Chapter 2

Literature Review

Organization of the Literature Review

The literature review starts by providing background of the evolution of trade theories. Current theories of international trade and competitiveness are examined. Porter's competitiveness theory, the diamond framework and stages of national development are examined in detail. Export related researches on export performance and export success are reviewed. The domain of the study, Thai economic development, Thai export development, and Thai food industry, is discussed.

Historical Background

To develop full understanding of trade, it is important to recognize the reason behind international trade. The question of why do nations trade, what benefits do international trade provide must be explored. To build foundation of understanding on the subject, this section provides historical evolution of trade theories. Assumptions and rationales behind each theory are discussed. To enhance comprehension, implications and examples are provided when possible.

Theory of Mercantilist

Theory of trade began back in Europe during the seventeenth and eighteenth centuries when modern states were beginning to develop (Rugman, Lecraw and Booth, 1985). Theory of mercantilist was popular in the eighteen century, when gold was the only world currency (Rugman and Hodgetts, 1995). The theory assumed that the power and strength of a nation increases as the nation's wealth increases. Exports increase gold stock while imports reduce

gold stock. To increase the nation power and economic well being, the country must promote exports and discourage imports. Rationale for mercantilistic view is to protect the country's interest. First, if a country is attack by an external force, gold can be used to hire soldiers to force off the attackers. Without gold, a country cannot pay soldiers and cannot defend its' interest. Second, exports increase domestic production and provide job, imports decrease domestic production and reduce employment, so the country should promote exports and reduce imports.

Theory of mercantilist was based on two wrong assumptions. One is that gold has value in itself. Gold, as a medium of exchange, has value only when it is used or traded for other productions or services. Two, the theory fail to recognize the benefit gained from the comparative advantage of using the nation's resources in the most efficient way. Another question arises from the imbalance of supply and demand. If all nations promote exports and impede imports, the supply of products offered would be greater than the demand. The market is out of equilibrium and trade on excessive supply will no longer be beneficial to the supplier.

Theory of Absolute Advantage

In 1776, Adam Smith offered theory of absolute advantage. The theory states that by specializing in the production of goods at which a nation is most efficient, the nation can increase the economic well being through international trade. The country should concentrate on production of goods where it has absolute advantage and export production surpluses in exchange for products it does not hold an absolute advantage in. If a country has absolute advantage in all goods, it should not trade. The theory of absolute advantage contradicts the theory of mercantilist where trade is allowed when there are benefits to be gained from trade. The implications of this theory are that there are gains from trade provided that there are different costs of production for different products in the two countries before trade. If country A produces product C more efficient than country B produces product D, then country A should export product C to country B in exchange for product D. Both country A and country

B then obtain benefit from trade. The more a country specialized in the production of goods it produces relatively efficient, the greater are the potential gains in the country welfare. Note, however, that even if the country as a whole gain from the trade, an individual may suffer losses. Further look at the example of country A above, if there remain some producers of product D in country A, these producers, having produce the product D at higher cost than cost of importing, stand to loose from international trade. Therefore, it is necessary to have a compensation system from gainers to losers. If compensation does not take place, the losers would try to protect their interests by preventing international trade. This can be seen by private sectors pressure the government to impose barriers to trade and oppose the move toward a free trade policy.

Theory of Comparative Advantage

David Ricardo introduced the Theory of comparative advantage in 1817. The theory states that a country should produce and trade goods that it has the greatest relative advantage. Incentives for trade exist even when one country hold an absolute advantage in all goods. There are gains from trade whenever the relative price ratios of two goods differ under international exchange from what they would be under conditions of no trade. To illustrate the rationale of the theory, assume that country A produces goods C at cost 1and goods D at cost 3, country B produces goods C and goods D at cost 4 each. If country A exchanges goods C for goods D, say country A exchanges two unit of goods C for one units of goods D. Country A benefits from obtaining goods D at cost 2, country B gains from obtaining goods C at half price of goods D.

Factor Endowment Theory

Factor Endowment Theory was developed by two economists, Eli F. Heckscher and Bertin Ohlin, in 1933. The theory is based on 2 propositions. First, products have differing factor intensity, meaning that products differed in the amount of labor and capital they required. Second, countries have differing factor abundance, meaning that countries differed in their supply of labor and

capital. The theory suggests that a country produces and exports products that use large amount of production factors that it has in abundance, and imports products that required large amount of production factors that are scarce in its country. The theory assumes trade carry out under perfect competition, no transportation costs, and complete international immobility of productive factor. The theory also suggests that a country operate to the full potential on what is available within the country, there is no attempt to anticipate changes in economic structure or to build on competitive strength in new and emerging industries. While there are weaknesses on the assumptions of the theory, the fundamental ideas are widely accepted. Many new theories in trade follow Heckscher and Ohlin's principles.

Leontief Paradox

The factor endowment theory was challenged by an empirical study made by Wassily Leontief in the mid-1950s. The study identified the United States to be a capital abundant and labor scarce country. Trade information shows that U.S. exports were more labor intensive and less capital intensive than were U.S. imports. The finding is known as the Leontief paradox. Explanation to Leontief paradox is in terms of quality of labor input as opposed to non-skilled labor, while Heckscher and Ohlin made no distinguish between labor quality. The U.S. produces and exports technology intensive products that require highly educated labor. The finding leads to more detail studies in factors contributing to export product decision.

According to Kravis (1956) and Keesing (1974), the U.S. emphasis on skilled labor through education and training raised the quality of services. The U.S. supply of skilled labor in scientific and technical fields led to a more skilled labor intensive export products than its imports. Gruber, Mehta, and Vernon (1967) find that the U.S. gains an efficiency advantage from R&D oriented industries. These industries feature high employment concentration but not capital intensive. Successful exports are the result of successful product innovation and marketing. Study shows that the level of R&D expenditure is positively related to export performance. Vernon (1966) and Wells (1972)

explain Leontief paradox by trade cycle theory. Trade cycle theory argues that U.S. exports would be more labor-intensive than U.S. imports because of the innovative nature of U.S. products. The U.S. innovates and exports new products. These products tend to be more labor-intensive in the early product cycle.

Weaknesses in Assumptions of Trade Theories

Heckscher and Ohlin's model assumes trade carry out under perfect competition, no transportation costs, and complete international immobility of productive factor. These assumptions do not apply in international trade. Under perfect competition, producers and purchasers cannot influence price, there are no barriers to entry into the industry, and firm has full knowledge of cost and demand for the present and the future market. Under different market structures, trade operates in imperfect market conditions. Imperfect competition exists under monopoly, oligopoly, and monopolistic competition.

