

INDUSTRIAL RESTRUCTURING IN THAILAND: A CRITICAL ASSESSMENT

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Two and a half years since the Asia Crisis began there are signs of economic recovery in the East Asian countries. The crisis has had a significant impact on the structure of the Asian economies, and on the structure of the manufacturing sector in particular. Due to the crisis, industrial restructuring is taking place everywhere in Asia. Japan is reforming its *keiretsu*, abandoning the traditional lifetime employment and seniority systems, and trying to nurture entrepreneurship. The Korean government made a bold attempt to split up the *chaebol* system and aggressively reform industry to promote participation of small and medium-sized enterprises. Hong Kong attempted to strengthen the manufacturing sector, realising that it had relied too heavily on the service sector.

It can be argued that even in the absence the crisis, the industrial structure of the Asian economies had already changed significantly from a few decades earlier. In the case of Thailand, the adoption of an export-led growth strategy in the early 1980s brought marked changes in the composition of national income. The share of agriculture declined from 23.2 percent in 1980 to 11.3 percent in 1997 while the share of manufacturing increased from 21.2 to 28.2 percent.

This chapter describes the shift in industry structure in Thailand during the past decade, with a focus on the manufacturing sector. At the same time, it identifies problems that need to be addressed to keep the Thai economy on a growth path, assesses the government's post-crisis restructuring initiatives, and recommends further policy steps.

Throughout the analysis, we refer to four categories of manufactured products based on input characteristics.² These categories are:

- Resource-based products such as processed food, mining products, rubber products, and furniture.
- Labour-based products such as garments, footwear, toys, jewellery, artificial flowers, sporting goods, and leather products.
- Capital-based products such as steel, chemicals, petroleum products, and plastics.
- Technology-based products such as electronics, medical instruments, photographic and optical equipment, and pharmaceutical products.

The reader should recognise certain limitations in this system of categorisation. It may group together products that involve very different production processes. Moreover, there may be large differences in the labour and capital requirements among individual products within each category. Technology-based products are the most difficult to define because certain products that appear to be technology-based, such as electronics and computer parts, may actually involve relatively simple, labour-based assembly operations.

THAILAND'S DEVELOPING INDUSTRY STRUCTURE

Production Structure

Agriculture was the leading sector in the Thai economy during the two decades of growth in the 1960s and 1970s. When the first National Development Plan was launched in 1961, Thailand was a typical agricultural economy. Agriculture contributed approximately 40 percent of GDP, and over 80 percent of the population were engaged in agricultural activities. Rice was the major crop and primary products for export included rubber, maize, kenaf, and tin.

Agriculture's contribution to GDP started to decline even from the beginning of the first plan period, and in 1986 the industrial sector surpassed agriculture, both in share of GDP and in rate of growth. As the economy industrialised, the service sector such as banking, finance and insurance, and transportation, which provided basic support, grew in step with it.

The declining economic importance of agriculture and rapid growth of the industrial sector are signs of the success of the export promotion strategy implemented in conjunction with the Fifth Plan (1982-86) and continuing with the Sixth Plan (1987-91). Through this strategy Thailand's manufactured products became competitive in foreign as well as domestic markets.

Export Structure

For a highly open economy such as Thailand changes in the composition of exports readily reveal the changes in industrial structure. During the mid-1970s, exports of agricultural products, mainly resource-based products made a large contribution to GDP. Along with resource-based products, capital-based products also comprised a large part of total export value. Both resource- and capital-based products played a dominant role in the economy during this period (Figure 4.1).

The situation changed when the economy was readjusted towards export promotion in the early 1980s. The manufacturing sector, especially technology- and labour-based products started to replace the agricultural sector as the driving force for exports. Exports of manufactured products surpassed agricultural exports in 1985, and the value of manufactured exports has risen dramatically since then. Exports of technology-based products increased significantly during the 1990s, and the share of technology-based products overtook the share of labour-based products (Figures 4.1 and 4.2). Technology-based products' share of total exports increased from 27 percent in 1992 to 37 percent in 1998. During the same period, resource-based products declined from 11.3 to 9.2 percent of total exports and labour-based products fell from 21.6 to 11.7 percent of total exports.

Investment Patterns

Thailand has been among the top fifteen FDI recipient countries for the past three decades (UNCTAD 1999)³. Drawn by low labour cost, local market potential, political stability, and tax incentives, FDI has been one of the most important forces behind the shift in Thailand's industrial structure.

Since the 1980s the overwhelming number of FDI-financed projects benefiting from investment promotion measures has been in technology-based products. During the same period, the

share of locally funded promoted projects in technology-based products was very small (Figure 4.3). Net flows of foreign investment show a similar pattern. Since 1980 the largest volume of net FDI flows has gone to technology-based products, considerably exceeding the net flows to resource- and capital-based products (Figure 4.4).

Thailand's major sources of foreign investment are Japan, the European Union, the United States, and the newly industrialised economies (NIEs) in Asia. Although Japan remains the largest investor, its share of FDI into Thailand declined from over 50 percent in 1988 to only approximately 30 percent in 1998. In contrast, the shares of the United States and the EU increased considerably from approximately 10 percent to nearly 20 percent. Investment from the Asian NIEs started to gain prominence in the early 1990s and the combined investment share of these economies stood at approximately 24 percent in 1998 (Figure 4.5).

Although investment promotion measures did attract FDI to Thailand, the success came at a high cost. According to a recent analysis, the redundancy rate—the proportion of promoted investment that would have occurred without incentives—was 81 percent (FIAS 1999). The same study estimated that Thailand lost 28,500 million baht in annual tax revenue, about 0.61 percent of GDP, from the investment promotion measures, and the cost of 1.38 million baht per job created by the investment promotion far exceeded the opportunity cost of labour.

The pattern of investment is also characterised by the geographical concentration of industry, particularly in and around Bangkok. In 1981 Bangkok and its vicinity accounted for 75 percent of the total value of manufacturing. The figure was still 75.75 percent in 1990. After 1990, pollution, congestion, and labour shortages in the Bangkok region increasingly pressured investors to recognise the need to move industrial establishments to outlying regions—the Central region, Eastern region, or Southern region. Despite government fiscal incentives to encourage business relocation, most large-scale industries are still located in the Greater Bangkok vicinity in order to benefit from its large consumer market and the availability of better infrastructure facilities and social services.

MACRO-ECONOMIC ENVIRONMENT OF THE 1980s AND 1990s—BUILDING TOWARD CRISIS

Macro-economic Policy Adjustment

The Thai economy faced strong external pressures during the years 1980 to 1985. The second major oil price increase in 1979 had a serious impact because of Thailand's extreme dependence on oil imports. Real GDP growth was low, the inflation rate was high, and the debt service ratio was increasing due to heavy foreign borrowing at high interest rates. Faced with growing fiscal and external imbalances the government took a number of fiscal and monetary policy measures aimed at adjusting the economy to the new external parameters. These measures included two devaluations of the baht against the U.S. dollar (in 1981 and 1984), curtailment of public expenditures, vigorous revenue collection efforts, and a tight ceiling on external borrowing by the public sector.

Sound macro-economic management brought the economy back to a high growth track in the second half of the 1980s. Thailand's remarkable economic performance after 1986 is also attributed to external factors ranging from booming export demand, declining interest rates, and decreasing oil prices. The combined result of these factors was two-digit GDP growth in the late 1980s.

