

Economic Policy and the Growth of Local Manufacturers in Thailand

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1. Introduction

Thailand pursued a policy of import-substituting industrialization in the 1960s under the Promotion of Industrial Investment Act, but encountered problems due to the small-scale domestic market and a growing trade deficit owing to increased imports of capital and intermediate goods. To deal with the trade deficit, the government introduced measures to promote exports under its 1972 Investment Promotion Act. The 1970s, however, were a period of rising nationalism when Thailand and other developing countries all initiated localization policies. Thailand restricted foreign capital and limited the types of jobs which foreigners were allowed to fill in certain sectors. In this way during the 1970s, Thailand began to adopt export promotion policies, but also continuing import substitution with a shift towards heavy industries.

After planning heavy industrial complex projects the country entered a recession in the early 1980s, due to the effects of the second oil-shock, and ran into a problem with the balance of payments. In response the Thai government adopted the structural adjustment program and set up further export promotion measures. The export of labor-intensive manufacturers expanded rapidly from the mid-1980s due to the international adjustment of exchange rates at the G5 Plaza Accord of 1985. Foreign direct investment from Japan and Taiwan played an important role in economic growth over this period. In the late 1980s, a great expansion in exports caused Thailand to face the problem of trade friction with developed countries. Since the beginning of the 1990s, industrial protection policies have given way to liberalization policies due to the growing demands of the domestic market. Further, in response to trade liberalization in the world market, Thailand has abolished protection and regulation measures step by step in order to stimulate trade and investment.

According to a World Bank report, economic development in Thailand is characterized by macro-economic stability, but also by a series of poorly managed sectoral interventions.¹ The role of the state is the central issue often used to explain the cause of rapid economic growth in East Asia. In Thailand, however, there has been little state direction of credit or financial allocation. Unlike governments in other East Asian countries who have intervened in the markets in order to favor specific industries and companies, the Thai government has not focused on particular industries but rather emphasized fundamentals, in particular conservative fiscal and monetary policies and infrastructural investments.

This paper examines the role of government policy in Thailand's economic

¹ Scott Christensen, David Dollar, Ammar Siamwalla, and Pakorn Vichyanond, The Lessons of East Asia. Thailand: The Institutional and Political Underpinnings of Growth, World Bank, 1993.

development. I will argue that government intervention has been ineffective to promote specific industries and that under conservative macro-economic policy, local manufactures have guided development of the Thai economy. The paper consists of five sections. Section 2 reviews the trade and investment policies of the government in detail. After the examination of overall policies, sectoral policies of specific industries and their influences on local manufactures are analyzed: petrochemical industry (Section 3) and iron and steel industry (Section 4). The final section provides some conclusions about government policy and the private sector in Thailand.

2. Trade and Investment Policies in Thailand

2.1. Export Promotion Policies

2.1.1. Refinancing Facilities

The first system set up in Thailand to promote exports was the refinancing facilities of the central bank in 1956. This system is still in operation today. Exporters wishing to obtain cheap loans can issue their promissory notes to be discounted by commercial banks at below-market interest rates. These promissory notes can be rediscounted by the central bank at further lower rates under this system. In the initial phase, this so-called 'packing credit' was mostly used by exporters of agricultural products such as rice, sugar, and tapioca. Since the loans were for a maximum of six months, they were not attractive to exporters of industrial products, who required longer term financing. The ratio of the loans to total exports exceeded 30 percent in the early 1980s, mainly as a result of increasing exports by agro-industries. This ratio subsequently decreased, however, as total exports increased. In 1994, total packing credit amounted to only 117,716 million baht or 10.3 percent of total exports, and financing for industrial products fell to only 57,256 million baht or 6.2 percent of industrial exports(See Table 1). This decrease reflected the internal divisions of labor by multinational corporations in the manufacturing sector. Products accounting for large percentages of the total amount of packing credit in 1994 included shrimp, rice, canned food, garments, tapioca, shoes, and rubber.

In addition to this packing credit, short-term pre-shipment loans have also been provided by the Thai government based on foreign letters of credit, orders, and contracts. Use by small-scale and new exporters has been encouraged. In 1994, a total of 458.5 million bahts in credit was extended to 67 exporters.

These refinancing programs were originally handled by the central bank, but were transferred to the newly established Export-Import Bank in February 1994. Other services of the Export-Import Bank are long-term lending for exports of machinery and other capital goods, medium-term credit to exporters of agricultural goods, equity participation in overseas investment of Thai investors, and export insurance.²

2.1.2. Investment Promotion for Export

² Export-Import Bank of Thailand, Annual Report, 1994.

The Board of Investment (BOI) began to grant incentives such as a holiday on income tax and exemption from import duties on machinery, raw materials, and intermediate goods for promoted activities in 1960. Almost all promotional companies in the 1960s produced products for the domestic market. In the 1970s, there were various policies to promote capital-intensive industrialization, so the export ratios of the promoted companies did not increase. Therefore, in 1983, the BOI announced Criteria for approving 100 percent foreign ownership investment projects, with export ratios of over 80 percent, so as to promote exports.³

As a result, export-oriented projects supported by the BOI increased in the late 1980s after the international adjustment of exchange rates, and reached 422 projects (67.2 percent of total foreign investment) worth 62.1 billion baht (16.8 percent) by 1990. By sector, the light industries, including textiles, accounted for 47.6 percent of the investment value. There was an increase in the number of export-oriented projects with small amounts of investment, and which took advantage of low labor costs. In 1994, however, the number of approved export-oriented projects declined to 241 (47.5 percent) worth 46.0 billion baht (31.1 percent). Along with a rise in wages over this period, investment in the labor-intensive light industries dropped to only 9.4 percent of the investment value. On the other hand, investment in electronic products increased to 44.4 percent and exports of those items are continuing to increase.

2.1.3. Tax Refunds

To increase the competitiveness of export products, the Customs Department operates tax refund measures. Under Section 19bis of the 1939 Custom Act (No.9), the authority refunds tax and duty paid on raw materials imported for the production of goods for export within one year. The number of exporters claiming for this duty drawback scheme has increased since the late 1980s. In the 1984 fiscal year, there were 34,632 applications filed for drawbacks of 1.84 billion baht.⁴ In 1994, this had risen to 357,160 applications for 18.942 billion baht. The value of the exports on which tax was refunded in 1994 amounted to 451.609 billion baht (See Table 2). The main items whose exports benefited from this drawback were textiles, garments, plastic products, ceramics, and electronic products.⁵

The drawback system, however, is not available for exporters who do not manufacture the export items themselves and does not cover taxes on domestic raw materials which are used to manufacture the exports. Therefore, in 1981 the authorities set up another system for the rebate of indirect tax in order to compensate tax and duty paid on domestic goods for export. Under this rebate scheme, exporters are entitled to receive

³ Atchaka Sibunruang, Industrial Development Policies in Thailand, World Bank, 1986.

