การประเมินศักยภาพการเคลื่อนไหวทางการค้าในเศรษฐกิจใหม่สองประเทศ: กรณีประเทศเม็กซิโกและประเทศไทย

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MEASURING POTENTIAL TRADE FLOWS FOR TWO EMERGING ECONOMIES: THE CASE OF MEXICO AND THAILAND

Mr. Indra Guillermo Eckstein Fernandez

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Arts Program in International Economics and Finance
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การศึกษานี้เป็นการดำเนินการประเมินผลศักยภาพทางการค้าของประเทศเม็กซิโกและประเทศไทยกับประเทศคู่ค้าที่สำคัญของทั้งสองประเทศและศักยภาพทางการค้าระหว่างประเทศเม็กซิโกและประเทศไทย การศึกษาได้ใช้วิธีการคำนวณดัชนีการค้าต่างๆ รวมทั้งประมาณการสมการแกรวิตี (Gravity Model) เป็นแนวทางในการวิเคราะห์ ในรายงานมีการคำนวนดัชนีความเข้มข้นทางการค้ารวมทั้งจำแนกดัชนีความเข้มข้นทางการค้าออกเป็นดัชนีย่อยคือ คือ ดัชนีความหนุนเสริมทางการค้าและดัชนีอคติทางการค้า การศึกษาได้นำดัชนีการค้าเหล่านี้มาตีความเพื่อทราบรูปแบบทางการค้าของประเทศที่ทำการวิเคราะห์และประมาณการโอกาสของการเพิ่มศักยภาพทางการค้า นอกจากนี้การศึกษาได้ใช้แบบจำลองศึกษาการค้าระหว่างประเทศ แกรวิตี (Gravity Model) ร่วมกับดัชนีการค้า ในการค้นหาปัจจัยกำหนดการค้า (ทั้งปัจจัยสนับสนุนและข้อจำกัด) ข้อค้นพบที่สำคัญคือรูปแบบจำลอง รวมทั้งข้อมูลที่ใช้วิเคราะห์ สามารถอธิบายแบบแผนการค้าในปัจจุบันและศักยภาพทางการค้าในประเทศเม็กซิโกและประเทศไทยได้เป็นอย่างดี การศึกษาแสดงให้เห็นว่าขนาดทางเศรษฐกิจเป็นสิ่งสำคัญ อย่างไรก็ตามระยะทางดูเหมือนจะมีบทบาทการผลักดันให้เป็นการค้าแบบทวิภาคี พิกัดอัตราภาษีศุลกากรทางการค้าเป็นข้อจำกัดหลักต่อความเคลื่อนไหวทางการค้าทั้งในประเทศเม็กซิโกและประเทศไทย ดัชนีความหนุนเสริมทางการค้าและดัชนีอคติทางการค้าสามารถอธิบายกรอบการค้าของประเทศเม็กซิโกและประเทศไทย ส่วนปัจจัยที่มีความสำคัญเป็นอย่างมาก คือความโปร่งใสในการดำเนินกฎระเบียบและข้อบังคับภายในประเทศ สุดท้ายคือการส่งเสริมการลงทุนโดยตรงจากต่างประเทศ สามารถช่วยผลักดันและสนับสนุนการค้าระหว่างประเทศได้มาก ข้อสรุปหลักของการศึกษาคือ หากข้อจำกัดในเงื่อนไขทางการค้าในปัจจุบันได้รับการแก้ไขปรับปรุงอย่างจริงจัง ศักยภาพในการเติบโตทางการค้าของประเทศเม็กซิโกและประเทศไทยร่วมกับประเทศคู่ค้าหลักและระหว่างทั้งสองประเทศจะสามารถเพิ่มพูนขึ้นเป็นอย่างมาก

สาขาวิชา:เศรษฐศาสตร์และการเงินระหว่างประเทศ ลายมือชื่อนิสิต.....

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##5085775129: MAJOR INTERNATIONAL ECONOMICS AND FINANCE

KEYWORDS: TRADE FLOWS / TRADE INDICES / GRAVITY MODEL / TRADE POTENTIAL

INDRA GUILLERMO ECKSTEIN FERNANDEZ: MEASURING POTENTIAL TRADE FLOWS FOR TWO EMERGING ECONOMIES: THE CASE OF MEXICO AND THAILAND. ADVISOR: ASSOC. PROF. PAITOON WIBOONCHUTIKULA Ph.D. 132 pp.

This study was conducted to assess the trade potential of Mexico and Thailand with their major trading partners and between themselves by using trade indices and gravity equation. The study computed the trade intensity index and then de-composed it into two additional indices namely, trade complementarity index and trade bias index. These indices were reliable in determining the examined country's trade patterns and moreover, room for potential trade. The study also used the gravity model in combination with the trade indices to find factors determining (boosting or constraining) trade and used the estimated results to compute room for trade potential. Our study finds that the model can well explain the gap between actual trade and trade potential for Mexico and Thailand and their trading partners. The estimates indicated that economic size mattered and distance seemed to drive bilateral trade. Trade tariffs were found to be among the principal constraints on trade flows. Trade complementarity and trade bias as determinants in the gravity model explained the Mexican trade and to certain extent Thai trade patterns. Governance seemed to be more significant than the domestic rules and regulations. FDI was significant in driving and boosting trade. We conclude from the estimates of the gravity model that trade potential growth of Mexico and Thailand with their major trading partners and between themselves could be enhanced only after current restrictive trade conditions were reduced.

Field of Study: International Economics and Finance — Student's Signature.....

Advisor's Signature.....

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LIST OF ABREVIATIONS AND ACRONYMS

AFTA	ASEAN Free Trade Agreement
ALADI	Asociación Latinoamericana de Integración
ALCA	Área de Libre Comercio de las Américas
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
BANXICO	Banco de México
BIMSTEC	Bangladesh, India, Myanmar, Sri Lanka, Thailand Economic Co-Operation.
CEE	Central and Eastern Europe
EAP	East Asia & Pacific
EU	European Union
FTA	free trade agreement
GATT	General Agreement on Trade and Tariffs
GDP	gross domestic product
IMF	International Monetary Fund
INEGI	Instituto Nacional de Estadística y Geografía (Mexico)
LATAM	Latin America
LPI	logistics performance index
NAFTA	North America Free Trade Agreement
OECD	Organization for Economic Co-operation and Development
SAARC	South Asian Association for Regional Cooperation
SITC	Standard International Trade Classification (UNCOMTRADE)
UK	United Kingdom
UNCOMTRADE	United Nations Commodity Trade Statistics Database
UNCTAD	United Nations Conference on Trade and Development
US	United States of America
WTO	World Trade Organization

CHAPTER I

INTRODUCTION

1.1 Background of the study

Decades ago, countries started to adopt export-oriented, outward-looking strategies and measures for trade integration. Since then, and after positive outcomes, trade has been seen as a critical element in supporting economic development in developing countries. Trade helps to increase national income and output, creates international linkages and enhances political stability. Many empirical studies find that trade helps the economies grow fast and create linkages in all social and economic sectors that help the country develop. The upward trends in real gross domestic product (GDP) growth and real trade growth during the period from 1995 to 2007 show a positive relationship between these two economic indicators (see Table 1 and Table 2).

Table 1 World Real GDP Growth 1995-2007

Year	Real GDP growth (%)				Real GDP growth per capita (%)			
	95-99	00-04	05-06	07	95-99	00- 04	05-06	07
World	3.1	2.9	3.7	3.8	2.7	3.2	3	2.7
Developed countries	2.8	2.2	2.6	2.5	2	2.4	2.2	2
Developing countries	4.5	5.1	6.9	7.3	4.8	5.7	5.2	5.9

Source: Data from UNCTAD Handbook of Statistics

The World Bank (2008) estimates and indicators show that all regions have achieved important real growth in trade (see Table 2).

Table 2 World Real Trade Growth 1995-2007

Year	Real Trade Growth (%)				Real Export Growth (%)			
	95-99	00-04	05-06	07	95-99	00-04	05-06	07
World	6.8	7.2	8.6	7.7	7.6	7.7	8.4	7.1
Developed countries	6.9	6.1	8	7.8	6.5	6.1	7.5	7.2
Developing countries	6.7	7.6	8.8	7.7	7.9	8.2	8.6	7.1

Source: Data from World Bank (2008)

According to the indicators, in 2007, the average real growth in world trade was 7.7 percent. The same for developed countries was 7.8 percent and 7.7 percent for developing countries. The real growth in world trade ranged approximately from 7 percent to 9 percent during 1995-2007. In addition, the World Bank pointed out, that countries with good policies and institutions tended to have better and stronger trade performance.

1.2 Statement of the research problem

The Organization for Economic Cooperation and Development (OECD) (2008) suggests that developing countries should look at fast growing OECD countries, which gain more from trade by combining competition enhancing reforms with greater trade integration and foreign investment inflows. Developing countries could seek high growth in trade that will allow them to be globally and locally integrated. Diversification of trade flows and trade structures is a key element in reducing risks that can arise from a financial crisis affecting the domestic economy and economies of those trade partners that are more susceptible to recessions. Therefore, countries have to avoid to certain extent high export concentrated trade flows and trade structures. In developing countries, trade policy among other important economic policies plays a key role. Developing countries face internal as well as external constraints to trade when they try to increase trade with developed country or developing country trade partners. Reforms in trade policy can boost trade flows and economic growth, therefore, reforms targeting

market access, supportive business and institutional environment, and trade facilitation become a priority.

While emerging economies such as Mexico and Thailand are well-endowed with economic resources, they have achieved only a regular trade performance. They could perform better, if they develop their capacities, design and implement appropriate trade policies, maximize their existing economic resources and realize their trade potential. Currently conditions that enable trade to flourish are underdeveloped to certain extent in Mexico and Thailand. It is important to note that positive outcomes can be achieved only when the factors determining (constraining or boosting) trade are identified and prioritized for the purpose of designing reforms and policies. Therefore, the trade factors determining trade flows need to be investigated, from an emerging economies perspective, i.e., if those factors determine trade negatively in these countries, these countries cannot increase trade flows, whereas if those factors determine trade positively, these countries can aim at strengthening them further. In other words, knowing the factors determining the trade gap between the actual and potential trade are key to good reforms and policies, which in turn, lead to better and stronger trade performance.

1.3 Objectives and research questions

The purpose of this thesis is, first, to find the factors determining Mexico's and Thailand's trade flows with their major trade partners (MTPs) and between themselves, and second, to estimate trade potential for Mexico and Thailand with their MTPs and between themselves (given their current trade structures).

These objectives translate into a set of research questions that guide the research process.

1. What are factors determining trade flows of Mexico and Thailand with their MTPs and between themselves?

2. In the case of Mexico and Thailand, what is the gap between the actual and the potential trade flows with their MTPs and between themselves?

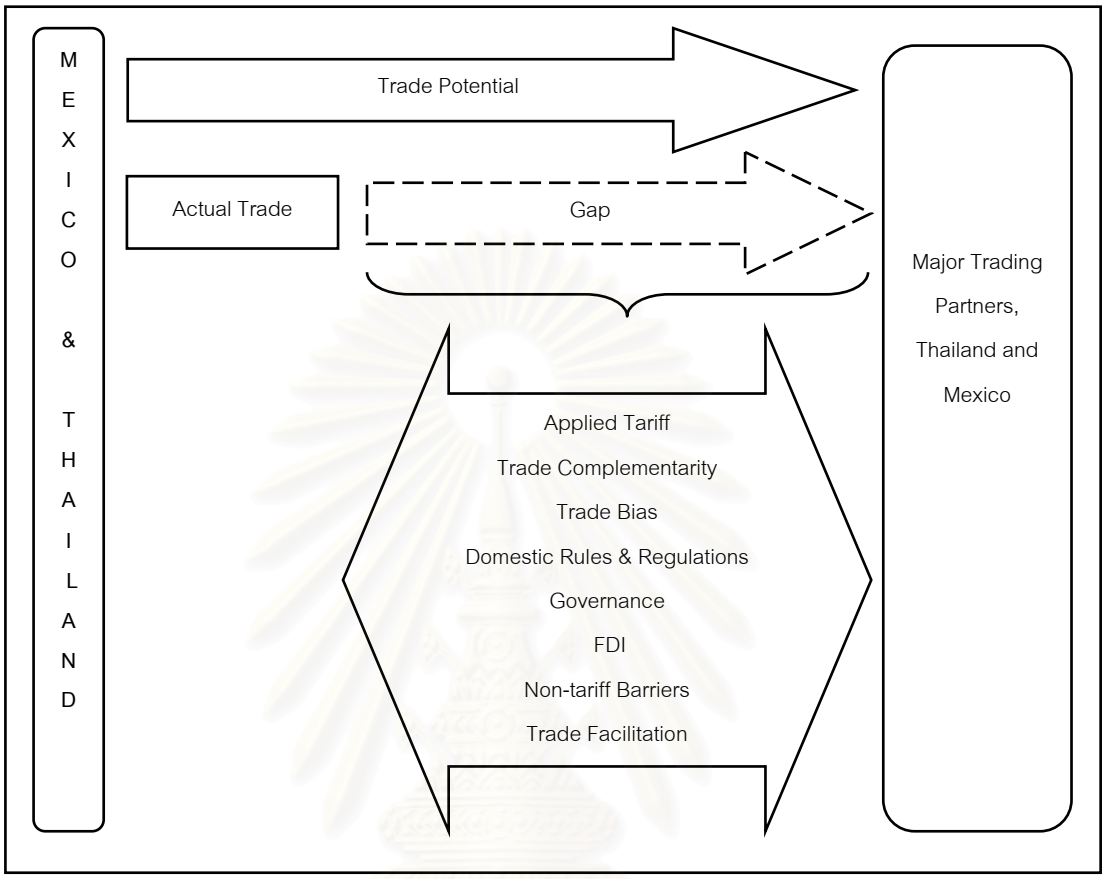
1.4 Research methodology

This study comprises four stages. The first stage consist of calculating several trade indices for Mexico and Thailand with their major trade partners and between themselves, namely trade intensity index for exports (*IX*) and for imports (*IM*), trade complementarity index (*C*) and trade bias index (*TB*), which are used in this study to investigate the potential trade flows and show that the gap between the actual and potential trade exists.

More specifically, these trade indices assess the trade performance and interdependence on trade between Mexico and Thailand with their major trade partners and between themselves. Moreover, they support the assumption that there is scope for further trade. The trade complementarity measures the degree to which Mexico's and Thailand's export pattern matches major trade partner's import pattern relative to the import pattern of all other countries combined, and the trade bias assesses the extent to which Mexico and Thailand enjoy more or less favorable access to major trade partner's market than Mexico's and Thailand's exports to other countries.

Furthermore, the trade complementarity and the trade bias estimates will be useful for the second stage. Because the trade indices do not reveal in detail factors determining the trade flows, the gravity model is used to investigate the potential trade flows and the unexplained factors determining the assumed gap between the actual and potential trade. The gap can be explained by the following unexplained factors, i.e., applied tariffs on imports (*TP*), trade bias (*TB*), trade complementarity (*C*), governance (*Gov*), domestic rules and regulations (*DRR*) and inflows of foreign direct investment (*FDI*), non-tariff barriers (NTBs) and trade facilitation. In the third stage, the gravity equation (Eq. 5) is estimated. Then, by using the actual trade values and the estimates, the trade potential (Eq.6) is calculated. The final stage is for analysis and conclusions. (See Figure 1)

Figure 1 Trade Potential Framework



1.5 Scope of the study

This study will focus on trade of two emerging economies, namely Mexico and Thailand, factors determining trade, and measuring trade potential with their MTPs and between themselves. The MTPs were selected based on the size of trade flows and the size of bilateral FDI flow criteria. Moreover, this study focuses on exports only. In the case of Mexico, the MTPs in this study are: Brazil, Canada, Chile, China, France, Germany, Japan, Republic of Korea, Netherlands, Spain, the United Kingdom (UK) and the United States of America (US). Thailand's major trading partners in this study are: Australia, China, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, Netherlands, Singapore, the UK, the US and Viet Nam.

The focus of this study is on unexplained factors constraining the trade potential. Furthermore, this study does not focus on intraregional trade like many other studies using the gravity model. This also means that several common variables (such as exchange rates, country area, language, common border, colonial ties and landlockedness) were excluded from the model.

The time scope of the study, in terms of data, for the trade indices for Mexico was from 1993 to 2007 and for Thailand, the period included the years from 1989 to 2007. The period used to analyze the trade complementarity and the trade bias was 1997-2007. The data used in this study were retrieved from Bank of Mexico (BANXICO), the Mexican Secretariat of Commerce, the Bank of Thailand (BOT), the Thai Ministry of Commerce, the United Nations Conference on Trade and Development (UNCTAD), the World Trade Organization (WTO), the International Monetary Fund (IMF), The Info Please web database, The World Bank, United Nations Commodity Trade Statistics database (UNCOMTRADE), CEIC database, Instituto Nacional de Estadistica y Geografia (INEGI), Direccion General de Informacion y Estadistica (DGIE) and the OECD.

Due to lack of data and in order to avoid unbalanced data on the econometric estimations and for more accurate estimates, a few major trading partners (such as Colombia and Venezuela for Mexico, Cambodia, Lao PDR and Philippines for Thailand) were excluded from the study.

1.6 Benefits of the study

Although this study does not focus on intra regional trade potential in Latin America and South East Asia, both Mexico and Thailand are relatively significant for their regions also due to their strategic geographical locations. They have been referred as potential trade hubs in their own regions. The aim of this study is to provide a framework for clarifying the relevant issues relating to trade and trade potential, provide insights to the issues through Mexico and Thailand and offer policy makers and trade

officers an overview of their country's trade performance and trade potential for further policy reforms.

1.7 Structure of the study

This study is structured into six main chapters. The following chapter two outlines the conceptual (theoretical) framework, reviews literature, including theories and models, and highlights factors affecting trade. Chapter three presents Mexico's and Thailand's trade overview. Chapter four describes the methodology used in this study. Chapter five analyzes the estimation results. Chapter six ends the report with main conclusions and recommendations.

CHAPTER II

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

A brief introduction to trade theories underlines the reasons behind why countries trade and how the theories have developed. In addition, the focus of the study, trade potential, will be studied using the trade indices and the gravity model. Therefore, the focus of the literature review is on the trade indices, gravity model and relevant issues and factors influencing trade flows.

2.1 Trade theories

2.1.1 Absolute advantage and principle of comparative advantage

Theories of absolute advantage by Adam Smith and comparative advantage by David Ricardo comprise the classical theories of international trade. Adam Smith, in his master work "The Wealth of Nations", states that countries specialize in the production of goods according to their absolute advantage therefore, they all gain from trade. In other words, the theory applies only to the countries with absolute advantage. The theory does not explain the reasons behind why countries that do not posses absolute advantage still engage in trade.

David Ricardo continued Adam Smith's work and established a fundamental theory of international trade, better known as the principle of comparative advantage, which states that country export gains are based on those goods or services in which it possesses the greatest (or greater than its trading partner) comparative advantage in the production, whereas it imports the goods and services in which its comparative advantage is the least (or lower than in the country that it is trading with), thus benefiting from imports at lower cost than producing them. Therefore, the Ricardian model explains that the opportunity cost of producing the goods or services is lower or higher in one country than in the other country. In other words, comparative advantage arises from technological differences between countries. The model gives a good

approximation of overall productivity and provides detailed information on the demand structure but, still requires improvements because it assumes extreme degree of specialization, while resources and production technologies differ between the countries. Furthermore, it assumes that every country gains from trade because it does not take into consideration the effects of international trade on income distribution within countries. Also the Ricardian theory provides no guide as to how labor productivity and comparative advantage can be expected to develop since it gave no explanation of differences in labor productivities across countries. Moreover, it takes only labor as a factor of production into consideration, while intra industry trade and economies of scale are not taken into account (Bowen et al., 1998; Feenstra, 2003; Krugman and Maurice, 2005).

2.1.2 Factor endowment theory

Over time the classical theory showed several defects, which encouraged the two Swedish economists, Eli Hecksher and Bert Ohlin, to extend the Ricardian model by developing the factor endowment theory, better known as the Hecksher-Ohlin model (H-O model). Furthermore, Paul A. Samuelson and American neoclassical economist set out a general equilibrium formalization based on the H-O theory deriving subsequent sets of important theorems, hence, the theory in recognition to Samuelson's contributions to the H-O theory became to be called the Heckscher-Ohlin-Samuelson (H-O-S) theory. The model states that a home country will export goods and services that use its abundant factors intensively and import the goods and services using home scarce factors intensively. Moreover, factor prices between countries become equal as trade increase between countries. The Heckscher-Ohlin-Samuelson model, show how factor proportions can determine comparative advantage, different from the classical model, the Heckscher-Ohlin-Samuelson model uses capital and labor as factors of production, and does not assume that every country gains from trade. It assumes that some will gain more than others. It also assumes that the only difference between countries is in the relative endowments of factors of production, and

the production technologies are the same where the same technologies will define the impacts on trade given the use and availability of proportions of factors of production. Furthermore, in the Heckscher-Ohlin-Samuelson model, trade does not lead countries to complete specialization between countries (Feenstra, 2003; Krugman and Maurice, 2005).

2.1.3 New trade theory

Contrary to the Ricardian and Hecksher-Ohlin theories, Helpman and Krugman (1985) came out with the new theory, which states that countries with similar level of wealth and endowment will trade more than countries with different wealth levels. The new trade theory presents four important facts among others: first, the increment on the trade to GDP ratio or “integration” has increased outstandingly, second, the trade is more concentrated among industrialized countries, third, the trade among industrialized countries is largely intra-industry trade, and fourth, the Ricardian and Hecksher-Ohlin theories fail once economies of scale and imperfect competition are introduced. In other words, the new trade theory explains the world trade based on economies of scale, imperfect competition and product differentiation, whereas the classical theory assumes constant returns to scale, homogenous goods and perfect competition. Markusen et al. (1995) stated contrary to the Ricardian and Hecksher-Ohlin model that there may be inherent arbitrariness in the patter of specialization. Therefore, trade can arise from two countries in which there exists no pattern of comparative advantage, emphasizing that in reality the gains from scale economies occur in addition to gains due to comparative advantage. Moreover, countries typically specialize when there are increasing returns, but the welfare effects of trade may depend on which country specializes on which good.

2.1.4 Gravity model

The above theories can explain why the countries engage to international trade, however, they do not explain the size of trade flows. Therefore, the gravity model is relevant in this context. The gravity model was firstly proposed by Linder (1961),

Tinbergen (1962) and Linneman (1966)[1]. Linneman also showed that the gravity equation could be derived from a partial equilibrium model. All authors based their models on the Newton's theory of gravitation[2]. Furthermore, they suggested that the magnitude of trade between two countries depend on the supply conditions of the source country and the demand conditions of the demanding country. Therefore, the gravity model applied in bilateral trade based on Newton's theory is:

$$T_{ij} = (C)\frac{GDP_i GDP_j}{D_{ij}^2}$$

Where

T_{ij}= Trade flows from country i to country j

GDP_i, GDP_j= Gross Domestic Product of both countries engaging in trade are taken as economic size.

D_{ij}= Distance between country i and j

Therefore the gravity equation represented in linear form is:

$$T_{ijt} = \alpha + \beta GDP_{it} + \beta GDP_{jt} + \beta Dist_{ij} + \varepsilon_{ijt}$$

---

[1] Published in Aigner et al. (1977) and Armstrong (2007)

[2] The gravity model is based on Newton's universal law of gravitation in physics which states that the gravitational attraction between two objects is proportional of their masses and inversely relate to square of their distance. Therefore is expressed

$$GA_{ij} = \frac{M_i M_j}{D_{ij}^2}$$

Where:

GAij= Gravital Attraction between i and j

Mi , Mj= Mass of object i and j

Dij= Distance

Among those who have been using the gravity model, Anderson and Wincoop (2003) added other factors to the model that may constrain or boost trade. Also, Cheng and Wall (2005), as the authors above, added four factors including language as a barrier or advantage to trade, where countries with common language tend to trade more, as in the case of Spain's trade with Latin America; history, where countries tend to be biased in trading with former colonies or blocks as the former Soviet Union and Yugoslavia within Eastern European countries or the United Kingdom and the common wealth countries; common border, as a matter of trade costs due to the factor distance; and accession to free trade agreements which may stimulate trade due to preferences within the countries that are part of the FTA. Sohn et al. (2001) used the gravity model to study Korea's trade pattern and FTA policy implications. Rose (2003) used the standard gravity model to study whether three international institutions (the WTO, the OECD and the IMF) help increase trade and found that only the OECD had a positive effect in most countries, whereas the WTO and the IMF had no effect. Moreover, Subramanian and Wei (2005) investigated whether the WTO promotes trade and within the most important finding s were that indeed the WTO has had a positive impact on trade, however, uneven. But it only depends on what the countries do with their memberships, the way and with whom they negotiate. Wong (2007) applied the gravity model to explain cross border flows that lead to spillovers having a good outcome except for merger and acquisitions flows. Moreover, Egger and Larch (2007) evaluated the trade, GDP and welfare effects on the Europe Agreements by means of structural estimation of bilateral trade flow model (gravity model), within the EU-15 and the Central and Eastern Europe (CEE) new entrants to the EU. Within their findings, a significant positive effect on trade in goods between the two country blocks. Furthermore, the effects on welfare were moderated in the EU-15 while the effect on welfare in the Central and Eastern Europe was significant.

2.2 Literature review on trade potential

2.2.1 Trade potential using the trade indices

The trade intensities have been broadly used in finding patterns of trade and trade potential. Aggarwal and Pandey (1992) used the trade indices to assess trade potential and trade expansion for the South Asian Association for Regional Cooperation (SAARC) countries and stressed the argument that the wider the difference in cost ratios the greater the prospects for trade potential and trade expansion in a custom union. Moreover, they identified the products in the sectors where intraregional trade could be expanded. Wiboonchutikula (1995) used the trade indices to assess trade potential for Thailand within the Asia Pacific Economic Cooperation (APEC) countries. The study found that the trade of Thailand in the region for the period 1976 to 1989 was below its potential due to the existence of protectionist measures of its trade partners. Bhattacharya and Bhattacharyay (2007) employed the trade indices to assess bilateral trade potential of India and China, furthermore, relaxed the benefits in terms of gains and losses for India and China due to preferential agreements and free trade agreements. The study found that in the short run India's potential gains are relatively less compared to China due to its high tariffs, but in the long run India's gains are higher once its tariffs levels are reduced.

2.2.2 Trade potential using the gravity model

There are a number of different approaches using the gravity model related to the study of trade potential. Aigner et al. (1977) introduced a gravity model using a stochastic frontier approach, furthermore, Jakab et al. (2001) also used the gravity model as an analytical device incorporating foreign direct investment variable, and they used the speed of convergence to find the potential trade of three Central Eastern European countries with good measuring outcomes. Bussiere, Fidrmuc and Schnatz (2005), by using the gravity model, also found that there is potential trade between the Central and Eastern Europe. Kang et al. (2006) and Armstrong (2007) provided a survey and improved the trade stochastic frontier which justified its use as a

tool for measuring trade potential within the gravity model. Armstrong, Drysdale and Kalirajan (2008) used the gravity model to compare the East Asian trade with the South Asian trade and measure their trade potential. The findings were that East Asia, led by the Association of South East Asia Nations (ASEAN), is performing very well in the world trade while South Asia lags behind significantly. Moreover, South Asia has yet to realize its potential even more.