Transportation and transfer costs exist in international trade. These costs incur by costs of physical transfer of products and costs associate with government regulation of international trade. Physical transfer costs include packing, transporting, and handling of products. Government regulation costs include import duties, quotas, and exchange restrictions. These costs increase price of imports and could affect international trade. When consider transportation costs, there are products that can be acquired at lower cost from domestic industries despite the fact that foreign industries can produce the same products at lower cost. Transportation costs, thus, influence international trade by affecting the location of production. Firm considers plant location to minimize total costs of production. Selection of production location can be classified as resource-oriented where plant location is near to raw materials, market-oriented where plant location is near to the markets, or in other location depending on the character of production processes.

According to Heckscher-Ohlin theory, there are no incentives for trade between countries sharing advantage in same industries. Heckscher-Ohlin

theory could not explain why a country imports products that it also exports. Grubel and Lloyd (1975) explains intra-industry trade by differentiated products.

Theory of International Product Life Cycle

In 1966, Raymond Vernon introduced International Product Life Cycle Theory. Initially, a new product is developed and introduced to the local market. The demand is limited and product is price inelastic. Demand grows in the local market and expands aboard, the innovating firm exports the product aboard. As demand expands in all markets, product becomes price elastic. Product and process technologies become diffused and production begins aboard. Finally, oversea producers become more cost competitive, due to lower labor and production costs, and export back to the originating country. The model provides explanation for international trade patterns during the 1950s and 1960s. As technological capabilities increase throughout the world, the new product and process technology can be rapidly transferred at relatively low cost. By mid 1970s, the movement of technology and production over the cycle became so rapid that exports from the innovating country did not occur. Instead, imports from aboard, with lower production cost, soon followed the initial introduction. The evolution of international product life cycle illustrates how dynamic environment changes pattern and structure of international trade.

New Theories of International Trade

The changing international trading environment calls for a revisit of international trade theory in the 1980s. Based on imperfect market conditions, strategic moves by producers and governments can affect trade flows and improve national welfare. In 1838, Cournot suggested that each firm chose to market the level of output that would maximize its own profits, assuming that the output level of its competitors was fixed. This is known as Augustin Cournot's Industrial Organization Theory. Further extension of theory of industrial organization involved the fact that all competitors react to price and

quantity changes in specific ways. Studies led to analysis of strategic moves by competitors using mathematical techniques known as game theory. The concepts of zero-sum game and positive-sum game (Neumanne and Morgenstern, 1944) explain the conditions under which it would be beneficial for firms to engage in specific types of behavior. These strategic behaviors applied by firms include dumping, preemption, and predation.

The concept of game theory suggests that firms and governments, under imperfect market condition, could make a strategic choice that affect a country's trade balance and national welfare. There are 2 school of thoughts. First is that government intervention could encourage activities that generate positive externalities and resulted in shifted profits from foreign economies to the domestic economy. Second is that government intervention would disrupt the general equilibrium of the economy as well as the market efficiency. Government protection policies could promote inefficiencies and redistribute income in undesirable ways.

Porter's Competitiveness Theory

Porter, Michael E. (1980) researched into companies' competitiveness was summarized in the structure of industries and the choice of companies' position within industries. His book in 1985, the Competitive Advantage was concentrating on presenting a framework for company's sources of competitive advantage and how to enhance the competitive advantage. An extension of the framework to include the challenge of international competition was explained in his study, the Competition in Global Industries (1986). A country level analysis based on empirical approach was published in 1990, The Competitive Advantage of Nations. The research was focused on explaining the reason for nation's firms succeeded in international competition.

Porter's four postulates on competitiveness are

1. The nature of competition and the sources of competitive advantage differ from one industry to another.

2. Competitive advantage can be obtained by perform some activities in the value chain outside the home country, that is advantage can be drawn from aboard and not only limited to the home base.

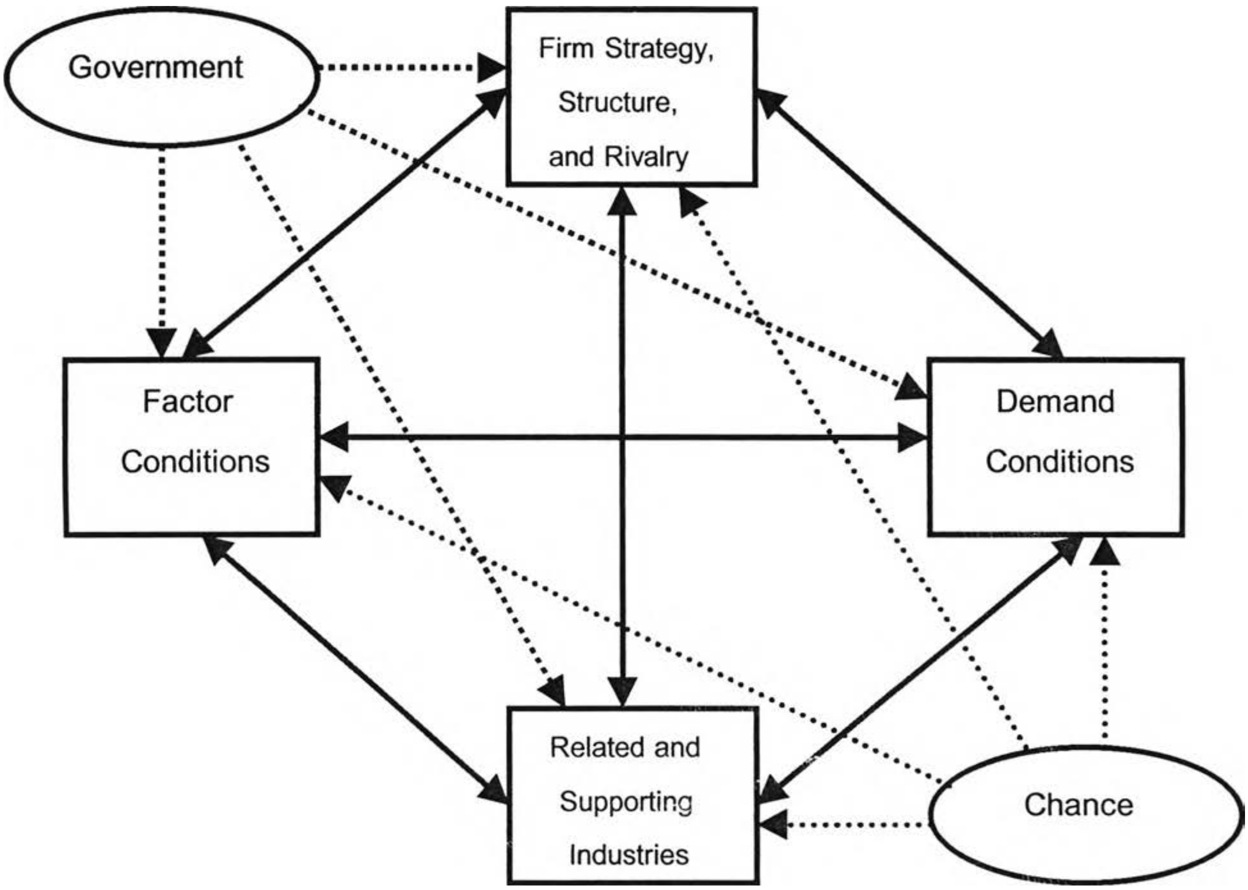
3. Sustainable competitive advantage is gained through innovation.