⁴ Paitoon Wiboonchutikula, et. al., Trade in Manufactured Goods and Mineral Products, Thailand Development Research Institute, 1989, pp.58-59.

⁵The Customs Department, Annual Report, 1994.

rebates on indirect taxes added in the cost of materials, spare parts, machinery, fuel, and power. The rebate is paid by means of tax coupons. The committee set up by the Fiscal Policy Office decides on the items subject to this rebate and the rate of rebate. There is, however, a ceiling for the tax rebate of 2 percent of the total tax revenue. The amount of tax compensation rose from the 1.482 billion baht in 1984 to 10.399 billion baht in 1994. Rebates were paid on 237.698 billion baht value of exports in 1994. Under this rebate scheme in the initial phase, the costs of electricity used to produce exports was compensated.⁶

In addition, in 1994 there were 119 bonded warehouses for storing duty-free imported inputs destined for export production. The amount of tax exempted for these bonded warehouses reached 16.421 billion baht in 1994, corresponding to 86.07 billion baht worth of products exported. Factories located in export processing zones (EPZ) in industrial estates enjoy exemptions of tax and duty on machinery, equipment and raw materials imported for export production. The Custom Department have offices in these export processing zones. The total amount of imported duties exempted in 1994 reached 10.792 billion baht, covering 41.628 billion baht worth of export products.

2.2. External Influences on Thai Exports

2.2.1. GSP

To encourage increased exports from the developing countries, the developed countries have provided those countries preferential tariff privileges under their Generalised System of Preferences (GSP). Thailand began to take advantage of this system in 1971. The ratio of exports under the GSP programme in Thailand's total exports rose from 11.6 percent in 1980 to 23.4 percent in 1990, but subsequently dropped to 20.0 percent in 1994.⁷ The ratio of industrial products in total exports under the GSP programme increased from the 63.7 percent in 1982 to 85.9 percent in 1994, so the purpose of increasing the exports of industrial goods from the developing countries has been achieved(See Table 3). The main export goods which were granted GSP privileges were silver jewellery, frozen shrimp, and sports shoes.

Since the late 1980s, the criteria which the developed countries have used for extending the GSP programme have become strict. In the United States, newly industrialized countries lost GSP privileges in 1989, and Malaysia was graduated from GSP in January 1997. The European Union (EU) decided to cut tariff benefits on Thai food products by 50 percent in January 1997, and will fully withdraw the benefits in 1999. Thailand may also lose GSP privileges in the US from June 1997 because the country was the second biggest beneficiary of the programme in 1995 with an export volume of

⁶ GATT, Trade Policy Review, Thailand, vol. 1, 1991, pp.140-142.

⁷ Suthiphand Chirathivat, et. al., The Management System of the World Economy and the Response of Thailand's External Sector, Thailand Development Research Institute, 1989, pp.128, 131-135 and documents of Foreign Trade Department, Ministry of Commerce.

US\$2,487 million, second only to Malaysia with US\$5,033 million in exports.⁸

2.2.2. Countervailing Duty and Anti-dumping Duty

While the world economy is on a path to free trade due to the multilateral trade liberalization under the GATT system, the developed countries have begun to adopt measures of managed trade in order to protect their own industries from the surge in imports. Some of these protectionist measures are quantitative import restrictions, anti-dumping duties (AD), and countervailing duties (CVD). Thai export products which have been most affected by restrictions on imports have been tapioca in the EU and textiles and clothing in both the EU and the United States.

Exports of Thai products have grown rapidly since the late 1980s, so the developed countries have tried to stop the increase in imports and protect their domestic industries by imposing CVD on Thai exports. These countries regard Thailand's export promotion measures as forms of export subsidies. For example, Thai ball bearings are subject to CVD in both the United States and the EU.⁹ Import countries levy the same ratio of CVD on one item. If it is clear that domestic industries are damaged by the dumping of imports, import countries have the right to impose AD on products of specific companies which practice export dumping. The United States has levied AD on Thai products such as steel pipe and pipe joints and canned pineapples, while the EU has done the same for products such as bicycles and color televisions.

2.2.3. Intellectual Property Rights

The United States has requested Thailand to protect intellectual property rights and pharmaceutical patents. Unless some improvements are shown, it has recently threatened to cut GSP privileges for some Thai export items. Since little progress was made in negotiations, the U.S. removed GSP privileges for 16 items, such as jewellery, artificial flowers, and electrical circuit components between 1987 and 1990. It also took the stance of applying Section 301 of the US Trade Act and threatening to impose economic sanctions in the case of infringement of intellectual property rights. Based on US Trade Representative regulations, Thailand was placed on the priority watch list (PWL) in 1989. In 1991, it was raised to a priority foreign country (PFC) status.

The Thai government responded in 1993 with Cabinet decisions to amend the

⁸ The new GSP programme of the US, expected to take effect on June 1, 1997, would have three conditions Thailand does not meet. First, per capita income of eligible countries must not exceed US\$8,600, so Thailand is well under the limit at only \$2,680. Second, one country's market share of any specific product must not be higher than 50% of total imports of that product to the US. Most Thai products have only small market shares in the US. Third, US imports of a specific item from a particular country must not exceed \$76 million. Only some exports of Thai markets would be affected under this condition (Bangkok Post, March 6, 1997).

⁹ Surcharges on the export of Thai ball bearings for the EU are imposed by the Thai government instead of the EU.

Copyright Law and to protect computer software and pharmaceutical patents. In 1994, the Parliament finally passed the relevant amended laws. The United States has credited Thailand for improvements in dealing with copyright infringements and has since removed Thailand from the priority watch list. In 1995, Thailand had GSP privileges restored for the above items in the United States.

2.3. Liberalization Policies

2.3.1. Reduction of Import Tariffs

For over 30 years ago, Thailand was an agricultural producing country, but rapid economic growth has transformed Thailand over the past few decades. As a consequence industry's share of GDP has increased steadily. To deal with these changes in its economic structure and in response to global liberalization of trade and investment, the Thai government has been reducing its import tariffs step by step since 1990. Until the 1980s, Thailand still had substantial import protection for certain industries. Consumers had to bear the burden of this protection, and higher costs obstructed the export competitiveness of various industries.