2.2.3 Factors influencing trade flows

Good domestic rules and regulations and quality governance can significantly influence countries' trade performance. Good domestic rules and regulations and governance will guide businesses to support growth on exports and economic stability. The World Bank in the World Trade Indicators 2008 stated that countries having better institutional environments tend to have better trade outcomes, and furthermore, those countries tend to have a higher share of their exports in manufactures, and lower export concentration. Moreover, Campos and Kinoshita (2008) pointed out, that structural reforms are more than just a signal. They generate real benefits to foreign investors by affecting the key parameters upon which the decision to invest in a foreign country is taken.

UNCTAD [World Investment Report (WIR) 2005] describes an example that uses Thailand to highlight the importance and the benefits of good governance and domestic rules and regulations. Toyota Motor Corporation founded its fourth overseas research and development centre in Thailand in the year 2003 investing US$27 millions, while the other three are located in Japan, the US and Belgium, Thailand being the first developing country. Thailand was chosen because Thailand had good infrastructure, political stability, a favorable geographical location, a skilled labor force and favorable government policies.

The World Bank and many empirical studies have being keen on realizing the importance of governance. The World Bank, based on thousands of surveys, has built indices for different matters concerning governance. According to the

World Bank and specifically of Kaufman, Kraay and Mastruzzi (2007) who have been working on a series of papers for governance research definitions such as voice and accountability (VA) refers to the perception to which a country's citizens are able to participate in the government selection, as well as freedom of expression and association, and free media. Political stability (PS) refers to the perception of the likelihood that the government will be destabilized or overthrown by unconstitutional means, including, political motivated violence and terrorism. Government effectiveness (GE) refers to the perception of the quality of public services, quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Regulatory quality (RQ) refers to the perception of the ability of the government to formulate and implement sound policies that permit to promote private sector development. Rule of law (RL) refers the perception of the quality of contract enforcement, property rights, police and courts, as well as the likelihood of crime and violence and finally the control of corruption (CC) refers to the perception of the extent to which public power is exercised for private gain. Businesses face lower transaction costs when countries have good governance and good institutional environment [World Trade Indicators (WTI)], 2008). Furthermore, trade logistics is critical for developing countries to improve their competitiveness, reap the benefit of globalization, and fight poverty more effectively (World Bank/Trade Logistics and Facilitation, 2008).

Among other empirical studies, Papaiouannou (2008) carried out a study to find the determinants of international financial flows from rich countries to "poor" countries. It found that improvement of institutions is followed by significant increases in international finance. Furthermore, the model showed that future bank lending correlated strongly based on initial levels of institutional quality.

CHAPTER III
TRADE OVERVIEW

3.1 Mexico's trade overview

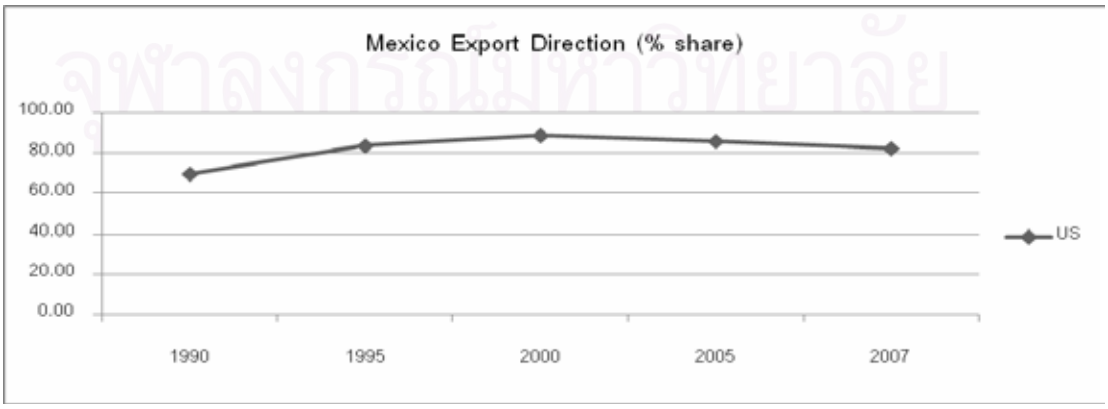
Before the 1980's Latin American countries were relatively closed economies characterized by import substitution and other protectionist and nationalist policies. Latin America was living in constant crises, political turmoil and stagnation, and Mexico was not an exception. During the eighties in Mexico different forms of liberalization started to arise and have evolved over time as a response to changing conditions and developments along the globalization process. In 1982 Mexico faced a high debt that triggered a crisis. Mexico had benefited from booming oil sector for decades, but the fall in oil prices deprived Mexico of liquidity, and it was unable to meet its liabilities, therefore, declared itself in default. It took Mexico over 7 years to recover and stabilize its capital markets. In spite of holding some degree of protectionist policy, in the early 1990's, Mexico showed attempts to integrate with the worlds markets in higher degree by establishing bank reforms, privatizing the banking system that aimed to increase offer prices and maximize revenues from the selling activities. But weak normative institutions led to poor lending practices, besides political turmoil induced volatility and spread risk for the Mexican peso (Orme, 1998). According to Santiso (2006) the government tried to buffer the volatility by issuing short term treasury bonds which had no effect after an imminent crisis, therefore, the government was forced to let the Mexican peso to float which was attained to the incapability of the Mexican government's management, as a result the financial crisis "The Tequila Effect" by the end of 1994 and beginning of 1995.

One of the outstanding features of Mexico in the middle of nineties was the signing of the North American Free Trade Agreement (NAFTA) with the United States of America and Canada. This was the biggest step away from the former protectionist and nationalistic policies to policies to open the country further to the global economy, just some months before the financial crisis. Mexico is one of the world economies

highly active in the area of bilateral or reciprocal preferential trade agreements (i.e. with Canada, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Japan), multilateral and regional trade agreements such as NAFTA and EU-Mexico FTA. Besides NAFTA, Mexico has already multilateral agreements with different member countries of international institutions such as Asociacion Latinoamericana de Integracion (ALADI), Area de Libre Comercio de las Americas (ALCA), Asia Pacific Economic Co-operation (APEC), OECD and WTO.

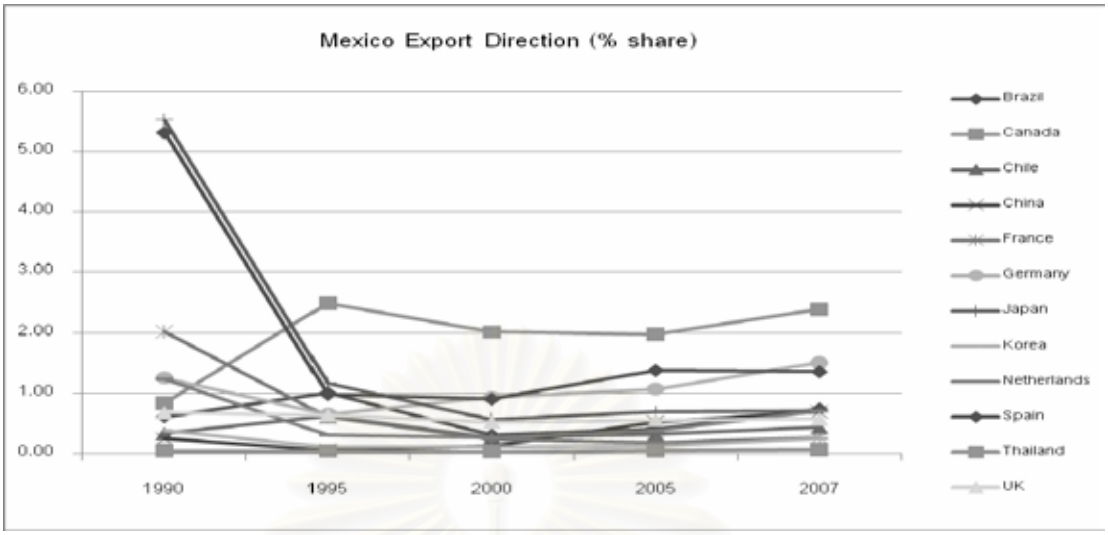
The US has always held the largest share of Mexico's export direction, which has been at its highest after signing NAFTA. In 1990, the US held a share of slightly under seventy percent (69.34 percent) of the Mexican export direction, which peaked at close to ninety percent (88.69 percent) in 2000, after which it decreased close to eighty percent (82.18 percent) in 2007 (see Figure 2 and Appendix A Table 11). In 1990, only Japan and Spain held a share of over five percent (5.53 percent and 5.32 percent, respectively), which decreased close to one percent (1.17 percent and 0.98 percent, respectively) in 1995 after NAFTA had been signed. Canada, in 1990 before NAFTA, held a less than one percent (0.83 percent) share of Mexican exports, which in 1995 had increased close to two and half percent (2.49 percent). The share remained over or close to two percent during the years until 2007. (See Figure 3 and Appendix A Table 11).

Figure 2 Mexico's Export Direction (the US, % share) 1990-2007



Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Figure 3 Mexico's Export Direction (MTPs and Thailand, % shares) 1990-2007

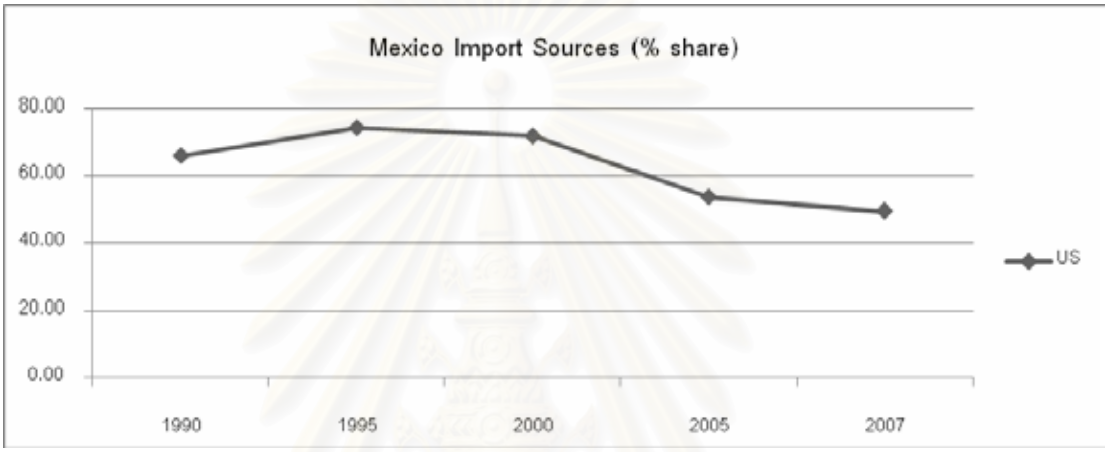


Source: Data from IMF/DOTS (c.i.f), authors' calculations

The US has also held the biggest share of the Mexican import sources, however the share is less than the US share of the Mexican export direction (see Figures 2 and 4), implying that Mexico has held a trade surplus with the US since the last decade. From 1990 to 1995, the pattern of the US share of the Mexican import sources was increasing; the shares increased from 66.11 percent and to 74.52 percent. By 2000, 2005 and 2007 the shares fell to 72.04 percent, 53.64 percent and 49.64 percent, respectively (see Figure 4 and Appendix A Table 13 and Table 14). The falling pattern of US shares of Mexico's import sources can be explained by the steep and fast rising shares of China and Korea as Mexican import sources, of which the former accounted in 1990 and 1995 for less than 1 percent (0.73 percent and 0.72, respectively), 1.63 percent, 7.98 percent and 10.55 percent in 2000, 2005 and 2007, respectively, and the latter accounted for less than 1 percent (0.61 percent), 1.34 percent, 2.08 percent, 2.96 percent and 4.49 percent in 1990, 1995, 2000, 2005 and 2007, respectively. Japan's share of Mexican import sources remained relatively high during the period of 1990-2007. The share ranged from its lowest share at close to three and half percent (3.65 percent) in 2000 to its highest share at slightly under six percent (5.90 percent) in 2005 during the period of 1990-2007. Germany's share of Mexico's import sources was a bit higher in 1990 (5.56 percent) than in the following years, when the share remained between three and four percent during 1995-2007. In 1990 and 1995, Canada's shares

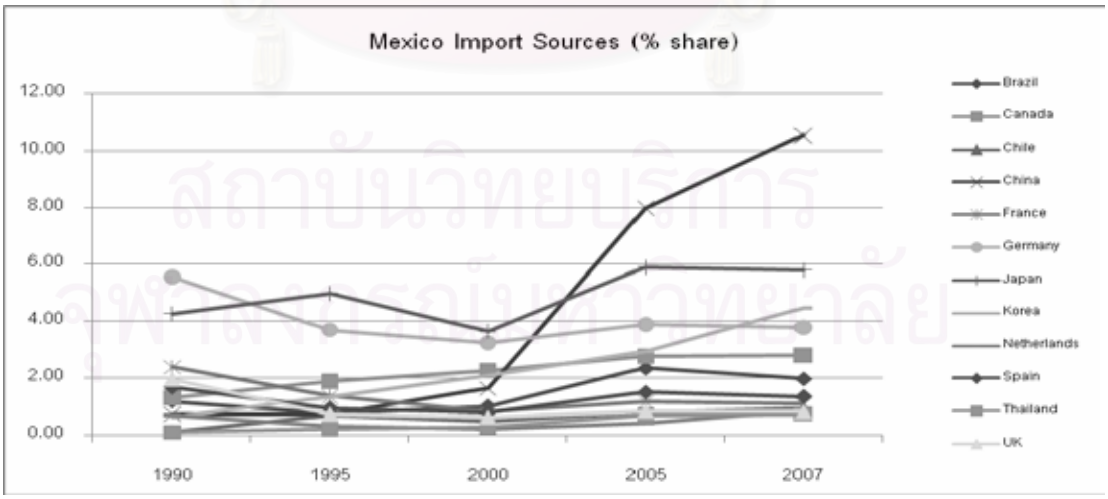
of Mexico's import sources were between one and two percent (1.30 percent in 1990 the lowest share) and in the following years the share remained between two and three percent (2.82 percent in 2007 the highest share). (See Figure 5 and Appendix A Table 13 and Table 14)

Figure 4 Mexico's Import Sources, (the US % share) 1990-2007



Source: Data from IMF/DOTS (c.i.f), authors' calculations

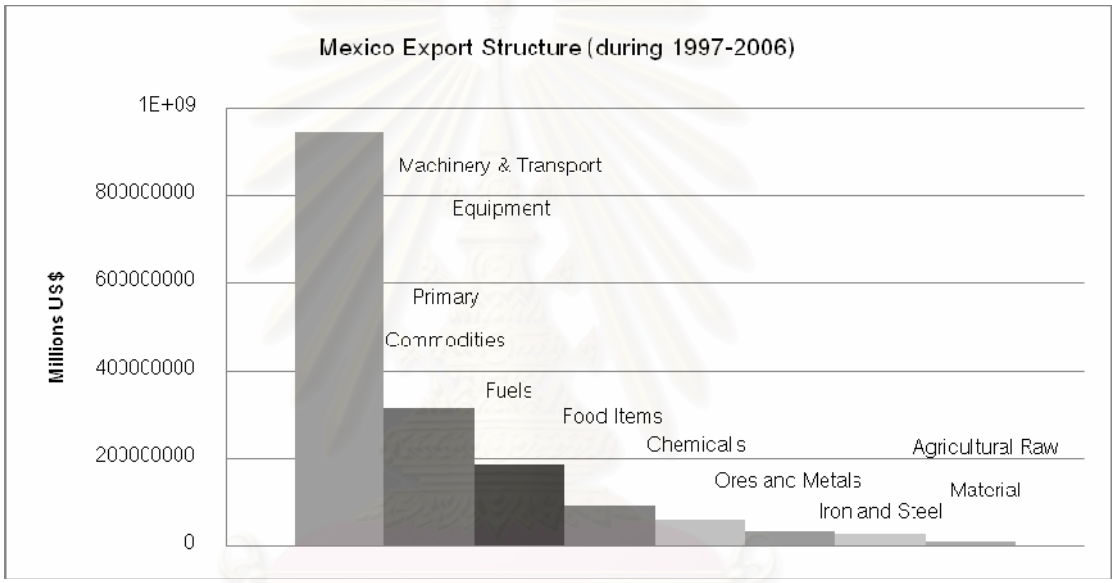
Figure 5 Mexico's Import Sources (MTPs and Thiland, % shares) 1990-2007



Source: Data from IMF/DOTS (c.i.f), authors' calculations

Mexico's major source of exports income during the period 1997-2006 came from machinery and transport equipment, which accounted for US$945,140,315 millions,, followed by primary commodities with US$311,704,239 millions, fuels with US$183,052,080 millions, then food items, chemicals, ores and metals, iron and steel, and agricultural raw materials with US$89,632,036 millions, US$59,069996 millions, US$29,605,805 millions, US$24,326,737 millions, US$9,414,316 millions, respectively (see Figure 6).

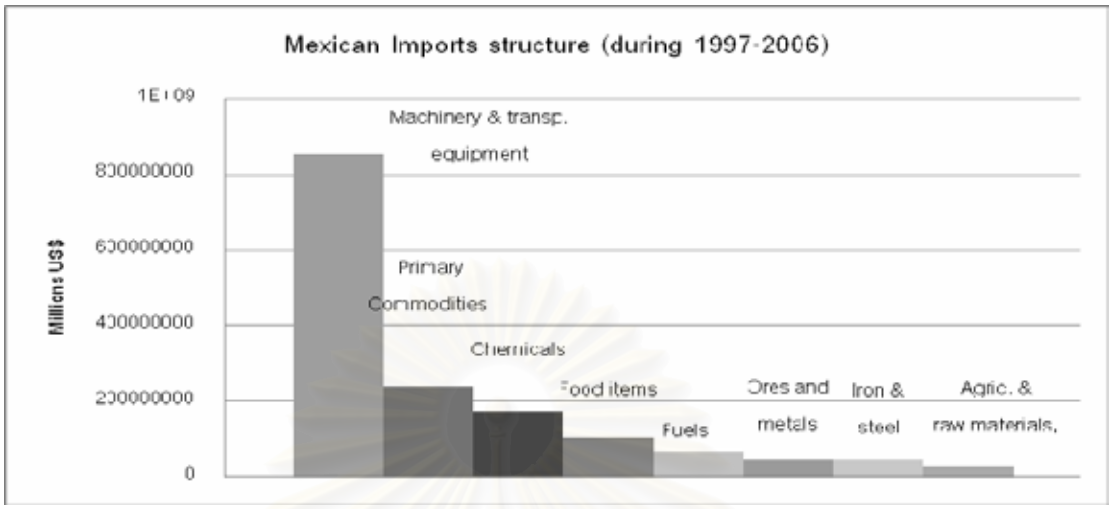
Figure 6 Mexico's Export Structure 1997-2006



Source: Data from UNCTAD, Handbook of Statistics 2008

Mexico showed a trade deficit in the following goods: food items, chemicals, ores and metals, iron and steel, agricultural raw material and a surplus in machinery and transport equipment, primary commodities and fuels, implying the Mexican competitiveness and endowment (see Figure 7).

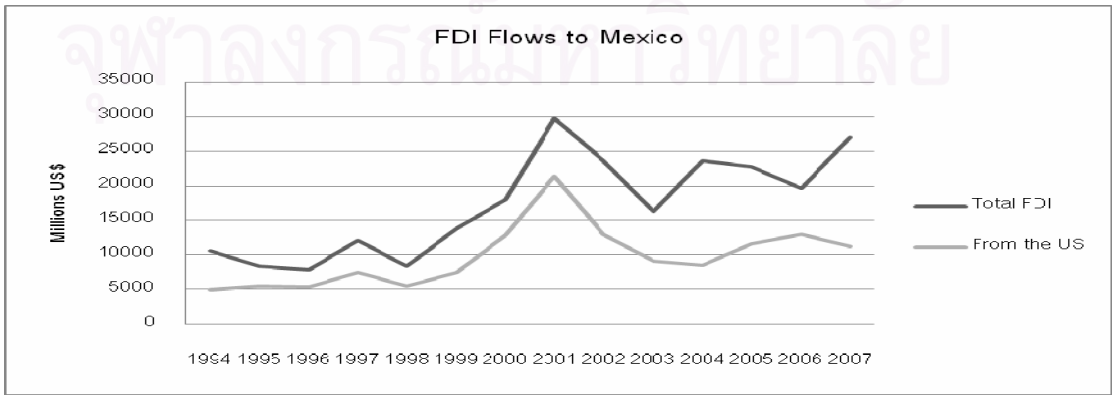
Figure 7 Mexico's Import Structure 1997-2006



Source: Data from UNCTAD, Handbook of Statistics 2008

After signing NAFTA in 1994, Mexico experienced large inflows of capital, mainly from the US, which gave some degree of "credibility". During the period 1997-2000, private investment in Mexico grew at an annual average rate of 10.6 percent amounting to approximately US$44 billion in foreign direct investments (WTO/TPR, 2002). Approximately US$17.7 billion in flows were registered 2005. In 2006, an increase of 6.4 percent compared to the past year amounted to US$18.9 billion. But in 2007, foreign direct investment in Mexico experienced an outstanding rise of 21 percent to US$23.2 billion, the second highest in history, only behind the US$29.5 billion invested in 2001. (See Figure 8 and Appendix A Table 19)

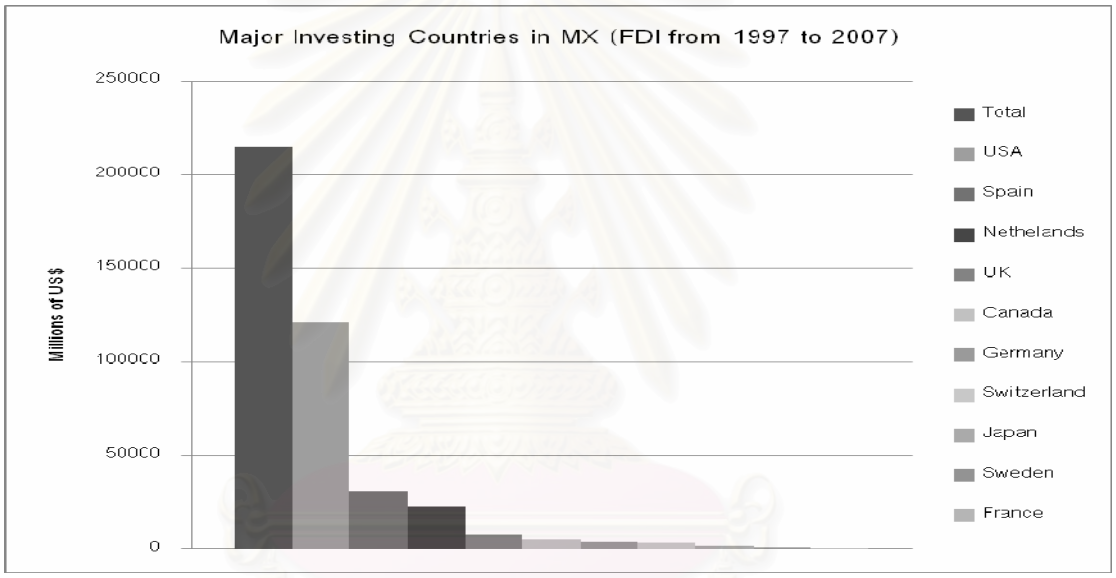
Figure 8 FDI Flows to Mexico 1997-2007



Source: Data from UNCTAD Handbook of Statistics

Within the last decade over US$200 billion foreign direct investment has been directed into the Mexican economy. The main sources were the US with US$ 121,140.7 million, (due to high investment returns) and the European Community (EC) (Spain with US$31,144.9 million, and Netherlands with US$22,892.6 million were the major sources and accounted for 25 percent of the EC's share) (DGIE, 2008), followed by the UK, Canada, Germany, Switzerland, Japan, Sweden and France with US$7,934.3 millions, US$5,646.2 millions, US$4,131.2 millions, US$3521.1 millions, US$1982.1 millions, US$845.3 millions and US$140.6 millions, respectively (see Figure 9).

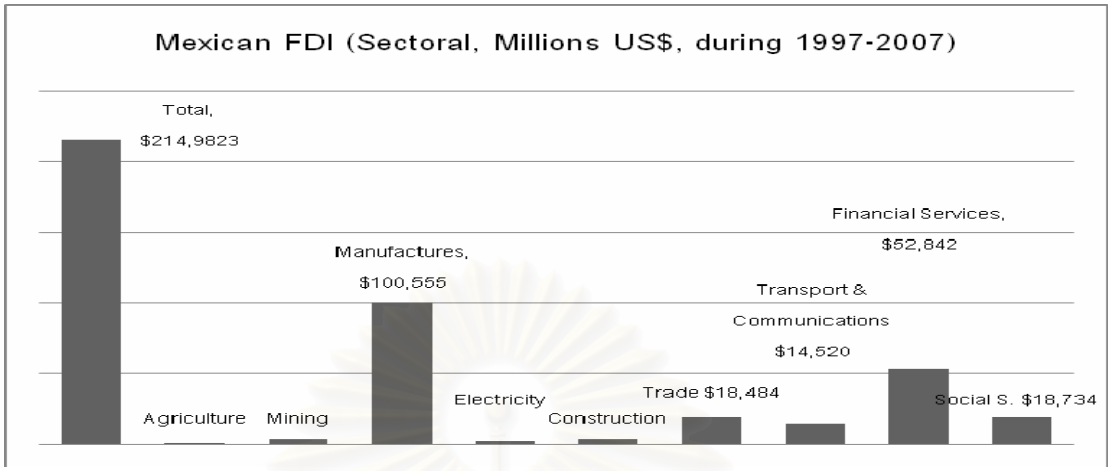
Figure 9 Major Investing Countries in Mexico 1997-2007



Source: Data from INEGI

This transformed Mexico from an oil-exporter country to a one of the largest exporters of manufactures in the world. 48 percent (US$100,555 Millions) of the total FDI in Mexico (US$2149823 Millions) during the period 1997-2007 were directed to the manufactures sector, followed by the financial services (US$52,842 Millions). Whereas, the foreign direct investment to agriculture and the oil industry (included to the mining sector), was almost zero given the high protection of these industries in Mexico (see Figure 10).

Figure 10 Mexico's Sectoral Distribution of FDI 1997-2007

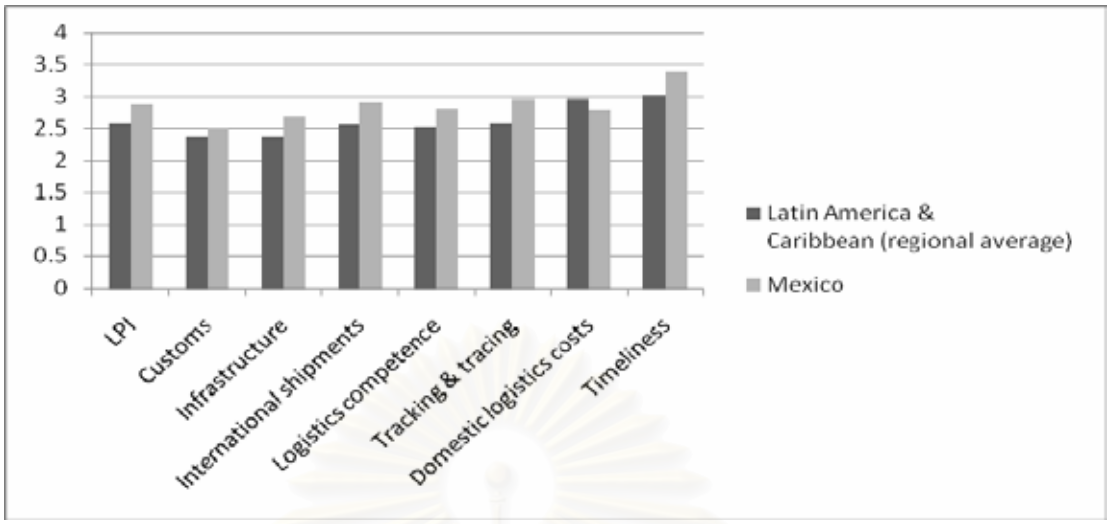


Source: Data from INEGI

However, the Mexican government passed a new reform within the energy sector in October 2008 which allows foreign investments in the oil industry, therefore, large amounts of capital are expected to flow in Mexico to this sector in the coming years.