4. Competitive advantage is acquired by firms that move early and aggressively to exploit a new market or technology.

Porter's Diamond Framework

Porter's determinants of national competitive advantage are explained with the Diamond framework. Diamond framework is based on four attributes and two external variables. The four attributes govern the country environment in a way that promoted or impeded the creation of competitive advantage. The four attributes are factor conditions, demand conditions, firm strategy, structure, and rivalry, and related and supporting industries. The two external variables, the role of chance and the role of government, also contribute to the success or failure of an insdustry. Figure 2.1 shows the full model of the diamond framework. Each of the four attributes affects one another. The two external variables have influences on all of the attributes.

Figure 2.1 Porter's Diamond Framework



Factor Conditions

Porter derives factor conditions from factor endowments concept. The shifting idea is that endowments are dynamic and could be upgraded, created and specialized. Few factors are inherited and the others are the outcome of investment. The notion that factor abundance is a source of advantage is challenged by the fact that factor disadvantage can contribute to success through influencing strategy and stimulating innovation. Factor conditions are classified into basic and advanced factors, and generalized and specialized factors. Basic factors required little or no effort to develop. They include natural resources, climate, location, unskilled, and semiskilled labor. Advanced factors required high and sustained level of effort to develop. These factors are skilled labor, specialized personnel, and infrastructures. Generalized factors are shared by different industries. Examples are transportation system, communication system, and pools of skilled labor. Specialized factors are used

in specific industry. They include field-specific knowledge, specialized personnel, specific research and technology.

To remain internationally competitive, the nation must continue to upgrade its factor conditions. Continue development in advanced and specialized factors can secured a dominant position over international competitors. It is possible to be internationally competitive even when the nation is at disadvantage in its basic factors. Under disadvantage basic factor conditions, together with stimulating level of domestic rivalry, firms have tendency to drive for sustainable advantage through investment in factor creation and innovation.

Demand Conditions

Domestic demand conditions can influence the level of international success. Characteristics of domestic demand affect how product and process are developed. The conditions include the level of home demand sophistication, size and growth rate of home demand, domestic taste and requirements as compare to international demand. The more sophisticate demand at home stimulates strong competitive position internationally. The large domestic market means more incentive to new research and development. Similar in taste for domestic and international demand allow immediate transfer of product aboard.

Firm Strategy, Structure, and Rivalry

The firm management strategy, the organization structure, and the level of domestic competition influence how the firm competes internationally. The most successful industries usually associate with high intensity of domestic competition. To survive intensify home competition, firm is forced to continue its product development and innovation, and expand its market aboard. Firm's internal factors influencing the international success are managerial attitudes, goals, ownership structure, and motivation.

Related and Supporting Industries

Internationally competitive suppliers can provide downstream industries with easy, rapid, and preferential access to cost effective input. Domestic suppliers provide advantage of coordination. Competent suppliers can develop product according to developing needs of downstream firms and manage production plan accordingly. Downstream firms can also change their strategic plan to take advantage of supplier innovations. Internationally competitive related industries can coordinate and share activities in the value chain for the benefit of both industries. A breakthrough in one industry can increase demand for the complementary products.

Role of the Government

Government cannot be the main engine to create competitive advantage. Government policies are effective only in industries that already have potential for competitive advantage. Government can influence the competitive advantage through different policies. Government actions include tax policies, subsidies, public R&D, education policies, exchange controls, FDI controls, financial control, standard setting, and trade regulation. Government intervention can have negative effect on the long run well being of the industry. By protecting the domestic industry, firms are not under pressure to enhance or upgrade their products or production process.

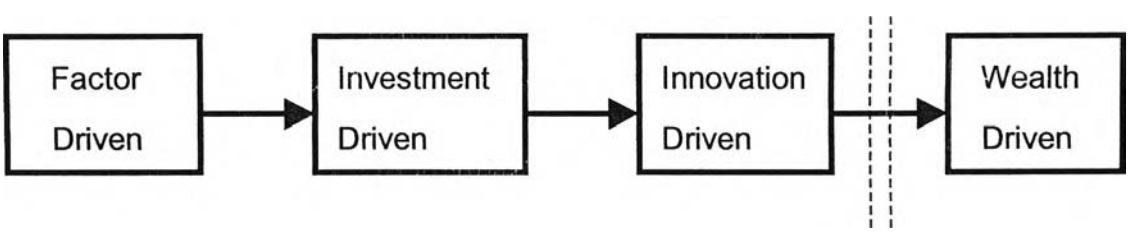
Chance

Chance can overturn the whole competitive position. Chances that have major affect on competitive position are new inventions, technological breakthroughs, wars, oil shocks, demand shifts, shifts in financial markets or exchange rates, and change in foreign political decisions. While it is true that chance can alter the competitive position, it is difficult to predict and guard against.

Four Stages of National Development

Porter identifies four stages of national competitive development. These stages are factor driven stage, investment driven stage, innovation driven stage, and wealth driven stage. Factor driven stage is where industries obtained competitive advantage from basic factors such as natural resources, and low cost labor. Firms can move to investment driven stage by capital investment in efficient facilities and in technology to improve products or productivity level. Competitiveness can further be secured through alteration and improvement in these investments. Innovation driven stage is where firms create new product, process, or technology to strengthen their competitive advantage. According to Porter, innovation is the only mean to obtain sustainable competitive advantage. Successful nations tend to move to wealth driven stage. It is in this stage that firms begin to lose their competitive advantage. Figure 2.2 shows advancement of these four stages.

Figure 2.2 Stages of National Development



Porter evaluates and assigns each of the 10 countries on to these stages. Singapore is in factor driven stage. Korea is in investment driven stage. Italy, Japan, and Sweden are in innovation driven stage. Denmark is in innovation moving back to investment driven stage. Switzerland, Germany, and the U.S. are moving from innovation to wealth driven stage. The U.K. is in wealth driven stage. According to Porter, country develops from one stage to another. Therefore, proper placement of country into these stages is essential as it determine how the country can further be developed. Argument lies in the fact that within a country, it is likely that individual firms within an industry are in different stages of development so it is a development span of two or more stages within industry. It is also possible that different industries are in

different stage of development. So it might not be possible to assign a particular stage of development to a country.