Impacts of Financial Market Liberalisation

In the late 1980s, the Thai authorities lifted most capital controls. It liberalised repatriation of profits and dividends and removed the remaining controls to give Thai companies, including banks and finance companies, access to offshore markets for funding. By 1991, virtually all capital account transactions were unregulated. In 1993, the Bangkok International Banking Facility (BIBF) was established. The purpose of the BIBF was to facilitate the international expansion of the banking sector and reduce the cost of borrowing for Thai entrepreneurs. BIBF banks were allowed to mobilise funds abroad to lend to local companies in foreign currency. BIBF banks were subjected to the same capital adequacy and liquidity requirements as non-BIBF banks but they enjoyed tax advantages. At the same time that the capital account was liberalised, the authorities started to liberalise domestic interest rates and interest rate controls were largely abolished in 1992.

Cheap foreign loans available at a presumably risk-free fixed exchange rate fuelled speculation in the property sector as well as over-investment in the manufacturing and service sectors. Even before the crisis, over capacity was common in capital-intensive industries, e.g., telecommunications, power generation, petrochemicals, steel, and refineries. Once the crisis struck Thailand in July 1997, the country's real sectors were left with tremendous unserviceable debts and half-idle facilities.

THE NEED FOR INDUSTRIAL RESTRUCTURING

To restart their full operation, debt-ridden companies need to undergo financial restructuring. The government facilitated the process soon after the crisis by setting up the Corporate Debt Restructuring Advisory Committee (CDRAC) under the Bank of Thailand. The CDRAC program targets large corporations, with total outstanding credits exceeding half of the non-performing loans in Thailand. Though necessary, debt restructuring by itself is not enough to make these companies more competitive. Even before the crisis, Thai firms were losing competitiveness in international markets and economic growth was slowing. Signs of low productivity and relatively weak position in export markets pointed to the need for changes in the structure of the manufacturing sector.

Low Productivity

Historically, the main source of output expansion in Thailand has been increases in inputs rather than improvements in productivity. In the early 1960s and 1970s, agricultural output increased primarily due to extension of the area under cultivation; yields remained low. In the 1980s, manufacturing output increased mainly because of pervasive inflows of investment. From the late 1980s to the early 1990s, high rates of investment in Thailand increased the growth rate of output. But during the 1990s, many East Asian economies achieved rates of output growth similar to Thailand's with lower rates of

investment. This meant that investment in Thailand was relatively less productive than in neighbouring economies. As a result, Thailand required a higher rate of investment to compensate for the declining growth rate (Colaco 1998).

Competitive Market Position

Just as the competitive position of an individual company is described in terms of its products' market share and the growth rates of those markets, the competitive position of a country can be judged from the market shares of its exports and growth rates of international markets. A country is 'competitive' in the production of a particular product when its share in the global market for that product is expanding. It is considered 'dynamic' in the production of a product if its share of world trade is growing above the average rate of all other traded products (Lall 1998).

Using these definitions, a country's exported products can be classified as 'rising stars', 'falling stars', 'lost opportunities', or 'retreats' (Figure 4.6).⁴ A country whose exports are mainly classified as rising stars—signifying the country is gaining market share in dynamic products, products whose markets are expanding rapidly—is in the best position. The worst situation for a country is a high proportion 'lost opportunities', which signifies the country is losing market share in products that are supposed to be dynamic. Exports classified as 'falling stars' are preferable to 'lost opportunities', since at least the country is gaining share, albeit in a shrinking or slowly expanding market. Exports classified as 'retreats' signify that the country is moving out of stagnant products and indicate that the country is undergoing a form of restructuring.

Figure 4.7 uses these categories to compare the competitive position of Thailand and other Asian countries in international markets based on export data for 1990-95. Since the data precede the Asian crisis, they may not accurately reflect the current situation. However, they do reveal historical differences in the competitive position of these economies. With more than half (54 percent) of its manufactured exports classified as rising stars, Thailand was seemingly well positioned in international markets. Even so, Thailand was not in as strong a position as some nearby economies including Malaysia, which had 73 percent of its exports classified as rising stars, and Singapore with 69 percent rising stars. On the other hand, overall, Thailand was on a par with the Philippines and it was positioned well ahead of Indonesia and Korea and somewhat ahead of China and Taiwan. Furthermore, Thailand had a smaller proportion of exports classified as lost opportunities than all except China and Malaysia.

A survey of manufacturing companies by the Ministry of Industry in early 1999 adds another dimension to our understanding the competitive position of the Thai manufacturing sector. Sixty-five percent of the Thai manufacturing companies surveyed identified their major competitors as domestic producers, joint-venture companies, and multinational corporations in Thailand. This indicates that most Thai companies compete locally instead of globally. Moreover, nearly half (48 percent) of the remaining manufacturing firms identify producers in low-cost countries (China and Vietnam) as their main competitors (Figure 4.8). This suggests that Thai manufacturers compete mainly at the low-end

of international markets where there is little product differentiation and added value is low.

Thus, although Thai manufacturers are relatively well positioned to compete in the world market, making products for market segments that are growing, they do not create high added value and remain confined to the low -end of these growing markets.

Reasons for Decline in Competitiveness

The first strain in Thailand's impressive macroeconomic performance appeared in 1996, when export growth slowed down markedly. While Thai exports grew on average 23 percent a year during the 10 years prior to 1996, growth fell to 0 percent in 1996 (Mallikamas and Pootrakool, 1998). A number of short-term factors such as a cyclical slowdown in the demand for Thai exports seem to have been at play, in particular in explaining the abruptness of the decline in export growth in 1996. However, long-term factors seem to have also been at work for a period of time before 1996, as shown by the slowdown in the growth of labour-intensive exports. The erosion in competitiveness in labour-intensive goods seems to be the result of both international and domestic factors.

International Factors

International factors include the coming on-stream of new production facilities in countries with much lower income per capita and wages than Thailand: India, China, Indochina, and the Philippines. The 1994 devaluation of the Chinese currency by about 30 percent may have been an additional factor.

Domestic Factors

Domestic factors include labour market dynamics and exchange rate policy. During 1991-1995, nominal wages in the manufacturing sector of Thailand increased by 11 percent on average, which translated into an average increase in real wages of 5 percent a year. This sustained wage growth took place despite the large disparity between rural and urban incomes and the large share of employment in the rural sector—about 50 percent of total employment. Furthermore, the increase in real wages since the mid-1980s was not matched by an increase in labour productivity (Mallikamas and Pootrakool 1998).

The exchange rate policy that linked the baht to the US dollar, until July 1997, led to an appreciation of the real effective exchange rate of the baht of about 15 percent between mid-1995 and mid-1997. As a result, labour-intensive industries such as garments and footwear were relocated from Thailand to China or Indochina. This translated into a drop in Thailand's share of labour-intensive goods on world export markets. This loss was not, however, compensated by an increase in market share in more advanced exports.

Factors Inhibiting Competitiveness in Advanced Exports

A number of factors explain why Thailand is not gaining competitiveness and market shares in more advanced products:

Quality Management

Poor management of product quality may help explain why Thai manufacturers are not positioned to

compete in high-end markets. Quality management consists of actions that a company takes to ensure that its products conform to external standards and to customers' requirements. Central to the concept of quality management is the ISO9000 standard. ISO9000 is becoming increasingly prominent as more and more importers demand products manufactured according to this standard. Thus, the number of its companies that are ISO9000-certified can be viewed as a basic indicator of a country's competitiveness.

Thailand has fewer companies with ISO9000 certification than the other Asian countries except the Philippines (Figure 4.9). Thai companies did not adopt the standard widely until 1996, two years after most countries in East Asia. Moreover, almost 40 percent of the certified companies in Thailand make products classified as capital-intensive (Figure 4.10). Surprisingly, only 20 percent of certified companies are in technology-based sectors. This share is disappointingly low since manufacturers of technology-based products are oriented to production for export. This suggests that Thai export producers have failed to keep up to the quality standards demanded in the global market.