The World Bank developed a logistics performance index (LPI) based on survey of global freight forwarders and express carriers providing feedback on the countries abilities to handle trade operations. The index is composed by country customs, infrastructure, international shipment, logistics competence, tracking and tracing, domestic logistics costs and timeliness. The highest score for the index is 5, meaning that as higher the score the better logistics performance an economy have. Trade logistics is critical for developing countries to improve their competitiveness, reap the benefit of globalization, and fight poverty more effectively. In 2006, Mexico performed above (0.30 positive difference) the regional average in the LPI compared to countries in Latin America. Only in domestic logistics costs Mexico performed worse than its regional counterparts (see Figure 11). Mexico is ranked 56 in the world in logistics performance (World Bank/Trade Logistics and Facilitation, 2008).

Figure 11 Mexico's Logistics Performance 2006

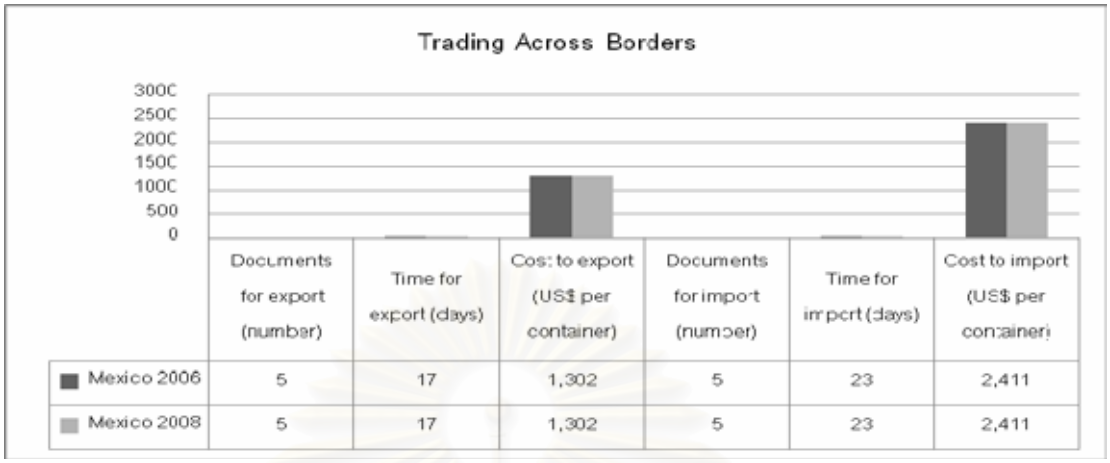


Note: Logistics Performance Index (LPI)

Source: Data from the World Bank/Trade Logistics and Facilitation

Businesses face lower transaction costs when countries have good governance and good institutional environment (WTI, 2008). In the World Bank (Doing Business Indices 2008), Mexico's performance was ranked average in the trade across borders. In 2008, there had been no changes compared to the year 2006: the same number (5 for exports and imports) of documents and days (17 exports and 23 for imports) were required for trading, and the cost of export per container remained at US$1,302 and the cost of import per container remained at US$2411 by 2008 (see Figure 12). Clearly Mexico has stagnated in the trade across borders category. Therefore, due to the high cost for export/import container, Mexico is ranked 76th in the world.

Figure 12 Mexico's Trading Across Borders 2006 and 2008

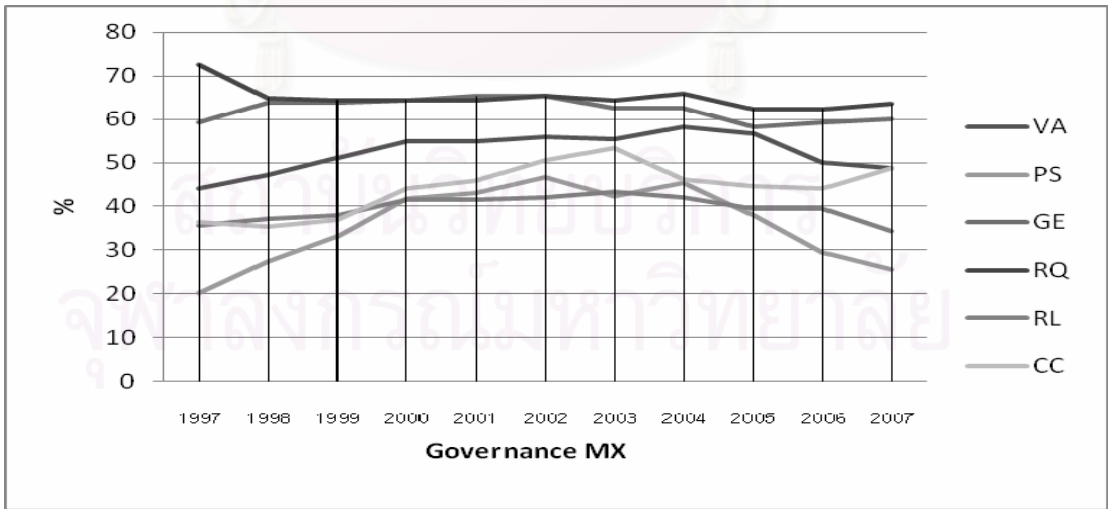


	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)	Documents for import (number)	Time for import (days)	Cost to import (US$ per container)
Mexico 2006	5	17	1,302	5	23	2,411
Mexico 2008	5	17	1,302	5	23	2,411

Source: Data from the World Bank/Doing Business 2008

In terms of governance, Mexico faced imbalances during the 1997-2007 period. The worst index score was in political stability which lied in less than 50 percent of 100 percent at the best, followed by control of corruption and rule of law. These show that despite Mexico enjoys good development; it still has its weaknesses (see Figure 13).

Figure 13 Mexico's Governance 1997-2007

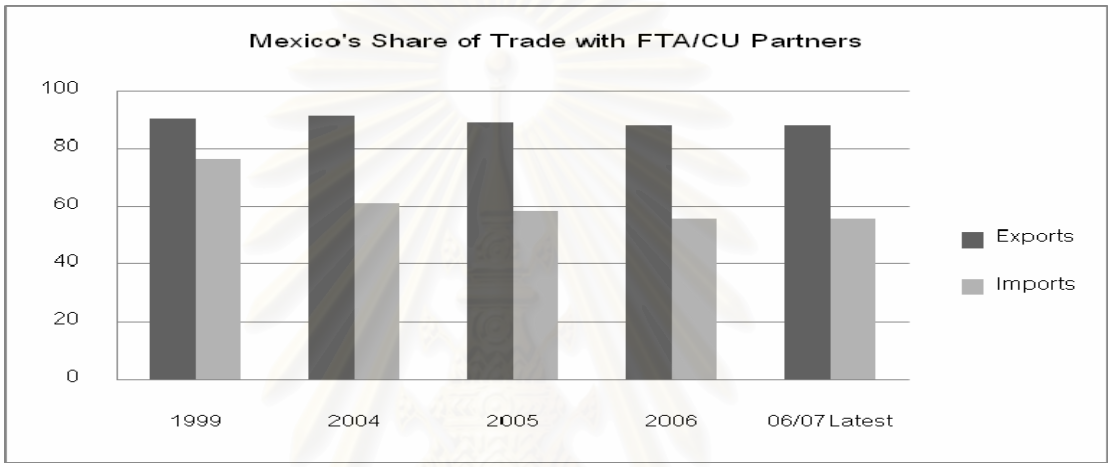


Note: Voice and Accountability (VA), Political Stability (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC)

Source: Data from the World Bank Indicators/Governance

Mexico's trade policy is highly restrictive outside preferential trade agreements. Since 1999, approximately 90 percent of Mexico's exports have been to its free trade agreement (FTA) partner countries, and over 70 percent of its imports in 1999 came from its free trade agreement partner countries. However, later on the share of imports from free trade agreement partner countries has been declining to 55 percent by 2007 (see Figure 14).

Figure 14 Mexico's Share of Trade with FTA/CU Partners

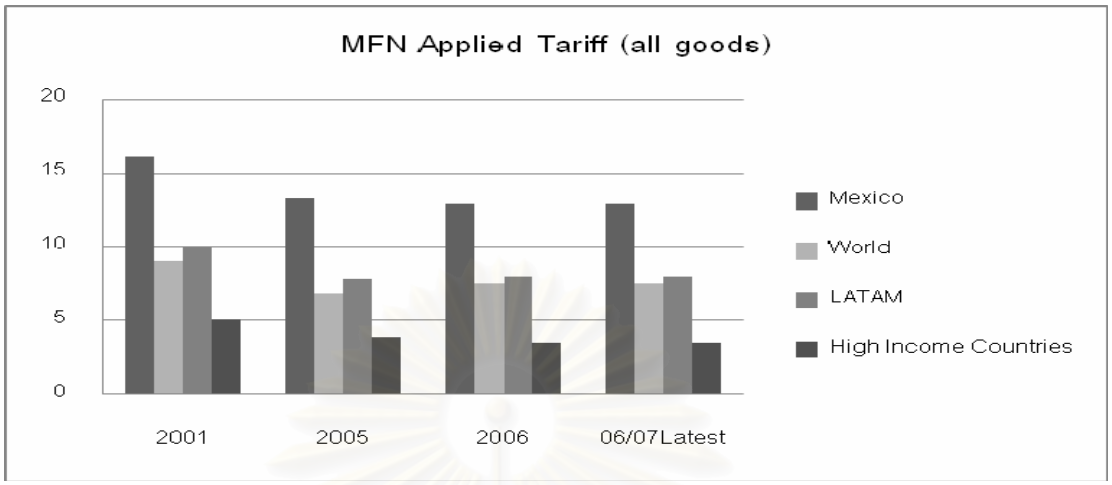


Note: Free Trade Agreement (FTA), Custom Union (CU)

Source: Data from WTI 2008

The latest World Bank's World Trade Indicators report ranked Mexico 107th out of 125 countries in 2006 given its 11.1 percent import weighted average most favored nation (MFN)-tariff, whereas import weighted average MFN-tariff with countries holding preferential trade agreements in 2006 was 2.5 percent. This was down from over 10 percent compared to the previous decade. Mexico's MFN applied tariff is high compared to the world and regional average (see Figure 15), though it has been declining if one compares the 16 percent average in 2001 to the 13 percent average by 2007 (WTI, 2008). This should support the Richardson (1993) findings, where he states that once a country lowers its trade barriers within a free trade agreement or custom union, tariffs and other measures against no members will fall.

Figure 15 Mexico's MFN Applied Tariffs

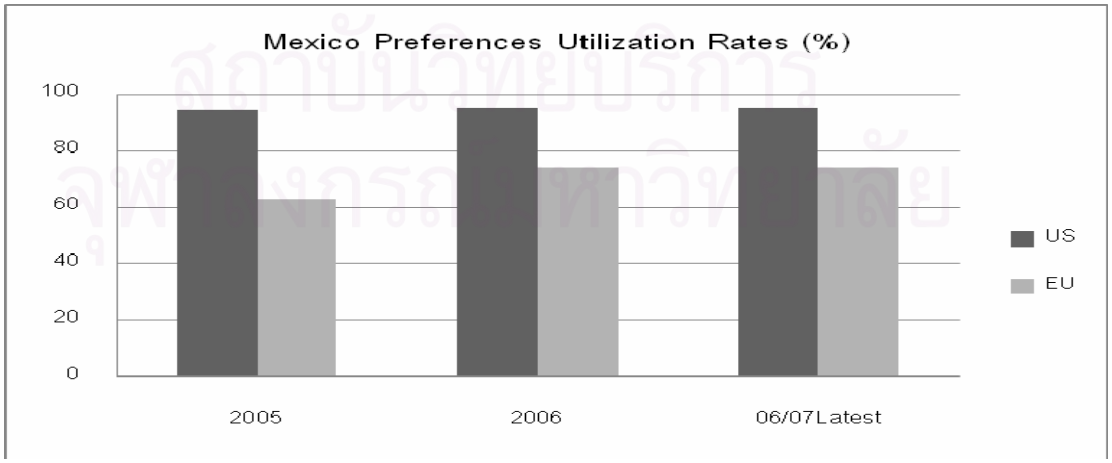


Note: Latin America (LATAM)

Source: Data from WTI 2008

For the market access Mexico is ranked 4th out of 125 countries (World Trade Indicators, 2008) given that it is one of the countries that enjoys one of the lowest applied tariff barriers, which in 2006 was 0.6 percent. Moreover, around 90 percent of Mexican exports go to countries which it has a trade agreement with. Furthermore, Mexico makes high use of preferences provided by the US and the EU (over 90 percent with the US and over 70 percent with the EU) in the recent years (see Figure 16).

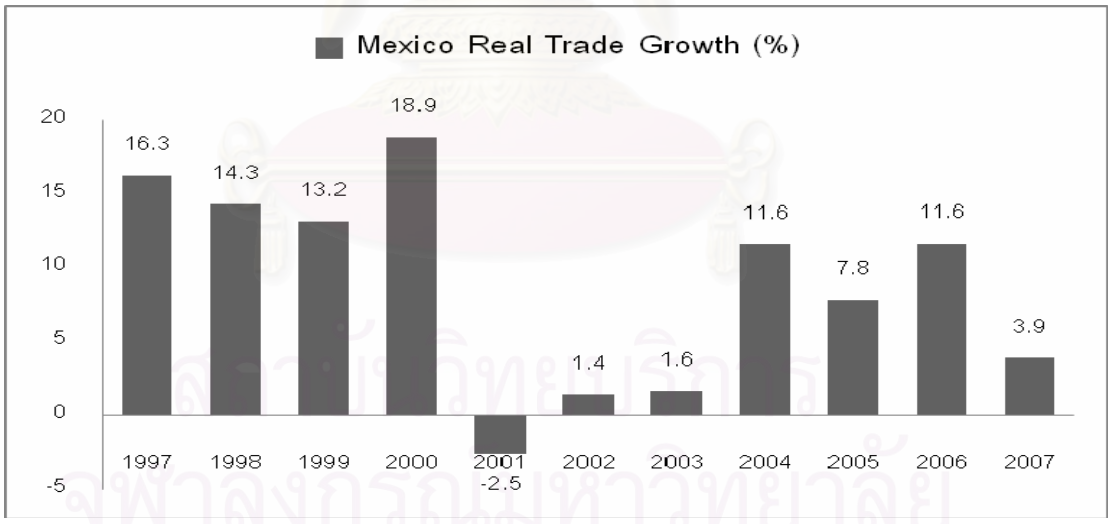
Figure 16 Mexico's Preferences Utilization Rates (%)



Source: Data from WTI 2008

The real growth trade reflects the expansion of a country over a period. The real trade growth calculated by the World Bank/World Trade Indicators 2008 as the average annual growth rate of the total exports and imports in goods and services at constant 2000 US dollars showed that Mexico experienced double digits in real growth trade after the 1994-1995 crisis (see Figure 17 and Appendix A Table 21) After a constant growth, in the years 2001, 2002 and 2003 Mexico's real growth trade was affected negatively because the US and the other industrialized major trade partners were in recession. The following years Mexico again experienced a double digit real trade growth, whereas in 2007 the country experienced only a small (3.9 percent) real trade growth. It is worth to highlight the importance of trade diversification, in the case of Mexico, because the US is the major share holder of Mexican export direction and import sources (see figures 2 and 4). Therefore, when the US entered into recession, Mexico's real trade growth was affected negatively given that Mexico's trade relies heavily on the US.

Figure 17 Mexico's Real Trade Growth 1997-2007



Source: Data from WTI 2008

In real terms Mexico's trade is reflected in the current account balance and GDP growth. Before the 1995 crisis (from 1990 to 1994) Mexico experienced a 3.8 percent growth of GDP reaching over US$4000 per capita GDP. After the 1995 crisis per capita GDP fell to US$2500. GDP grew on average 5 percent until the year 2000, when

Mexico reached one digit inflation rate after many years holding a double digit inflation rate. But given the recession in the industrialized countries especially in the US, Mexico's principal trade partner, Mexico did not experience GDP growth in 2001. This was followed by a 2.9 percent average growth from 2002 to a 4.9 percent peak in 2006, falling again to 2 percent average in 2008. In 2008, GDP per capita was averaging over US$10,000 however; Mexico has not experienced a yearly average current account surplus since 1995.

3.2 Thailand's trade overview

In the early seventies and during the eighties, many Asian countries shifted from import substitution to export promotion. Moreover, adoption of macroeconomic and outward oriented trade policies contributed to an exorbitant growth rates in Asian countries. Asian countries, before the 1997 crisis, were enjoying outstanding rates of development. But 1997 was the year that crippled the region with the fall of the financial system in the "Asian Tigers". Many factors triggered the financial crises in July 1997 in the Southeast Asia. The banks and corporations got indebted, and the region took too much short-term foreign currency external debt. At that time the Asian currencies were pegged to the US dollar creating false security, which encouraged external borrowing that led the exposure to the foreign exchange risk in the banking sector. Moreover, it was a governance problem, because there were no institutions to manage and regulate all those large capital inflows. A rapid expansion of the housing and construction industry and an escalation of real estate prices and acceleration in money supply growth led to a bubble that burst. As a result of high capital mobility, managed exchange rates and monetary autonomy, businesses collapsed. More than US$100 billion were pulled out of Southeast Asia (World Bank, 2007). Thailand was the country that felt the crisis before Korea, Malaysia, Philippines and Indonesia. The Thai baht depreciated 19.6 percent right away. Wages fell by 6 percent. Therefore, by 1998, over 1.1 million Thais fell below the poverty line. At the time

of the crisis the ratio of total loans to GDP in Thailand was about 140 percent (The paper experts, 2008).

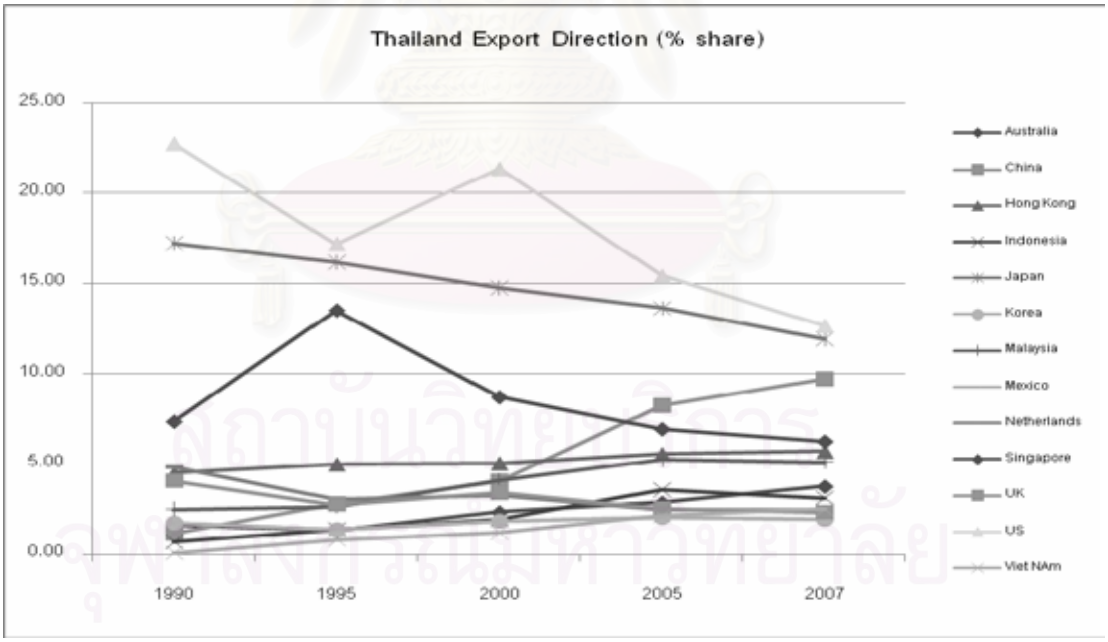
Thailand started the outward oriented trade policy in the eighties, specifically in 1982, when Thailand joined the general agreement on trade and tariffs (GATT), adopting an export oriented industrialization strategy relying on the development of an increasingly open multilateral trading system. And back in the sixties Thailand co-founded ASEAN with Indonesia, Malaysia Philippines and Singapore, to which Brunei joined in 1984, Viet Nam in 1995, Lao PDR and Myanmar in 1997 and finally Cambodia in 1999. This partnership was established for economic cooperation and development. ASEAN free trade agreement (AFTA) was launched in 1992 and in 2005 the signatory countries have reduced the tariffs to no more than 5 percent (ASEANSEC, 2008). Furthermore, Thailand became a member of APEC in 1989 and is committed to fully open trade and investment by 2020. Moreover, Thailand joined WTO in 1995 and later the BIMST-EC[3]. In the nineties, Thailand had intentions for a free trade agreement with the Czech Republic and Israel, but none was landed. Besides the AFTA, Thailand holds bilateral FTA with Bahrain since 2003 and with New Zealand since 2004. At the ASEAN level, the ASEAN-China negotiations were concluded in 2004, with Australia and India in 2004, and with Peru since 2005.

Thailand trades mainly with Asian countries. Export direction and import sources are more specifically to and from East and Southeast Asia. The US is the highest partner outside Asia (see Figures 15 and 16). The US, Japan and Singapore have been the major recipients of Thai exports, although, all presented fluctuations, for example, from 1990 to 1995 the Thai exports share to the US represented 22.71 percent and fell to 17.17 percent by 1995 (presented a -0.24 percent change). At the same time Singapore showed a significant increase in Thai exports share from 7.35 percent in 1990 to 13.49 percent share in 1995 (a 0.84 percent change after experience of a -0.7 percent change in the previous period). During the period 1995-2000 Thai exports to the

[3] Bangladesh, India, Myanmar, Sri Lanka and Thailand Economic Cooperation (BIMSTEC)

US showed an upward pattern reaching 21.32 percent, which was followed with a decreasing pattern until 2007, when the share of Thai exports to the US had reached 12.63 percent. Japan has held the second highest share of the Thai exports, however, the pattern has been decreasing. The share has declined from 17.20 percent in 1990 to 11.89 percent by 2007. Singapore's share peaked at 13.49 percent in 1995, however, by 2007 the Thai exports share was 6.25 percent. In 1990, China held a 1.16 percent share of Thai exports, which by the year 2000 reached over 4 percent and by 2007 9.73 percent. Among the remaining major trading partners, Hong Kong's share ranged from 4.50 percent in 1990 to 5.70 in 2007 and Malaysia's share ranged from 2.49 percent in 1990, peaked at 5.25 percent in 2005 and then decreased to 5.11 percent in 2007. In general, Thailand has been diversifying its exports direction (see Figure 18 and Appendix A Table 15 and Table 16)

Figure 18 Thailand's Exports Direction (MTPs and Mexico, % shares) 1990-2007

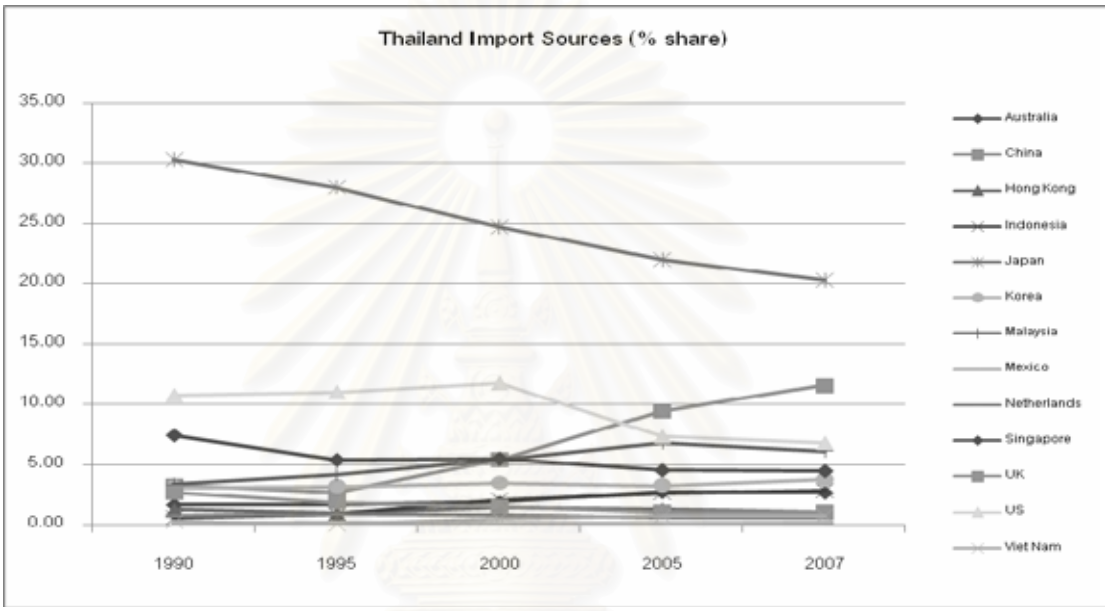


Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Japan has always dominated Thailand's imports sources, although the share has fell from a 30.36 percent share in the year 1990 to 20.29 percent in 2007. The next main source of imports holding steady until the year 2000 was the US which held

an 11 percent average during the period 1990-2000. This was followed with a decreasing pattern and a share of 6.83 percent in 2007. China has been responsible for the decreasing shares of Japan and the US. In 1990, the Thai imports sources from China were 3.31 percent and by 2007 was 12 percent. In general, Thailand has diversified its import sources (see figure 19 and Appendix A Table 17 and Table 18)

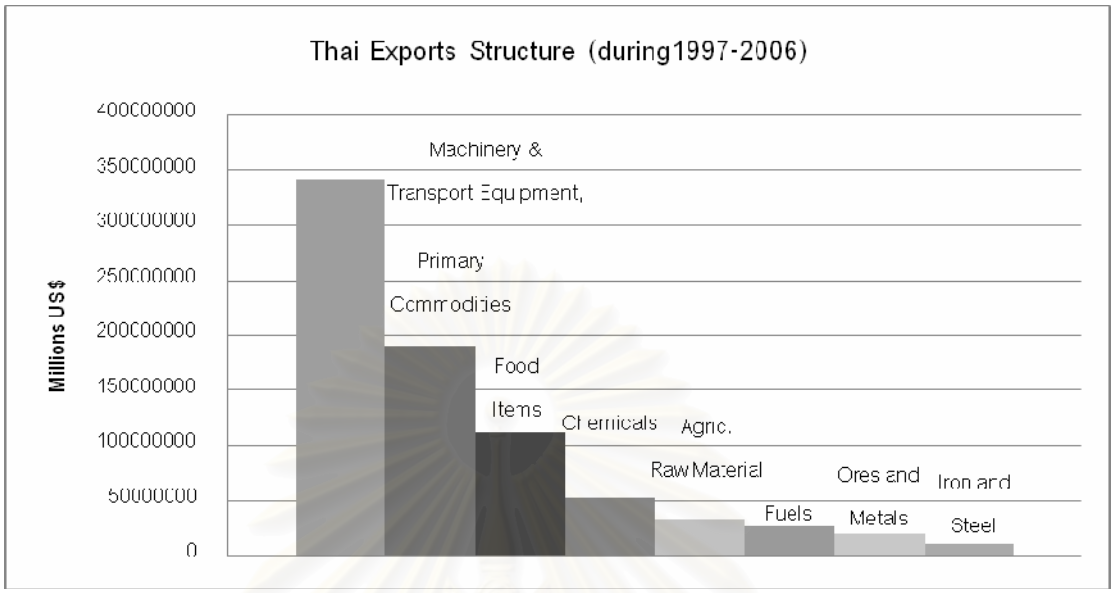
Figure 19 Thailand's Import Sources (MTPs and Mexico, % shares) 1990-2007



Source: Data from IMF/DOTS (c.i.f), authors' calculations

The main source of exports income for Thailand during the 1997-2006 period was the machinery and transport equipment with US$340,458,028 millions, followed by primary commodities with US$189,831,380 millions, food items with US$111,513,807 millions, chemicals with US$51,371,141 millions followed by agricultural raw materials, fuels, ores and metals, and iron and steel with US$33,045,164 millions, US$25,913,967 millions, US$19,358,441 millions and US$10,002,406 millions, respectively (see Figure 20). This confirms the relative endowment and competitiveness in these commodities.