Critique of Diamond Framework

Porter drew his framework from statistical analysis of export data of 10 countries. These countries are the United States, the United Kingdom, West Germany, Denmark, Sweden, Switzerland, Italy, Japan, Singapore, and South Korea. These countries are either member of the Triad or an industrial country. Under developed and developing countries are operating under different environmental conditions. The question arises in whether the diamond framework is applicable to these countries.

Porter identifies diamond framework's level of analysis as being industrial or national. He agrees, however, that firms, not the nations, compete in international markets. Therefore, the diamond framework must be applied at firm level.

Porter states that outward FDI can create competitive advantage through value chain activities aboard. Inbound FDI has no positive effect on the nation's competitive advantage. Inbound FDI, on the other hand, can be a draw back as domestic firms may lack the ability to defend their market positions against foreign firms. Argument is whether inbound FDI could create favorable domestic competitive condition, and whether it is possible that domestic firms stand to gain from positive spillover effect of inbound FDI superior process and technology.

Relevance Studies

Dunning (1988) argues for Eclectic Paradigm. Under eclectic paradigm, competitive advantage occurs through ownership specific advantage, location specific advantage, and internalization. Competitive advantage is gained

through combination of firms owning special knowledge or characteristics, country locational advantage, and internalization of transactions.

Rugman and D'Cruz (1993) suggest the extension of diamond framework to join Canada and the U.S. in double diamond framework. The concept is through North America economic integration to take advantage of geographically connecting countries, Canada and the U.S.. The two countries are strategically integrated into a single market. Under the double diamond framework, advantages from both countries are integrated to produce higher or more beneficial conditions. The higher level of competitive advantage is the result.

Yip (1995) argues that competitive advantage occur through global strategy. It is possible that R&D is located in one country, material sourcing in second country, and manufacturing can take place in another country. Global strategic approach can reduce cost and increase competitiveness. Successful global strategy requires more control, communication, and information system.

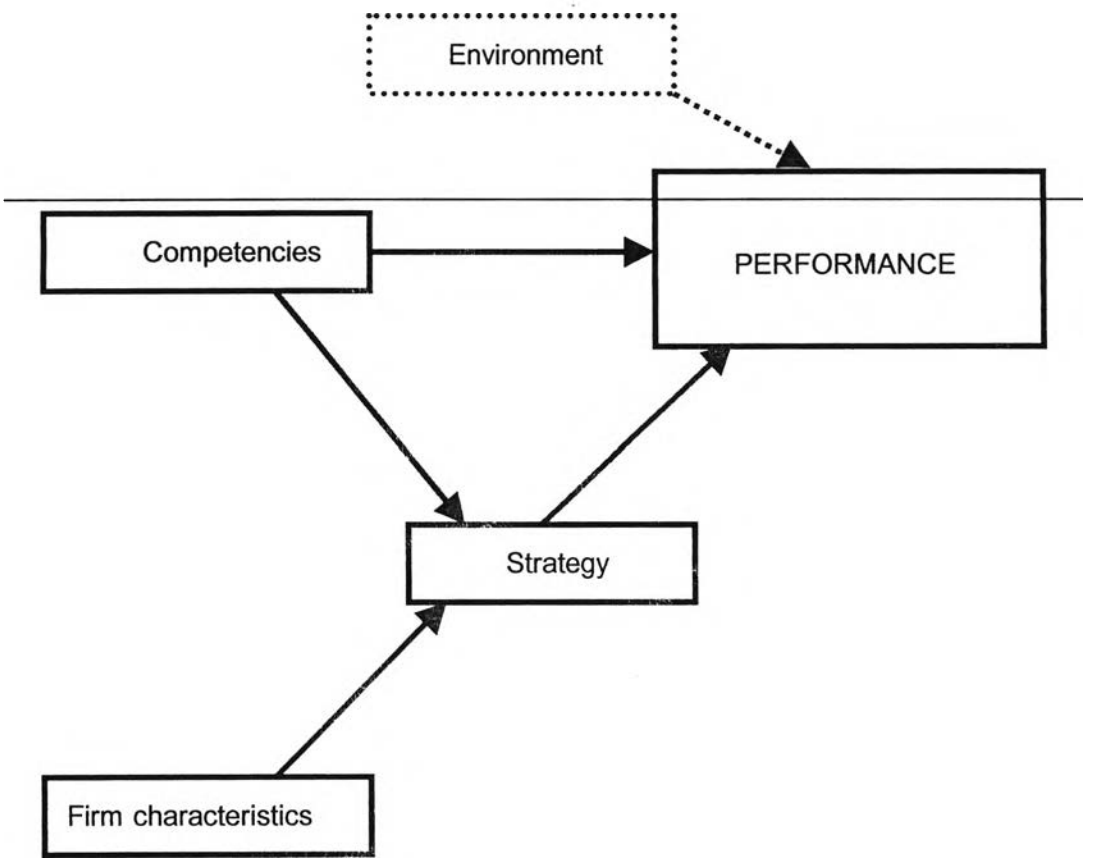
Export Related Researches

Relevance researches on export are on measures of export performance and factors affecting export performance. Export performance can be measured by both objective and subjective measures.

Aaby and Slater's Export Literature Review

Aaby and Slater (1988) reviewed empirical literatures relating to export performance during 1978 to 1988. They consolidated Bilkey (1978)'s review of 43 research studies on export behavior of firms with other 55 studies on export performance during 1978 to 1988. The review concludes with a general model for accessing export performance. Figure 2.3 shows model for assessing export performance.

Figure 2.3 Export Performance Model



Mathematical Model:

Export performance = f (Firm characteristics, Competencies, Strategy)

Constructs are firm characteristics, competencies, strategy, and export performance. Firm characteristics are measured by firm size, management commitment, management perception towards financial incentives, competition, market potential, distribution, delivery, and service, government incentives, risk, and profit. Measure for competencies are technology, export/market knowledge, planning, export policy, management control, quality, and communication. Strategy is measured by market selection, use of intermediaries, product mix, product development, promotion, pricing, and staffing. Beside the three constructs, environmental factors are found to be external influence to export performance.

There are two approaches to measure export performance. First is to separate firms into categories of exporters and non-exporters. Exporters imply successful export performance. There are arguments as to whether being exporting firms imply successful. There could be poorly performed exporters. Grouping all exporters into one category assumed that poorly performed exporters are no different from highly successful exporters. Second is to measure firm on some dimensions. Successful export performance is measured in term of rate of growth in export sales, export sales profitability, and percentage of export sales to the total sales of the firm. The second approach reflects an improvement in performance criteria over the categorical approach.