By March 1994, Thailand had lowered its tariffs on 2990 goods in nine categories such as passenger cars, commercial vehicles, machinery, and electronic goods (39.53 percent of total tariff items). Starting from January 1995, it reduced import tariffs on a further 3908 goods in 11 categories (52 percent), but exempting agricultural goods. This rationalization of the tariff system also streamlined the tariff structure from 39 rates to only 6 rates in conformity with the value added escalation: 0 percent for goods that fall under the tariff exemption policy such as medical equipment; 1 percent for raw materials, electronic parts, and vehicles for international transportation; 5 percent for primary and capital goods such as machinery, tools, and computers; 10 percent for intermediate goods; 20 percent for finished products; and 30 percent for goods that need extra protection. A grace period is granted to allow adjustments for products which may have difficulty competing with imports, such as petrochemical products, textiles, furniture, toys, leather goods and watches. The grace period is in two phases: in the first phase tariff cuts will be only half the intended amount, while full tax cuts will be introduced in the second phase on January 1997. These reductions in the tariff rates will bring the average tariff rate of Thailand down from 30.24 percent to 17.01 percent in 1997, faster than the GATT agreement and giving Thai products a stronger competitiveness in the ASEAN region.¹⁰

2.3.2. Deregulation of Industrial Sectors

Along with the changes in the structure of the Thai economy, the government has been proceeding to deregulate the industrial sectors with an aim to increase competitiveness in local industry and to gain access to foreign markets. In the past, local industries have

¹⁰ Bank of Thailand, Annual Economic Report 1994, pp.120-121 and documents of the Fiscal Policy Office, Ministry of Finance.

often required continuing protectionist policy, but both growing domestic demand and international pressures have induced dramatic liberalization of domestic economic policy.

Government policies towards the automobile industry in Thailand has protected local industry with high tariff rates, and has regulated the establishment of new assembly plants since 1978 in order to achieve economies of scale. However, in 1991 the government decided to liberalize the automobile industry so as to decrease domestic car prices and improve competitiveness. The ban on imports of completely built-up automobiles (CBU) was lifted in April 1991 and import tariffs on CBU and completely knocked-down kits (CKD) were substantially reduced in July 1991. Further, the government approved the establishment of new assembly plants for passenger cars in 1994.¹¹

The Thai government plays an important role in guiding the development of other major industries also. The development of the petrochemical industry and the iron and steel industry in Thailand have followed similar patterns. These industries are analyzed in detail in section three and section four respectively.

2.3.3. Abolition of Localization Measures

In accordance with the GATT agreements under the global liberalization of trade and investment, local content requirement and export requirement measures are to be abolished. The Thai government has attempted to force auto assemblers to source local parts in order to develop the local auto parts industry since 1971. Since 1987 assemblers of passenger cars have had to achieve a local content of 54 percent by total assigned points. However, it is expected that Thailand will abandon this local content requirement within five years (by 2000), to comply with the trade related investment measures (TRIM) of GATT regulations.¹² Local auto parts companies consequently are urged to improve their technological standards and to upgrade their competitiveness.

The export requirement measures will have to be abandoned within eight years (by 2003), to comply with the subsidies and countervailing measures (SCM) of GATT regulations. However, most regulations of the Board of Investment for promoting export have already been abolished. Further, the government has agreed to amend the Alien Business Law.¹³ The purpose of this amendment is to encourage more foreign investment and to permit foreigner engagement in more fields of industry, in conformity with world-wide deregulation.

3. Petrochemical Industry

¹¹ Shigeki Higashi, "The Automotive Industry in Thailand: From Protective Promotion to Liberalization" in The Automotive Industry in Asia: The Great Leap Forward?, Institute of Developing Economies, 1995.

¹² In June 1996, the Thai government agreed with General Motors to abolish local content requirement for all passenger car assemblers in June 1998, 18 months ahead of the previous schedule. In response General Motors decided to invest in a car production factory in Rayong.

¹³ Announcement of the National Revolutionary Council No.281 in 1972

3.1. Historical Background and Structure of Thai Petrochemical Industry

The petrochemical industry in Thailand has developed from downstream plastic resin production, corresponding to the growing demands of the plastic fabrication industry. The pioneer firms in the resin segment of the industry were established in the 1970s and 1980s. Thai Plastics and Chemicals (TPC), major shares of which are held by Asahi Glass, Srifuengfung family, and Mitsui Toatsu Chemicals, began to produce PVC in 1971. Mitsui Toatsu Chemicals in Japan made a decision to invest in Thailand owing to the requests of its customers. In 1978 Pacific Plastics, once a solely owned subsidiary of Dow Chemical in the USA, became the second petrochemical producer specializing in PS. The third petrochemical plant, owned by Thai Petrochemical Industry (TPI), began to produce LDPE in 1982, the first time in Southeast Asia. TPI, a group company of the Leophairatana family, originally centered its business interests around the textile and rice trading sectors. When Prachai, currently the CEO of TPI, took over the running of the business, he decided to diversify into the petrochemical industry.

Natural gas reserves were found in the Gulf of Thailand and the government formulated the NPC1 Project in 1982 to utilize natural gas for developing the petrochemical industry. The National Petrochemical Company (NPC) was established and its olefins plant has operated since 1990 to produce ethylene and propylene from natural gas, enabling downstream production of plastic resins. The original shareholders of NPC were PTT (Petroleum Authority of Thailand), the public sector corporation with a 49% share, and a number of private sector companies with a total of 51% ownership. In addition to TPC and TPI, HMC Polymers (a member of the Metro Group) and Thai Polyethylene (a member of the Siam Cement Group) were also participants in downstream stages of the NPC1 Project.

Because of the expected growth in demand for petrochemicals and plastic products, the government put the NPC2 Project into place in 1987. Thai Olefins (TOC), which manufactures naphtha-based ethylene, propylene, and mixed C4, and Thai Aromatics (TAC), which will produce a mix of benzene, toluene, and other products, were established under the leadership of PTT. The olefins plant of TOC has operated since 1995, and the aromatics plant of TAC will commence operations in 1997. There have been many midstream and downstream private petrochemical companies promoted by the BOI¹⁴(See Figure 1).