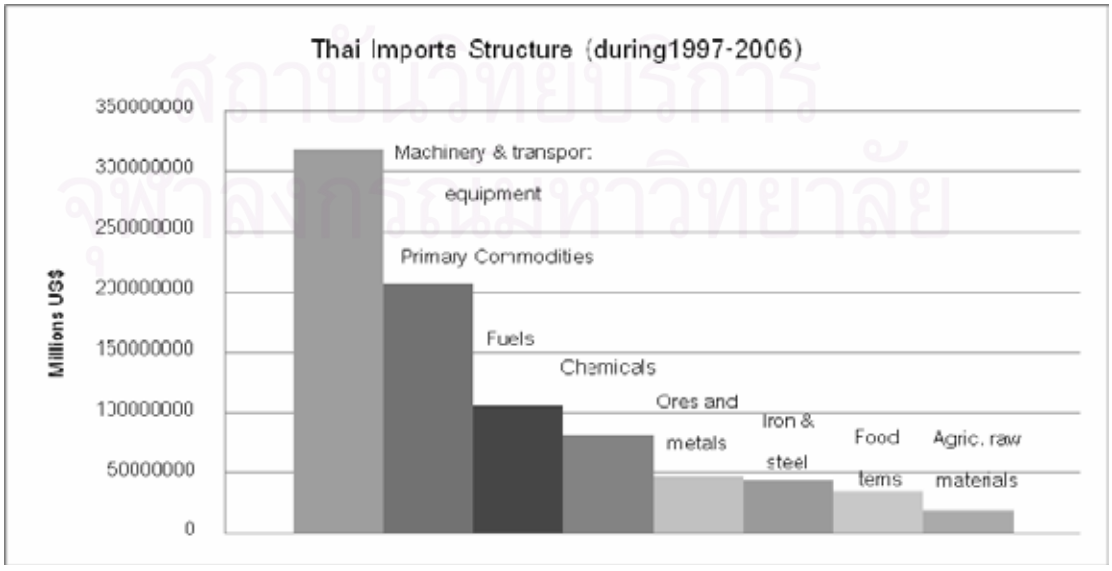
Figure 20 Thailand's Export Structure 1997-2006



Source: Data from UNCTAD, Handbook of Statistics 2008

The Thai import structure within the study period demonstrates a relative small surplus in the machinery and transport equipment, while in all other commodities there is a deficit. Thailand also exports more food and agricultural raw materials than it imports. It is worth to note that Thailand has a large deficit in fuels meaning that Thailand is a net oil importer (see Figure 21).

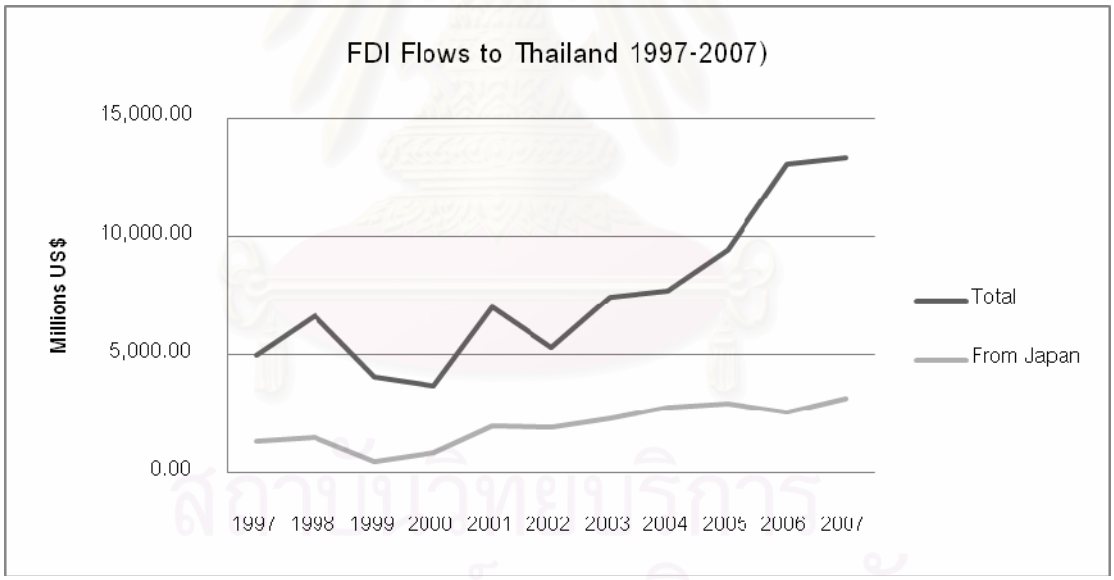
Figure 21 Thailand's Import structure



Source: Data from UNCTAD, Handbook of Statistics 2008

Free trade agreements helped Thailand to overcome the crisis. Dent (2006) stated that the determining factors behind Thailand's bilateral free trade agreeement policy were strengthening diplomatic relations with key trading partners, consolidating domestic economic reforms and strengthening regional economic cohesion. Indeed, after the confidence in Asia was re-established, large amounts of capital (foreign direct investment) flew in. During the period 1997-2000 Thailand's yearly average of FDI was US$5203 millions, and in 1998 FDI to GDP ratio was 6.5 percent at its highest in that period falling to 2.7 percent by the year 2000. The following years, from 2001 to 2004, the yearly average inflows fell to US$4873 millions and in 2004 FDI to GDP ratio was 3.6 percent. During the latest period, 2005-2007, Thailand's average yearly inward foreign direct investment was US$8878 millions, which was almost twofold compared to the previous period (see Figure 22 and Appendix A Table 20).

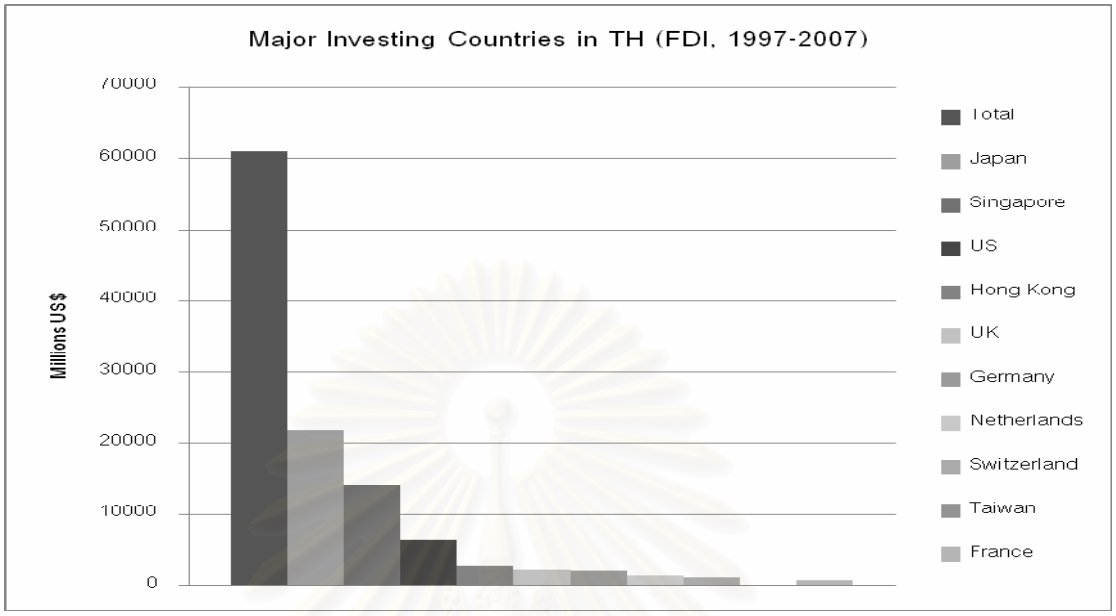
Figure 22 FDI Flows to Thailand 1997-2007



Source: Data from BOT

The leading investing countries in Thailand are Japan with US$21,725 millions, followed by Singapore with US$14,052.7 millions and the US with US$6,263.1 millions. The other major investors (on smaller scale) in Thailand were Hong Kong, UK, Germany, Netherlands, Switzerland, Taiwan and France (see Figure 23).

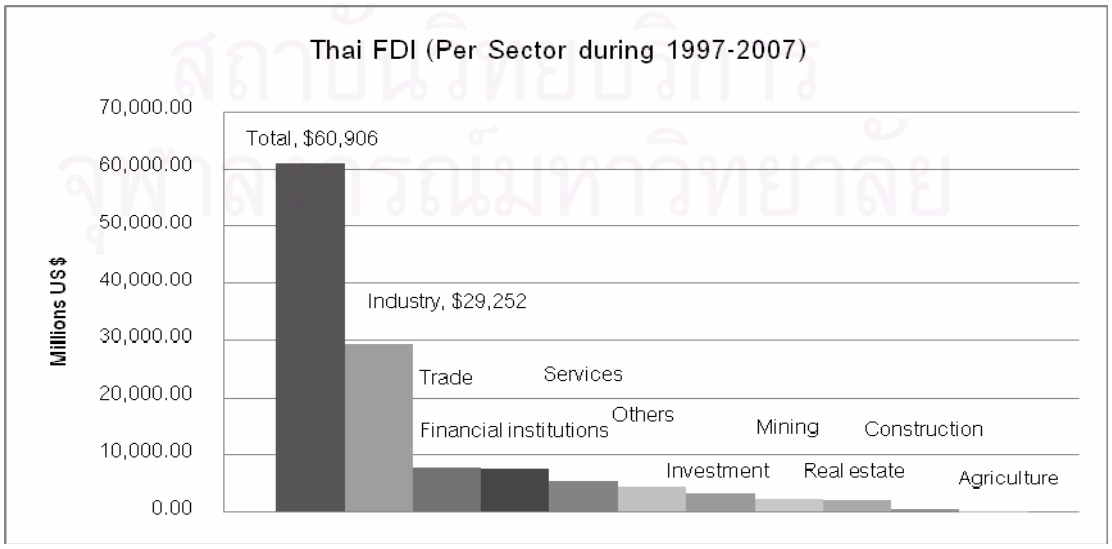
Figure 23 Major Investing countries in Thailand 1997-2007



Sources: Data from BOT

The total inward foreign direct investment flows during the period 1997 to 2007 were US$60,905.92 millions, of which 49 percent were directed to the industry sector with a value of US$29,252.71 millions, followed by flows directed to trade and financial institutions with US$7,634.18 and US$7,335.54 millions, respectively (see Figure 24).

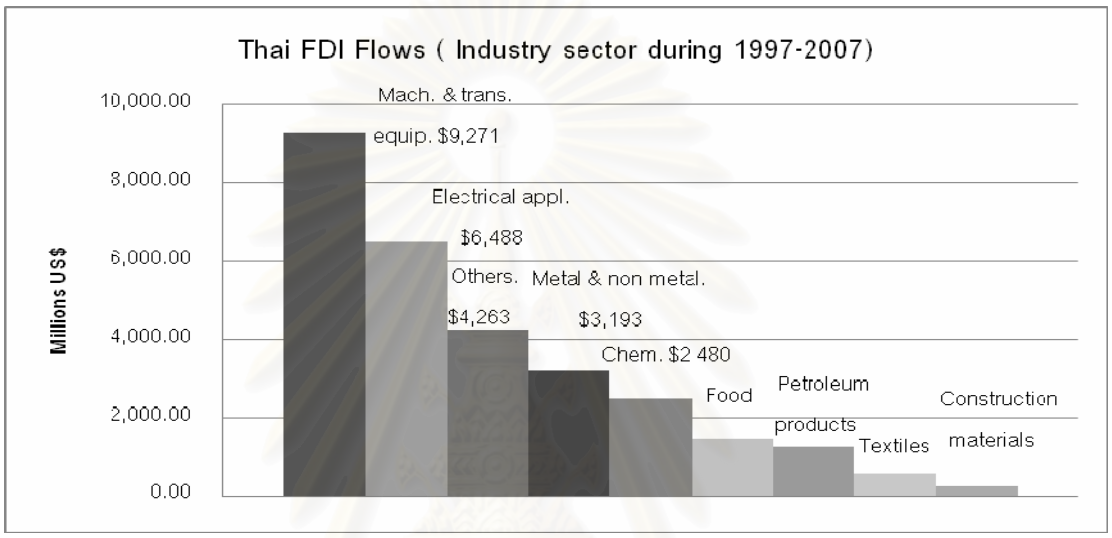
Figure 24 Thailand's Sectoral Distribution of FDI 1997-2007



Source: Data from BOT, Thai Ministry of Commerce

Therefore, from the total US$29,252.71 millions of foreign direct investment directed to the industry sector, over 34 percent (US$9,271.60 millions) was directed to the machinery and transport equipment industry, followed by electrical appliances (US6,488.60), others (US$4,263.09 millions) and metal and non metallic (US$3,193.85 millions) (see Figure 25).

Figure 25 Thailand's FDI Distribution in the Industry Sector



Source: Data from BOT, Thai Ministry of Commerce

Even though most of the foreign direct investment went to the industry sector, the pattern showed during the period was not steady, instead it showed great imbalances. In 1997, US$1,817 millions were directed to the industry sector, whereas the following year this increased to US$2,206 millions, falling drastically to 1,268 millions in 1999 and recovered in 2001 to US$2,960 millions, falling again to US$1,844 millions in 2002, and outstandingly increasing to US$3,786 millions by 2004, keeping the average of US$2,700 millions for the following years until 2007.

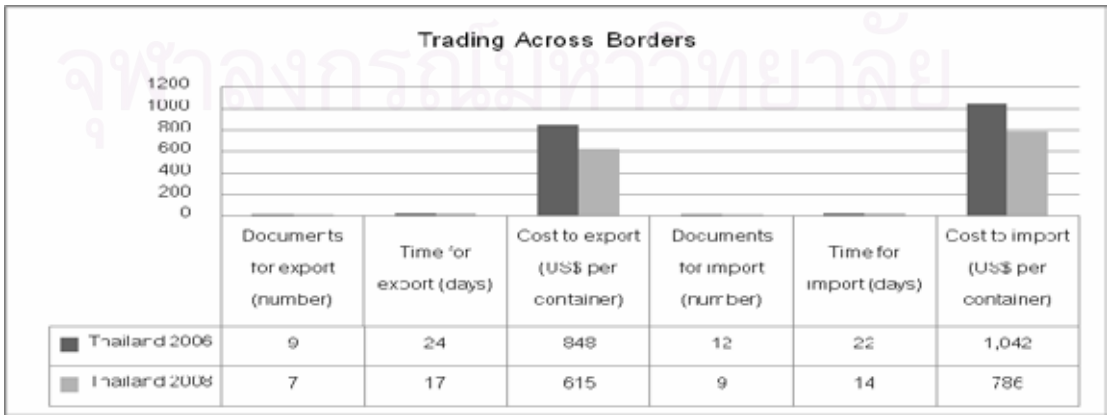
In the Logistics Performance Indices, Thailand scored above the regional average. Thailand held an outstanding positive difference in relation to its region with a difference of 0.78 in 2006. The smallest difference with the East Asia and the Pacific was in the domestic logistics costs of 0.17. In general, Thailand is ranked 31st in the world, i.e. above the world average (see Figure 26).

Figure 26 Thailand's Logistics Performance 2006

Source: Data from the World Bank/Trade Logistics

As for the World Bank (Doing Business Indexes 2008), Thailand performed on average satisfactorily in the trade across borders. In 2006, Thailand required 9 documents to export. The requirement was reduced to 7 in 2008. Moreover, in 2006 the time required to export was 24 days and this was reduced to 17 days by 2008. Furthermore, the export cost per container in 2006 was US$848 while the cost in 2008 was reduced to US$615. For imports, the number of documents was reduced to 9 in 2008 in comparison to 12 in 2006. The time for imports was reduced to 14 days against the 22 in 2006. The import cost per container was outstandingly reduced from US$1,042 to US$786 (see Figure 27).

Figure 27 Thailand's Trading Across Borders 2006 and 2008

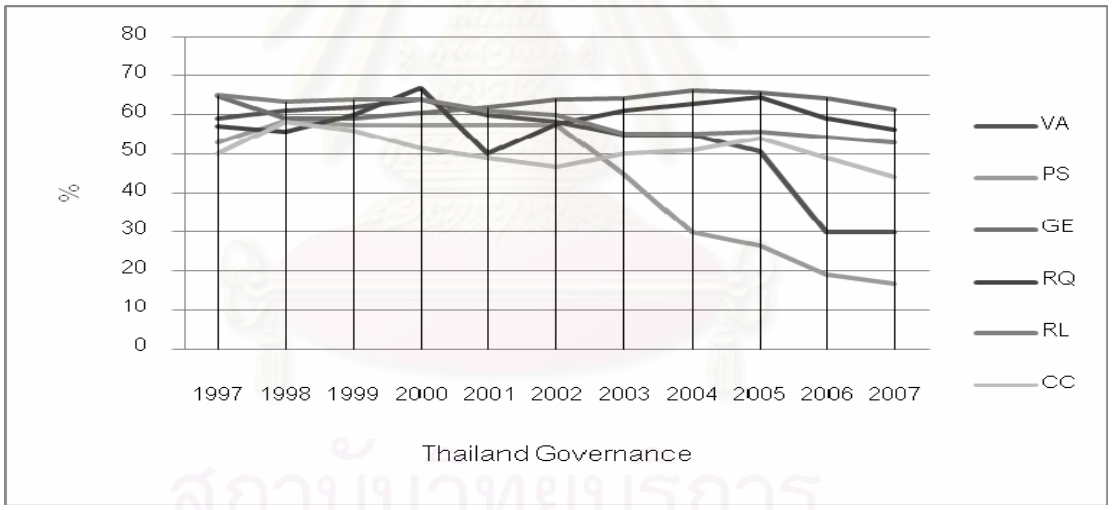


	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)	Documents for import (number)	Time for import (days)	Cost to import (US$ per container)
Thailand 2006	9	24	848	12	22	1,042
Thailand 2008	7	17	615	9	14	786

Source: Data from the World Bank/Doing Business 2008

The World Bank in the World Trade Indicators 2008 stated that countries having better institutional environments tend to have better trade outcomes, and furthermore, those countries tend to have a higher share of their exports in manufactures, and lower export concentration. Thailand governance has experienced multiple imbalances. According to the World Bank's governance indicators, based on thousands of surveys, indices for different matters concerning governance have been built. Thailand (from 1997 to 2002) scored over 50 percent in its worst index (political stability) falling drastically to 16.8 percent of 100 percent by 2007. The other worsening index was voice and accountability scoring over 50 percent until 2005, and falling to 30 percent by 2007. Control of corruption was experienced at 60 percent at the highest in 1998, with a steady decline to 50 percent in 2002, increase to 53 percent by 2005 and since then a falling trend to 40 percent by 2007. (See Figure 28)

Figure 28 Thailand's Governance 1997-2007

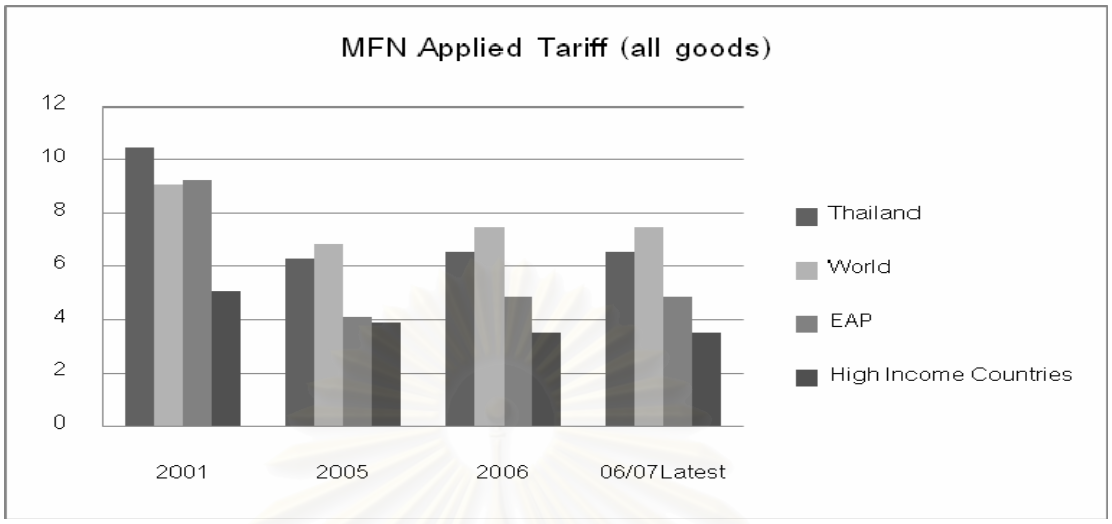


Note: Voice and Accountability (VA), Political Stability (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC)

Source: Data from the World Bank Indicators/Governance

Regarding to trade policy, Thailand has lowered its tariffs: the latest registered most favored nation simple average tariff was 9.9 percent lower than the East Asia 10.2 percent (World Trade Indicators 2008) (see Figure 29). However, for agricultural products the tariff was still 21.8 percent. When weighted, most favored nation tariff is 5 percent whereas its trade partners held an 11.1 percent.

Figure 29 Thailand's MFN Applied Tariffs

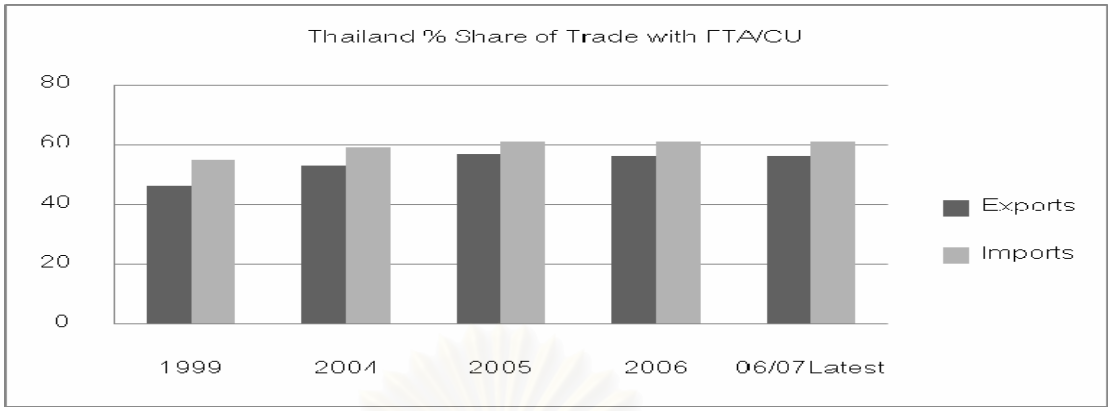


Note: East Asia and Pacific (EAP)

Source: Data from WTI 2008

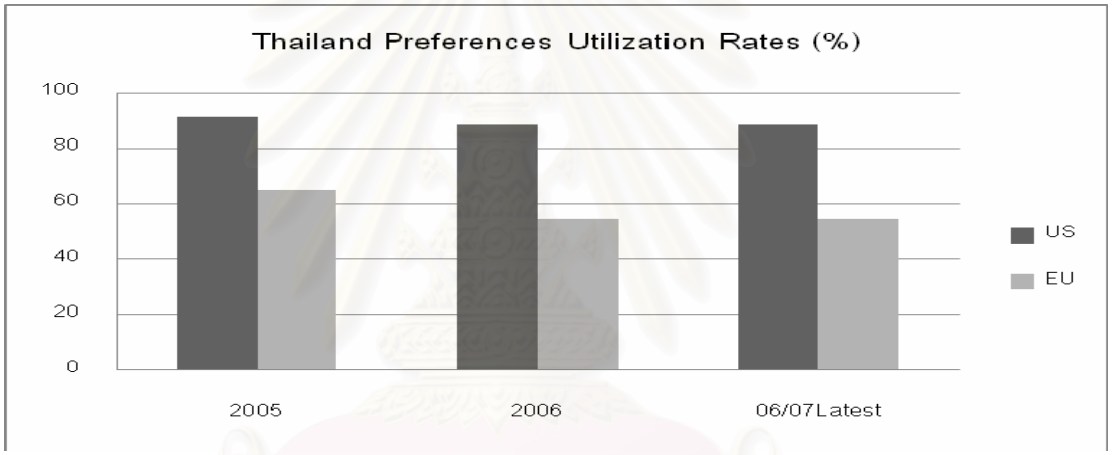
Thailand is ranked 71st out of 125 countries in the World Bank's trade restrictiveness index. Thai exports face high tariff barriers, however nearly half of its exports were most favored nation duty free in 2006 (World Trade Indicators, 2008). Thailand share of trade within free trade agreements in 1999 was over 40 percent of its exports and after 2005 over 50 percent went through free trade agreements, and as for imports in 1999 over 50 percent went through free trade agreements while by 2007 the figure was over 60 percent (see Figure 30). Furthermore, Thailand has been an active user of preferences provided by the US and the EU. Although for the EU they have been declining, in 2005, the utilization rate was over 65 percent, while by 2007 it was 53 percent. And with the US, Thailand showed a steady 90 percent rate utilization of preferences during the last years (see Figure 31).

Figure 30 Thailand's Share of Trade with FTAs



Source: Data from WTI 2008

Figure 31 Thailand's Preferences Utilization (%)



Source: Data from WTI 2008

The real trade growth calculated by the World Bank/World Trade Indicators 2008 as the average annual growth rate of the total exports and imports in goods and services at constant 2000 US dollars showed that Thailand's total real trade growth has suffered many imbalances. Due to the 1997 crisis Thailand experienced no real trade growth in 1997 and 1998. In 1997 the country experienced a 7.2 percent real growth in exports while imports fell by 11.3 percent. After the crisis in 1998 exports grew only 8 percent while imports fell over 21 percent. In 2000 Thailand seemed to overcome the crisis, experiencing a double digit total real trade growth: the Thai exports grew over 17 percent while imports grew over 21 percent showing a fast recovery from the crisis. In 2001, there was no growth, while in 2002, the country experienced again a double digit total real trade growth, exports and imports had good response of 11 and 13

percent, respectively. Since 2005, Thailand has showed a single digit total real trade growth (7.80 percent), with 9 percent growth in exports and 7.8 growth in imports in 2007 (see Figure 32 and Appendix A Table 22).

Figure 32 Thailand's Real trade Growth 1997-2007

Source: Data from WTI 2008

The growth in exports, which are dominated by the manufactured goods, remained up when developed economies entered into recession, and the World Bank states that this was due to Thai export diversification to non-traditional markets such as the Middle East and Russia.