General conclusions from these studies are organized according to firm characteristics, firm competencies, and strategy. Firm competencies are better determination of export success than firm characteristics. Firm size is not an important factor in determining export performance unless it is linked to aspects such as financial strength, or economy of scale. Management commitment is positively related to export performance. Good management and planning systems is positively related to export performance. Successful exporters associate with firm competencies in term of management international vision, consistent export goals, risk taker, and willingness to engage in export activities.

Chetty and Hamilton's Export Literature Review

Chetty and Hamilton (1993) conducted a meta-analysis extension of Aaby and Slater (1989)'s export performance. The analysis includes 111 studies on firm-level export performance during 1978 to 1991. The study criticizes that Aaby and Slater (1989) failed to find strong supports for relationships embodied their framework. The study, using meta-analysis technique, allows statistical support for Aaby and Slater's framework. The significant level, not significant, positive significant, or negative significant, is applies to each of the measure of export performance.

Other Studies on Export Success

Sriram, Neelankavil, and Moore (1990) conduct a study using 223 small-to-medium size firms to identify export success factors. The study uses both subjective and objective measures of export success. The finding suggests that export knowledge, commitment, and the product technology have positive relationships with export success.

Ughanwa (1990) reviews export related literature. He concludes the reasons for export on national level as to maintain healthy balance of payments in international trade, increase production and productivity, maintain and sustain standard of living, and build political, economic, and social relationships with other countries. At firm's level, firm exports to achieve higher profits, spread business risk, utilize production capacity, and achieve economies of scope. Characteristics of successful exporters are select the right market, pay attention to product quality, use niche market strategy, make use of effective distribution, use effective promotion, adopt flexible pricing policies, commitment to export, use effective communication, and customer orientation.

Holzmuller and Kasper (1991) identify determinants of export potential by company objectives, manager characteristics, and organizational culture. Export success requires foreign trade know-how, marketing knowledge, and efficient production. Export performance also related to attitudes, value systems, and norms of the company.

Export Success

Export success can be measured both subjectively and objectively, (Sriram, Neelankavil, and Moore, 1990). Subjective measures are as valid as objective ones (Dess and Robinson, 1984). Subjective measures are management perception. Objective measures are rate of export sales growth, and proportion of export sales to total sales.

Factors Related to Export Success

Barriers to export lie within the firm, not the external environment (Wiedersheim-Paul, Olson, and Welch, 1978; Cavusgil and Nevin, 1981). Factors critical to export are business goals, management expectation, level of commitment to export marketing (Nigel, 1975; Kizilbach and Maile, 1977). Export comparative advantage depends on the intensity of technological effort (Cavusgil, 1980; McGuiness and Little, 1981; Suzman and Wortzel, 1984). Successful exporters value quality control and seek unique product attributes (Kacker, 1975; Daniels and Goyburo, 1977; Tessler, 1980; Christensen, da Rocha, and Gertner, 1987). Successful exporters focus on market factors such as market segmentation (Philpot, 1975; Piercy, 1981; Wortzel and Wortzel, 1981). Level of competition relates to export success (Bilky, 1978; Czincota and Johnston, 1983; Cooper and Kleinschmidt, 1985). Trade barriers influence export success (Hirsch and Adar, 1974; Christensen, da Rocha, and Gertner, 1987).

The Domain

The domain of the study is on Thai food industry. Export has been an important part of Thai economic structure. Thailand economic development has been built on Thai export.

Thailand Economic Development

During 1950s, Thailand with the assistance of the World Bank studied and laid out development plan necessary for the country economic growth. In 1961, Thailand started implementing her first National Economic and Social Development Plan (NESDP). The major objective of this plan was to facilitate economic growth through investing in infrastructure, manufacturing, and in agricultural products. The first plan was used for six years, since then Thailand implementing new plan every five years. Major objectives of these plans were to facilitate economic growth and stability, to support social development, to

promote investment, and to develop infrastructure system. Table 2.1 shows result of NESDP in term of economic growth and inflation rate.

Table 2.1 National Economic and Social Development Plan

NESDP #	Period	GDP % growth	Inflation Rate
1	1961 - 1966	8.1%	2.0%
2	1967 – 1971	7.8%	1.8%
3	1972 – 1976	6.5%	10.5%
4	1977 – 1981	7.4%	11.5%
5	1982 – 1986	5.4%	3.3%
6	1987 – 1991	10.9%	5.0%
7	1992 – 1996	8.2%	5.5%

Source: National Economic and Social Development Board,
Office of the Prime Minister

The first NESDP was successfully implemented. The country economic growth was impressive at average 8.1% per annum while inflation rate rose at an average 2% per annum. Per capita income rose from 2,137 baht in 1961 to 3,063 baht in 1966. Export value increased with major export items being rice, teak, rubber, tin, maize, and tapioca. In term of infrastructure, the development plan covered road network expansion especially national highway and provincial highway, irrigation and power plant projects, railway and communication system, and tertiary education system.

The second NESDP aimed to further develop infrastructure, promote private sector investment, and improve social welfare. During the beginning years of implementing the second NESDP, investment increased substantially and economic expanded at a rapid rate. In 1969, US Army withdrawal from Vietnam resulted in US Army budget cut in Thailand. Pace of Thailand's economic growth started to slow down. Toward the end of the plan, economic growth dropped further as a result of the low agricultural produce due to

drought in cultivation area and the falling of world price of rice and world price of rubber.

The third NESDP targeted at maintain economic stability, export promotion, and social welfare improvement through upgrading quality of life, education, public health, and infrastructure. The plan was not successfully implemented due to the affect of the first Oil Crisis in 1973, the withdrawal of US Army based in Thailand, and the instability of world economy. The average GDP growth plunged to 6.5% while inflation rose to 10.5%.

The forth NESDP intended to revive the country's economic growth and stability through improve productivity, expand investment, and increase employment opportunity. During this period, Thailand's economic growth and stability suffered from world economic recession and the second oil crisis. Toward the end of the forth plan, Thailand were faced with increasing Balance of Trade deficit and Balance of Payment deficit. With high inflation and intense world competition, Thailand lost her export competitiveness and was force to devalue the baht in 1981. The average GDP growth improved from the third NESDP to 7.4%. Inflation was more difficult to control, it rose further to 11.5%.

The fifth NESDP was an extension of the forth plan. Major objectives were to restore economic and financial stability, reduce trade deficit, increase household saving, and improve productivity. The continuation of world economic recession and an increased world trade competition and trade barrier had lower Thai export competitiveness. To remain competitive in the world market the baht was further devalued at 15 percent in 1984. At the end of the plan, oil price started to weaken, and US currency took a downward turn, Thailand export started to increase. GDP average growth at 5.4% and inflation average at 3.3% for the period.