Labour Quality

Thailand missed the opportunity to upgrade both its physical and human capital during the economic boom. Compared to bottlenecks in physical infrastructure and related services, deficiencies in human capital are the more serious drawback to improving competitiveness in advanced exports.

Education and skill levels of the Thai population lag behind those of neighbouring countries because of the neglect of secondary and higher education during the 1980s (Table 4.1). With low enrolment in secondary and technical education, Thailand has a smaller stock of skilled labour and educated workers than its competitors. The lack of skilled and trained labour has been a persistent obstacle to industry restructuring in Thailand. Since firms are more likely to provide productivity-enhancing training to more highly educated workers, Thailand's lack of better-educated workers acted as a brake on productivity growth.

Of particular concern is the small stock of Thais with science and engineering skills. For example, in 1995 Thailand had 119 scientists and engineers per million population, while Korea and Singapore each had more than 2,500 (Colaco 1998). As much as low growth of production capability, a lack of workers with training in science and engineering has limited Thailand's capability in design, research, and technology development, functions that are increasingly important in the industrial development process (Table 4.2).

There are also serious quality problems with Thailand's educational system. Curricula are outdated, personnel are under-qualified, and quality and access are unevenly distributed. The present education system is not conducive to developing the skills needed for higher productivity manufacturing and information technology- and knowledge-based services (Middleton 1998).

Other Factors

While the human capital bottlenecks and failure of quality management are important, many other

factors inhibit Thai firms in competing in advanced products.

- High tariffs distort the finished product and tariffs for such certain finished products are lower than on parts, components, and raw materials. Producers of advanced export products are therefore penalised by negative effective rates of protection (ERP).
- Supporting industries are weak, particularly local SMEs with the potential to subcontract with advanced industries to provide such critical inputs as plastics and rubber processing.
- The quality of infrastructure services and related facilities such as telecommunications, networks, and transportation is poor and investors must bear high operating costs to meet user demand.
- Financial institutions do not function well to provide loans to makers of advanced products. The difficulty of financial institutions in assessing the risk of such investments limits their access to credit. Moreover, financial institutions are reluctant to provide loans to this kind of activity because firms lack physical infrastructure and tangible assets as collateral.
- Government sectoral policies and administration are fragmented, leading to ineffective and misguided investment decisions and easily encouraging rent-seeking behaviour.

SECTOR-SPECIFIC RESTRUCTURING

This section discusses the restructuring needed in three industrial sectors that represent three competitive positions. The Thai electronics and computer parts industry is a rising star; the textile industry may be a falling star; and e-commerce represents a lost opportunity.

Electronics Industry

The electronics industry is composed of five sub-sectors: consumer electronics, computer parts and assembly, semiconductors, telecommunication equipment, and other electronics and related industries. Multinational companies dominate most of these sub-sectors. Most active are Japanese- and American-owned companies and more recently Taiwanese ones. A key characteristic of the electronics industry is the short life span of electronics products, especially computer-related products. For example, laptop computers usually become out-dated in three months, notebook computers in five months, hard disks in six months and monitors in a year. With the fast pace of technological innovation, manufacturers must be able to shift to new product lines quickly in order to survive. Thai electronics makers have shown considerable ability to adapt to changes in the world market (Poapongsakorn and Tangkitvanich 1999). Electronics products have become the largest export category, contributing 35 percent of total exports in certain years. Employing more than 330,000 workers, the industry has been a major source of job creation.

The electronics industry contributes little to the Thai economy except employment, however, because value added and use of local content are low. The case of a multi-million dollar hard-disk assembly factory is a good example. Although it employs over 3,500 workers, the factory adds only 5 percent to the value of the products it produces, and it procures less than 10 percent of its parts and raw materials locally (Poapongsakorn and Tangkitvanich 1999).

There are many reasons for the industry's low value added and limited use of local sources. First,

because of distortions in the tariff structure such that tariffs on certain finished products are higher than on the component parts and raw materials penalise producers by negative effective rates of protection (ERP). For example, home electronic appliances and insulated cable wires were estimated to have an ERP in 1996 of -11.9 and -11.5 percent, respectively (Bussayawit and Saehae 1996). Second, Thailand lacks local industries in critical areas supporting the electronics sector, such as presswork and plastic and rubber processing both because of the limited capacity of locally sourcing parts and because current tax policies inhibit the subcontracting system. Finally, the lack of qualified electronic engineers and technicians in certain areas, for example, electromagnetic interference, is a major bottleneck for upgrading the industry.

The competitiveness of Thailand's electronics manufacturers will be fully tested when the WTO Information Technology Agreement goes into effect in January 2000. Tariffs are cut to 0-5 percent for a large number of items. To maintain competitiveness, the electronics industry needs to invest more in training human resources, especially engineers and technicians. It must also acquire the ability to add more value by improving product quality, designing new products, conducting research and development, and seeking new markets.

Textile Industry

While the textile industry includes textile equipment, related petrochemical ventures, related pulp, fibre, yarn spinning, fabric weaving and knitting, fabric forming, fabric processing, and garment manufacturers, the main players in the Thai textile industry are involved in fibre, yarns, fabric, fabric processing, and garment making. The industry is widely viewed as set to become a falling star because of Thailand's rising labour costs. In 1995 annual manufacturing wages in Thailand were higher than in Malaysia and well above the level in other developing economies (Table 4.3).

Some textile industry insiders (Kittikulsingh 1999) disagree that this conclusion applies across the board. They argue that different sectors have different labour and capital input requirements so that rising wages may affect competitiveness to varying degrees. An increase in labour cost will have a significant impact on competitiveness in downstream segments, such as weaving and knitting, dyeing, printing and finishing, and garment manufacturing, which are labour-intensive.⁵ Up-stream fibre manufacturing, however, is capital-based and not greatly affected by rising labour costs. The competitiveness of garment manufacturing, which can be viewed as a service-oriented industry, depends on efficient marketing as much as labour cost. Spinning, a midstream industry, can be either labour-or capital-intensive depending on the production technology. Since spinning plants in Thailand are reasonably well equipped and not excessively labour-intensive the competitiveness of this segment should not be unduly affected by Thailand's rising wage costs.

Nevertheless, the textile industries in Thailand need modernisation. Old machinery should be replaced, staff should be trained, and marketing techniques should be re-oriented towards serving customers and securing repeat orders. Investment should focus on research and development for

quality improvement. To deal with the lack of qualified staff in marketing, quality control and auditing, and textile engineering, the government should set up an industry institute to establish a standard productivity benchmark for each sub-sector, operate a high-quality training program, and assist SMEs in export preparation (Kittikulsingh 1999).

E-commerce

Narrowly defined, e-commerce is the conduct of business on-line, that is, selling and buying goods and services through the Internet. The products traded may be physical products such as books, CDs, and used cars, or services such as travel and information services. This form of e-commerce is usually referred to as Business-to-Consumer (B-to-C) e-commerce. Business-to-Business (B-to-B) e-commerce focuses on supply-chain management and customer relationship management among companies. Both forms of e-commerce are growing very fast due to the proliferation of the Internet.

In developed economies e-commerce has increased the efficiency of conducting business and lowered transaction costs, both of which enhance overall competitiveness. Companies in these economies are adopting e-commerce very quickly. For example, General Electric (GE) expects to conduct almost all procurement through its electronic procurement system within five years. Other large companies are moving in the same direction.

Further adoption of e-commerce in developed economies will inevitably increase the pressure on Asian companies that trade extensively with them. Companies in the leading e-commerce sectors, e.g., wholesale and retail trade, pharmaceutical, automobile, and electronics industries are under the most pressure to adjust in order to maintain their status as suppliers to global companies. Asian companies will have no choice but to upgrade their technological and marketing capabilities and modify their business models to adapt to the fast-approaching information era. Unless they join the electronic supply chain, they will lose comparative advantage as suppliers of cheap and high quality parts and raw materials to large multinational corporations. To them e-commerce will become a 'lost opportunity'.