In sum, Thailand recovered steadily after the 1997 financial crisis, and by 2002 the country reached almost the pre-crisis situation due to a more stable baht and inflation, and by 2004 was able to surpass the pre-crisis level of GDP. Another important factor was the reduction of external debt, from a 93 percent of GDP in 1998 to 47 percent on 2002 (WTO Trade Policy Review, 2003). The real GDP has shown a fast recovery, with some exceptions. During the 2003-2007 a yearly average GDP growth was 5.7 percent, which was largely a result of outstanding growth in exports and domestic consumption (WTO Trade Policy Review, 2007). The Economist Nov 20th, 2008 printed edition, states that trade in Asia will slow down. But Asia's economic

downturn will be milder than the 1997 crisis. Furthermore, Thailand is not about to suffer another crisis, given its foreign-exchange reserves that are fourfold its short-term foreign debt. Moreover, Thailand has a current account surplus. But as exports fall, business and consumer's confidence remain depressed by political uncertainty.

Chapter Summary

This chapter highlighted the trade pattern and current trade situation of Mexico and Thailand. These two countries have experienced a significant transformation in their trade structures after adopting outward looking trade policies. Indeed these two countries experienced harmful setbacks. Mexico in 1994-1995 and Thailand 1997-1998, but they have showed regular performance after these setbacks. Greater investments and logistics improvement helped Mexico and Thailand to overcome those crises. Though, both countries still face great challenges in order to stay at the forefront of investments and logistics improvements when they are compared with other emerging and developed markets. Both countries are trading more (export direction and import sources) with their closest neighbors. Moreover, these two countries rely highly on the manufacturing sector, since most of the export earnings are from the industry sector. Both in Mexico and Thailand, there is a strong correlation between the inflows of foreign direct investment, logistics and trade facilitation, good governance and outward looking trade policies of the trade pattern and trade growth. This chapter showed the linkage between the growth in exports and the growth in GDP since exports are a component of the national output. Trade liberalization and the creation of linkages through free trade agreements and cooperation agreements seem to drive the export direction and import sources. In sum, these two countries have developed accurate trade policies which are difficult to maximize given that both face many internal imbalances and external barriers which are harmful for increasing trade flows and reducing costs ratios.

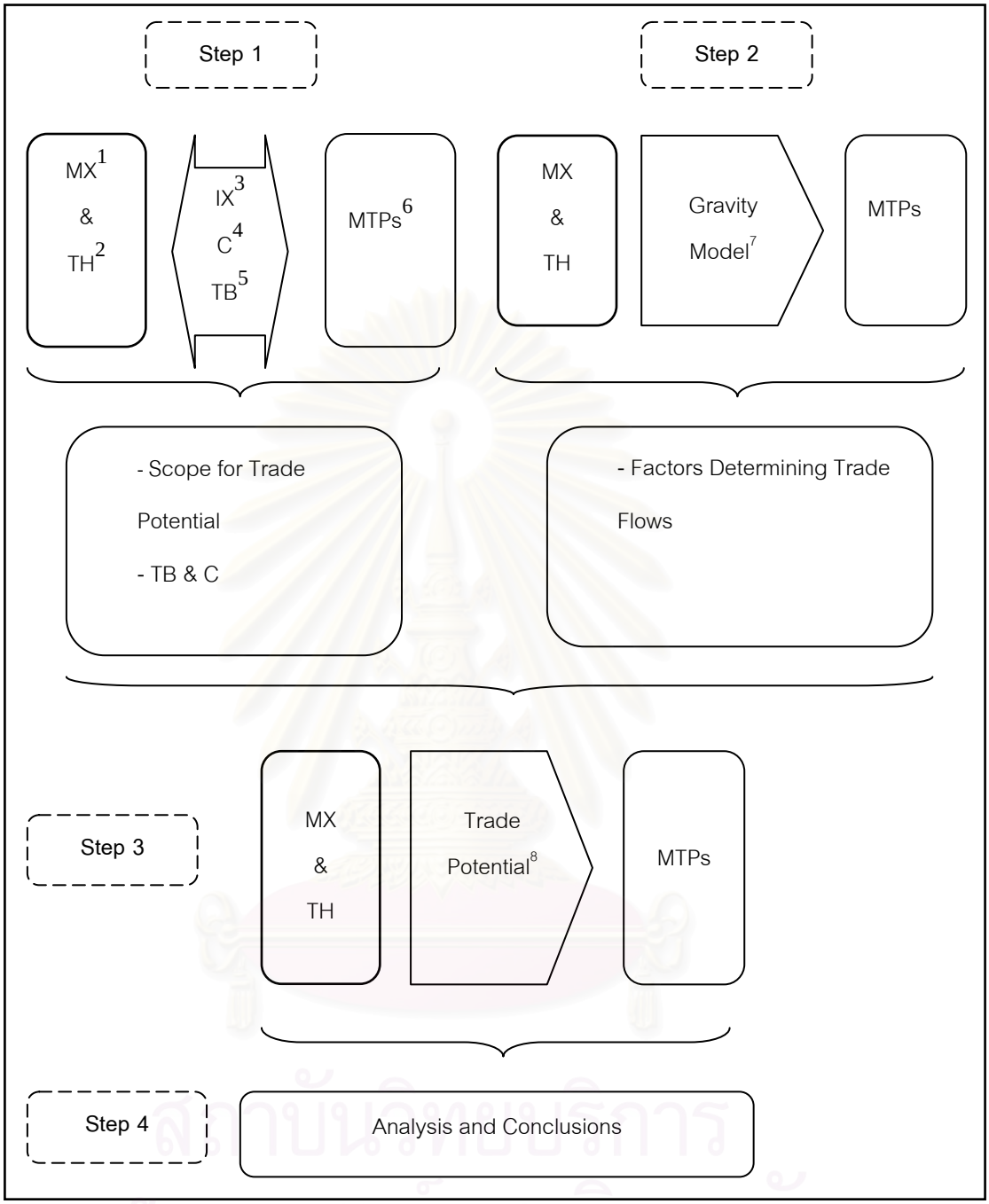
CHAPTER IV

METHODOLOGY

4.1 Methodology structure

The methodology was divided into four stages. The first stage consisted of calculating the trade indices of Mexico and Thailand with their major trade partners and between themselves. The aim was to achieve the scope for trade, furthermore, to assess the trade performance and interdependence of Mexico and Thailand with their major trade partners and between themselves. To determine whether there is scope or not for trade potential using the trade intensities, a principle of convergence will be used. If other major trade partner different than the US for Mexico and Japan for Thailand converges or surpasses the two trade intensity for exports and trade intensity for imports level intensities of these two countries, this will determine whether there is scope for trade potential or not. Moreover, the trade complementarity and the trade bias was calculated and used in the gravity equation (Eq. 5). The second stage consisted of finding the factors determining trade flows of Mexico and Thailand as exporters. The third stage consisted of calculating the potential trade flows of Mexico and Thailand with their major trade partners and between themselves. In the final stage the outcomes of the former three stages were analyzed (see Figure 33).

Figure 33 Methodology Framework



Note: [1]Mexico, [2]Thailand, [3]Trade Intensity (Eq. 1 and 2), [4]Trade Complementarity (Eq. 3), [5]Trade Bias (Eq. 4), [6]Major Trade Partners, [7]Gravity Model (Eq. 5), [8]Potential Trade (Eq. 6).

4.1.1 Trade intensity indices

As introduced in the chapter one, to assess the trade performance and trade interdependence of the countries in this study the trade intensity for exports, trade intensity for imports, trade complementarity and trade bias indices [see Eq. (1) – (4)] were used, following Wiboonchutikula (1995), Raghavan (1995) and Bhattacharya and Bhattacharyay (2007).

The trade intensities measure the extent to which a trade partner's share of Mexico's and Thailand's exports/imports is larger or smaller compared to the country's share in total world exports.

Trade intensity for exports: Eq. (1)

$$IX_{ij} = \frac{\frac{X_{ij}}{X_i}}{\frac{M_j}{M_w - M_i}}$$

Trade intensity for imports: Eq. (2)

$$IM_{ij} = \frac{\frac{M_{ij}}{M_i}}{\frac{X_j}{X_w - X_i}}$$

Where IX_{ij}, IM_{ij} are the export intensity and import intensity respectively, where IX_{ij}, $IM_{ij} > 0$, if country *i* has a great intensity for exports and imports, and close to *0* otherwise. *Mi, Mj, Mw*, are the total country *i*, country *j* and world total imports, furthermore, X_i and X_{ij} are the total exports of country *i* and export flow from country *i* and j respectively.

The actual degree to which Mexico's and Thailand's export pattern matches a major trade partner's imports pattern relative to the import pattern of all countries combined is measured with the complementarity index.

Trade complementarity index: Eq. (3)

$$C_{ij}=\Sigma_k\left(\frac{X_i^k}{X_i}\cdot\frac{M_w-M_i}{M_w^k-M_i^k}\cdot\frac{M_j^k}{M_j}\right)$$

C_{ij} = Complementarity between country i and country *j* where *1>Cij>0*, if country *i* and country *j* complements each other then =1 and if they do not complement each other *=0* otherwise. Therefore, X_i are the total exports of country *i,* X_{ik} are the total exports of the good *k* from country *i, Mw* are the total world imports, M_i are the total imports of country *i,* M_{wk} are the world imports of the good *k*, M_{ik} are the imports of country *i* of the good *k*. And for the country j, M_{jk} are the country *j* total imports of the good *k* and M_j are the total imports of country *j* respectively.

The extent to which Mexico's and Thailand's exports enjoy more or less favorable access to a major trade partners import markets than exports to import markets of all countries is measured with the trade bias index

Trade bias index: Eq. (4)

$$TB_{ij}=X_{ij}\,\Sigma_k\left(\frac{M_w^k-M_i^k}{X_i^k-M_i^k}\right)$$

Where TB_{ij} is the trade bias of country "s exports (access to country *j*) where $TB_{ij}>0$, if country *i* trade bias is *>1* means that country *i* enjoys good access to country *j*, X_{ij} are the exports from country *i* to country *j,* M_{wk} are the world imports of the good *k*, M_{ik} are the imports of country *i* of the good *k,* X_{ik} are the total exports of the good k from country *i* and M_{jk} are the country *j* total imports of the good *k.*

The data for the trade intensity for exports and for imports were retrieved from the UNCTAD Handbook of Statistics for the period 1990 to 2007. The gravity model used only estimates from 1997 to 2007. And the data for the trade complementarity and trade bias from, the UNCOMTRADE (SITC single digit) database and WTO database, for total trade, classified as *Food & Live Animals, Beverages & Tobacco, Crude Materials, Fuels & Lubricants, Chemicals, Machinery & Transport Equipment and Miscellaneous Manufactured Articles* during the period 1989-2007.

4.1.2 The gravity model

Besides the featured variables within the model (GDPs and distance DIST), this study, also included the MFN applied tariff (TP) (as simple average and weighted average on imports), trade complementarity, trade bias, domestic rules and regulations, governance, inward foreign direct investment as explanatory variables y the dependent variable in the model namely, trade flows (T). Furthermore, dummy variables were used to give different treatment to each Mexican and Thai trade partner. In other words, not only the different trading partners had different size of trade volumes with Mexico or Thailand, they also responded to each of the explanatory variables differently. Therefore, following Armstrong (2007), Armstrong et al (2008) and Kang and Featianni (2006) the regression model in this study is specified in the form below.

Eq. (5)

$$T_{ijt} = \alpha + \beta_1 GDP_{it} + \beta_2 GDPjt + \beta_3 Dist_{ij} + \beta_4 TP_{jt} + \beta_5 C_{ijt} + \beta_6 TB_{ijt} + \beta_7 DRR_{it} + \beta_8 Gov_{it} + \beta_9 FDI_{jit} + \beta_{10}(D_j * GDP_{jt}) + \beta_{11}(D_j * Dist_{ij}) + \beta_{12}(D_j * TP_{jt}) + \beta_{13}(D_j * C_{ijt}) + \beta_{14}(D_j * TB_{ijt}) + \varepsilon_{ijt}$$

Where:

Variable	Description
T_{ijt}	Trade flows/exports from country i to country j a time t (+)
GDP_{it}, GDP_{jt}	Country's i and country's j size of Gross Domestic Product at time t (+)
$Dist_{ij}$	Distance between country i and j (-)
TP_{ijt}	Tariff MFN applied tariff (simple average to all goods and weighted average on imports) to country i exports by importing country j at time t (-)
C_{ijt}	Trade complementarity of country i to country j at time t (+)
TB_{ijt}	Trade bias of country i to country j at time t, (+)
DRR_{it}	Favorable domestic rules and regulations affecting international trade of country i at time t (+)
Gov_{it}	Favorable governance of country i at time t (+)
FDI_{it}	Inward FDI to country i at time t (+)
D_j	Dummy variable for country j
α	Common slope intercept
ε	Error term

4.1.3 Trade potential

By using the estimates from the Eq. (5) for each pair of countries, the trade potential was calculated. The estimates were compared as a ratio of the estimates and the actual trade, following Jakab et al. (2001):

Eq. (6)

$$Potential\ Trade_{ij} = [(Estimated\ T_{ijt} - Actual\ T_{ijt}) / Actual\ T_{ijt}]*100$$

Where, if, Potential Trade > 0, the potential trade is underdeveloped trade can be improved. If Potential Trade < 0, the potential trade is in the maximum attainable given the current country trade structure and current restrictive trade conditions, or there are some other unexplained factors determining trade.

4.2 Data description and sources

The data in the study were from the years 1997 to 2007. The data for the variables included annual export trade flows, gross domestic products, distance, tariff, trade complementarity, trade bias, domestic rules and regulations, governance, and inward foreign direct investment.

4.2.1 Independent variable

The *T* was selected aiming at answering the research questions stated for the study. Therefore, it is the representation of total trade flows (exports) given the country's current's economic condition. The data were retrieved from BANXICO and the Mexican Secretariat of Commerce, BOT and the Thai Ministry of Commerce, UNCTAD Handbook of Statistics, and WTO database.

4.2.2 Gross domestic product

Within the model, the *GDP* refers to country size and potential for trade assumes that the larger the GPD, the better off countries are in trading (Producing and

consuming). Therefore, it is expected to have a positive impact. The model used Mexico and Thailand GDPs and major trade partners GDPs. The GDP data were retrieved from the IMF database as a yearly value in current units of million US$.

4.2.3 Distance

The variable *Distance* which is taken as the great circle distance in kilometers between the countries capital cities was retrieved from the Info Please web database. This is an important variable and one of the principal features of the conventional gravity model. Krugman (1991) stated that countries trade more with their neighbors than with countries that are remote due to high transport costs. However, distance is more than geographical location. It relates to history, culture, language etc. It is expected to have a negative impact with pair of countries situated in different regions.

4.2.4 Tariffs

A tariff is a tax levied on imports, and its effects increase the international domestic price of the imported good above its external world price. Therefore, it is expected to have a negative impact on trade flows. A tariff rate can be either *Ad Valorem* or specific, where the former is stated as a percentage of the import value of the “good”, while a specific rate is stated as fixed currency amount per unit of the imported ”good”. Therefore, within this study the *Ad Valorem* tariff was used. To support the use of it and the reason behind is that *Ad Valorem* tariffs are more transparent, that is to say, the effect on price is readily calculated. The second reason is that the *Ad Valorem* tariffs are directly comparable across goods since they are in percentages. Furthermore, another issue arises: which tariff should be used, the simple average applied tariff (*Ad Valorem*) (*TPS*) or the weighted import average (*Ad Valorem*) (*TPW*). Both have their strengths and weaknesses, and both have been used in this kind of research methods broadly, but it is recommended to use the weighted import average, although it contains a systematic downward bias since “goods” subject to high tariffs have low weights, while “goods” with low tariff rates get relatively high rates. Despite the bias, the model tested both tariffs. Bowen, Hollander and Viaene (1998) stated that the

ideal tariff would be a weighted average with weights equal to the amount of each product. Indeed, but because product tariff classifications are different and it is difficult to match the data, the two former tariffs were used. They were retrieved from the World Bank's world trade indicators (WTI, 2008).

4.2.5 Trade complementarity index

The trade complementarity would reflect how a country's commodity composition would complement its trade partner's commodity composition. Furthermore, it could be thought as a proxy of relative source endowment or cost ratio. Positive impact is expected The data to estimate the index was retrieved from BANXICO, Mexican Secretariat of Commerce, BOT, Thai Ministry of Commerce, UNCOMTRADE database, WTO database and CEIC database.

4.2.6 Trade bias index

The trade bias index reflects whether a country's exports enjoy more or less access to a trade partner's market. Furthermore, this is associated with flows of technology and aid investments. The impact is expected to be positive and higher for countries within the same region or those holding a FTA. The data to estimate the index were retrieved from BANXICO, Mexican Secretariat of Commerce, BOT, Thai Ministry of Commerce, UNCOMTRADE database, WTO database and CEIC database.

4.2.7 Domestic rules and regulations index

Countries with good domestic rules and regulations tend to have a greater share in exports of manufactures and services and less export concentration (World Bank, 2008). Moreover, good rules and regulations reduce the export growth volatility. The *domestic rules and regulations* index is a yearly average composed index of three World Bank's governance indicators that are more specifically focused on domestic rules and regulations. Papaiouannou (2008) used a composite index (with data retrieved from the Bank for International Settlements), called institutional quality,

which consist of legal, political, bureaucratic aspects and corruption. Within his study, the index was reliable as a determinant for financial flows. It is worth to mention that financial flows are key issue for trade flows. The data were retrieved from the World Bank/Governance database. The indices are in percentage (0-100, 100 percent the best). Therefore, low index is expected to have a negative impact whereas a high index is expected to have positive impact. The indices to construct the domestic rules and regulation affecting trade index are: regulatory quality which promotes private sector development, rule of law, which includes the quality of contract enforcement, property rights, police and courts and likelihood of crime and finally the government effectiveness which is the quality of public services and capacity of policy formulation and implementation.

4.2.8 Governance index

Good governance gives certainty to foreign investors and domestic investors, moreover to foreign consumers and domestic consumers. Stability in a country is a key factor to be integrated in the world, moreover, the country's GDP growth, income distribution and good trade linkages are dependable of good governance. The governance index is a yearly average composed index of three World Bank's governance indicators that are more specifically focused on governance. The data were retrieved from the World Bank/Governance database. The indices are in percentage (0-100, 100 percent indicates the best). Therefore, low index is expected to have a negative impact, whereas a high index is expected to have positive impact. The indices to construct the *Governance* index are: political stability which indicates destabilization of the government by unconstitutional means, furthermore violence and terrorism, the index also includes, control of corruption which is the extent to which public power is exercised for private gains and finally voice and accountability which is defined by the degree of participation in government selection, freedom of expression and association.

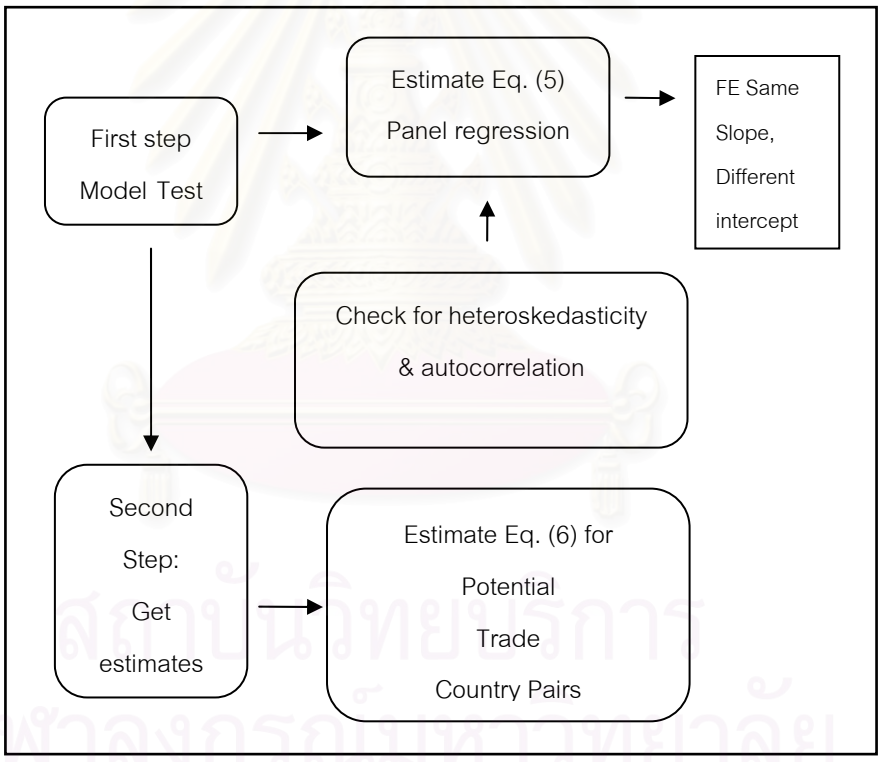
4.2.9 Foreign Direct Investment

Many developing countries are not well endowed in monetary terms. Therefore, foreign investment plays an important “fuelling” role in the developing economies. *Foreign* direct investment flows from the origin country to the host country imply a higher trade flow between the foreign direct investment issuer and the foreign direct investment recipient. Therefore, it is expected to have a positive impact on trade flows. Markusen (1995) stated that some governments deliberately have increased barriers to trade to attract foreign firms to invest in their countries. Moreover, this does not imply that attracting foreign direct investment is likely to improve welfare (World Investment Report, 1996). Government policies, especially tariffs or other barriers on imported goods, are thought as an encouragement for prompting exporting firms to begin production in a host country. Moreover, foreign direct investment offsets the cost of distance by undertaking foreign production in a host country. Another twofold issue concerning foreign direct investment is the role of foreign direct investment in a host country i.e. to substitute or complement. Schiff (2006) analyzed the relationship of trade and factor movement based on Mundell (1957) where he showed that substitution holds in the H-O model, whereas Markusen (1983) showed in five different models that removing barriers to factor movement under free trade are complements. Therefore, Schiff showed that substitution holds under high protection and complementarity holds under low protection. Borensztein et al. (1998) tested the effect of foreign direct investment on economic growth utilizing data of foreign direct investment flows from industrial countries to developing countries. Their results suggested that FDI is an important vehicle for the transfer of technology, having greater impact on growth than domestic investment. Furthermore, foreign direct investment has a greater effect when the host country has sufficient absorptive capacities to benefit from the advanced technologies. The data were retrieved from BANXICO, BOT, CEIC database, INEGI, UNCTAD and OECD.

4.3 Model Estimation

The model estimation framework (see Figure 34) can be explained as follows: in the first step, Eviews software was used to test the model [Eq. (5)] with polled and Panel regression, then, within the first step pooled, random effects (R) and fixed effects (F) estimations were compared, besides heteroskedasticity and autocorrelation issues were checked. After several tests the panel regression with fixed effects, using same slope with different intercept were used. In the second step the Eq. (5) was estimated with the best estimation method. In the third stage, by using the estimates from the Eq. (5) for each pair of countries, the trade potential was calculated. The estimates were compared as a ratio of the estimates and the actual trade (Eq. 6).

Figure 34 Estimation Framework



CHAPTER V

ESTIMATION ANALYSIS

In order to asses a gap between the actual trade and potential trade of Mexico and Thailand with major trade partners, the trade intensity index (for exports and imports) was used, which was split into complementarity index and trade bias index. The trade intensity for exports and the trade intensity for imports was estimated in order to asses more accurate linkages of Mexico and Thailand with their major trade partners and between themselves. This study focused on Mexico and Thailand as exporters, in other words, for the further trade complementarity and trade bias indices we focused on Mexico and Thailand as export countries. For Mexico the period included in this study was extended to 1993 to 2007 given the 1994 NAFTA agreement, following the 1995 crisis. And for Thailand the period included were the years from 1989 to 2007 given the interest in pattern of trade development and the experience of the 1997 financial crisis. However, the period used to analyze the trade complementarity and trade bias as factors determining trade flows of Mexico and Thailand within the gravity model was the 1997-2007 period. Furthermore, the factors determining trade flows from Mexico and Thailand were analyzed, and moreover, the trade potential was estimated.

5.1 Analysis of Mexico's estimates

The trade intensity for exports was used in order to measure the extent to which a trade partner's share of Mexico's total trade flows (exports/imports) is larger or smaller compared to the country's share in total world exports. The trade intensity for exports of Mexico, as expected, was the highest and relatively outstanding with the US for the period 1993–2007 in comparison with any other economy in the world, showing a steady increasing pattern since the 1994 NAFTA agreement (see Appendix B Table 23). Furthermore, the trade intensity for exports estimations matched the export direction

patterns presented in the chapter two. The increasing pattern showed clearly the lowering tariff schedules agreed within NAFTA.

Mexico's next highest trade intensity after the US was with Chile, whereas the direction of trade approach in the chapter two indicated that the highest is Canada. This difference can be attained to the different data sources and classification, although the trend is the same with both countries. The intensity with Chile was high before signing a free trade agreement (proposed in 1993) and increasing in 1997 after the conclusion of negotiations of the Mexico-Chile FTA (MCFTA). Canada is a NAFTA member and the trade intensity for exports responded after signing NAFTA in 1994. Mexico's trade intensity for exports with Brazil is the third in the Americas region after Canada and Chile besides the US. From 1993 to 1997 the trade intensity with Brazil experienced an upward pattern, but by 1998 onwards declined, given the Brazilian 1998-1999 financial shock followed by a steady recovery. By 2007 the trade intensity of Mexico and Brazil increased to the 1996 levels. Spain and Japan were among the highest trade partners with Mexico outside the region (see Appendix B Tables 24 and 25). For Spain the trade intensity for exports can be explained by the language factor and historical ties. However, this trade relationship experienced a trade downturn the following years until the 2000 Mexico-EU free trade agreement due to Mexican trade concentration within NAFTA.

In Asia, Japan (mainly) and Korea have always been major partners with Mexico but Korea in less degree. The Mexican trade intensity for exports with Japan was higher before NAFTA. In the second chapter, the direction of trade supports the trade intensity for exports outcome with Japan, showing the depression of the Mexican export direction to Japan in 1990-1995 (see figure 1) The Mexico-Japan free trade agreement was proposed in 1993 and after rough negotiations the Mexico-Japan free trade agreement was concluded in April 2005. Although Japan has been a major trade partner from Asia with Mexico before the Asian crisis, the intensity was twofold higher before the Asian crisis (see Appendix B Table 24). This was due to the slow recovery of Japan's trade partners in Asia, which produced the intermediate goods for Japan's

industries, and afterwards, because of Mexico's concentration in NAFTA and the Mexico-EU free trade agreement. Another reason for softening the intensity is that, due to the fast development of the Asian markets after the crisis, Japan's imports are mainly from Asian countries following by the US and the EU. Mexico's trade intensity with Germany, after Spain in the EU is among the important ones, given the large German investments in the automobile industry in Mexico, but it is obvious that Mexico increased the intensity with Germany after the 2000 Mexico-EU free trade agreement. After the Asian crisis, Mexico's trade intensity for exports with Thailand surpassed already Korea and France. This was maybe due to the fact that Mexico and Thailand are both highly focused on exporting/importing intermediate products, besides final products. Mexico and China have traded more lately, given that both countries are currently the number three and number one partners, respectively, to the US and both benefit from trade with China.