The sixth NESDP proposed to solve economic and social problems. The plan emphasized on increased development effectiveness, maintained economic stability, solved country's trade deficit problem, increased manufacturing

productivity, promoted exports and reduced imports. There were expansions in exports both for agricultural and manufacturing products. The increase in export resulted in high economic growth for the period. The 1990, Gulf War affected the country economic expansion and the economic bubble burst in 1992. The plan was successfully implemented for the period where GDP growth average at 10.9% and inflation rose at an average of 5.0%.

The seventh NESDP directed at stability in economic growth, distribution of wealth, and human development. During the plan implementation, there were increasing investments both in private and in public sector, stable economic growth, export expansion. The average GDP growth was 8.2% and inflation rate was 5.5%. There were, however, signs of problem toward the end of the plan. In 1996, economic growth rate declined and export growth was halted. The problem carried on to the next period.

Since the implementation of the first NESDP in 1961 until end of the seventh NESDP in 1996, Thailand economic and social development has advanced substantially. Per capita income improved from just over 2,000 baht in 1961 to 71,000 baht in 1996. Size of the economic rose over 100 times. GDP was over 4.5 billion baht in 1996. Export value increased from 11,263 million baht to 1.4 billion baht. By the end of the seventh NESDP, 98% of villages has electrification, 98% of population completed at least 6 years of basic education, and road network expanded over 210,000 kilometers. With the success in economic growth, the country suffered the depletion of natural resources and the deteriorating of environmental conditions. Table 2.2 shows the composition of Thailand gross domestic product for the period between 1970 and 1995.

Table 2.2 Composition of Gross Domestic Product at Current Market Prices, 1970-1995

Unit : %

Year	Agriculture	Manufacturing	Others	GDP (million baht)
1970	25.9	16.0	58.1	147,385
1975	26.9	18.7	54.4	303,319
1980	23.2	21.5	55.3	662,482
1985	15.8	21.9	62.3	1,056,496
1990	12.5	27.2	60.3	2,183,545
1995	10.9	28.2	60.9	4,202,835

Source: National Economic and Social Development Board, Office of the Prime Minister

During 1960s to 1980s, the government encouraged the expansion in both agricultural sector and manufacturing sector. Land cultivation increased three folds and export of agricultural products increased at an average cumulative rate of 12 percent per year (Phongpaichit and Baker, 1998). Industrial Promotion Privileges during 1960s were used to encourage investment in manufacturing sector. In 1970s, government promoted export through establishment of center for export services and tax incentives. Manufacturing sector has been growing at faster rate than agricultural sector. In 1981, GDP proportion of manufacturing products exceeded that of agricultural products for the first time. Since then, manufacturing has been the leading contributor of the GDP. By 1996, GDP contribution for agricultural was at 11% while manufacturing was at 28%.

Beside the country development plan, external factors have significantly contributed to the country development. Vietnam War, the first oil crisis, world economic recession, the second oil crisis, oil price drop, US currency depreciation, Gulf War, PRC currency devaluation, and weakening Yen had strong impact on Thai performance. With the increasing trend of globalization,

regionalization, and relocatization, individual country becomes more and more dependent on international trade and, thus, becomes more vulnerable to external factors. In 1970s, Thailand was faced with more world competitors in raw agricultural produces. To remain competitive in the world market, the country was forced to move up the production ladder. Export structure was transformed from raw agricultural produced to agricultural processed and in manufacturing products.

Thailand managed to compete and grow in international trade. International trade becomes an important contribution of Thai economic expansion. Export value as percentage of GDP rose from 10% in1970 to over 30% in 1996. Realizing the dynamic change in international trade trend, the country adapted and adjusted its production accordingly. Major export items in 1970s were unprocessed agricultural produces such as rice, rubber, tapioca, and maize. The growth in country economy drove up the basic factor cost of physical resources and labor cost. Since the competitiveness in basic factor conditions were not sustainable, toward the end of 1970s, Thailand lost its cost competitiveness in raw agricultural produces to countries like P.R. China, Vietnam, Indonesia, and Philippines.

According to Porter's National Development Stages (1990), to remain competitive a country must move from factor driven stage to investment driven stage. Thailand moved to the next level of development to the manufacturing products. In the early 1980s, the leading export items were processed agricultural products especially food products. In 1980s and 1990s, the government promoted the production and export of manufacturing goods. In the 1980s, investments were concentrated on high resources and labor intensive products such as textile, food processing, jewelry, and foot ware. In late 1980s and 1990s, more investments were put on higher skilled products mainly on machinery and mechanical parts and accessories, electrical circuits and appliances, and to a lesser extent in metal, plastic, petroleum, and chemical industries.

The development in Thai manufacturing sector has been built on resources and labor intensive. While investment and export increases, productivity and technology have not been improved. Thailand failed to capture sustainable competitive advantage. The International Institute for Management Development (IMD) and the World Economic Forum (WEF) showed drops in Thailand's competitiveness. The IMD's competitive index shows a drop from ranking of 27th in 1995 to 39th in 1997. The WEF shows a drop from 14th ranking to 18th ranking.

Tinnakorn and Sussangkarn (1998) illustrates that Total Factor Production (TFP) growth of Thailand dropped from 41 percent during 1986 to 1990 to 21 percent during 1991 to 1995. Labor productivity growth also dropped during the same period, while productivity growth of property was negative. The problem has not been addressed and rectified. Low productivity and increasing cost of production reduces Thailand's competitiveness in the world market. This leads to significant drop in the country's export in 1996.

Dwor-Frecaut, Pootrakool, and Mallikamas (1998) conclude that Thailand's growth performance has been the result of high levels of investment rather than of rising productivity. The Incremental Capital Output Ratio (ICOR), the ratio of investment to GDP divided by the rate of growth of GDP, raised from an average of 3.1 during 1985 to 1990 to 6.4 in 1996. Output growth is generated by the accumulation of capital rather than by efficiency gains. Thailand's unit labor cost has been rising faster than that of its competitors. The high cost of investment and rising cost of labor adds to high total cost of production. To resume export growth, Thailand requires efficiency of investment, better financial system, better corporate governance, better infrastructure, skilled manpower, and increased R&D expenditure.

Henderson (1998) described Thailand's structural problem of competitiveness with the lack of highly skilled workers, low productivity growth relative to wage cost increases, and low level of high technology, value added export. Mismanagement and lack of control in financial sector adds to the problem. The BBC scandal, the sharp drop in stock prices, and the stagnant

export growth in 1996 led to declining confidence among investors and creditors.

