CHAPTER 1

INTRODUCTION

1.1 Statement of the Problem

In the study of international trade, comparative advantage is the key economic concept to explain the pattern of trade among countries. It also illustrates how international trade can benefit all countries.

According to Ricardo (1817), the pattern of trade between two nations was based on the law of comparative advantage. It explained that a nation exported a good with which it had a comparative advantage over another nation in the production of that good and imported another good with which it had a comparative dis-advantage. It also expressed a comparative advantage in terms of relative labor cost share (or term of relative labor input requirement in case of wage rates are equal across sectors).

Furthermore, Heckscher-Ohlin Theory was another trade theory which also explained the pattern of trade. In this theory, the pattern of trade depended on the difference in factor endowments in each nation. Hecksher and Ohlin stated that a nation exported a good whose production required the intensive use of the nation's relatively abundant and cheap factor and imported a good whose production required the intensive use of the nation's relatively scarce and expensive factor (Salvatore, 1987). Therefore international trade led nations' factor endowments to move from places with relative factor abundance to places with relative factor scarcity (Saito, 1999).

The two trade theories have been used to explain the pattern of trade across countries. In fact, a comparative advantage can be explained as another way in which a "nation exports a good for which its own relative cost of production is low compared to the world or it has a comparative advantage in a good that makes intensive use of a factor that it has relatively more of than the world" (Deardorff,

2004). In conclusion, a change in comparative advantage varies with a change in cost of production and abundant factor endowments. For that reason, a change in cost of production (or abundant factor endowments) influences the pattern of trade.

Despite the fact that the comparative advantage concept is helpful in indicating the pattern of trade and specialization in production, the choice of the measure of comparative advantage differences has been quite restricted. Additionally, several measurements have some limitations of comparative advantage analysis such as the source of comparative advantage and policy implications.

The well-known measurement of comparative advantage is "Revealed Comparative Advantage" (RCA). It has been applied to examinations of comparative advantage in goods production among countries. In other words, it can usefully assess the country's export potential. Since it is built on the export variable, the index is thus easily calculated to explore a country's specialization in both agricultural and industrial production.

Nevertheless this approach has some limitations. For instance, a well-recognized limitation of RCA index is that high specialization may not reveal true comparative advantage but results from policy or other distortions (Balassa, 1965). As a result, a low RCA index may not illustrate a comparative dis-advantage because its value does not probably reflect all true comparative advantage of goods. In addition, this index is static analysis and cannot take into consideration a change in RCA over time. Moreover, RCA index cannot suggest policy implications. A nation's high RCA index in one good can only recommend that nation allocate relatively more its resources to this production. However, its value does not identify whether the high RCA index is already optimal, still not high enough, or already excessive (Leung and Cai, 2005). Therefore RCA approach has potential problems in exploring a comparative advantage; the work of Yeats (1985) found that it could not reveal real international specialization production for each country.

Because of the limitations of the RCA approach, two alternative choices of measuring international specialization pattern have been developed: Domestic Resource Costs (DRC) and Revealed Symmetric Comparative Advantage (RSCA). In terms of the DRC approach, it uses the profitability variable to measure a comparative advantage in production; if a good has greater profitability, then it has the stronger

specialization production (Monke and Pearson, 1989). The latter approach, the RSCA index, is based on the RCA index. It is calculated by making the RCA index symmetric and obtaining the index as (RCA-1)/(RCA+1) (Laursen, 1998). However these two indexes also have the same problems of the RCA index. For instance, the two indices are static analyses and neglect the dynamic nature of measuring a comparative advantage (or dis-advantage) so that their value may lead to misleading policy implications.

In more recent years, Saito (1999) has developed new measurement approach called Comparative Advantage Index (CAI), which is derived from Ricardian measure[1]. Her paper investigated a comparative advantage among OECD countries and analyzed the impact of different production technologies across countries on the pattern of trade. Indeed, this approach is interested in considering the impact of technological progress on international comparative advantage. The source of comparative advantage for the index is divided into two effects: wage effect (relative wage rate advantage) and labor productivity effect. The latter effect captures the comparative advantage which is due to technological progress and the choice of input factors. Moreover, this approach allows worldwide capital mobility to exist in the model. In other words, it believes that worldwide capital possibly benefits a comparative advantage in producing commodities for each country.

Since the index is calculated by using output and input factors--output, capital, quantity of labor, and labor compensation. The index is likely to measure a international specialization through the supply side (factor endowment and technology improvement). In other word, this approach seems to measure directly comparative advantage in production rather than other measurements such as RCA and DRC. Furthermore, the index can indicate whether a comparative advantage (or dis-advantage) is determined by a wage effect or a productivity effect. It thus resolves limitations of policy implications. In conclusion, the index is a relatively appropriate measurement to explore international comparative advantage.

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[1] In fact, the comparative advantage index (CAI) has been called the Ricardian measure of technology differences, see Saito (2004).

For Thailand, there have been many studies measuring a comparative advantage in production by using RCA and DRC approaches in the past. These papers aimed to explore international comparative advantage in producing the key exported commodities, for example, food and beverage, textile, furniture, rubber, electric and electronic equipment. However, Saito's approach has never been applied to the case of Thailand. It is interesting to apply this approach (CAI) to explore a comparative advantage in industrial production in Thailand.

Moreover, since 2000, the number of free trade agreement (FTAs) has been increased rapidly in East Asian countries, for instance, Singapore-New Zealand (2001), Japan-Singapore (2002), ASEAN-China (2002), U.S.-Singapore (2003), Singapore-Australia (2003), Korea-Chile (2004) and Thailand-Australia (2004). Thailand is also planning to negotiate the detail of FTAs with other countries such as the U.S. Many recent papers such as Sussangkarn (2004) still use the RCA approach although it had measurement problems.

Therefore this study aims to use the comparative advantage index (CAI) to explore the export performance in Thailand.

1.2 Objective of the Study

1) Measure comparative advantage in Thailand's ten industrial sectors compared to ten selected countries (see Appendix A) by using the comparative advantage index, during the period 1970-2000

2) Investigate the main source of comparative advantage in Thailand

1.3 Scope of the Study

In this study, definition of "comparative advantage" is defined as " a nation has a comparative advantage in production if its own relative cost of production is low compared to the world or if it makes intensive use of a factor that it has relatively more of than the world" Deardorff (2004).

In addition, this study will only measure the CAI of ten industrial sectors in Thailand during the period 1970-2000. These ten industrial sectors include the following: (1) food and beverage products, (2) textile and clothing, (3) footwear, (4) furniture, (5) paper product, (6) industrial chemicals, (7) rubber products, (8) plastic products, (9) electrical machinery, and (10) transport equipment. These industrial sectors are classified by International Standard Industrial Classification (ISIC Rev.2) at 3-digit classification. Finally, this study will express CAI for three years (1974, 1994 and 2000) in order to explain a change in comparative advantage of Thailand over the last thirty years.

1.4 Limitations of the Study

In terms of the limitations of data sources, this study could not measure CAI in all economic sectors, especially the agriculture and service sectors. This study thus concentrates on the industrial sector. All data may be directly taken from the UNIDO (United Nations Industrial Development Organization) database. However there are still missing data systems in many countries such as Australia, Germany, Philippines, and Thailand. The missing data is a very serious problem for computing the index. To solve this problem, we need to estimate some data to compensate for this missing data[2].

[2] See all details on unavailable data and estimated data for each country in Appendix D.