For this reason, it is worrying that Thailand lags behind other East Asian countries in adapting to e-commerce (Tangkitvanich 1999). Thailand ranks near the bottom of the East Asian economies in the number of SSL servers and Internet hosts per capita (Figure 4.11).⁶ Tangkitvanich and Nikomborirak (1997) argued that the lower penetration of the Internet in Thailand is due in part to the existence of the state monopoly of the international communication market. Moreover, while most East Asian economies have a scarcity of IT-literate human resources, the problem seems especially acute in Thailand. The country also lags in computerisation of the public sector and has fewer computers per capita than most Asian countries.

POLICY RESPONSES AND EVALUATION

The Asian Crisis triggered the realisation of the necessity to restore manufacturing competitiveness, and since 1998 the government has issued a number of programs and measures aimed at restructuring

Thai industry.

Industrial Restructuring Master Plan

In June 1998, the National Committee for Industrial Development issued the Industrial Restructuring Plan. The plan focuses on upgrading Thailand's competitiveness through a set of strategies including allocating soft loans to 13 sectors, dispatching experts to provide technical assistance, and establishing funds and government organisations to support industrial development (Figure 4.12).⁷ The implementation program budget allocation was US\$1.19 billion.

Based on a breakdown of the budget, the restructuring plan emphasises upgrading production technology and machinery and relocating labour-intensive industries to outlying regions (Table 4.4). While it includes programs to improve productivity and upgrade labour skills and product design, it allocates only 9.1 percent of the budget to these activities.

Tariff Reform

In late 1999 the Cabinet announced a comprehensive reform of the tariff structure to enhance industrial competitiveness and meet international commitments. Under the ASEAN Free Trade Area (AFTA) agreement, import duties must be reduced to 0-5 percent on 1,190 items on January 1, 2000. Furthermore, under the Information Technology Agreement (ITA), 153 items will be exempt from import duties from January 1, 2000 and another 37 items from January 1, 2005. The reform also focuses on cutting tariffs on capital goods (machinery, mechanical appliances and parts, and electrical machinery, equipment, and parts) and on raw materials (inputs of pharmaceutical, food, chemical, plastic, and textile products). At the same time, the Cabinet removed the 10-percent import duty surcharge on items with a tariff rate over 5 percent. The tariff reform is estimated to cost the government approximately US\$124 million a year in lost revenues.

SME Support Packages

Having been neglected for decades, SMEs suddenly gained recognition in a series of government support measures. A draft SME Promotion Bill was submitted to Parliament in June 1999. It provides for the creation of an SME Promotion Committee whose mandate is to recommend an SME Promotion Plan to the Cabinet, give incentives and other financial assistance to support SMEs, and direct the executive board of the SME Promotion Office. The bill will also set up an SME Promotion Fund to provide soft loans to SMEs for business start-ups and upgrading.

Independent of this bill, the Ministry of Finance initiated a package of financial support for SMEs. The package includes an allocation of nearly US\$1 billion in credit for SMEs through specialised financial institutions and the Bank of Thailand. It also established a US\$1 billion Venture Capital Fund, financed by structural adjustment loans from the World Bank, to invest in SMEs. The government also set up the Market for Alternative Investment (MAI), a special stock market with less stringent listing rules for SMEs.

Educational Reform

The National Educational Act was passed in 1999 to reform the educational system. The key component of the Act is the initiative to provide free basic education for every student through the upper secondary level from the year 2003. The Act also sets out an ambitious plan to decentralise educational administration by giving individual teachers and institutions more freedom to set their own curricula and mobilise their own resources. It also aims to introduce a quality assurance scheme through a school accreditation system. Finally, the Act promotes the use of information and other educational technologies in every school. If successfully implemented, the reform will gradually improve the quality of human resources and contribute to the long-term competitiveness of Thai industry.

Assessment and Policy Recommendations

Although the reform effort came late in the game, many aspects are laudable. At the same time, the efficacy of certain specific measures may be questioned and there remain many areas that have yet to be addressed.

The tariff reform will directly benefit manufacturers in a wide range of industries. For example, the textile industry will gain from lower tariffs on cotton and chemicals, while the electronics industry will gain from lower duties on copper cathodes. The reduced tariffs on capital goods will lower production costs for all sectors. At the same time, the removal of the import duty surcharge will reduce the degree of protection and encourage more efficient resource allocation. The tariff reform to comply with AFTA is an important step towards a comprehensive rationalisation of the tariff structure. By eliminating many distortions in the existing system it will prepare Thai industries to compete in a wider arena when full-scale trade liberalisation begins under the WTO commitments. Tariffs on non-AFTA products, however, remain high and continue to distort resource allocation in many industries.

While the educational reform program will undoubtedly raise the quality and productivity of Thai workers, it will be very costly. A recent study shows that the total increase in operating expenditure to implement the program will be as high as US\$ 1.5 billion per year by 2010. This is equivalent to an increase about 63 per cent from the current operating cost in providing basic education service (Poapongsakorn and Tangkitvanich, forthcoming).

There are more questions about the effectiveness of the Industrial Restructuring and SME support programs than about the educational and tariff reforms. The program to provide soft loans to encourage industries to relocate to outlying regions lacks a basis in economic reasoning. If total production costs were actually cheaper in the regions, companies would relocate without the inducement of soft loans. A similar argument applies to soft loans to promote upgrading production technology and machinery. Without a clear economic rationale, such programs appear to be mainly politically motivated and more likely to promote resource misallocation than to improve competitiveness.

It is doubtful that the government programs to support SMEs will solve their financing problems.

The Ministry of Finance's Venture Capital Fund is unlikely to succeed where experienced foreign venture capitalists have found it hard to make money. Similarly, it is not probable that the MAI will be able to attract investment by just relaxing its listing rules. Merely relaxing the rules would render the market much more risky for investors. Higher risks can be justified only if the listed SMEs generate higher returns than larger companies.

Government initiatives have so far overlooked certain critical areas that need to be addressed to fully restore the competitiveness of Thai industry. First, the programs have not focused sufficiently on ways to improve productivity, the critical element of competitiveness. Only a small portion of the Industrial Restructuring Plan budget allocation is to go toward improving productivity, upgrading labour skills, and improving product design. Moreover, nothing has been done yet to strengthen capability in science and technology. The way to cure Thailand's technological weakness, however, is not to simply put more government money into public research institutes. Instead, government should encourage these institutes to become more reliant on private funding in order to shift them away from supply-push R&D programs to demand-pull or market-oriented ones and to improve their productivity and accountability.

Another area that has not been touched by reform is the state monopolies. By introducing competition into infrastructure sectors, ending the state monopoly will improve the competitiveness of Thai industry across the board. For example, liberalising the telecommunication sector will boost Internet usage and jump-start Thailand into the e-commerce bandwagon.

Regional co-operation on certain issues—some general and some sector-specific—will also lead to improved competitiveness for Thai industries. Co-ordination of investment policy among would benefit Thailand as well as neighbouring economies. Southeast Asian economies are becoming involved in a costly zero-sum game, competing to offer similar investment incentives to multinational companies (Nicolas 1999). Regional co-operation in simultaneously lowering investment incentives would make each economy's FDI promotion efforts more cost-effective.