Thailand's policy to liberalize its financial sector has not been well supported by control measurements. On the surface, mismanagement of fund leads to financial instability that finally put the country into financial crisis in 1997. The rooted problems, however, can better be described by the country unsustainable development. From the beginning of the first NESDP until the end of the seventh plan, the country's development was based on the growth in resource intensive and labor intensive products. The growth was not sustainable. High investment flew into the country which lead to over heated economy. It drove up prices in real estate, stock exchange, commodity, and wages. This, in turn, increased the cost of production and reduced export competitiveness.

Thailand Export Development

During the 1940s and 1950s, rice was the major export items of the country. Rice export contributed over 50 percent of the total export value. Other export items were teak, tin, and rubber. Export development in both agricultural and manufacturing sectors started in 1960s. In agricultural sector, there were area expansion in the growing of export required crops. Major export items during 1960s were rice, sugarcane, maize, kenaf, and cassava. Early 1970s were the period of scarce supply of food. The export prices of agricultural produces become very attractive. This, in turn, led to agricultural boom worldwide. In Thailand, there were forest land clearance for farming and planting. The 1970s export continued to be agricultural lead.

Surpluses of food supply began in early 1980s. The price for agricultural produces plunged. In order to compete in international trade, Thai export structure needed adjustment. Thai labor force moved from farming to factory work. Export structure shifted from agricultural led to light labor intensive manufacturing. Major manufacturing export items were garments, gems and

jewelry, canned tuna fish, and assembly of electrical products. The over valued of the baht lower Thai export competitiveness which led to declining growth of export. After the baht devaluation in 1981 and in 1984, the baht was realigned and Thai export boomed. From mid 1980s, there were substantial increases in foreign investment in industrial sector, especially from Japan, Taiwan, and Hong Kong. These countries were facing with high labor cost and rapid appreciation of their currencies. To remain competitive, they moved their production location to countries with abundant resources and low production cost like Thailand. Export oriented foreign investment to Thailand during the last three years of the 1980s was higher than the previous thirty years (Phongpaichit and Baber, 1998).

During second half of 1980s, foreign investment accounted for one-eighth of the increase in investment. The remaining investment came from thousands of local firms joining in the export oriented manufactured. These export products led by foreign investment were textiles, garments, electronics, jewelry, leather goods, wood products, processed food, computer components, and auto parts. Oil price dropped, US currency depreciation, and the NICs' currency appreciation led to Thai export boom. Growth in exports led the country to double digits growth in economy. The high growth in export led the government to acknowledge and support five industries as basic foundation in the country industrial development. These industries were food processing, textile, steel, petrochemical, and electronic.

Custom department classifies Thailand's export items by their commodity groups. Major groups are food, manufactured goods, machinery, and miscellaneous manufactured goods. Table 2.3 shows composition of export by commodity group at current market prices and shows percentage of group composition to the total value.

Total export growth during 1975 to 1980 was 175.0 percent, during 1980 to 1985 was 45.17%, during 1985 to 1990 was 205.02%, during 1990 to 1995 was 138.43%, from 1995 to 1996 was stagnant at 0.41%, and from 1996 to 1997 was 27.94%. During 1980s, food contributed to the largest proportion of export, followed by manufactured goods, and machinery. From the beginning of 1990s, production and export of machinery out grew other groups. Machinery became export leader group. In 1996, the total export growth was stagnant. Growth in machinery group was 12.87 percent, growth in food was 2.34 percent, other groups had negative growth rate. The declining international competitiveness, mismanagement of funds, problems in real estate and financial sectors led to currency attack resulted in financial crisis in 1997. The change of currency exchange system to managed float system led to currency depreciation. Baht depreciation led Thai export products in the priced competitive position and resulted in export growth in all commodity groups in 1997.

While currency depreciation solves short-term export competitiveness problems, measures to ensure sustainable competitiveness of Thai export are required. Lall (1998) shows that structure of Thai's exports has been high in resource-based products, high in labor intensive products, low in scale-intensive products, and low in science-based products. Thailand lags behind in complex and high technology products. Thailand is behind in design, research, and technology development. While labor-intensive and resource-intensive products can remain competitive at high labor cost level, it require very substantial inputs of skill, design, and research, these factors are not sufficient in Thailand. Thai's educational and institutional structure is inadequate of supporting firms to upgrade human and technological capital.

A study by Francis (1998) shows that Thailand's international competitiveness has been dropping since the early 1990s. The proportion of investment capital expansion is high when comparing to the return on investment. Production increase is a result of input expansion rather than productivity improvement. Government fails to enhance human resources competency in term of education, skill training, R&D, information and

technology capability. The study suggests a change in productivity structure from labor intensive to skilled and technology intensive. The study concludes with selecting an industry where there is potential competitive advantage and up grade its production process to match those of international practices.

While the export composition by commodity group explains overall structure of Thai exports, it does not provide sufficient information to evaluate the industries potential competitive advantage. Custom Department provides data on all export industries. Statistic shows that the present major export industries are food, machinery and mechanical appliances, electrical circuits and parts, electrical appliances, and textile and garment. From the beginning of 1990s, these five industries accounted for more than 50 percent of export value. Table 2.4 shows export value of these industries and their percentage contribution toward the total export value.

Table 2.4 Thailand's Important Export Industries.

Unit: Millions of Baht

Industry	1988	1993	1994	1995	1996	1997
Food	137,566	201,576	235,504	268,072	274,340	325,638
Machinery -Computers, Parts & etc.	16,494	90,802	118,020	160,938	196,343	264,028
Electrical circuits, parts, and telecommunication equip.	29,888	75,622	102,438	130,246	137,451	178,792
Textiles and garments	64,053	129,568	149,609	160,559	138,009	169,676
Electrical appliances	6,274	62,634	88,124	102,849	106,569	134,865
Export Composition						
Food	36%	22%	21%	19%	19%	18%
Machinery -Computers, Parts & etc.	4%	10%	10%	11%	14%	15%
Electrical circuits, parts, and telecommunication equip.	7%	8%	9%	9%	10%	10%
Textiles and garments	16%	14%	13%	11%	10%	9%
Electrical appliances	2%	7%	8%	7%	8%	7%
Total Composition	**65%**	**61%**	**61%**	**57%**	**61%**	**59%**

Source: Foreign Trade Statistics of Thailand, Custom Department

Export statistic shows that food has been the leading export industry from the beginning of Thai trade history. While it continues to grow in value, the percentage contribution to total export declines over the years. Food contributed over 50 percent of total export value until beginning of 1980s. After 1984, shared contribution declined to lower than 50 percent. By 1997, food contribution was down to 18 percent. Export of textiles and garments grew fastest during 1980s but growth rate and percentage contribution toward total export value declined in 1990s. Percentage contribution toward total export decline from double digits in 1980s and early 1990s to 9 percent in 1997. Machinery industry, especially computers, parts, and accessories, started in late 1980s and continue to be the highest growth industry in the 1990s.