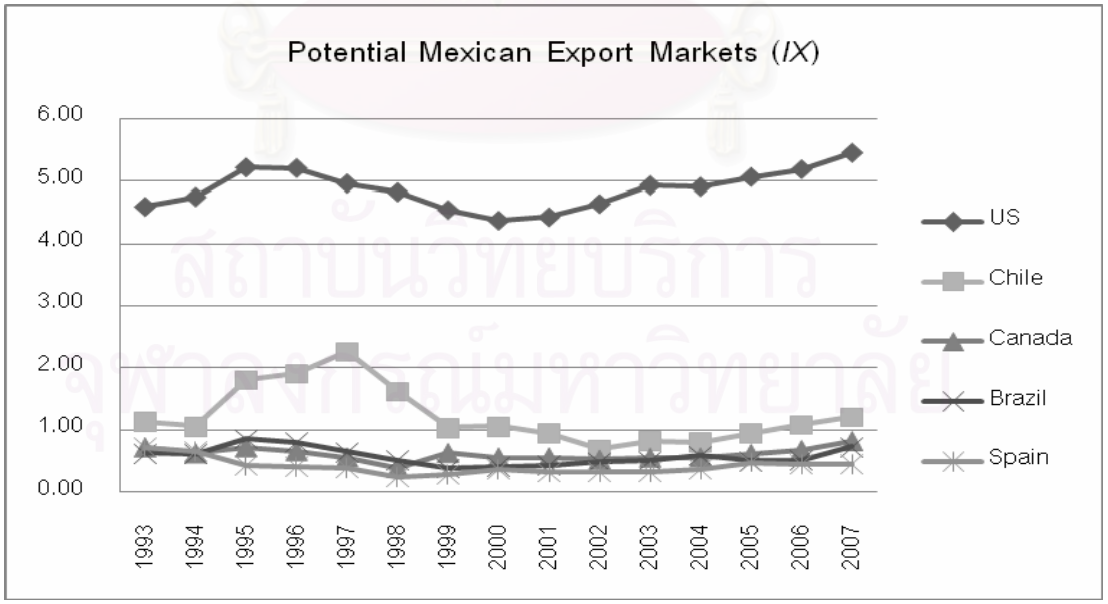
As for Mexico's trade intensity for imports, again the US stands as the highest partner, due to bilateral preferences in NAFTA. Although, every time Mexico signs a free trade agreement, it shows how the import intensity of Mexico towards the US is affected (see Appendix B Table 26). After 1997, Chile and Brazil are among the outstanding partners, even more than Canada, or other region (this may be due to the common culture and language). In Asia, China, Japan and Korea are the highest exporters to Mexico, although it is noticeable how Japan is taking advantage of the MJFTA and during the last years Korea has diverted Mexican import sources from the US (see Figure 5 and Appendix A Table 13) However, since 2003 China's exports have surpassed all other Asian exports to Mexico. The Mexican import sources and trade intensity for imports highlight China as being responsible for diverting Mexican import sources from the US (see Appendix B Table 13, Figures 2 and 3 and Appendix A Tables 4 and 5). In Europe, Spain is still the highest export partner with Mexico followed by Germany, as the trade intensity for imports increased noticeable after the Mexico-EU FTA signed in 2000 (see Appendix B Table 28). The trade intensity for exports and the

trade intensity for imports with Thailand indicate that Thailand exports more to Mexico than imports from Mexico (see Appendix B Tables 24 and 27).

The trade intensities revealed that the Mexican trade intensity for exports and trade intensity for imports have been driven by free trade agreements and mainly by NAFTA. Outside NAFTA only the regional partners remained above the rest of the world. Some distant economies such as Spain, Germany, Japan, China and Korea saw an improvement. The decrease of Mexico's trade intensity for imports with the US is mainly attributable to the rise of Korea but mainly China as import sources.

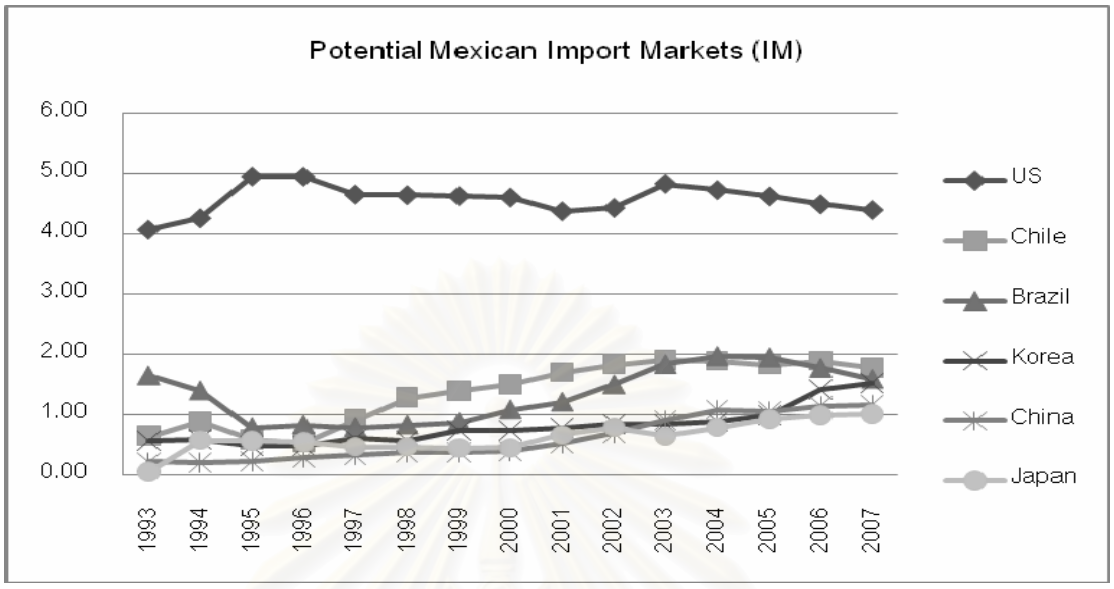
It was revealed from the trade intensity for exports and trade intensity for imports analysis and the previous established convergence criteria (whether a Mexican MTP other than the US converges or surpasses the US *trade* intensity for exports and trade intensity for imports level intensities) showed that there is room for trade potential due to the fact that all other major trade partners are too far away to converge US' trade intensity for exports and trade intensity for imports (see Figures 35 and 36).

Figure 35 Potential Mexican Export Markets



Sources: INEGI, DGIE, UNCTAD, authors' calculations

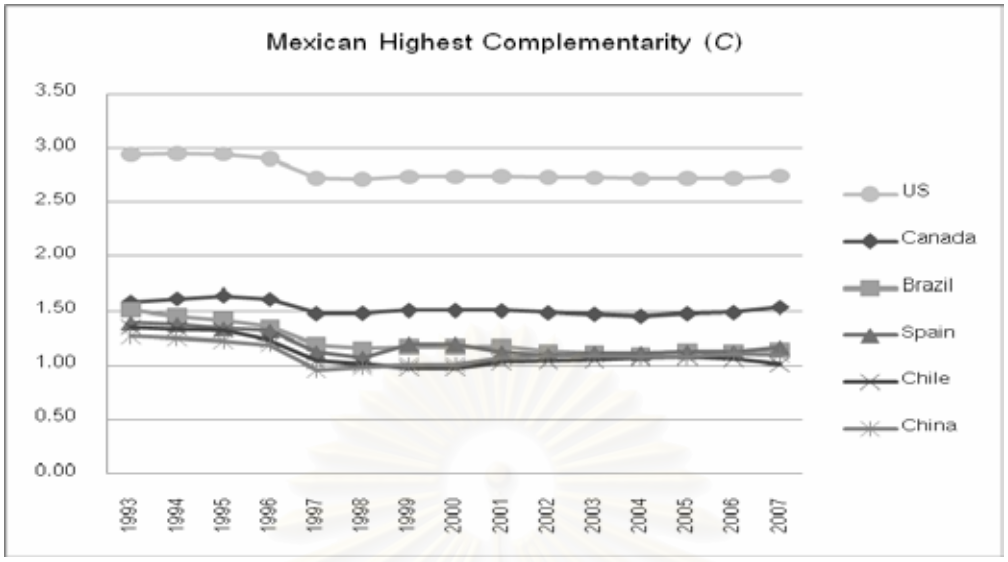
Figure 36 Potential Mexican Import Markets



Sources: INEGI, DGIE, UNCTAD, authors' calculations

The actual degree to which Mexico's export pattern matches a major trade partner's imports pattern relative to the import pattern of all countries combined was measured with the trade complementarity index. For Mexico, the highest complementarity was with the US, demonstrating again the interdependence of these two economies, followed by Canada, Brazil, Spain Chile and China. (See Figure 37 and Appendix B Tables 29, 30 and 31) For the rest, the estimates showed low complementarity. The estimates showed higher complementarity for some countries during the period 1993- 1997.The highest share of trade complementarity is in machinery and transport equipment, which is also noticeable in the Mexican exports structure (see figure 6 in chapter 2). The low average complementarity indicated that the Mexican major trade partners' cost ratios in this commodity have been converging with Mexico's cost rations with the time. This may be due to the recovery of the Asian countries from the crisis having similar export structures. In the developed countries, it may be due to their imports market diversification. Therefore, given the financial flows and multinational corporations spreading everywhere, it is expected that commodities with similar composition and costs flow from developed countries to developing countries and vice versa, and within developing.

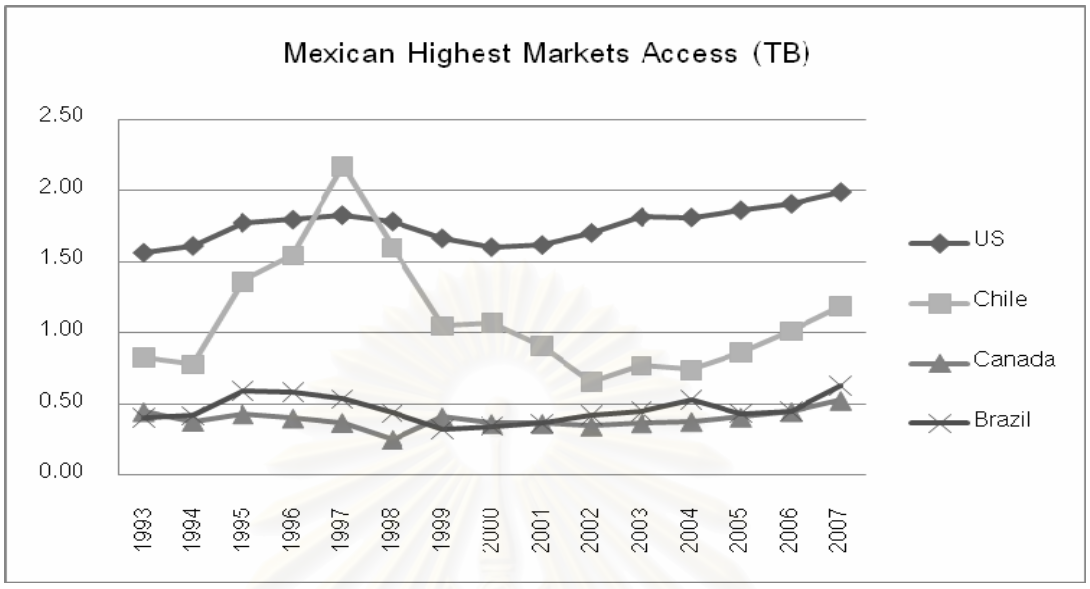
Figure 37 Mexican Highest Complementarity



Sources: INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations

The extent to which Mexico's exports have enjoyed more or less favorable access to a major trade partner's import markets than exports to import markets of all countries was measured using the trade bias index. It was found that Mexican exports have enjoyed a favorable access to the group of countries having relatively close ties (cultural, language, institutional and regional) with Mexico (see Figure 38 and Appendix B Tables 32, 33 and 34). The highest trade bias for Mexico is with the US, which includes all the possible factors, i.e. NAFTA, preferences, distance, shared border, language and culture (due to the high immigration ratios), high returns on investments, flows of investment, technology and aid etc. The Mexican trade bias with the other major trade partners has an upward trend given the constant decrease of their tariff schedules.

Figure 38 Mexican Market Access



Sources: INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations

The Eq. (5) was estimated for Mexico in order to find the determinants for trade flows and trade potential. The goodness of the model's fit was carried as explained in the methodology taking into account the R^2, the significance of the t-statistic and coefficient signs. Then it was found that most of the variables behaved as expected with most country partners. The simple average tariff and weighted average tariff variables behaved differently within different countries, Moreover, alternating the simple average tariff and weighted average tariff affected some variables to be significant and some to be non-significant. This was expected, since both tariff classifications have some degree of inconsistency as pointed out in the variables description in the previous chapter. Although, the Mexican overall estimations with the weighted average tariff gave more accurate results that were expected based on the hypothesized signs of the variables. The study found the selected factors determining trade to be significant within the gravity model, they all behaved well in explaining the gap between actual trade and trade potential for Mexico and Thailand. The following summary table highlights the regression outcome. See also Appendix C Table 47)

Table 3 Regression Summary for Mexico

MTP	GDP	MTPGDP	DIST	TP	C	TB	DRR	GOV	FDI
Brazil	+			+		+			
Canada					+	+			
Chile	+		+	+		+			
China		+				+	+	-	-
France									
Germany	+	-	+	+	-	+	+	-	+
Japan	+	+	-	-	+	+	-		+
Korea		+		+		+		+	
Netherlands									
Spain	+	+	-	-		+	-	+	-
Thailand		+				+	-		
UK	+	+	-	+	+	+	-	+	+
USA	+	+	-	-	-	-	+	+	-

Note: significant at 95% confidence level, R^2= 0.998678, Durbin-Watson = 3.38197, N/S = no significant

The economic size is highly influential to trade, the factor distance affected trade with some major trade partners due to transport costs, and trade logistics seem to play a significant role in the cost to trade. Distance was negative significant to trade with Japan, Spain and UK. For Mexico tariffs were trade determining factors with some countries such as Brazil, Chile Germany and Japan which holds free trade agreements, The complementarity was a factor determining trade flows with some countries. It was positive significant for determining trade with Canada, Japan and the UK. This explains that the actual trade pattern of Mexico with these partners is due to the complement of Mexico for those economies import needs. In other words the cost ratio in the commodities composition is lower and beneficial to Mexico. The trade bias index indicated that Mexico will trade more with those countries where its exports face low restrictions. The variable was highly significant for all countries except for France and the Netherlands indicating that there are still some barriers to trade. Mexico's domestic rules and regulations variable was positive significant with China Germany and the US. Mexican governance was one of the factors determining trade positively with Korea, Spain, UK and the US, and stood as one of the principal constraint to trade with China, and Germany. And finally the foreign direct investment flows to Mexico were

significant in determining trade flows from Mexico to Germany, Japan and the UK. It is important to notice that only China, Spain and the US signs were negative implying that foreign direct investment its being substitute for trade.

After these estimations, the trade potential for Mexico with its major trade partners and Thailand during the years 1997-2007 was calculated. The estimated regression demonstrated that the model is accurate to estimate bilateral trade flows given the small difference between the actual and the estimated trade. The results can be viewed from two points of view, i.e. “a glass half full or a glass half empty”. Despite multiple imbalances, Mexico has overcome its potential expectations given its current economical conditions in each year, however, overall Mexico showed small potential for trade In America, with the US, Mexico had less than 1 percent of potential trade in 1997, 1.49 percent in 1998, less than 1 percent again in 2001, 1.50 percent in 2004 and over 1 percent in 2007; with Canada and Chile the potential remained under 1 percent during the study period; expect with Chile the potential slightly increased over 1 percent in 2003 (see Table 4) In Asia, only with China Mexico had 6.67 percent potential in 1997, in 1998 5.53 percent and almost 10 percent in 2001 (see Table 5). And in Europe, with Netherlands in 1997 Mexico presented over 12 percent potential, in 2001 almost 5 percent, in 2004 over 3 percent and in 2005 over 5 percent. (See Table 6)

Table 4 Mexico's Trade Potential (America) 1997-2007

In America

Year	Brazil		Canada		Chile		USA	
	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW
1997	0.10	-0.05	-0.06	-0.05	0.27	1.33	0.76	0.15
1998	-0.12	0.63	0.90	0.52	0.40	-4.35	1.49	0.11
1999	0.19	-0.19	-0.39	-0.15	0.50	3.67	-0.63	-0.47
2000	0.26	-0.46	-0.43	-0.21	0.82	2.14	-0.76	0.20
2001	-0.13	0.68	0.18	0.06	0.17	-2.25	0.93	0.03
2002	-0.06	0.52	0.43	0.29	0.90	-4.28	1.22	-0.33
2003	0.21	-0.23	0.08	-0.04	1.22	3.01	-1.76	0.40
2004	0.06	0.05	-0.12	0.01	0.27	-0.31	1.50	-0.12
2005	0.01	0.23	-0.13	-0.06	0.37	0.26	0.63	-0.03
2006	0.04	0.09	-0.70	-0.37	0.53	1.30	-1.35	-0.10
2007	0.03	0.03	0.48	0.26	0.14	-0.94	1.06	0.09

Table 5 Mexico's Trade Potential (Asia) 1997-2007

In Asia

Year	China		Japan		Korea		Thailand	
	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW
1997	6.67	11.69	0.04	0.55	-0.05	0.60	-0.02	-0.25
1998	5.53	-3.27	-0.49	2.58	0.02	-4.91	2.27	1.68
1999	-23.83	-14.68	0.30	0.17	0.02	3.93	-3.66	-2.47
2000	-3.79	-3.77	0.04	0.80	0.02	-5.07	0.73	0.78
2001	9.89	6.26	-0.73	1.73	-0.23	0.98	0.24	0.64
2002	-4.05	-2.19	0.66	-0.57	0.23	7.11	-0.79	-1.56
2003	0.03	0.34	-0.21	1.08	0.09	-11.74	0.17	0.47
2004	0.69	0.10	-0.16	0.93	-0.18	2.89	-0.01	0.09
2005	1.35	1.41	-0.01	0.45	-0.06	1.92	0.22	-0.16
2006	-0.54	-0.55	0.10	0.27	0.05	-0.78	-0.67	-0.65
2007	-0.10	-0.11	-0.09	0.61	-0.02	-0.25	0.16	0.27

Table 6 Mexico's Trade Potential (Europe) 1997-2007

In Europe

Year	France		Germany		Netherlands		Spain		United Kingdom	
	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW
1997	4.93	2.92	-1.14	-0.77	12.28	1.41	0.61	-0.21	1.20	1.04
1998	-3.14	1.82	1.23	0.96	-19.34	1.06	-2.28	-1.53	-0.87	-1.36
1999	-1.60	-7.28	-0.13	-0.14	1.44	-3.51	-0.22	-0.68	1.81	0.59
2000	-2.28	-2.63	-0.19	-0.27	-9.49	3.74	-1.81	-1.05	-0.43	-0.49
2001	-5.91	0.65	-0.31	-0.19	4.79	-3.06	4.45	2.41	0.85	1.04
2002	9.86	5.51	1.25	1.08	1.96	0.02	-3.58	-2.62	0.84	-0.61
2003	-8.65	-11.66	-0.41	-0.23	-5.94	0.59	0.39	-0.15	-0.20	-1.06
2004	2.19	5.04	0.01	-0.10	3.50	0.00	0.20	0.10	0.66	0.89
2005	5.38	5.82	-0.09	-0.07	5.57	0.66	0.09	-0.06	0.44	0.53
2006	0.32	0.06	-0.11	-0.14	-0.53	0.69	-0.50	-0.32	0.07	0.03
2007	-1.63	-1.92	0.14	0.14	-1.34	-0.47	0.04	-0.15	0.24	-0.26

5.2 Analysis of Thailand's estimates

As with Mexico, the trade intensity for exports was used to measure the extent to which a trade partner's share of Thailand's total trade flows (exports/imports) is larger or smaller compared to the country's share in total world exports. For exports, as expected, Thailand had high trade intensity within the closer East Asia and Pacific trade partners, more specifically ASEAN members, which reflects the growth and importance of the region as world importer. Thailand's high trade intensity for exports were predominantly in East Asia and the Pacific, which may be due to the general upward development trend in the region and AFTA. Jughurnat et al. (2007) conducted an empirical study on Asia and the Pacific RTAs, aiming to assess whether free trade agreements create or divert trade. The findings were that ASEAN countries import more than they would if they were not members of that RTA. It can be argued that, given Thailand's high trade intensities with its AFTA partners, AFTA is encouraging trade

creation. Moreover, trade creation implies welfare improvement.[4] At relatively highest and steadiest Thailand's trade intensity for exports held during the 1989-2007 period with Japan, Malaysia, Indonesia, Vietnam and Singapore, which since 1962 has held a close economic cooperation, besides the AFTA partnership (see Appendix B Tables 35, 36 and 37). Thailand and Japan have not yet concluded a free trade agreement, although it has been proposed since 2001 but no general agreements have been made so far by 2007, which can be attributed to the Japan's unwillingness to open to the Thai agricultural products[5]. Malaysia and Indonesia have been significant trade partners with Thailand for the whole period. Baharumshah et al. (2007) found empirical evidence from the ASEAN-5 Economies moving towards trade liberalization. The falling trade intensity with Malaysia during the 1990-1995 can be explained by the fall of the Bank Negara after the foreign exchange speculation crisis, forcing the government of Malaysia to cover its losses (Horowitz, 2001). But after the 1997 Asian crisis and after the AFTA negotiations and conclusion in 2002 Malaysia and Indonesia were among the highest with Singapore and Vietnam. With Korea, Thailand held relatively low export intensity compared to the other Asian MTPs. The export direction approach in the second chapter highlighted the downward trend with Korea for the last period of years (see figure 18 and Appendix A Table 15) Even though talks for a free trade agreement started in 1998, they have faded due to the both parties' unwillingness to ease up negotiations. With China and Hong Kong, the trade intensities have shown an upward trend, it was expected to boost after the ASEAN-China free trade agreement and indeed the Thai export direction for China and Hong Kong is supporting Thailand's trade intensity for exports estimations (see Appendix A Table15). Thailand since early years has shown high trade intensity for exports with Australia also after the Asian crisis. This led to a free trade agreement negotiations starting in 2001, which led to signing of TAFTA in 2004. Since then Thailand has had even higher trade intensity with Australia.

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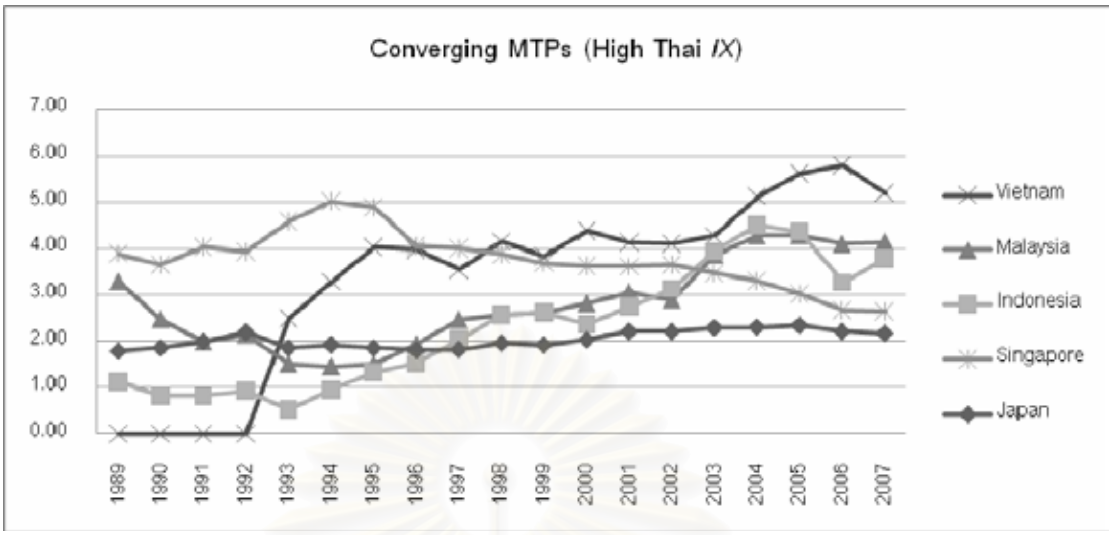
[4] Trade creation and trade diversion were developed by Viner (1950) [published in Bohara et al. (2002)] where trade creation arises when a FTA agreement induces a country to import goods from a more efficient supplier, (in this case from Thailand), whereas if there is trade diversion, a country imports goods from a less efficient supplier.

[5] After all Japan is within the countries that apply more often NTBs to agricultural products, which include tariff quota, state trading and state procurement (Deb, 2007).

With Mexico, Netherlands and the UK Thailand has shown really low trade intensity for exports. With the United States of America, the trade intensity for exports estimation is below the Asian partners and decreasing in the latest years. The Thai export direction approach showed that the US is overall the highest Thai export direction share holder which contradicts the Thai trade intensity for exports estimations; this may be due to different data sources and classification. Thai trade intensity for exports downward trend may be due to the US trade bias towards Mexican imports or other region partners. Contrary to this, Jughurnath et al. (2007) found some form of export diversion within NAFTA, where Mexican textiles and apparel among other products exported to the US were substituted by Asian goods. Although, was not specified from which country.

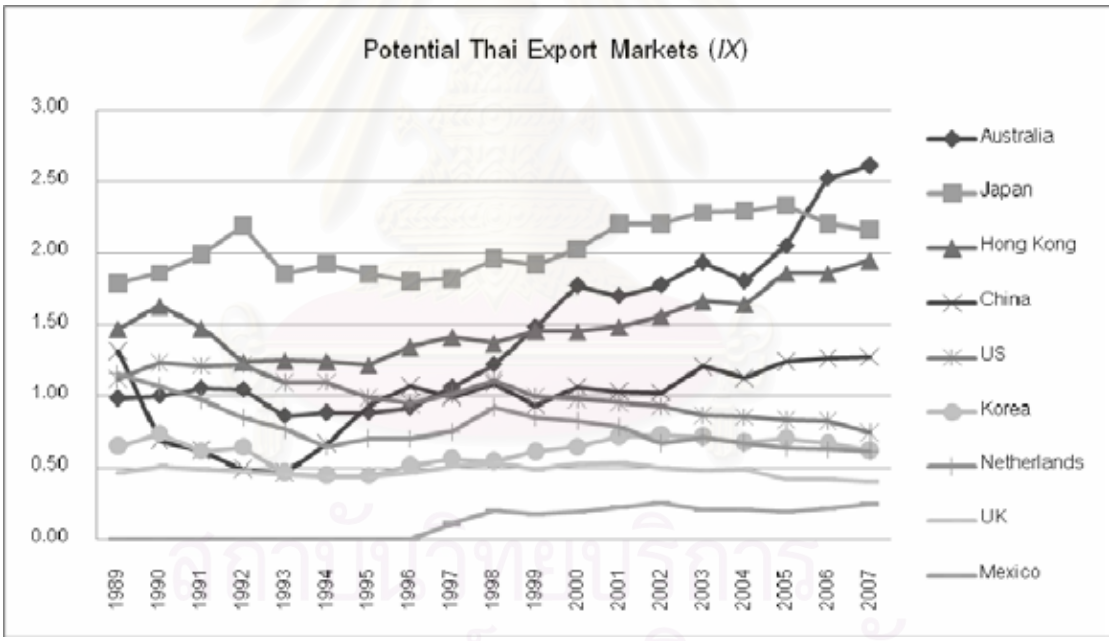
Regarding Thailand's trade intensity for imports, Japan Malaysia, Indonesia, Singapore, Viet Nam, China, Australia and the US are among the highest imports providers during the 1989-2007 period. Thailand's intensities for imports also show that Thailand imports more from China than it exports, whereas, for the rest of the countries the intensity for exports is higher than the intensity for imports. This may be due to the declining barriers faced and imposed by Thailand within the region (see Appendix B 38, 39 and 40). As for the western countries import intensity is low, therefore, we could say that Thailand's trade intensity for exports and trade intensity for imports are biased towards regional trade partners. Plummer (2006) suggested that in Asian countries after the 1997 crisis, "regionalism" increased due to the major disappointment over the US and the EU reaction to the crisis, leaving the feeling of "being in it alone together".