Another arena for regional co-operation is trade liberalisation. The difficulties in launching the new WTO round threaten a return to greater protectionism in world trade. Bilateral trade talks such those as between New Zealand and Singapore are also returning to vogue. With reciprocity, rather than MFN-treatment, as their key principle such arrangements can cause trade diversion and become stumbling blocks for trade liberalisation. An open regional trade arrangement such as APEC can restrain the forces for increased protectionism and bilateral agreements. The problem is how to make this regional forum work.

New industrial sectors such as e-commerce may prove to be productive areas for sector-specific co-operation among the regional economies. In fact, there is a need to harmonise laws and regulations, taxation, and standards in order to guarantee the free flow of goods and services traded by e-commerce. Regional co-operation on these issues could be a stepping stone towards global harmonisation.

Notes

1. The authors thank Mr. Kiratipong Naewmalee for his excellent research assistance.
2. The classification is adapted from OECD, 1987.
3. Thailand ranked eleventh during 1970-79, eighth during 1980-89, and sixth during 1990-96.
4. These categories correspond to the Boston Consulting Group's 'star', 'cash cow', 'question mark' and 'dog' categorisation of a firm's market position.
5. The labour intensity of the knitting and weaving industries is due not to a lack of automation, but to the scale of production, as the industries consist of many small companies.
6. An Internet host is a computer connected to the Internet with a domain name and an associated IP address. An SSL server is a computer that can set up a secure end-to-end link using the secure socket layer (SSL) protocol, a de facto standard protocol for e-commerce transactions.
7. Organisations that have been established to date include industry-specific institutions such as the Textile Institute of Thailand, the National Food Institute, the Electronic and Electronics Institute, and the Vehicle Institute and functional institutions such as the National Productivity Centre and the Industrial Design Institute. Examples of funds set up are the Fund for Venture Capital Investment, the Thailand Recovery Fund.

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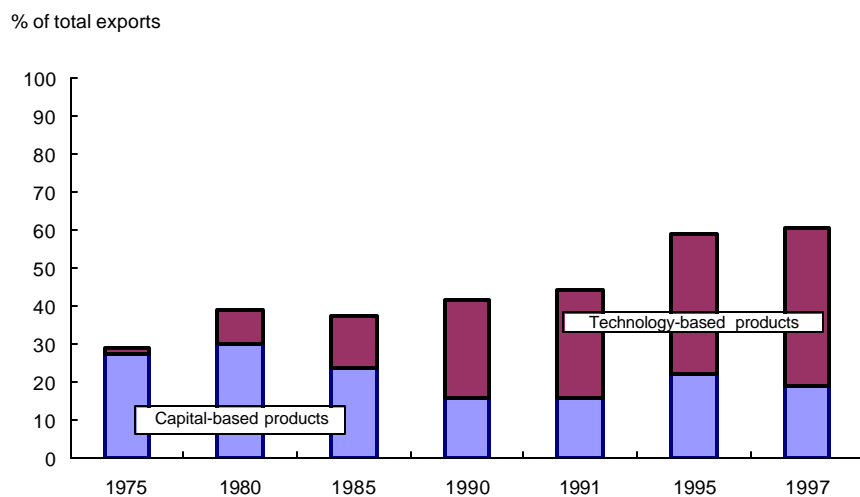
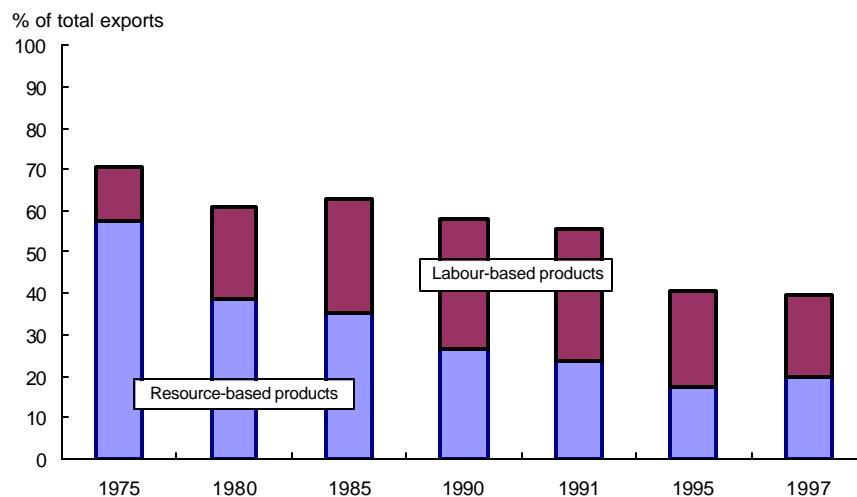
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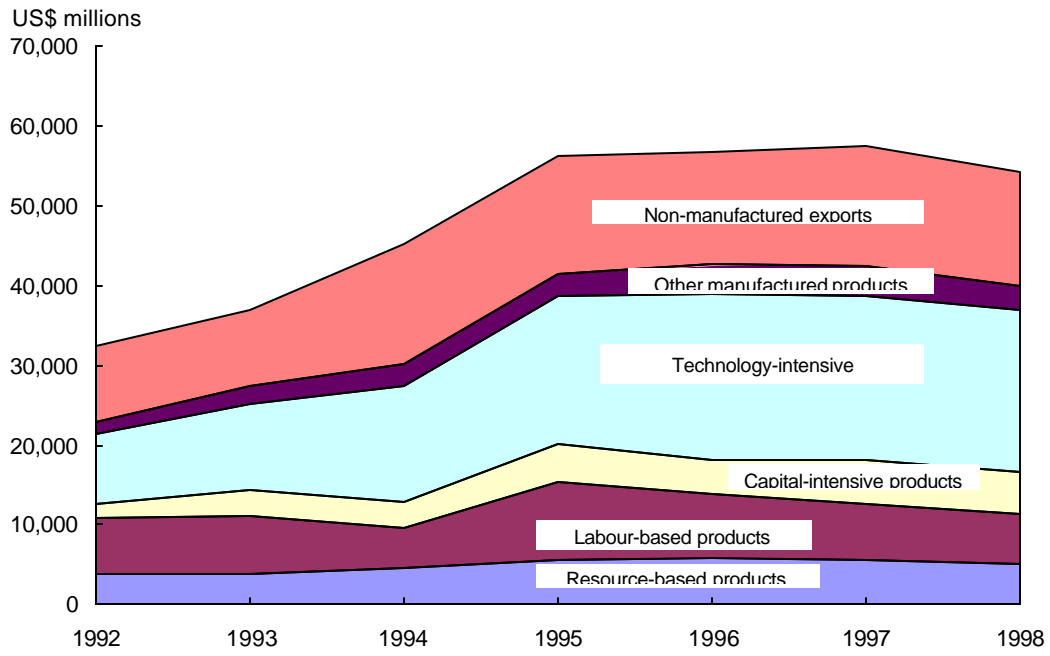
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FIGURE 4.1
Composition of Exports by Input Category, 1975-97