Percentage contribution to total export grew from 4 percent in 1988 to 15 percent in 1997. Electronic industry and electrical appliance industry started in late 1980s and continue to grow in the 1990s. Electrical circuits and parts grew from 7 percent in 1988 to 10 percent in 1997. Electrical appliances grew fastest during end of 1980s to beginning of 1990s. The contribution toward total export grew from 2 percent in 1988 to 7 percent in 1992, then stable from 1992 to 1997.

Thai export development for the last three decades has been a shift from agricultural lead to resource-base agro-industry in 1970s, then to labor intensive industries in 1980s, and to investment, skilled, and high technology industries in 1990s. During the beginning of 1980s, Thai export growth slowed down due to world economic recession. From mid 1980s to 1990, export growth was average at 30 percent per year. During beginning of 1990s, export expansion declined to average 13 percent per year. In 1996, export growth became stagnant. Export in labor intensive industries such as canned food, textile and garment, toy, ceramic, footwear, and plastic products were facing declining growth. High technology and skilled intensive industries such as computer and parts, integrated circuits, electronic devices, electrical appliances, telecommunication parts, and auto parts and accessories continued to expand.

Vibulchutikul (1997) points out that during the 1990s, labor intensive industries experienced a lower growth rate when compare with technology, skilled intensive industries. In 1996, while Thai exports in technology and skilled intensive products continued to grow, labor intensive products had negative growth. Thailand lost comparative advantage in labor intensive manufacturing products because the increase in labor cost was higher than the increase in productivity. Lower wages countries, such as P.R.China, Indonesia, India, and Vietnam, become major competitors in labor intensive products. During the same period, export growth of food industry was minute. While export of processed food increased, export of unprocessed agricultural food items decreased. Key to success in international trade is improvement in

productivity growth. Productivity improvement can be acquired through technology investment and human resources development.

Thai Food Export

Food can be classified into 2 major types. One is unprocessed food and the other is processed food. Prior to 1960, most of Thai exports were surplus of unprocessed agricultural food products. Thai food manufacturing started in the 1960s using technology from Taiwan and Japan producing sweetened condensed milk, can fruits and vegetables, and vegetable oil (National Food Institution (NFI), 1998). Unprocessed food dominated Thai export until the 1970s. The 1980s were the rapid expansion period for development in food industry. More processed food technologies were brought in from the US and Europe. Plentiful supplies of agricultural produces together with the acquired processed technologies, Thailand was able to develop and expand the country's export of processed agricultural food products. In 1990s, world competition becomes more intense. Concerns are placed on hygiene and sanitation of production, food safety, wholesomeness, production costs, value-added, standards, environment and regulations (National Food Institute (NFI), 1998).

Studies by the National Food Institution (NFI), Ministry of Industry, show that Thailand is an agricultural country and is the major food exporter in Asia. The natural resources of fertile soil, the sufficient supply of water, and the suitable climate enable Thailand to concentrate on farming. Forty-five percent of the 513,115 square kilometers of total area in Thailand is used for agricultural production. Fifty percent of the thirty-five millions Thai labor force is working in agricultural sector. Thailand is one of the world's largest exporters of rice, sugar, and tapioca. Tropical climate provides for tropical fruit plantations. Thailand is the leading supplier of pineapple, longan, durian, mangosteen, and longkong. Chicken farming puts the country on the top ten exporters of frozen chicken. In term of fishing industry, Thailand is one of the largest exporters of seafood, especially tunas and shrimps.

Study of food processing industry, done by Chaovakul, Tirawadhanaprasert, and Kao-ian (1997), shows that Thai food processing industry has rapidly been developed in the past twenty years. Factors contributed to the success were resource-based, low labor cost, and acquired production technology. The export growth was double digits until the beginning of 1990s. In 1992, export growth rate declined. Past success factors became drawbacks. Internal factors that hindered the growth are high labor cost, shortage of labor in agricultural sector, and low productivity level. External factors contributed to small growth are declining growth of world demand and imposition of non-tax barrier to entry by some importing countries.

Chaovakul, Tirawadhanaprasert, and Kao-ian (1997) studies export data and comparative advantage on selected food items using data collected between 1982 and 1993. According to the study, Thailand has become the world largest exporter of chilled and frozen shrimps since 1989, major world competitors are Indonesia and India. Revealed comparative advantage (RCA) shows that superior technology in shrimp farming put Thailand in advantageous position over its competitors. Thailand is the world largest exporter of canned tuna fish. While the RCA for Thai canned tuna fish is higher than those of its major competitors, Philippines and Ecuador, the world demands for the product declined. Thailand is also the world largest exporter of canned pineapple, pineapple juice, and concentrated pineapple. Major competitors are Philippines and Indonesia. While RCA for Thai pineapple products is substantially higher than its competitors, the Thai RCA is on declining where its competitors are on the rising. Another study on RCA by Kaosa-ard (1997) shows that, for the period between 1990 and 1995, Thailand becomes less competitive in producing and exporting canned seafood, and preserved fruits and vegetables.

Until beginning of 1990s, Thailand had enjoyed comparative advantage in the export of processed food. Since then, the comparative advantage is on the declining. External factors affecting the declination are the size of world economic expansion, the reduction of US quota on imported food, the lifting of European Union's GSP on Thai processed food from 1 January 1999, and the imposition of import standards such as ISO9000, ISO14000, and HACCP.

Internal factors affecting Thai export of food are the rising labor cost, the availability of labor force, inconsistency of agricultural produces, inconsistency in fishery catches, productivity level, and the level of production technology.

The National Science and Technology Development Agency (NSTDA)'s 1997 annaul meeting suggested that innovation is the key to Thailand's success in the 21st century. Export data shows that Thailand lost its competitive advantage in resources and labor intensive industries to countries like P.R.China, Vietnam, and Indonesia. To succeed in export, Thailand is required to develop its technology, skilled, and complex industries. There is a need for synergy between national innovation system and corporate innovativeness.

Kim (1997) defines innovation as the process of identifying or generating new ideas, developing these ideas, and creating new products, services, or processes that will compete successfully in international markets. Kim (1997) suggests that, similar to those occurred in Korea, creative imitation is the key to Thailand's sustainable competitiveness. To achieve the target, firms required a good knowledge base and high intensity of effort. In the beginning stage, less industrialized countries need duplicative imitation from industrially advanced countries. Duplicative imitation is an easy way to acquire technology. Education and R&D investment are important foundation for future development. After mastering the technology, next stage is moving to creative imitation.