Figure 39 Thailand's Highest Export Intensity



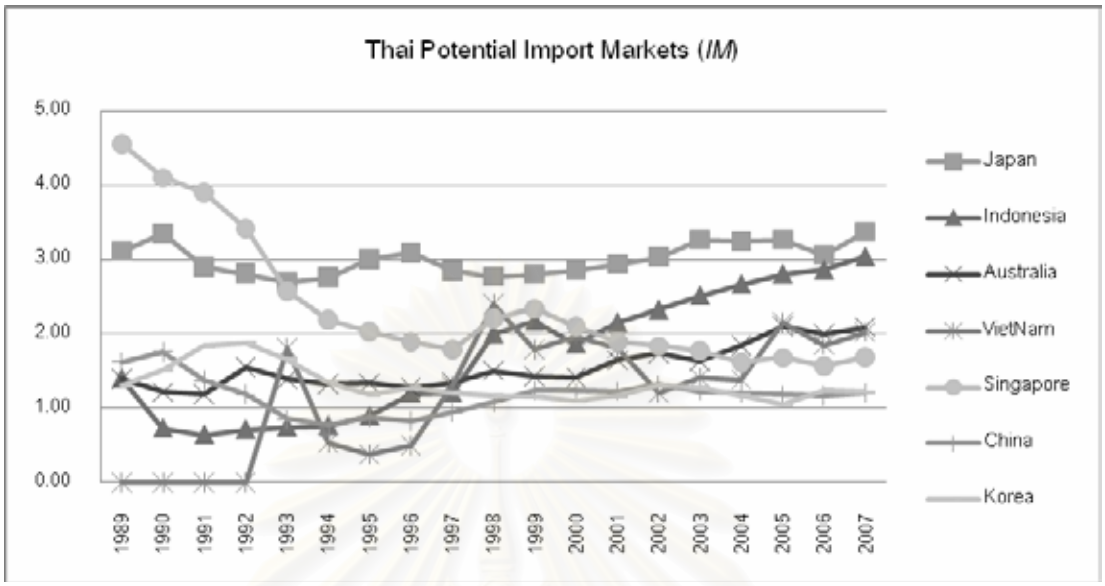
Source: Data from BOT, UNCTAD, authors' calculations

Figure 40 Potential Export Markets for Thailand



Source: Data from BOT, UNCTAD, authors' calculations

Figure 41 Potential Thai Import Markets



Source: Data from BOT, UNCTAD, authors' calculations

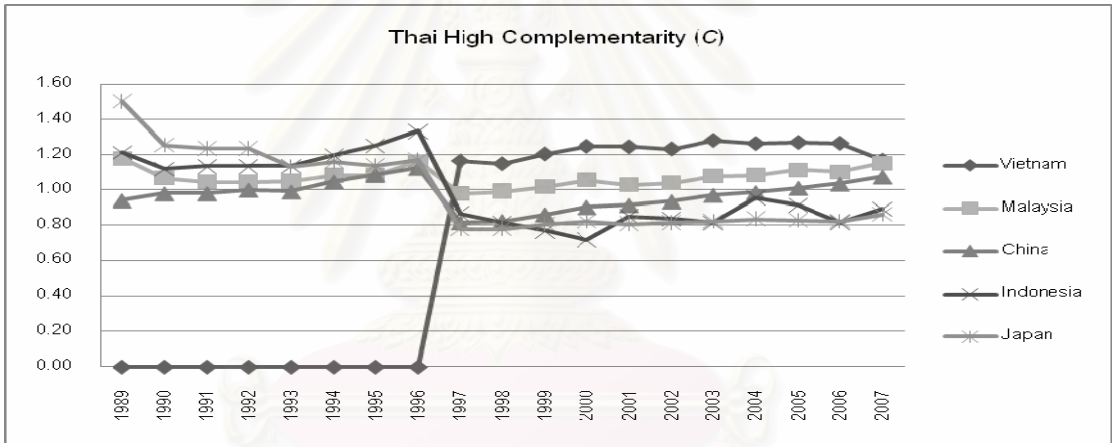
Same as with Mexico, The trade intensities revealed that the Thai trade intensity for exports and trade intensity for imports have been higher with regional trade partners and mainly with ASEAN members. Some distant economies such as Australia and the US saw an improvement.

Therefore, it is revealed from the trade intensity for exports and trade intensity for imports analysis and the previous established convergence criteria (whether a Thai MTP other than Japan converges or surpasses Japan's trade intensity for exports and trade intensity for imports level intensities) showed that there is room for trade potential for exports and imports with Australia, Hong Kong, China, the US, Korea, Netherlands, the UK and Mexico. As for Japan, Malaysia, Indonesia Viet Nam and Singapore are becoming Major recipients of Thai exports and imports (see Figures 39, 40 and 41).

The degree to which Thailand's export pattern matches a trade partner's imports pattern relative to the import pattern of all countries combined was measured using the trade complementarity index. Thailand's calculations showed relatively small

complementarity with most MTPs. Only Viet Nam, Malaysia, China, Indonesia and Japan presented relatively high complementarity. (See Figure 42 and Appendix B Tables 41, 42 and 43). Therefore, it can be argued that the high trade intensity is not due to the Thai complementarity towards its trade partners. In other words, Thai MTPs are converging the Thai relative cost ratio, since the Thai trade complementarity major share composition are the manufactures and transport equipment. However, Thailand after 1997 up to 2007 has shown an upward trend as complement to Malaysia, Singapore, China, Hong Kong and Mexico, which indicates that, even though this countries transform their export and production structures similar those in Thailand, Thailand's commodities are becoming even more diversified and more competitive.

Figure 42 Thai High Complementarity

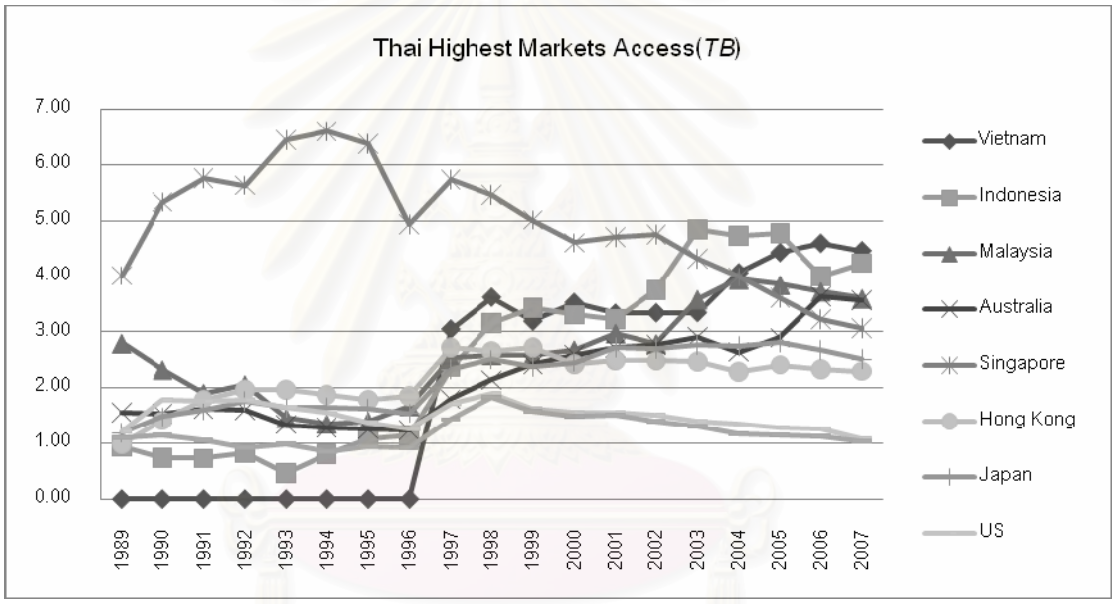


Source: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations

The extent to which Thailand's exports enjoyed more or less favorable access to its major trade partners' import markets than exports from other countries was measured with the trade bias index. Thailand enjoyed high market access mainly to the ASEAN members which are Indonesia, Singapore Malaysia Viet Nam, because of Thailand's free trade agreement through AFTA. Also within the region, Thai market access to Japan and Hong Kong represented a low bias according to the estimates and in comparison to the ASEAN members, which may be due to some still standing barriers to Thai exports, especially the agricultural products. Outside the region, Australia has opened its markets showing an outstanding Thailand bias for the last three years, which can be attributed to the ongoing free trade agreement. In China and Korea, Thai

exports still face constraints to enter those markets, although the ASEAN-China free trade agreement negotiations were concluded by 2005. With Korea there is still no agreement on a FTA, which has been proposed since 1998, given the high opposition to open to the Thai agricultural products, similar as in Japan. Thailand's trade bias estimates imply that Thai exports enjoy preferences given by the US and the EU, but non-tariff barriers play a significant role constraining Thai exports to those markets (see Figure 43 and Appendix B Tables 44, 45 and 46).

Figure 43 Thailand's Highest Market Access



Source: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations

In order to find the factors determining trade for Thailand, a regression of the principal equation was conducted with a variant variable, tariff for imports imposed by the Thailand's importer trade partner, in the form of simple average tariff and weighted average tariff on imports, keeping the other variables unchanged. The proposed factors determining trade for Thailand, did not behave as expected, but only for a few countries. The following table summarizes the estimation results. (See also Appendix C Table48)

Table 7 Regression Summary for Thailand

MTP	GDP	MTPGDP	DIST	TP	C	TB	DRR	GOV	BFDI
Australia		-	+	+	-		+	+	+
China		+	-	-	+	+	+	-	+
Hong Kong									
Indonesia	-	+	+	+	+	+	+	+	+
Japan	+	+	+	-	-	+	-	+	-
Korea		+	+		-	-	-	+	-
Malaysia									
Mexico									
Netherlands	+		+		+	+			
Singapore									
UK								-	
USA		+	-						
Viet Nam									

Note: significant at 95% confidence level, R2= 998349, Durbin-Watson= 2.759593, N/S= no significant

The GDPs of China, Indonesia, Japan, Korea and the US were significant for determining trade. The size of Thailand's GDP was highly significant in trading with Japan and the Netherlands. Most of Thailand's major trade partners are located within the region, therefore, distance was negative significant for trade with China and the US, which implied high transport costs and positive significant with major trade partners located near Thailand. Tariffs were negative significant with China and Japan. The trade complementarity index were significant only explaining trade for China Indonesia and the Netherlands. It was expected that Thailand's complementarity falls with its Asian major trade partners after the impressive shift towards industrialization patterns. Thailand's trade bias index was significant with China, Indonesia, Japan and the Netherlands. This means that as long as these countries keep lowering their trade barriers to Thailand, Thailand's exports will increase. The domestic rules and regulations index was positive significant in trading with Australia, China and Indonesia and negative significant with Japan and Korea. Thai governance was positive significant in trading with Australia, Indonesia, Japan and Korea and negative significant with China and the UK, meaning that as long that Thailand maintains good governance, these

countries will likely keep good trade ties with Thailand. And the foreign direct investment inflows were significant for Thailand with Australia, China and Indonesia.

After the gravity model estimations for Thailand, the trade potential with its MTPs and Mexico during the 1997-2007 was calculated. These calculations showed higher potential when estimated with the weighted average on imports tariff (*TPW*), than with the simple average tariff (*TPS*). It is true that with the time, the potential fluctuations have faded, this may be due to the Thailand's improvement in its trade openness and market access reflected by the trade bias indices. Thailand estimates reflected potential trade mainly with its regional trade partners. This means, given Thailand's relatively short distance and cultural ties with the Asian partners, trade is 'costless' in comparison with the America's and Europe's trade partners. (See Tables 8, 9 and 10)

Table 8 Thailand's Trade Potential (Asia) 1997-2007

In Asia

Year	Australia		China		Hong Kong		Indonesia		Japan	
	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW
1997	-0.17	0.13	5.56	2.97	1.79	1.79	-3.42	-2.89	0.95	-0.53
1998	-5.97	-5.80	-1.48	2.44	-2.56	-2.56	-11.12	-8.64	-1.88	1.22
1999	5.72	6.03	-15.31	-11.98	-2.08	-2.08	15.59	8.81	0.22	0.02
2000	-1.57	-1.43	0.76	1.13	-0.33	-0.33	-0.10	5.10	-0.42	0.03
2001	0.75	1.04	3.16	-0.25	1.29	1.29	-1.40	3.12	0.27	-1.39
2002	-1.58	-1.41	5.21	4.51	1.88	1.88	5.28	-7.34	-0.62	-1.72
2003	0.43	0.46	-2.44	-1.39	0.28	0.28	-7.51	0.19	2.43	2.81
2004	0.66	0.82	-0.65	2.11	-0.52	-0.52	5.20	3.52	-0.89	-0.53
2005	-0.57	-0.47	0.62	-1.08	-0.03	-0.03	-4.67	-3.39	-0.03	-0.26
2006	0.20	0.27	-0.39	-0.70	-0.26	-0.26	0.92	-0.07	-0.07	-0.09
2007	-0.19	-0.14	0.07	0.40	-0.01	-0.01	0.54	0.60	-0.13	0.00

Table 9 Thailand's Trade Potential (Asia II) 1997-2007

In Asia

Year	Korea		Malaysia		Singapore		Viet Nam	
	TPS	TPW	TPS	TPW	TPS	TPW	TPS	TPW
1997	1.04	0.83	-0.03	2.54	-1.63	-1.63	4.54	3.99
1998	-1.39	-1.92	-0.48	-13.92	2.36	2.36	-1.09	-1.72
1999	-0.35	0.68	-0.42	6.06	0.61	0.61	-4.77	-4.24
2000	-1.01	-1.19	0.52	-1.56	1.28	1.28	-3.37	-2.67
2001	1.57	1.58	-2.86	1.76	-4.06	-4.06	1.96	2.24
2002	-1.74	-1.71	2.12	-0.60	1.05	1.05	3.73	3.41
2003	0.05	-0.35	1.99	4.66	1.54	1.54	-1.36	-1.89
2004	1.65	1.75	1.59	-3.07	0.64	0.64	-1.93	-1.59
2005	0.32	0.29	-2.69	-0.26	-2.79	-2.79	2.05	1.72
2006	-0.70	-0.60	-0.35	0.75	0.41	0.41	-0.06	-0.06
2007	-0.05	-0.09	0.48	-0.50	0.59	0.59	-0.35	-0.30

Table 10 Thailand's Trade Potential (America – Europe) 1997-2007

In America

Year	Mexico		USA	
	TPS	TPW	TPS	TPW
1997	4.46	8.56	0.94	-0.08
1998	-3.13	-2.50	0.62	0.09
1999	3.45	-3.21	1.36	0.36
2000	-3.72	-4.62	0.39	0.01
2001	-0.25	0.30	1.02	-0.14
2002	3.46	4.36	0.88	-0.10
2003	-0.26	0.32	-0.10	0.28
2004	-2.49	-3.60	1.67	0.03
2005	1.96	3.26	0.46	-0.04
2006	0.88	-0.18	0.41	0.09
2007	-0.55	-0.68	0.57	0.02

In Europe

Year	Netherlands		United Kingdom	
	TPS	TPW	TPS	TPW
1997	0.10	-0.05	0.08	0.60
1998	0.09	-0.29	-1.32	-1.39
1999	0.09	0.74	2.53	0.87
2000	0.09	-0.44	-1.34	-1.45
2001	0.09	0.32	-0.60	1.09
2002	0.10	-0.12	0.83	0.09
2003	0.08	-0.69	0.13	-1.70
2004	0.07	0.00	0.47	0.84
2005	0.07	0.43	-0.59	0.65
2006	0.06	0.11	0.23	-0.32
2007	0.05	-0.15	-0.17	-0.34

Chapter summary

This chapter summarized the Mexican and Thai estimations, the trade intensities were reliable in finding scope for trade and supported the direction of trade and import sources approach highlighted in the chapter three. Mexico has not diversified enough its export direction and import sources, which is the opposite case of Thailand. Mexico highest trade intensity for exports, trade intensity for imports, was with the US and regional partners, whereas for Thailand the same was with the ASEAN members. The trade complementarity and trade bias for Mexico was outstanding again with the US, showing the great reliance of these two economies on reciprocal markets. Whereas for Thailand the highest trade complementarity and trade bias were with the ASEAN members given the already long term partnership and cooperation agreement. However, the trade complementarity was not outstanding implying that Thailand's regional trade partners are moving towards similar trade structures, whereas the trade bias was important in determining trade flows with these countries. The gravity model with the potential trade equation (Eq. 6), showed small potential trade for Mexico with Brazil, Chile, France, Japan and Thailand, whereas for Thailand they showed trade potential with Japan, Mexico, Netherlands, the UK and the US which means that there is still trade barriers that need to be dismantled. The regression estimations showed that the model used in this study is a good model for estimating bilateral trade due to the small difference between the actual and estimated trade flows. The model estimations for Mexico and Thailand can be viewed from two perspectives: both countries are maximizing their trade potential given their current resources and trade conditions or it can be said that the estimations did not present any outstanding trade potential given the Mexico's and Thailand's current restrictive trade conditions. In other words, insignificant or no potential trade was found given the Mexican and Thai current restrictive trade conditions.

CHAPTER VI

CONCLUSIONS

6.1 Conclusions

Mexico and Thailand are well-endowed with economic resources. Mexico and Thailand have remained as active trade members in the world economy despite they have experienced harmful setbacks. Indeed, remarkable recoveries have made these countries to be at the forefront in their regions. Though, many imbalances still remain. This study has highlighted that through determining factors that constrain or boost trade the countries could identify and prioritize options for the purpose of improving trade flows. Moreover, the trade potential was determined for Mexico and Thailand (with their MTPs and between themselves) given their current trade structures. In other words, the factors determining the trade gap between the actual and potential trade were identified, because these are information for designing good reforms and policies, which in turn, could lead to better and stronger trade performance.

Trade intensities reflected that these countries are trading and will trade more with their close neighbors or regional partners. This may be due to close cultural ties, low transport costs, common language in the region and preferences with some of the regional partners. Even though there are prevailing protectionist measures, the declining of these during the last decade has helped trade to flow in greater volume and value. Literature describes Mexico as one of the countries with most free trade agreements, though, the exports direction and imports sources analysis in the trade overview in the second chapter, and moreover, the trade intensity for exports and the trade intensity for imports estimations showed that Mexico has not diversified its trade enough, which it is harmful when global crises arise. Based on the trade intensity for exports and the trade intensity for imports estimations Thailand's trade is biased towards its ASEAN partners given the high market benefits, but a positive development for Thailand is the diversification of trade partners in Asia. Mexico and Thailand are among the countries with the highest competitiveness in the manufacturing sector, which

explains the high degree of foreign direct investment directed to that sector. Most export earnings to these countries come from the manufacture sector, implying that Mexico and Thailand are more open in this sector, keeping the sensitive sectors, such as agriculture and mining, closed to the foreign investment due to national interests. The trade complementarity index calculations did not reflect any outstanding advantage of Mexico and Thailand towards their trade partners, which suggests that the trade partners are moving toward industrialization putting emphasis on the manufactures sector, pushing Mexico and Thailand to improve further in the areas of technology and educated labor force in order to remain competitive. The trade bias index suggested Mexico has already a noticeable trade bias with the US and Thailand has a bias with the ASEAN partners. The trade intensities reflected room for expanding linkages in different regions (for Mexico and Thailand). Though, transaction costs (represented in this study as distance, domestic rules and regulations, trade facilitation and governance) still remain as a barrier for Mexico and Thailand to overcome in order to realize their trade potential.

The study found the selected factors (GDPs, distance, tariffs, trade complementarity, trade bias, domestic rules and regulations, governance and foreign direct investment) determining trade to be significant within the gravity model. They all behaved well in explaining the gap between actual trade and trade potential for Mexico but in less degree for Thailand with most of their major trade partners and between themselves. Trade restrictions and political reasons seem to drive developed countries either to direct or not direct investments to Mexico and Thailand. Mexico is a vital supplier to the US, although China already surpassed Mexico. This has become a challenge for Mexico. It needs to improve the trade policies that have permitted such high gains in the past. In addition, Mexico needs to diversify its trade structures so that it will be less dependent on the US, because the Mexico-US trade has been based on high foreign direct investment flows from the US and low labor costs in Mexico. Thailand is a vital and increasing supplier to its major trade partners. In addition, Thailand is diversifying its export flows. It has achieved gains, but not enough in market access to certain markets and products.

Tariffs, in the near future are likely to be abolished (except for agricultural products) and therefore non-tariff measures as technical barriers to trade (TBT) and sanitary and phyto-sanitary (SPS) measures for trade in goods and some other barriers to trade in services, are a real challenge for Mexico and Thailand. Although, the objective of the TBT[6] and SPS[7] is to protect consumers so as to maximize social welfare, it is well known that both measures may impede trade due to the fact that Mexico and Thailand have limited amount of capital, qualified human resources and effective time to converge their competitiveness with their trade partners.

6.2 Recommendations

This study also aims at highlighting opportunities to increase trade flows and potential trade. Therefore, some recommendations are provided below. For Mexico, it would be "healthier" to start exploiting the costly free trade agreements signed with other partners than NAFTA (diversification towards other trade partners). Thailand could aim to conclude talks and sign a free trade agreement with Japan and Korea, even though these countries are not willing to open their economies for sensitive markets, such as agricultural products from Thailand. Thailand could push Japan's and Korea's governments to at least start opening their less sensitive markets, which in turn, would be a big step forward with reciprocal benefits.

Mexico's and Thailand's reciprocal trade restrictive measures are high, which provides a possibility to consider a free trade agreement between these two countries. Though, both countries are high exporters of manufactures and have similar export structures, which imply that these two countries are actually competitors and to certain extent they are diverting trade from each other. Thailand has already a free trade

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[6] Relates to technical standards covering all products, including food, and product specification issues such as size, shape weight and packing material requirements, including labeling and safe handling ([www.wto.org] Understanding the WTO/non-tariff measures).

7 Includes all measures to ensure the safety food for human and prevent the spread of animal and plant pests and diseases ([www.wto.org] Understanding the WTO/non-tariff measures).

agreement with Peru, in Latin America, since 2004 and has started negotiations with Chile to improve its access to the South American markets.

Mexico and Thailand in most cases are viewed as standard takers with regard to the non-tariff measures. They face high costs to ensure the compliance with health or safety regulations of exported goods. Mexico and Thailand still need to develop capacities to meet these challenges. Therefore, it is suggested that Mexico and Thailand should aim at improving trade facilitation. This applies especially to Mexico, because it still faces great imbalances in trade facilitation (which was explained in the second chapter of this report). Both countries could improve the cooperation and initiatives with their trade partners. In addition, more diversified foreign investments among industries could assist these two countries to develop their trade potential with higher outcomes.

6.3 Suggestions for further research

This study did not focus on intraregional trade or intra-industry trade. Therefore, it is of interest to realize regional trade integration and the intra-industry trade potential. Furthermore, since this study was carried on total trade flows, it is of interest to do it at the disaggregated commodity level i.e. assess the bilateral potential trade by commodities and analyze the costs factors underlying.

REFERENCES

English

Aggarwal M. R. and Pandey P. R. 1992. Prospects of Trade Expansion in the SAARC Region. **The Developing Economies** 1: 3-22.

Aigner, D., Lovell C. A. L., Schmidt. 1977. Formulation and Estimation of Stochastic Frontier Production Function Models. **Journal of Econometrics** 6: 21-37.

Anderson, J. E. and Van Wincoop, E. 2003. Gravity with Gravitas: A solution to the Border Puzzle. **American Economic Review** 93: 170-192.

Armstrong, S. 2007. Measuring Trade and Trade Potential: A Survey. **Australian National University Asia Pacific Economic** 368.

Armstrong, S. Drysdale, P. and Kalirajan, K. 2008. Asian Trade Structures and Trade Potential: An Initial Analysis of South and East Asian Trade Crawford School of Economics and Government. **The Conference on the Micro-Economic Foundations of Economic Policy Performance in Asia**, pp. 3-4. New Delhi: Australian National University.

Baharumshah, A. Z. Onwuka, K. O. and Habibullah, M. S. 2007. Is a Regional Trade Bloc A Prelude to Multilateral Trade Liberalization? Empirical Evidence from the ASEAN-5 Economies. **Journal of Asian Economics** 18: 384-402.

Balassa, B. 1967. Trade Creation and Trade Diversion in the European Common Market. **Economic Journal** 305:1-21.

Bhattacharya, S. K. and Bhattacharyay, B. N. 2007. Gains and Losses of India-China Trade Cooperation – A Gravity Model Impact Analysis **Center for Economic Studies CESIFO University of Munich Working Paper** 1970.

Blomqvist, H., C. 2004. Explaining Trade Flows of Singapore. Swedish School of Economics & Business Administration (Vaasa, Finland) **Asian Economic Journal, Social Science Research Network (SSRN)**[Online]. Available from: http://papers.ssrn.com [2004, March 18]

Bohara, A. K., Gawande, K., and Sanguinetti, P. 2004. Trade Diversion and Declining Tariffs: Evidence from Mercosur. **Journal of International Economics** 64: 65-88.

Borensztein, E., De Gregorio J. and Lee, J-W. 1998. How Does Foreign Investment affect Economic Growth? **Journal of International Economics** 45:115-135.

Bowen, H. P., Hollander, A. and Viaene, J. M. 1998. **Applied International Trade Analysis.** London: MCMILLAN PRESS LTD.

Brimble, P. 2002. Foreign Direct Investment: Performance and Attraction, The Case of Thailand. **The Brooker Group plc.** [Online]. Available form: http://www.imf.org/external/pubs/ft/seminar/2002/fdi/eng/pdf/brimble.pdf [2002, May 20]

Bussiere, M., Fidrmuc J. and Schnatz, B. 2005. Trade Integration of Central and Eastern European Countries, Lessons From a Gravity Model. **European Central Bank. Working Paper Series** 545.

Campos, N. F. and Kinoshita, F. 2008. **Foreign Direct Investment and Domestic Financial Reform: A Marriage Made in Heaven?** [Online] Available form: http://www.imf.org/external/np/vc/2008/032408.html [2008, March 24]

Cavallo, E. and Frankel, J. 2008. Does Openness to Trade Make Countries More vulnerable to Sudden Stops, or less? Using Gravity to Establish Causality. **Journal of International Money and Finance** 27:1430-1452.

Caves, R. V. 1996. **Multinational Enterprise and Economic Analysis.** 2nd ed. Cambridge Surveys of Economic Literature.

Deb, K. U. 2007. **Non-Tariff Barriers in Agricultural Trade: Issues and Implications for Least Developed Countries**. ARTNeT POLICY BRIEF, UNESCAP, Brief No. 12.

Dent, C. M. 2006. **New Free Trade Agreements in the Asia – Pacific**. New York: Palgrave McMillan.

Egger, P. and Larch, M. 2007. **An Assessment of the Europe Agreements' Effects on Bilateral Trade, GDP, and Welfare** [Online]. Available from: https://editorialexpress.com/cgibin/conference/download.cgi?db_name=mwiefall2007&paper_id=56 [2007]

Feenstra, R. 2003. **Advanced International Trade: Theory and Evidence**. Princeton University.