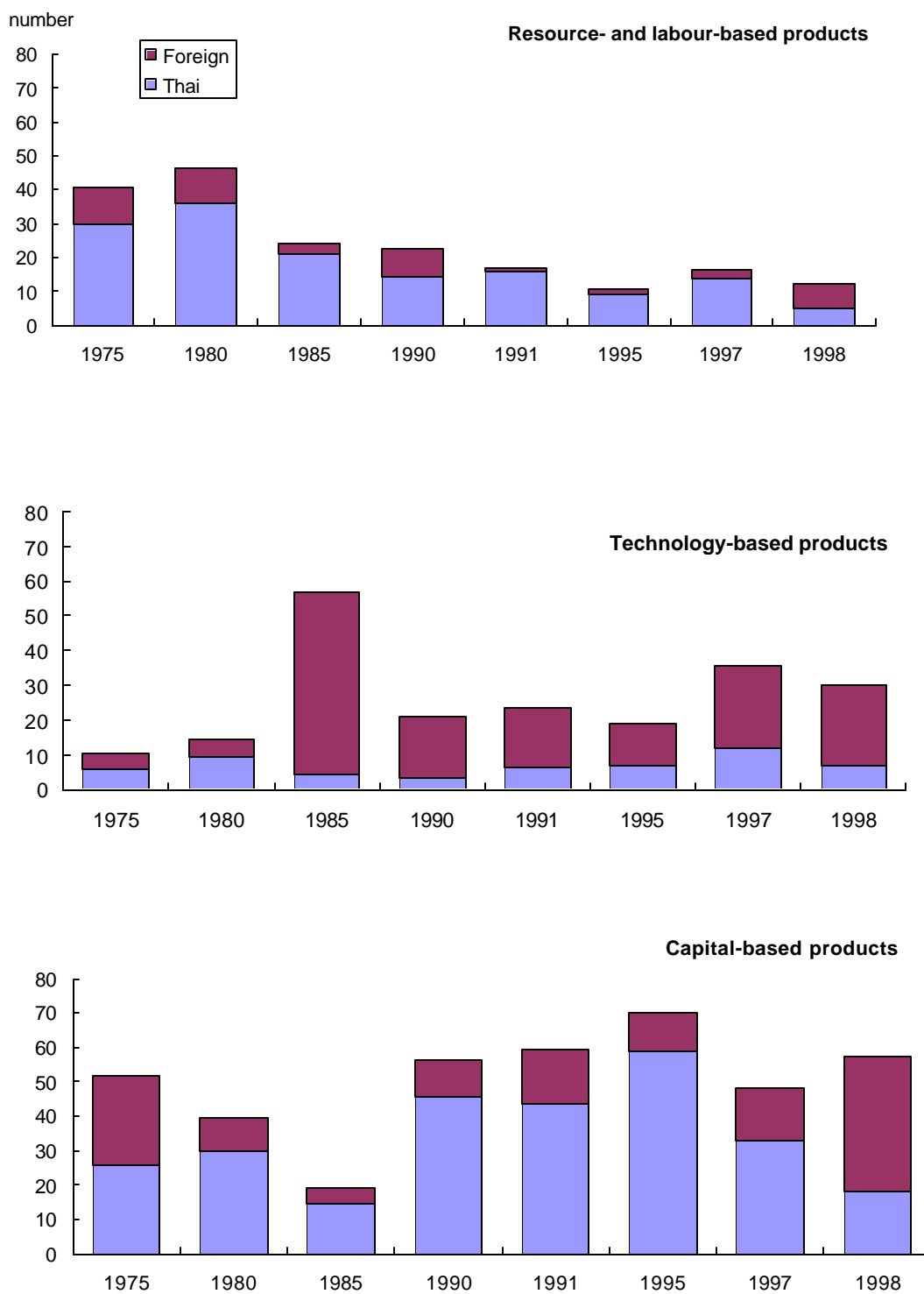
Source: Bank of Thailand

FIGURE 4.2
Export Value of Manufactured Products by Input Classification



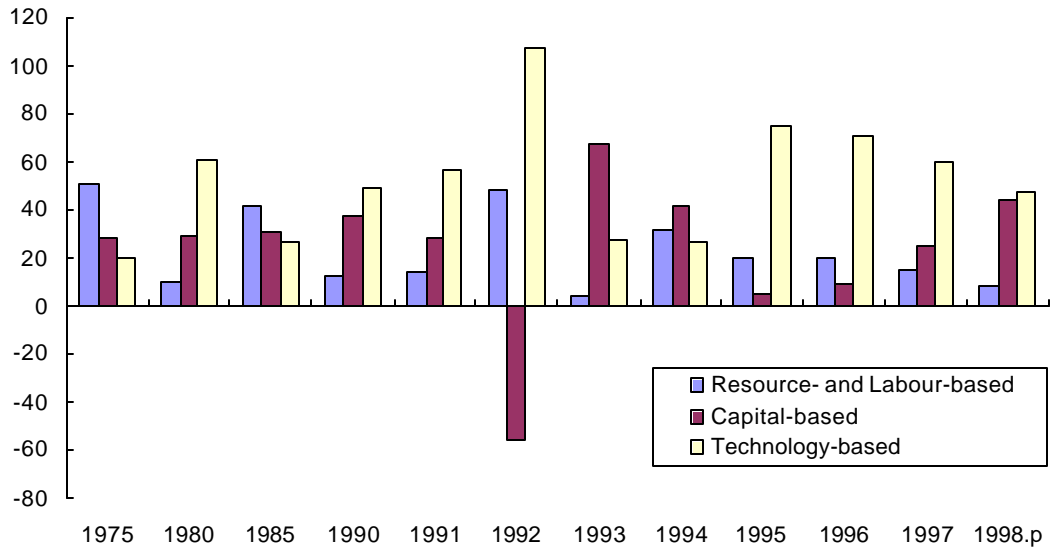
Source: Computed by TDRI from Bank of Thailand data.

FIGURE 4.3
Number of Promoted Investment Projects by Input Category and Financing Source



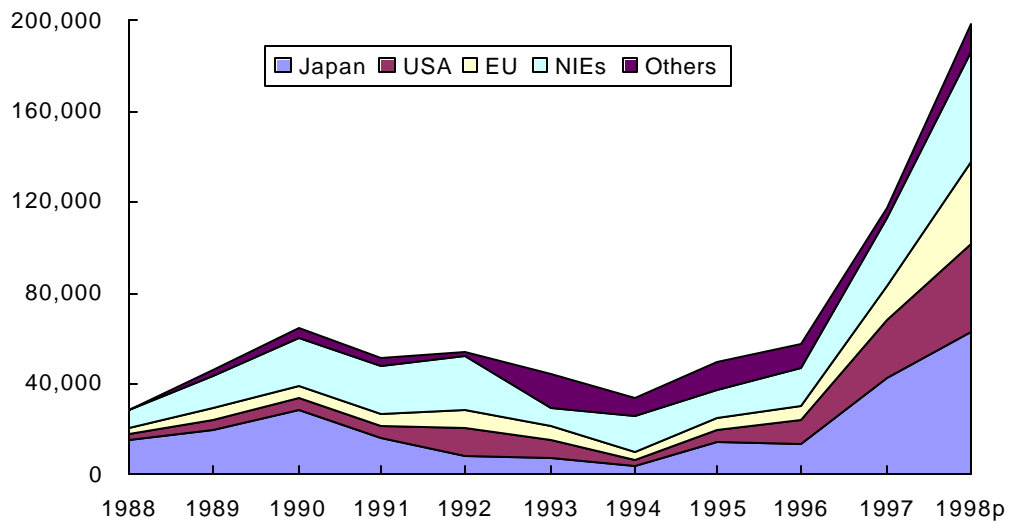
Source: Computed by TDRI from BOI Annual Report

FIGURE 4.4
Net Flow of Foreign Direct Investment by Input Category of Product



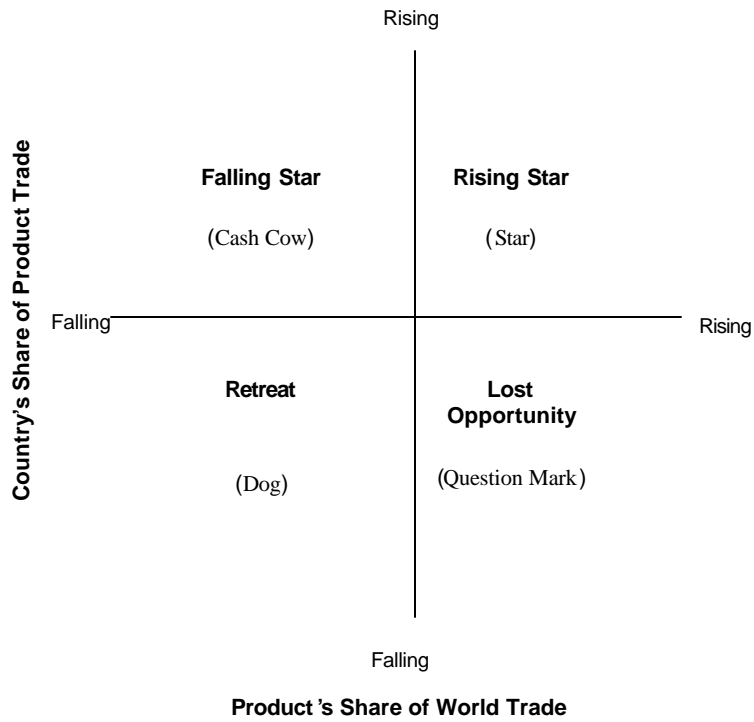
Source: Computed by TDRI from Bank of Thailand data.