3.2. Government Policy towards the Petrochemical Industry

Government policy has played a great role in influencing development of the petrochemical industry in Thailand. Until 1992 the government had restricted construction of new plants and had implemented tariffs on petrochemical and plastic products to protect and promote industry. After petrochemical companies of the NPC1 Project were awarded promotion bills to invest, the Ministry of Industry issued a regulation that prohibited plant

¹⁴ Board of Investment, Thailand's Investment Promotion Journal, vol.7, no.12, 1996 (in Thai), pp.48-58.

establishment by other investors in 1986. A similar regulation on petrochemical plants producing plastic resins was also implemented by the Ministry throughout the NPC2 period from 1989 to 1996. The purpose of these policies was to provide all promoted investors protection against the threat of competition from other investors.¹⁵

However, because of the growing demand for plastic resins which are materials needed by many major industries, these protective promotion policies have given way to liberalization policies since 1992. In 1992 the government began to promote a policy of liberalization and the establishment and expansion of PP, PE, VCM, PVC plants was approved to meet the increased demand for these four products. In 1994 the Thai Ministry of Industry announced policy guidelines aimed at liberalizing the market and took steps to improve its competitiveness, including the deregulation of control of the establishment and expansion of petrochemical plants. Deregulation of intermediate and downstream industry was to start from 1997, while the schedule for deregulation of upstream industry was to begin from 1999. In 1995 liberalization was moved forward and the free establishment and expansion of petrochemical plants of all stages was permitted, except for upstream aromatic production, which is not to start operation until 1999.

3.3. Effects of Tariff Reduction on the Petrochemical Industry

The government announced the reduction of import tariff rates effective 1995, with an aim to support the industrialization process and to give the country a more competitive edge in the global market in the long run. These tariff reductions are consistent with the GATT Agreement and the Common Effective Preferential Tariff (CEPT) plan of the ASEAN Free Trade Area (AFTA). But for those petrochemical industries that required time to adjust to the new tariff rates in order to better compete with imports, the tariff cuts were to be effected in two phases. In 1995, import tariffs on upstream products dropped from 20% to 12%, with a further reduction to 5% by 1997. Intermediate products were initially subject to an import tariff of 15%, while downstream products were assessed at a 30% rate. In 1997, imports tariffs on intermediate and downstream products will decrease to 10% and 20%, respectively(See Table 4).

Petrochemical downstream products in Thailand will be affected by this tariff reduction as they will now have to compete with cheaper imports. This is especially true for petrochemical plants of the NPC2 Project which have been in operation for only 2-5 years, and are still burdened with debt repayment obligations and depreciation of equipment.¹⁶ Therefore in competition with imported products, some of these plants may suffer losses. In comparison with Malaysia and Indonesia, Thailand is disadvantaged in raw materials and feedstock, which account for more than 60% of total costs.¹⁷ In spite of some advantages

¹⁵ Bank of Thailand, Monthly Bulletin, vol.35, no.7, 1995 (in Thai), pp.75-92.

¹⁶ Bangkok Bank, "The Petrochemical Industry" in Monthly Review, vol.36, no.10, 1995, pp.25-30.

¹⁷ Surat Pongpipatpanich, "Petrochemical Industry" in Somchai Ratanakomut, et. al., Manufacturing Industry in Thailand: A Sectoral Analysis, Institute of Developing Economies, 1995.

in other elements, Thailand's tariff reduction schedule is ahead of other countries and has been criticized by Thai petrochemical and plastic manufacturers due to perceived cost disadvantages.¹⁸

While Thailand has agreed to introduce the new tariff reductions, Malaysia and Indonesia have included most of their petrochemical products on the temporary exclusion list. In Malaysia, import tariffs on downstream products will remain at 30%. In Indonesia, the government has imposed import surcharges on petrochemical products in order to protect the naphtha cracker Chandra Asri plant which has operated since 1995. Because Indonesia's highly protected industry has been criticized by foreign countries, the government changed the policy to impose import tariffs only, but tariffs rates are still high. For example LLDPE/LDPE are taxed at 40%, PP is taxed at 44%, PS is taxed at 30%, while tariffs on ethylene and propylene are 25%. In Singapore, a new olefins plant with an annual capacity of 600,000 ton, will be put into operation from 1997, with a plan to export its products to Thailand. In Malaysia and Indonesia, tariff rates for petrochemical products are higher than those in Thailand, and non-tariff protective measures also remain in place at the government and private sector level.

3.4. Local Manufactures' Strategy in Response to Liberalization

Plastic resins consumption per capita in Thailand(23kg) has been lower than other developed countries and NIEs, such as Singapore(88kg), South Korea(65kg), and Japan(70kg). Nevertheless, the domestic demand for plastic resins in Thailand has been increasing continuously, with high growth rates due to strong national economic growth. This high growth of demand is an important factor that gives local producers an impetus to invest in new petrochemical plants, and encourages the expansion of domestic production to substitute imports of petrochemical products.

In Thailand development of the upstream petrochemical industry has been led by public sector corporations because of the huge amount of investment capital required. However, in response to the liberalization of the industry, the government has allowed more firms to produce upstream products and many local downstream producers have new investment plans to construct their own olefins plants in order to supply to their downstream plants. This petrochemical integration will help bring down the costs of industry, which will allow local producers to reduce their prices and become internationally competitive. Main sponsors of these olefin projects are TPI group and Siam Cement group.

TPI's olefins plant, capable of producing 360,000 tons a year of ethylene and 200,000 tons of propylene, will be built as an integral part of TPI's petrochemical complex

¹⁸On 27th December 1996, The Finance Ministry announced it would reduce import tariffs on petrochemical and plastic products on January 1st,1997. However, there will be a delay of full reduction until July 1st because of a request by petrochemical and plastic manufactures. For example, import tariffs on downstream products decreased only 27% and further reductions, decreasing a further 20%, will be announced within the next six months.

including plants producing polypropylene and polystyrene in Rayong. TPI group will also undertake oil refining projects and develop another olefins plant with the same capacity. To balance the planned upstream output, TPI is also adding to its downstream petrochemical production within the next few years. These new projects are to produce acrylonitrile which is a major raw material for ABS production, to increase the group's polyethylene output, to set up for a poly-butadiene project, and so on.¹⁹

Siam Cement group is leading an olefins plant consortium that will produce 600,000 tons a year of ethylene and 320,000 tons of propylene. The plant will use naphtha as its primary raw material and is scheduled for operation startup in 1999. Its output will be supplied to downstream plants run by its subsidiaries, a group affiliate to Bangkok Bank, and other producers. Bangkok Bank group is also investigating the viability of building its own olefins plant.²⁰

Within the domestic Thai petrochemical industry, group formation has been promoted to upgrade competitiveness in response to the ongoing liberalization process. The above olefins plant companies are leaders of this reorganization of the petrochemical industry. Recently Siam Cement group acquired stock of TPC, and HMC Polymers has become affiliated with the Bangkok Bank group. TPI group has withdrawn its shareholding of NPC and is establishing its own petrochemical complex.

