable expansion during the last decade, leading to an increase in their share of total exports (Table 3). Aside from contributing higher value added, manufactured exports, being less vulnerable to the swings of business cycles offered a wider scope for market expansion during times of slower economic growth in the West.

Another consequence of the import-substitution strategy of the 1950s was the concentration of manufacturing establishments in Manila, the country's primary trading port and financial centre. Government controls on foreign exchange and the licensing of imports necessitated ready access to banks and government financial