FIGURE 4.5
Net Flow of Foreign Direct Investment by Source



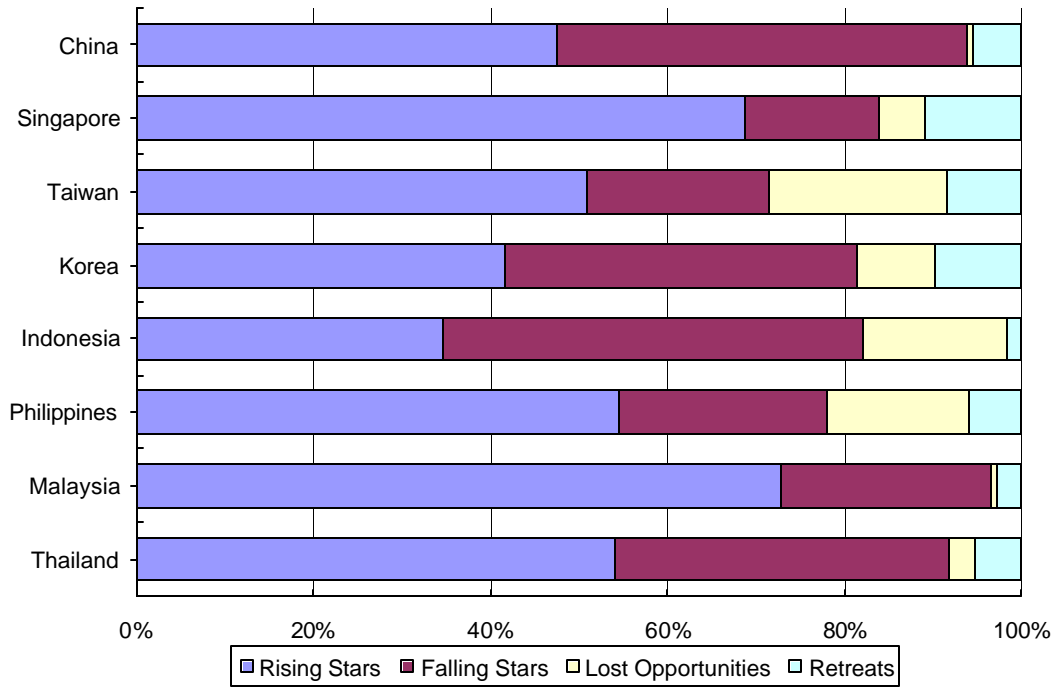
Source: Board of Investment

FIGURE 4.6
Positioning of a Country's Export Products in World Markets



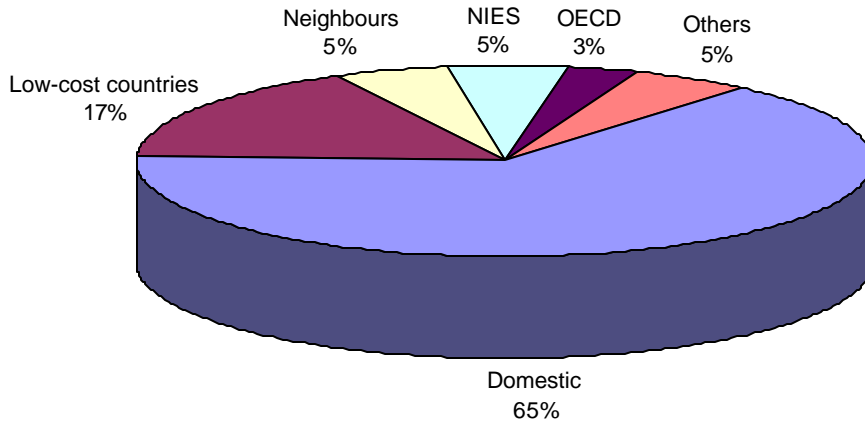
Source: TDRI based on Boston Consulting Group and Lall 1998.

FIGURE 4.7
Competitive Position of East Asian Economies in Export Markets



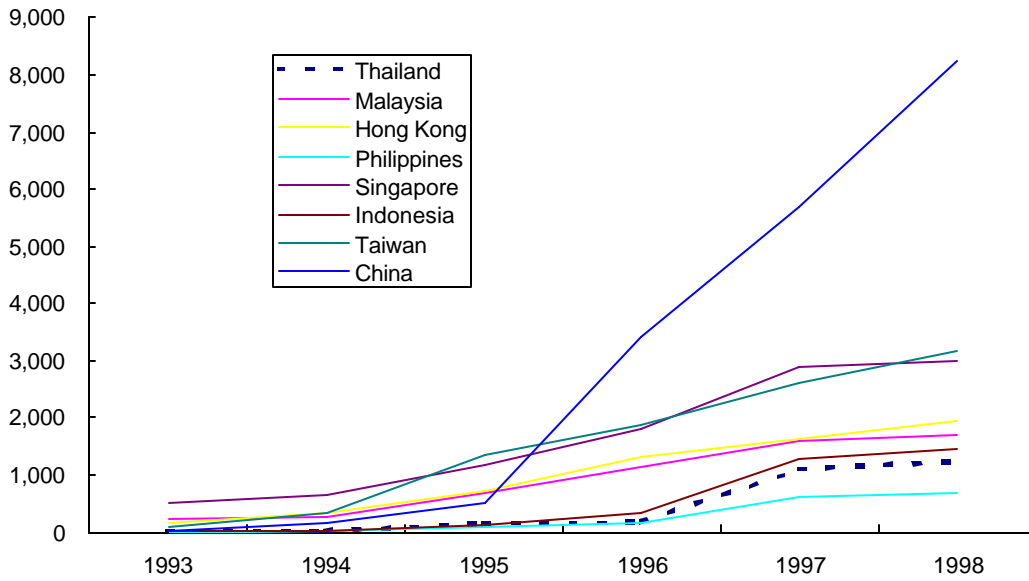
Source: Lall 1998.