On the other hand, in September 1995 the public sector corporation NPC established PTT Petrochemical (PTT-PC), owned 25% by NPC and 75% by PTT, to carry out the NPC3 Project which is intended to be a fully-integrated petrochemical operation. PTT-PC has planned a new olefins plant with a capacity of 600,000 tons of ethylene and 121,000 tons of propylene, but has decided not to start this upstream portion of its planned petrochemical complex before 2000. This is owing to a fear of oversupply when privately-owned olefins plants being constructed by TPI group and Siam Cement group begin operations. The NPC3 Project will represent diversification of the public sector into mid-stream and downstream petrochemical production after finding its major customers like TPI group and Siam Cement group crossing into its upstream territory. The NPC is also studying a merger plan with TOC, the only other public sector olefins company, in order to increase the production flexibility of the company.²¹

Under the agreement negotiated within NPC1, the downstream private sector participants would be required to guarantee purchase of 75-80% of the output from NPC. However, TPI group has already changed policy to import ethylene, and both TPI and Siam Cement group will be able to procure from their own olefins plants. In response to the liberalization policy, the former cost plus pricing system of NPC has shifted to a new system based on US Gulf Coast prices and prices charged in the Asia region. The world price of petrochemical products has fluctuated because of China's decision to impose

¹⁹ Thai Petrochemical Industry Public Company Limited, Annual Report, 1994 and 1995.

²⁰ Bangkok Post, Economic Review Mid-year 1995, pp.27-29.

²¹ National Petrochemical Public Company Limited, Annual Report, 1995.

higher import duties, anti-dumping exports by foreign countries and a series of other developments. Local manufacturers must improve competitiveness and prepare themselves to be ready for any possible fluctuation in the world market.

4. Iron and Steel Industry

4.1. Historical Background of the Thai Iron and Steel Industry

Until the 1970s, the development of Thailand's steel industry was limited to downstream processes such as pipe manufacturing, steel bar production and, wire rod manufacturing. At the beginning of the 1980s, the government conducted a feasibility study on establishing the integrated steel industry in order to decrease trade deficits caused by large volume imports of raw materials, semi-finished materials and final steel products. However, according to a feasibility study submitted to the Ministry of Industry, there was insufficient infrastructure to support a domestic steel industry due to lack of investment. The economic depression at that time also affected the integrated steel industry project.²²

In the late 1980s, Thailand had a high economic growth rate with double digit growth in three consecutive years. Due to the high linkage between the steel industry and many other industries, the Board of Investment began in 1988 to promote investment of an integrated steel project in response to the future increasing demand for flat steel products. The Ministry of Industry adopted protection measures to limit this steel project to only one producer at first, in order to support the huge investment capital required for such a project. This steel project was not an integrated steel project, and did not include an iron making facility. The structure of the iron and steel industry in Thailand is different from that of other countries. In general, the iron and steel industry has been promoted by the government as part of the armaments industry. However, the steel industry in Thailand has developed from downstream processes, due to the market being oriented towards local producers rather than directed by government policy, which provides only investment licensing.

In 1989, the Board of Investment officially decided to give Sahaviriya Group the right to launch the country's first integrated steel project. Sahaviriya Group, which was a joint venture with Italian company Duferco, partly owned by the IRI Group, overcame Siam Steel Group's rival proposal which was supported by four German steel makers. Sahaviriya proposed a plan to build factories capable of producing 1.8 million tons of hot-rolled steel sheet, 670,000 tons of cold-rolled steel sheet, and 135,000 tons of electric zinc galvanized steel sheet annually. To protect this massive investment project, the government would not allow any other similar projects to be set up in the next ten years.

After taking into consideration an investigation by the United Nations Industrial Development Organization (UNIDO), the Sahaviriya Group established a steel complex at Bang Saphan District, Prachuap Khiri Khan Province in the proximity of a deep-sea port. In 1994, Sahaviriya Steel Industries started operation at its hot-rolled steel coils factory,

²² Amorn Thavilabh, Industrial Protection: A Case Study of the Iron and Steel Industry, Master's Thesis, Faculty of Economics, Thammasat University, 1995.

the first such plant in Thailand. In this same location an electric galvanizing factory has operated since 1994 and a cold-rolled steel coil factory will begin operation from 1997.²³ The Sahaviriya Group also has two other steel complexes: Prapradaeng Complex and Banpakorn Complex. Steel plate production commenced 1996 at the latter complex.

4.2. Present Situation of the Thai Steel Industry

4.2.1. Long Products

The most common steel products produced in Thailand are steel bars and wire rods, and are manufactured in order to supply the construction industry. There are two types of steel bar and wire rod manufacturing mills in Thailand, namely, the electric arc furnace mill using scrap as raw materials, and the re-rolling mill using billet as raw materials. The electric arc furnace manufacture of steel bars and wire rods under BOI promotion are increasing owing to a boom in the Thai construction sector.²⁴ Meanwhile, Siam Yamato Steel, subsidiary of the Siam Cement Group, has produced H-shaped structured steel since 1994.

4.2.2. Flat Products

Currently, Thailand can only produce hot rolled products and some coated products. Thainox has produced cold-rolled stainless steel sheet since 1993. For hot rolled products, there are two manufactures: Sahaviriya Steel Industry (SSI) and LPN Plate Mill. SSI employs machinery and technology imported from Italy and has produced hot rolled sheets and coils since 1994. The capacity of SSI's factory will be 2.4 million metric tons per year in 1997. In the case of LPN, plate production of 500,000 metric tons per year commenced operation in 1995. Moreover, Thai Cold Rolled Steel Sheet will produce one million tons per year of cold rolled sheets and coils from 1997. This company is a joint venture between Sahaviriya group and NKK.