FIGURE 4.8
Main Competitors Identified by Thai Manufacturing Firms



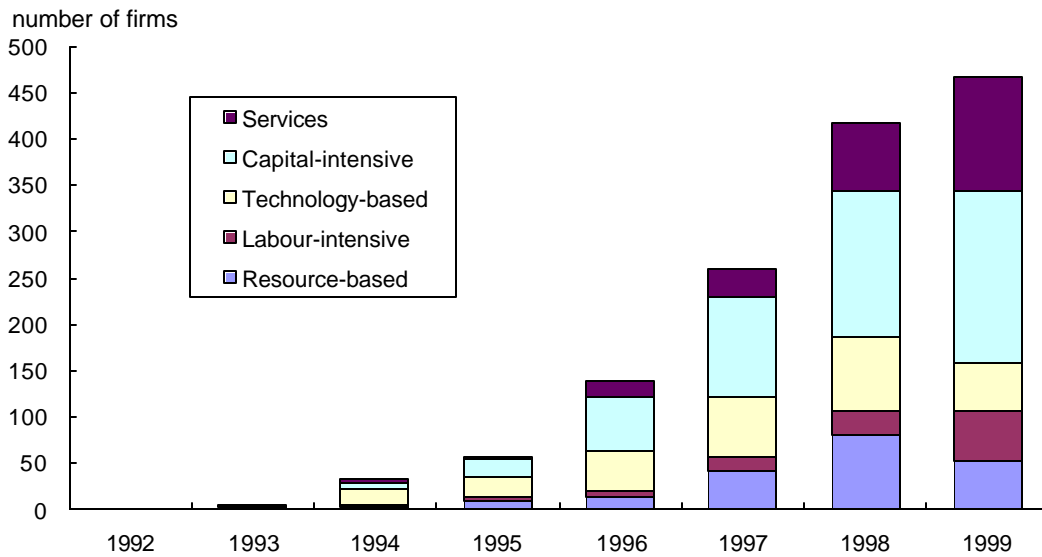
Source: Ministry of Industry

FIGURE 4.9
Number of Companies with ISO9000 Certification in Asian Countries



Source: ISO.

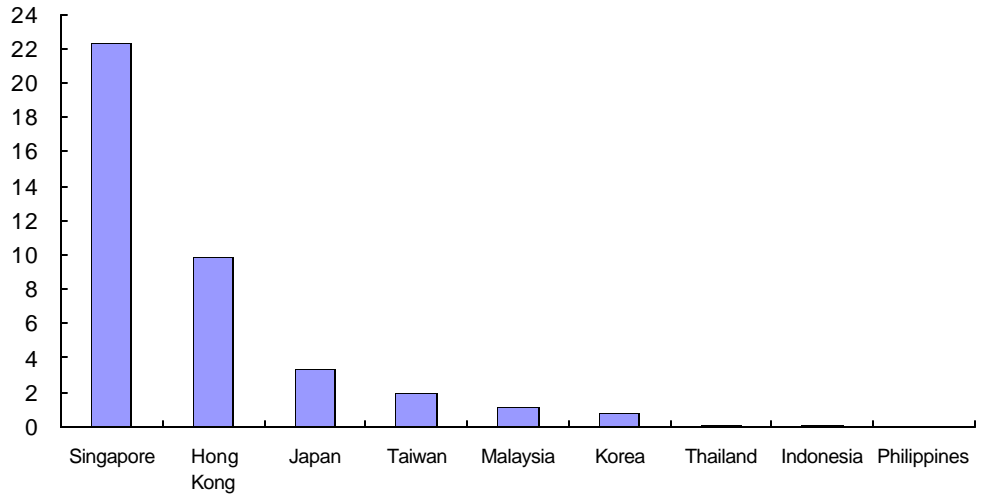
FIGURE 4.10
Thai Firms with ISO9000 Certification by Input Category, 1992-99



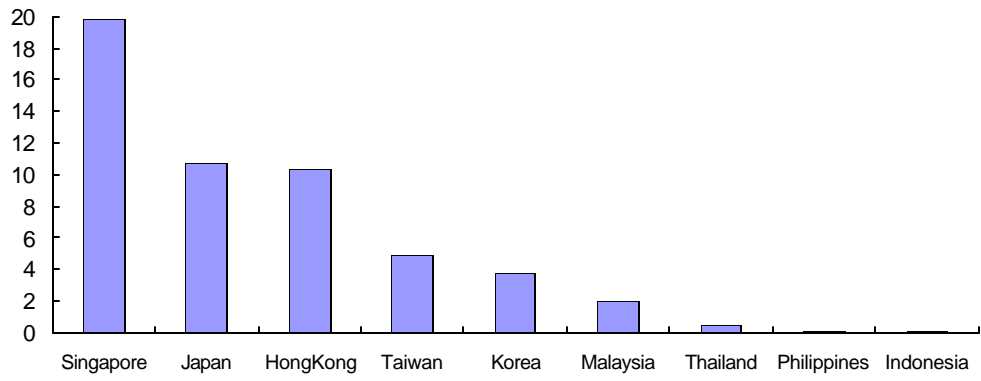
Source: Thailand Industrial Standard Institute(TISI).

FIGURE 4.11
SSL Servers and Internet Hosts in East Asian Economies

Servers/million pop



Hosts/thousand pop.



Source: Netcraft (servers) and Network Wizard (Internet hosts).

FIGURE 4.12
1998 Industrial Restructuring Plan for Thailand

1. Move towards production of high value-added products for middle-to higher markets, with higher quality standards, by
 - upgrading technology and machinery as well as quality management
 - developing product design in line with market preferences
2. Improve efficiency in terms of production costs, streamline production process and improve delivery and quick response as well as improve management capability
3. Upgrade knowledge and production skills of industrial personnel
4. Create strategic alliances to penetrate and expand markets and enhance technology transfer
5. Reduce industrial pollution through the adoption of clean technology and industrial zoning policies
6. Disperse industrial employment to regional and rural areas

Source: MOI 1998

TABLE 4.1
Enrolment in Secondary and Tertiary Education
in East Asian Economies

	Secondary School Enrolment Ratio % of age group	Tertiary Enrolment in Technical Fields	
		(QIQHIIQ	7 RYD
		QXPEHU	QXPEHU
Philippines			,525
0 ID) VD			,222
7 KICDQG			,256
QGRQHMD			,3
. RHD			,346

Source: Middleton 1998.

TABLE 4.2
Technological Capacity of East Asian Economies

	Number of Scientists & Engineers in R&D per million population	7 RYD
		([SHQVXHV as a % of GDP
7 KICDQG		
QGRQHMD		
0 ID) VD		
3KICLSIQHV		
. RHD		
6QIDSRUH		

Source: Colaco, 1998.

TABLE 4.3
Annual Manufacturing Wages in Selected Developing Economies, 1985-95
(US dollars)

					3UHQMChange	
					-	-
6QIDSRUH	,290	,839	,794	,577		.2
. RHD	,476	,353	,295	,000		.8
7 IDZ DQ	,832	,826	,469	,200		.9
Hong Kong	,808	,161	,160	,061		.3
7 KICDQG	,392	,522	,917	,450		.7
0 ID) VD	,375	,240	,555	,413	-	.1
3KICLSIQHV	,257	,802	,857	,650		.6
3N\WVWQ	,323	,754	,139	,942		.7
(J\SW	,058	,756	,751	,048	-	.6
QQLD	,298	,592	,269	,181		-2.8
QGRQHMD			,001	,	-	.2
Sri Lanka						.1
%DQ CDHK			,016		-	.3
&KLQD						.7

Source: UNIDO 1997.

TABLE 4.4
Allocation of the Industrial Restructuring Program Budget
 (US\$ millions)

	Loans to Private Sector for:		Allocation to Governmental Organisations for:			Total
	Investment	Hiring Experts	Compensation for Experts	Human Resource Development	Setting up Organisations	
7 RWD\OHDWIRQ	.0					,191.8
Productivity improvement and process restructuring						
Upgrading production technologies and PDKQU\						.0
3. Upgrading labor skills						.6
. Incubating and strengthening small- and medium -sized industries						
Product design & development and distribution channels				4		
Relocating labor-intensive industries to the regions						
Attracting foreign investment in strategic industries						
Relocating and containing hazardous industries						

Source: MOI 1998.