Production process of Sahaviriya group is using a conventional slab which is imported from Russia as main raw materials. About half of the hot rolled products are sold to the steel pipe industry, container industry, gas container industry, and so on. The remaining products are transferred to the cold rolled mill. For cold rolled products, the automobile industry and the electrical appliance industry will remain the main customers. Remaining products will be supplied for coated products lines.

Coated products made locally are tinplate and tin free steel, hot-dip galvanized and electro-galvanized sheet. There are two tinplate and tin free producers: Thai Tinplate Manufacturing and Siam Tinplate Manufacturing. The pineapple canning and tuna canning industries are the main consumers of tinplate products. Hot-dip galvanized sheet is used mainly for construction materials whereas electro-galvanized sheet is used by the

²³ Sahaviriya Steel Industries Public Company Limited, Annual Report, 1994 and 1995.

²⁴ Board of Investment, Thailand's Investment Promotion Journal, vol.6, no.8, 1995 (in Thai), pp.22-53.

automobile and electrical appliance industries. There are four producers for hot-dip galvanized steel. With respect to electro-galvanized sheet, the only producer in Thailand is Thai Coated Steel Sheet, which is a joint venture between Sahaviriya group and NKK, and commenced operating in 1994²⁵(See Figure 2).

4.3. Government Policy and Tariff Reduction in the Steel Industry

Since 1990, demand for steel sheets which are utilized by the pipe, furniture, automobile, and electrical appliance industries has increased rapidly in line with rapid economic growth. In the seventh National Economic and Social Development Plan, the iron and steel industry was one of the six targeted industries to be selected for priority development. Under the plan investment in the upstream iron industry was promoted by the government. In order to ensure an adequate supply for domestic steel sheet needs, the government overturned its protection policy which had previously given Sahaviriya group a ten-year monopoly on the production of hot- and cold-rolled steel. By ending protection the government allowed new steel sheet projects. This liberalization policy was designed to allow other producers to enter the flat rolled steel sector, and came about in November 1994 because Sahaviriya group was deemed unable to cope with rising demand for flat products. In the case of cold-rolled steel projects, the government will permit cold-rolled production from January 1998 as long as producers sell their products to the local market.²⁶

The Thai government determines the import tariff rate which affects industrial protection. In order to protect domestic industry, the tariff rate of hot-rolled coil was increased from 8 percent to 10 percent in 1995 when the hot-rolled mill of Sahaviriya group had just commenced operation. The tariff rate of cold-rolled coil is also planned to increase to 10 percent in 1997, a increase from the current 400 baht per ton (equivalent to 2-3 percent) level, because the cold-rolled mill of Sahaviriya group will start operation at that time(See Table 5). However, the import tariff on steel products is on normal track reduction under the AFTA Agreement, with Thailand under obligation to lower tariffs to 0-5 percent by January 1, 2000. The government also plans to rationalize the tariff system so as to increase the competitive ability of domestic industry in the world market: 1 percent for raw materials; 5 percent for primary products; and 10 percent for intermediate products.²⁷

Compared with other ASEAN countries, Thailand will reduce tariff rates drastically. Malaysia is planning to increase tariff rates for steel products to further protect its domestic production. Indonesia maintains non-tariff protective measurers, with imports continuing to pass through public sector Krakatau Steel. The steel industries of Malaysia and Indonesia

²⁵ Wikrom Vajragupta, "Steel Industry" in Somchai Ratanakomut, et. al., Manufacturing Industry in Thailand: A Sectoral Analysis, Institute of Developing Economies, 1995.

²⁶Anna Low, "Thai producers expand strips and long products" in Metal Bulletin Monthly, October 1995, pp.24-26.

²⁷ Bank of Thailand, Monthly Bulletin, vol.36, no.9, 1996 (in Thai), pp.11-23.

will therefore continue to enjoy assistance from their government, and will have an edge over producers in Thailand. Moreover, Thai steel manufacturers have been complaining about an influx of cheap imports due to product dumping by Russia and East European countries, along with a low import tax structure. Domestic manufacturers proposed a petition to the government to speed up passage of Anti-dumping and Countervailing Bills in order to protect local industries.²⁸

4.4. Local Manufacturers' Strategy in Response to Liberalization

Due to the liberalization of government policy in view of anticipated growth in demand for both hot-rolled and cold-rolled coil, some of the new steelmaking projects involve strip mill for the first time. Three local steel manufacturers have plans to set up their own hot strip mills. Nakorn Thai Steel Group (NTS) has installed a new electric arc furnace and continuous casting process with production capacity of 550,000 ton of steel bars and wire rods at Bo Win (Chonburi) Industrial Estate. In line with liberalization policy, NTS has decided to invest in the hot-rolled coil plant, which is operated by Nakornthai Strip Mill (NSM), with designed capacity of 1.5 million ton per year. This mini integrated steel mill with technology from SMS (Germany) is expected to commence in early 1998.²⁹ LPN Plate Mill currently produces more than 300,000 ton of old hot rolled plate per year. The company has signed a turnkey contract with Tipping for the construction of new flat steel mill in response to liberalization. The signing of this technical know-how enables LPN to realize its objective to expand the breadth of its product range to include hot-rolled plate and coils with a total capacity of 1.6 million ton per year to be completed by 1998. Siam Steel Pipe Group (SSP) has also entered into hot-rolled steel coil project with the launch of Siam Strip Mill. This project of SSP, with annual production capacity of 1.8 million ton, will begin production in 1998³⁰(See Table 6).

For cold-rolled steel production, a Japanese group expressed interest in establishing a cold-rolled production facility in Thailand, and lodged petitions to the BOI that the government should deregulate new entry of flat rolled steel sector in order to cope with rising demand for flat products. After the decision to permit new entry this project,

²⁸ The Board of Investment applied surcharges on imported shaped steel, cold-rolled stainless steel and wire rods to protect the local steel industry from foreign dumping. The surcharges were effective August 21, 1996 and will last one year. Further, the Ministry of Commerce announced it will collect preliminary anti-dumping duty on imports of structural steel from Poland and hot-rolled sheets from Russia and Ukraine. The announcement was effective December 27, 1996 and at the same time surcharges of import tariffs collected by BOI were canceled. The government investigating dumping and subsidy cases made the decision to collect anti-dumping duty on top of the normal tariff following complaints from Siam Yamato Steel and Sahaviriya Steel Industries.

²⁹ N.T.S. Steel Group Public Company Limited, Annual Report, 1995.

³⁰ Board of Investment, Thailand's Investment Promotion Journal, vol.7, no.12, 1996 (in Thai), pp.43-47.

which is operated by Siam United Steel, obtained BOI approval to produce high quality cold-rolled steel with annual capacity of one million metric ton. The plant, to be located in Rayong, is expected to start operation in 1998. Siam United Steel is a Thai-Japanese-Korean joint venture with a 30 percent stake held by Siam Cement Group, 24 percent held by Nippon Steel, and 3 percent held by Pohang Iron and Steel (POSCO). Australian BHP Group, which is joint venture with Loxley Group, is also building a cold-rolled steel plant in Rayong. The plant with annual production capacity of 400,000 ton, will begin production in 1998.

Three local steel manufacturers are also planning to install cold-rolled strip mills(See Table 7). These local manufacturers have more than 30 years experience in the steel industry. Beginning as scrap traders and dealers for various steel products, these companies entered the property business in the latter half of the 1980s. More recently, these companies have commenced steel production, especially hot and cold rolled coils and sheets, in response to the liberalization process. However, some companies are afraid of an oversupply of flat products as a result of the investment rush detailed above. It may be difficult to reach the break-even point unless manufacturers produce effectively by reducing production costs.

It is necessary to install iron making facilities using iron ore as a raw material if manufacturers desire to produce high quality steel products. But due to the massive investment required, electric arc furnace production using scrap melting is the only upstream process used in Thailand. Scrap melting is not suitable to produce high quality steel products because of purity problems. Recent increases in scrap prices due to minimal supply, and a 5 million ton estimated domestic blister steel demand in a few years are making some local manufacturers consider investment in upstream iron and steel making plant.

To realize investment in an integrated steel making plant, TPI Group has joined forces with two steel producers, Bangkok Fastener Group (BFC) and SSP Group, forming the Thai Special Steel Industry (TSSI). This project will be Thailand's first integrated iron and steel plant, including blast furnaces and steel plants for upstream and downstream primary steel production. Of the 3 million ton of hot metal which TSSI will produce, 800,000 ton will be cooled and sold as pig iron. The remaining hot metal will be converted into 2.2 million ton of billet. About 1.65 million ton of billet will be sold, while 550,000 ton will be supplied to TSSI's wire rod mill. The upstream plant is expected to be built near the TPI deep sea port in Rayong, with completion scheduled for mid-1999. With regard to production technology, TSSI selected the blast furnace process instead of corex direct reduction route due to rising fuel and material costs. Moreover, a plan for a hot-rolled coil facility with annual production capacity of 2 million ton is presently under evaluation by BOI.³¹

Compared with other ASEAN countries, the Thai steel industry has advantages of

³¹ Thai Special Steel Industry Public Company Limited, Annual Report, 1995.

economies of scale provided by growing domestic, and neighboring Indo-China market demand. Local manufacturers are moving to achieve modernization in response to liberalization. TSSI will be the countries' first integrated steel producer and its value-added production will be higher than that of others. NTS will ensure lower production costs by using mini mill technology. Sahaviriya Group is building a totally integrated industrial zone for the production of steel sheets and coils. Thai local manufacturers are undertaking investment and installing new technology to prepare themselves for a highly competitive market.

5. Conclusion

There is no doubt that the Thai state has an important role in economic development in Thailand. But overall trade and development policies have not always been indispensable in explaining Thailand's economic success. The government has never tried to control the allocation of credit and foreign exchange, as has been the case in other East Asian nations. The experience of Thailand's development shows that macro-economic management and infrastructure investments are the most essential factors undertaken by the government. Conservative fiscal and monetary policies and infrastructural provisions have made it possible for the private sector to grow.

With regard to sectoral policies, the Thai government has tried to promote the development of selected industries. To promote the automobile industry, The Ministry of Industry set up the Automobile Development Committee in 1969. At the beginning of the 1980s, the government made plans to establish a petrochemical industry and an integrated steel industry. However, its actions have not been very effective, nor have they been carried out with a clear development purpose. Compared with the governments of other East Asian nations, which have actively attempted to intervene in the market deliberately, the role of government industrial policy in Thailand is minimal, involving only the coordination of investment licenses and import duties. It may be concluded that within the framework of the government's conservative policy, the private sector has taken the opportunity to expand investment, in line with the increasing demands of the domestic market. In response to the country's integration into the world economy, Thai manufacturers must be ready to strengthen competitiveness through their own efforts.

Figure2 Integrated Steel Plant Flowchart

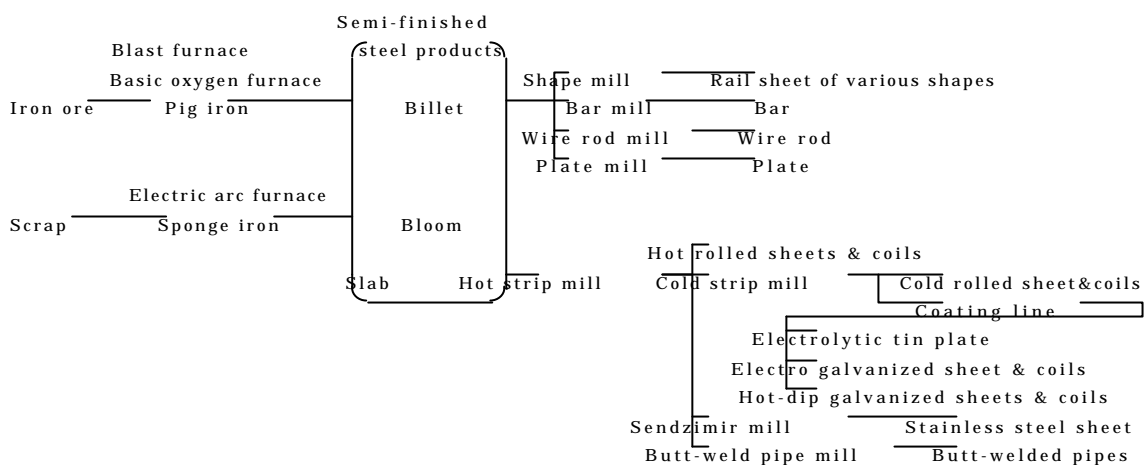


Table1 Export Credit Schemes

(unit : Million bahts)

Year	Thailand's Total Exports			Industry			Agriculture		
	Finance	Exports	%	Finance	Exports	%	Finance	Exports	%
1989	122,848	516,315	23.8	54,822	354,154	15.5	64,212	147,046	43.7
1990	138,991	589,813	23.6	66,903	440,395	15.2	66,394	132,510	50.1
1991	168,598	725,630	23.2	86,838	553,186	15.7	79,578	152,982	52.0
1992	163,655	824,643	19.8	63,473	634,385	10.0	83,171	172,603	48.2
1993	123,502	935,862	13.2	49,626	752,558	6.6	61,755	166,384	37.1
1994	117,716	1,137,600	10.3	57,256	922,791	6.2	59,563	197,462	30.2

Source: Bank of Thailand(1989-93), Export-Import Bank of Thailand(1994)

Table2 Tax Refunds

Fiscal Year	(unit : Number, Million baht)					
	1992		1993		1994	
Tax Refund						
Number of Refund Applications	208,760	+10.22	263,332	+25.66	357,160	+36.15
Amount of Tax Refunded	18,732	+26.76	18,616	- 0.62	18,942	+41.75
Value of Exports on which Tax Refunded	202,676	+58.43	268,158	+32.31	451,609	+68.41
Tax Compensation						
Number of Compensation Claims	84,644	+3.10	61,200	- 27.21	68,255	+11.53
Amount of Tax Compensation	8,767	+4.52	7,108	- 18.92	10,390	+46.30
Value of Exports on which Tax Compensation Paid	378,979	+7.92	246,477	+34.96	237,698	- 3.56
Manufacturing Bonded Warehouses						
Value of Imported Raw Materials	43,107	+38.27	55,043	+27.69	67,003	+21.73
Amount of Tax Exempted	18,144	- 61.24	20,183	+11.24	16,421	- 18.64
Export Value	56,743	+9.23	75,466	+33.00	86,070	+14.05
Number of Warehouses	115	+1.79	108	- 6.09	119	+10.19
Export Industrial Zone						
Value of Raw Materials and Machines Imported	15,380	+90.09	21,904	+42.42	35,195	+60.68
Amount of Imported Duties Exempted	5,315	+45.58	7,361	+38.49	10,792	+46.61
Export Value	16,810	+87.34	26,460	+57.41	41,628	+57.32

Source :The Customs Department, Annual Report 1994

Table3 Exports Eligible for GSP in Terms of Total Thailand's Exports

Year	(unit: Million US Dollars)							
	Agriculture	= / (%)	Industry	= / (%)	Total Exports under GSP	Thailand's Total Exports	= / (%)	
1980	209.98	27.83	544.48	72.17	754.46	6,513.31	11.58	
1981	340.40	38.80	536.95	61.20	877.35	7,018.38	12.50	
1982	354.51	36.27	622.93	63.73	977.44	6,950.75	14.06	
1983	289.41	31.34	34.13	68.66	923.54	6,373.88	14.49	
1984	285.12	26.69	675.17	70.31	960.29	7,422.17	12.94	
1985	305.79	29.23	740.21	70.77	1,046.00	7,127.37	14.68	
1986	448.48	27.49	1,182.95	72.51	1,631.43	8,876.20	18.38	
1987	541.03	21.55	1,969.18	78.45	2,510.21	11,662.90	21.52	
1988	676.38	19.90	2,721.51	80.09	3,397.89	15,970.31	21.28	
1989	714.03	16.22	3,687.40	83.78	4,401.43	20,171.54	21.82	
1990	848.48	15.34	4,683.36	84.66	5,532.24	2,3211.83	23.83	
1991	926.21	17.07	4,700.75	86.62	5,426.96	28,549.74	19.01	
1992	1,154.87	16.19	5,980.22	83.81	7,135.09	32,539.99	21.93	
1993	1,169.34	13.84	6,656.31	86.16	7,725.65	37,378.92	20.67	
1994	1,268.60	14.12	7,713.25	85.88	8,981.60	44,918.10	20.00	

Source :Department of Foreign Trade, Ministry of Commerce.

Table 4 Tariff Reduction of Petrochemical Products in Thailand

	Dec.31,1994	Jan.1,1995	Jan.1,1997
1, Upstream			
Ethane, Propane	0.001Baht/kg	0.001Baht/kg	0.001Baht/kg
Ethylene, Propylene	20%	12%	5%
Benzene, Toluene	20%	12%	5%
2, Intermediate			
VCM, SM etc.	20%	15%	10%
EG, PTA	7%	7%	7%
3, Downstream			
PE, PP, PS, PVC etc.	40%	30%	20%*
PET, NYLON	or 8Baht/kg	or 6Baht/kg	or 4Baht/kg
4, Plastic Product	60%	45%	30%*
	or 14Baht/kg	or 10.5Baht/kg	or 7Baht/kg

Source: document from Bank of Thailand

Remarks: Import tariff on downstream products and plastic products decreased only 27% and 40.5% respectively. Further reductions, decreasing 20% and 30% respectively, will be effective July 1st,1997.

Table 5 Tariff Reduction of Steel and Iron Products in Thailand

	~Dec.31,1994		Jan.1,1995~
Jan.1,1997~			
1, Ram materials			
Iron ore, Pig iron, Scrap	0%	1%	
2, Primary products			
Billet, Bloom, Slab	10%	5%	
3, Intermediate products			
Bar	20%	10%	
Hot rolled sheet	8%	10%	
Cold rolled sheet	0.4Baht/kg	0.4Baht/kg	10%
4, Finished products		20%	

Source: document from Bank of Thailand

Table 6 Future Demand and Supply of Hot Rolled Steel in Thailand

unit : Million

tons

Company	1994	1995	1996	1997	1998	1999
Sahaviriya Steel Industry	0.51	1.13	1.75	1.92	1.92	1.92
LPN Plate Mill	-	0.30	0.40	0.50	1.10	1.46
Nakornthai Strip Mill	-	-	-	-	0.75	1.20
Siam Strip Mill	-	-	-	-	-	0.67
Total capacity	0.51	1.43	2.15	2.42	3.77	5.25
Total demand table	2.00	2.69	2.92	3.60	4.72	5.29

Source: document from Board of Investment

Table 7 Future Capacity of Cold Rolled Steel in Thailand

Company	Capacity(Thousand tons)	Start-up
Thai Cold Rolled Steel Sheet(Sahaviriya Group)	1,000	1997
Siam United Steel(Siam Cement Group)	1,000	1998
LPN Strip Mill	450	1998
BHP Steel Southeast Asia	400	1998
Siam Strip Mill(SSP Group)	500	1999
NTS Group	1,000	1999
Lee Group	600	
Total	4,950	

Source: document from Board of Investment