Frankel, J. A. and Romer, D. 1999. Does Trade Cause Growth? **American Economic Review**, 89: 379-399.

Gujarati, D. N. 2003. **Basic Econometrics.** 4th ed. New York: McGraw-Hill.

Harris, M. and Matyas, L. 1998. The Econometrics of Gravity Models. **Melbourne Institute Working Paper** 5/98.

Helpman, E. and Krugman, P.R 1985. **Market Structure and foreign Trade: Increasing Returns, Imerfect competition, and The International Economy**. Cambridge: MIT press.

Hill, H. 1985. Australia-Philippine Trade Relations **Journal of Philippine Development** 12: 253-273.

Horowitz, S. and Heo, U. 2001. **The Political Economy of International Financial Crisis. Landham MD**: Rowman & Littlefield Publishers Inc.

Jakab, Z. M., Kovacs, M. A. and Oszlay, A. 2001. How Far Has Trade Integration Advance? An Analysis of Actual and Potential Trade of Three Central Eastern European Countries, **Journal of Comparative Economics**, 29: 276-292.

Jugurnath, B., Stewart, M. and Brooks, R. 2007. Asia/Pacific Regional Trade Agreements: an Empirical Study. **Journal of Asian Economics** 18: 974-987.

Kang, H. and Fratianni, M. 2006. International Trade Efficiency, The Gravity Equation, and the Stochastic Frontier. **Social Science Research Network (SSRN)** [Online]. Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=952848 [2006]

Kaufmann, D., Kraay, A. and Mastruzzi, M. 2008. Governance Matters VII. **World Bank Policy Research Working Paper 4654** [Online]. Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1148386# [2008]

Krugman, P. 1991. **The Move Toward Free Trade Zones. In Policy Implications of Trade and Currency Zones**, by Jackson Hole: 7-42.

Krugman, P. and Maurice, O. 2005. **International Economics: theory and policy**. 7th ed, Boston: Addison-Wesley.

Lewer, J. J. and Saenz, M. 2004. **Efectos de la Liberación Financiera Sobre el Comercio Exterior: Modelo Gravitacional de Latinoamérica, 1995-1999**. Asociación Euro-Americana de Estudios de Desarrollo Económico. AEEADE. 4: 2

Linder, S. 1961. **An Essay on Trade and Transformation**. Uppsala: Almqvist and Wiksells.

Linneman, H. 1966. **An Econometric Study of International Trade Flows**. Amsterdam: North Holland.

Markusen, J. R., Melvin, J. R., Kaempfer, W. H., Maskus, K. E. 1995. **International Trade: Theory and Evidence International Edition**. New York: McGraw-Hill, Inc.

Markusen, J. R. 1983. Factor Movements and Commodity Trade as Complements. **Journal of International Economics** 14: 341-356.

McDermott, R. 2005. Regional Trade Agreement and Foreign Direct Investment. The North American. **Journal of Economics and Finance** 18: 107-116.

Mundell, R. A. 1957. International Trade and Factor Mobility. **The American Economic Review** 47: 321-335.

Orme, W. A. 1996. **Understanding NAFTA: Mexico Free Trade and the New North America. Texas: The Briefing Books.** Washington Post Company, University of Texas Press.

Papaiouannou, E. 2008. What Drives International Financial Flows? Politics, Institutions and Other Determinants. **Journal of Development Economics** 88: 269-28

Petri, P. A. 1993. Is the United States Bowing Out of Asia? **Journal of Asian Economics** 4: 283-300.

Plummer, M. G. 2006. ASEAN-EU Economic Relationship: Integration and Lessons for the ASEAN Economic Community. **Journal of Asian Economics** 17: 427-447.

Raghavan, S. N. 1995. **Regional Economic Cooperation Among SAARC Countries Institute of Economic Growth (India, Economic and Scientific Research Foundation**) India: Allied Publishers.

Richardson, M. 1993. Endogenous Protection and Trade Diversion. **Journal of International Economics** 34: 309-324.

Santiso, J. 2006. **Latin America's Political Economy of the Possible, Beyond Good Revolutionaries and Free - Marketeers**. London: The MIT Press, Cambridge Massachusetts.

Schiff, M. 2006. Substitution in Markusen's Classic Trade and Factor Movement Complementarity Models. **World Bank Policy Research Working Paper** 3974, August 2006.

Schott, J. J. 2001. **Prospects for Free Trade in the Americas**. Institute for International Economics, USA. NW. USA.

Sohn, C.H. and Yoon, J. 2001. **Does The Gravity Model Fit Korea's Trade Patterns? Implications For Korea's FTA Policy and North-South Korean Trade**. In English, Korea Institute for International Economic Policy March 2001. Seoul Korea.

Stock, J. H. and Watson M. W. 2007. **Introduction to Econometrics**. 2nd ed. Boston MA: Pearson.

Secretaría de Economía. 2008. **Dirección General de Inversión Extranjera** [Online]. Available from: http://www.economia.gob.mx [2008]

Subramanian, A. and Wei S. 2005. The WTO Promotes Trade Strongly But Evenly. **Journal of International Economics** 72:152-175.

The Paper Experts. 2008. **Cause Effect Essay, The south East Asian Currency Crisis**. [Online]. Available from: http://thepaperexperts.wordpress.com/2008/09/09/cause-effect-essay-the-south-east-asian-currency-crisis/ [2008]

The International Bank for Reconstruction and Development / The World Bank. World Trade Indicators 2008: **Benchmarking Policy and Performance**. Washington D.C.

Tinbergen, J. 1962. **Shaping the World Economy: Suggestions for an International Economy Policy**. The twentieth Century Fund. New York

UNCTAD 2003. **Investment and Technology: Policies for Competitiveness – Review of successful Country Experiences Technology for Development Series, UNCTAD/ITE/IPC/2003/2**; New York and Geneva.

Verbeek, M. 2004. **A Guide to Modern Econometrics**. 2.ed., Chichester: Wiley.

Wiboonchutikula, P. 1995. Trade in Manufactured Goods: Prospective Gains for Thailand in Asia-Pacific Economic. **Cooperation Research in Asian Economic Studies**. 6: 305-342.

Wong, W. 2007. **Comparing the fit of the gravity model for different cross border-flows. Department of Economics**. National University of Singapore.Elsevier Economic letters. Science Direct.

World Bank. 2008. **Doing Business** [Online]. Available from: http://www.doingbusiness.org/CustomQuery/ [2008]

World Bank, 2008. **Trade Logistics and Facilitation** [Online]. Available from: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTTRANSPORT/EXTTLF/0,,contentMDK:21514122~menuPK:3875957~pagePK:210058~piPK:210062~theSitePK:515434,00.html [2008]

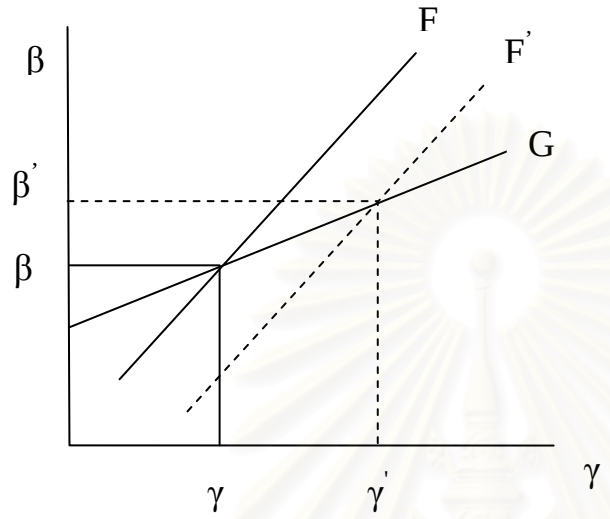
World Trade Organization (WTO). 2002. **Trade Policy Review / Mexico** [Online]. Available from: http://www.wto.org/English/tratop_e/tpr_e/tp190_e.html [2002, April 16]

World Trade Organization (WTO). 2003. **Trade Policy Review / Thailand** [Online]. Available from: http://www.wto.org/english/tratop_e/tpr_e/tp223_e.htm [2003, November 14]

APPENDICES

Appendix A Export Direction, Import Sources, FDI Tables

Figure 44 Cournot Game for Business and Government



FDI (as a form of multinational MNE) plays a key role on trade for developing countries. Therefore, they (the host government) need to "project" an environment that will allow them to lobby FDI. Certainty (or uncertainty) can be transmitted through, host demand uncertainty, labor problems, wrong governmental policies and bad government environment. In order to clarify this point a Cournot "game" for business and government is presented.

Assuming that a government maintain and control its economic environment, given by β as a set by spending μ amount so it can derive a net social benefit φ

$$\varphi=\alpha(\gamma,\beta) - \mu(\beta)$$

where

φ= Net Social Benefit,α=is the gross benefits due to FDI (γ=foreign capital, given β) and $\mu(\beta)$= is the cost of creating β

Thus, the certainty (or uncertainty) of the multinational enterprise (MNE) will depend on (β). Therefore for a given (β) (and thus the certainty or uncertainty of the MNE) the multinational invest (γ) to give a reaction function γ=F(β). Similarly, for a given (γ), the government will maximize the net social benefit (φ) by spending μ to create (β). Another reaction function of the type β=G(γ) therefore graphically can be explained

On the graph 1 of appendix A the first equilibrium point where (F,G) intercept given the β, thus, the MNE will invest γ, if the government improves the (β) let's say to (β') the G=MNE reaction function will be steeper yielding the (F', G) equilibrium point where the (γ) will become grater (γ')

In conclusion, as the government environment improves, the MNE will increase FDI and at the same time the government will be motivated to keep a good government environment to even further increase inward FDI which is a fuelling factor to increase the FDI host country trade.

Table 11 Mexico Export Direction

MTP	1990	1995	2000	2005	2007
Brazil	0.61	1.01	0.31	0.42	0.74
Canada	0.83	2.49	2.01	1.98	2.39
Chile	0.33	0.62	0.26	0.31	0.43
China	0.24	0.05	0.12	0.53	0.70
France	2.02	0.61	0.23	0.17	0.26
Germany	1.26	0.65	0.93	1.07	1.51
Japan	5.53	1.17	0.56	0.69	0.70
Korea	0.38	0.11	0.11	0.12	0.25
Netherlands	1.23	0.30	0.26	0.37	0.70
Spain	5.32	0.98	0.90	1.38	1.36
Thailand	0.04	0.04	0.03	0.05	0.06
UK	0.68	0.63	0.52	0.55	0.57
US	69.34	83.57	88.69	85.82	82.18
Rest of the World	12.2	7.79	5.07	6.54	8.15
Total	100	100	100	100	100

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 12 Mexico Export Direction (Shares % Change)

MTP	1990	1995	2000	2005	2007
Brazil	-0.54	0.64	-0.69	0.34	0.78
Canada	-0.53	2.00	-0.19	-0.02	0.21
Chile	3.50	0.86	-0.58	0.20	0.38
China	-0.35	-0.81	1.63	3.33	0.32
France	-0.45	-0.70	-0.63	-0.23	0.47
Germany	-0.05	-0.48	0.43	0.15	0.41
Japan	-0.28	-0.79	-0.52	0.23	0.03
Korea	-0.19	-0.70	-0.03	0.08	1.16
Netherlands	2.06	-0.75	-0.13	0.42	0.87
Spain	-0.31	-0.82	-0.08	0.52	-0.02
Thailand	-0.45	-0.06	-0.29	0.66	0.35
UK	-0.78	-0.06	-0.17	0.06	0.04
US	0.15	0.21	0.06	-0.03	-0.04

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 13 Mexico Import Sources (Shares)

MTP	1990	1995	2000	2005	2007
Brazil	1.19	0.78	1.02	2.35	1.98
Canada	1.30	1.90	2.27	2.78	2.82
Chile	0.12	0.69	0.50	0.79	0.92
China	0.73	0.72	1.63	7.98	10.55
France	2.39	1.36	0.83	1.16	1.10
Germany	5.56	3.71	3.25	3.91	3.79
Japan	4.27	4.98	3.65	5.90	5.80
Korea	0.61	1.34	2.08	2.96	4.49
Netherlands	0.69	0.30	0.21	0.42	0.87
Spain	1.68	0.96	0.81	1.50	1.36
Thailand	0.11	0.23	0.29	0.70	0.75
UK	1.97	0.73	0.62	0.84	0.81
US	66.11	74.52	72.04	53.64	49.64
Rest of the World	13.27	7.78	10.81	15.08	15.12
Total	100	100	100	100	100

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 14 Mexico Import Sources (Shares % Change)

MTP	1990	1995	2000	2005	2007
Brazil	-0.21	-0.35	0.31	1.31	-0.16
Canada	-0.26	0.46	0.20	0.23	0.01
Chile	-0.68	4.56	-0.27	0.57	0.16
China	0.57	-0.01	1.26	3.90	0.32
France	0.17	-0.43	-0.39	0.40	-0.05
Germany	0.39	-0.33	-0.12	0.20	-0.03
Japan	-0.21	0.17	-0.27	0.61	-0.02
Korea	6.39	1.19	0.55	0.42	0.52
Netherlands	0.20	-0.56	-0.32	1.03	1.10
Spain	0.05	-0.43	-0.16	0.86	-0.09
Thailand	0.76	1.05	0.25	1.45	0.06
UK	-0.07	-0.63	-0.16	0.36	-0.03
US	-0.01	0.13	-0.03	-0.26	-0.07

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 15 Thailand Export direction (Shares)

MTP	1990	1995	2000	2005	2007
Australia	1.62	1.32	2.34	2.86	3.76
China	1.16	2.80	4.07	8.27	9.73
Hong Kong	4.50	4.98	5.04	5.56	5.70
Indonesia	0.67	1.38	1.94	3.59	3.13
Japan	17.20	16.14	14.74	13.60	11.89
Korea	1.71	1.37	1.83	2.04	1.95
Malaysia	2.49	2.65	4.08	5.25	5.11
Mexico	1.71	1.37	1.83	2.04	1.95
Netherlands	4.83	3.07	3.26	2.50	2.49
Singapore	7.35	13.49	8.70	6.94	6.25
UK	4.06	2.76	3.42	2.53	2.33
US	22.71	17.17	21.32	15.39	12.63
Viet Nam	0.08	0.80	1.21	2.13	2.49
Rest of the World	29.91	30.72	26.22	27.32	30.6
Total	100	100	100	100	100

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 16 Thailand Export Direction (Shares % Change)

MTP	1990	1995	2000	2005	2007
Australia	-0.07	-0.18	0.77	0.22	0.31
China	-0.69	1.40	0.45	1.03	0.18
Hong Kong	0.11	0.11	0.01	0.10	0.03
Indonesia	0.10	1.06	0.41	0.85	-0.13
Japan	0.29	-0.06	-0.09	-0.08	-0.13
Korea	-0.08	-0.20	0.34	0.11	-0.04
Malaysia	-0.50	0.06	0.54	0.29	-0.03
Mexico	15.56	-0.20	0.34	0.11	-0.04
Netherlands	-0.32	-0.36	0.06	-0.23	0.00
Singapore	-0.07	0.84	-0.36	-0.20	-0.10
UK	0.67	-0.32	0.24	-0.26	-0.08
US	0.15	-0.24	0.24	-0.28	-0.18
Viet Nam	17.16	9.09	0.52	0.75	0.17

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 17 Thailand Import Sources (Shares)

MTP	1990	1995	2000	2005	2007
Australia	1.68	1.71	1.87	2.76	2.72
China	3.31	2.72	5.45	9.44	11.59
Hong Kong	1.24	0.97	1.43	1.27	1.03
Indonesia	0.59	0.87	2.10	2.65	2.85
Japan	30.36	28.05	24.73	22.03	20.29
Korea	3.13	3.21	3.50	3.29	3.78
Malaysia	3.37	4.20	5.40	6.85	6.16
Mexico	0.19	0.24	0.20	0.17	0.21
Netherlands	0.72	0.91	0.86	0.61	0.63
Singapore	7.42	5.40	5.52	4.55	4.49
UK	2.71	1.89	1.53	1.08	1.08
US	10.78	11.04	11.77	7.38	6.83
Viet Nam	0.28	0.06	0.54	0.75	0.79
Rest of the World	34.22	38.74	35.11	37.17	37.57
Total	100	100	100	100	100

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 18 Thailand Import Sources (Shares % Change)

MTP	1990	1995	2000	2005	2007
Australia	0.02	0.02	0.09	0.47	-0.01
China	0.38	-0.18	1.01	0.73	0.23
Hong Kong	0.07	-0.22	0.47	-0.11	-0.19
Indonesia	-0.10	0.48	1.41	0.26	0.07
Japan	0.15	-0.08	-0.12	-0.11	-0.08
Korea	0.56	0.03	0.09	-0.06	0.15
Malaysia	-0.43	0.25	0.29	0.27	-0.10
Mexico	-0.38	0.28	-0.16	-0.14	0.22
Netherlands	-0.26	0.25	-0.06	-0.29	0.03
Singapore	0.00	-0.27	0.02	-0.18	-0.01
UK	0.08	-0.30	-0.19	-0.29	0.00
US	-0.05	0.02	0.07	-0.37	-0.08
Viet Nam	42.39	-0.80	8.57	0.41	0.05

Source: Data from IMF/DOTS (c.i.f.), authors' calculations

Table 19 FDI in Mexico (Summary)

FDI in Mexico (Millions US$)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	12830	12656	13728	17977	29483	23049	16594	22833	20945	19291	24686
% GDP	3.2	2.9	2.8	3.1	4.7	3.3	2.3	3.3	2.6	2.3	2.8
Stock	55810	63610	78060	97170	140359	161511	178101	200878	221838	241050	265736
Stock per capita	594.2	667.8	808.2	991.9	1417.9	1615.1	1763	1968.4	2151.9	2312.9	2524.5
% exports	10.5	9.6	9.2	10	17.2	12.1	8.5	11.1	8.6	7.2	8.7

Source: UNCTAD Handbook of statistics 2008, WTI 2008, IMF database

Table 20 FDI in Thailand (Summary)

FDI in Thailand (Millions US$)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	3882	7492	6091	3349	5061	3335	5235	5862	8048.1	9010.2	9575.3
%GDP	2.6	6.5	5	2.7	4.4	2.6	3.7	3.6	4.6	4.4	4.4
Stock	13332	25481	31114	29915	33268	38449	48944	53187	60408	76174	85749
Stock per capita	220.6	416.6	503.6	479.4	528.6	605.9	764.7	817.2	927.8	1166.9	1304.4
% Exports	5.4	11.1	8.5	4.1	6.6	4.1	5.6	5.1	6.2	5.9	5.8

Source: UNCTAD Handbook of statistics 2008, WTI 2008, IMF database

Table 21 Mexico Real Trade Growth

Mexico Real Trade Growth (%)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	16.32	14.33	13.20	18.90	-2.58	1.45	1.65	11.63	7.84	11.68	3.90
Exports	10.72	12.18	12.33	16.28	-3.60	1.44	2.69	11.64	7.05	11.14	2.60
Imports	22.75	16.56	14.07	21.48	-1.63	1.46	0.69	11.62	8.57	12.18	5.00

Sources: World Bank/WTI, 2008

Table 22 Thailand Real Trade Growth

Thailand Real Trade Growth (%)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	-3.33	-7.39	9.68	21.78	-4.81	12.78	7.69	11.37	6.72	5.15	7.80
Exports	7.23	8.24	9.03	17.49	-4.21	11.99	7.07	9.60	4.34	8.58	9.00
Imports	-11.30	-21.65	10.49	27.12	-5.50	13.70	8.40	13.38	9.32	1.57	6.50

Sources: World Bank/WTI, 2008

Appendix B: Trade Intensities Tables

Table 23 Mexico IX (America)

Mexico Trade Intensity for Exports (America)

Year	Brazil	Canada	Chile	US
1993	0.61	0.71	1.12	4.59
1994	0.61	0.61	1.04	4.74
1995	0.85	0.71	1.80	5.21
1996	0.79	0.65	1.90	5.20
1997	0.64	0.55	2.25	4.96
1998	0.51	0.37	1.61	4.82
1999	0.38	0.62	1.02	4.54
2000	0.40	0.55	1.04	4.37
2001	0.43	0.55	0.94	4.43
2002	0.48	0.51	0.68	4.64
2003	0.50	0.54	0.81	4.93
2004	0.58	0.55	0.79	4.91
2005	0.49	0.60	0.93	5.06
2006	0.51	0.67	1.07	5.18
2007	0.72	0.81	1.20	5.44

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 24 Mexico IX (Asia)

Mexico Trade Intensity for Exports (Asia)

Year	China	Japan	Korea	Thailand
1993	0.03	0.16	0.02	0.01
1994	0.02	0.20	0.03	0.02
1995	0.02	0.15	0.04	0.02
1996	0.01	0.18	0.07	0.04
1997	0.05	0.12	0.07	0.14
1998	0.06	0.07	0.07	0.12
1999	0.04	0.11	0.09	0.11
2000	0.05	0.10	0.07	0.07
2001	0.06	0.13	0.06	0.08
2002	0.09	0.13	0.05	0.08
2003	0.11	0.13	0.05	0.10
2004	0.09	0.11	0.05	0.08
2005	0.09	0.13	0.04	0.08
2006	0.10	0.12	0.07	0.08
2007	0.10	0.15	0.09	0.11

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 25 Mexico IX (Europe)

Mexico Trade Intensity for Exports (Europe)

Year	France	Germany	Netherlands	Spain	UK
1993	0.12	0.08	0.06	0.71	0.07
1994	0.12	0.06	0.05	0.64	0.07
1995	0.10	0.06	0.06	0.42	0.10
1996	0.07	0.07	0.05	0.39	0.09
1997	0.06	0.06	0.09	0.38	0.08
1998	0.05	0.10	0.07	0.23	0.08
1999	0.04	0.15	0.08	0.27	0.07
2000	0.04	0.11	0.07	0.35	0.09
2001	0.04	0.11	0.07	0.31	0.08
2002	0.04	0.09	0.13	0.32	0.07
2003	0.04	0.12	0.11	0.31	0.07
2004	0.03	0.11	0.09	0.36	0.08
2005	0.03	0.13	0.10	0.47	0.10
2006	0.05	0.15	0.14	0.44	0.07
2007	0.06	0.19	0.16	0.45	0.11

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 26 Mexico IM (America)

Mexico Trade Intensity for Imports (America)

Year	Brazil	Canada	Chile	US
1993	1.65	0.41	0.65	4.09
1994	1.40	0.47	0.88	4.27
1995	0.79	0.46	0.59	4.96
1996	0.83	0.48	0.53	4.96
1997	0.79	0.43	0.92	4.66
1998	0.83	0.43	1.28	4.65
1999	0.88	0.46	1.40	4.64
2000	1.09	0.49	1.50	4.61
2001	1.21	0.55	1.70	4.39
2002	1.50	0.63	1.83	4.44
2003	1.84	0.61	1.91	4.84
2004	1.98	0.75	1.89	4.73
2005	1.96	0.75	1.83	4.63
2006	1.78	0.83	1.89	4.50
2007	1.59	0.88	1.77	4.41

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 27 Mexico IM (Asia)

Mexico Trade Intensity for Imports (Asia)

Year	China	Japan	Korea	Thailand
1993	0.22	0.06	0.57	0.17
1994	0.20	0.58	0.59	0.23
1995	0.23	0.57	0.49	0.17
1996	0.28	0.55	0.49	0.21
1997	0.32	0.47	0.60	0.11
1998	0.37	0.47	0.58	0.19
1999	0.37	0.45	0.75	0.17
2000	0.40	0.46	0.74	0.18
2001	0.53	0.67	0.79	0.21
2002	0.70	0.79	0.85	0.24
2003	0.91	0.65	0.86	0.20
2004	1.09	0.79	0.89	0.20
2005	1.07	0.94	1.01	0.18
2006	1.16	1.00	1.42	0.21
2007	1.18	1.03	1.53	0.26

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 28 Mexico IM (Europe)

Mexico Trade Intensity for Imports (Europe)

Year	France	Germany	Netherlands	Spain	UK
1993	0.21	0.38	0.09	0.71	0.14
1994	0.25	0.35	0.07	0.67	0.15
1995	0.19	0.33	0.06	0.37	0.12
1996	0.17	0.33	0.06	0.26	0.12
1997	0.17	0.35	0.05	0.36	0.13
1998	0.17	0.34	0.06	0.37	0.13
1999	0.15	0.34	0.05	0.36	0.12
2000	0.14	0.37	0.05	0.33	0.10
2001	0.15	0.43	0.07	0.41	0.13
2002	0.18	0.45	0.07	0.49	0.13
2003	0.19	0.34	0.07	0.47	0.13
2004	0.21	0.34	0.08	0.53	0.13
2005	0.22	0.40	0.10	0.59	0.16
2006	0.22	0.39	0.14	0.57	0.16
2007	0.24	0.38	0.21	0.55	0.17

Sources: Data from INEGI, DGIE, UNCTAD, authors' calculations

Table 29 Mexico C (America)

Mexico Trade Complementarity (America)

Year	Brazil	Canada	Chile	USA
1993	1.51	1.58	1.35	2.94
1994	1.45	1.61	1.34	2.95
1995	1.42	1.64	1.32	2.94
1996	1.36	1.61	1.23	2.90
1997	1.19	1.48	1.04	2.72
1998	1.15	1.48	1.01	2.71
1999	1.16	1.51	0.97	2.73
2000	1.16	1.51	0.97	2.73
2001	1.17	1.50	1.03	2.74
2002	1.12	1.48	1.04	2.73
2003	1.11	1.47	1.05	2.72
2004	1.10	1.45	1.07	2.71
2005	1.13	1.48	1.08	2.72
2006	1.12	1.49	1.06	2.72
2007	1.14	1.53	1.01	2.74

Sources: Data from INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 30 Mexico C (Asia)

Mexico Trade Complementarity (Asia)

Year	China	Japan	Korea	Thailand
1993	1.27	1.26	1.15	1.07
1994	1.24	1.20	1.11	1.08
1995	1.22	1.21	1.08	1.09
1996	1.19	1.15	1.03	1.06
1997	0.95	0.86	0.74	0.85
1998	0.97	0.83	0.71	0.79
1999	1.00	0.85	0.76	0.80
2000	1.00	0.89	0.76	0.80
2001	1.07	0.88	0.77	0.87
2002	1.08	0.89	0.78	0.85
2003	1.08	0.92	0.80	0.85
2004	1.07	0.92	0.78	0.82
2005	1.07	0.93	0.79	0.81
2006	1.10	0.92	0.77	0.79
2007	1.09	0.95	0.80	0.81

Sources: Data from INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 31 Mexico C (Europe)

Mexico Trade Complementarity (Europe)

Year	France	Germany	Netherlands	Spain	UK
1993	1.00	1.09	0.98	1.39	0.99
1994	0.99	1.10	0.92	1.38	1.01
1995	1.01	1.08	0.92	1.34	1.04
1996	0.96	1.06	0.88	1.32	1.01
1997	0.76	0.85	0.72	1.12	0.85
1998	0.77	0.87	0.70	1.07	0.85
1999	0.77	0.90	0.73	1.19	0.87
2000	0.77	0.89	0.73	1.19	0.87
2001	0.78	0.97	0.72	1.12	0.81
2002	0.79	0.96	0.65	1.10	0.77
2003	0.77	0.93	0.72	1.11	0.79
2004	0.78	0.92	0.74	1.11	0.80
2005	0.81	0.97	0.71	1.12	0.80
2006	0.84	0.98	0.72	1.12	0.78
2007	0.86	0.92	0.71	1.17	0.83

Sources: Data from INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 32 Mexico TB (America)

Mexico Trade Bias (America)

Year	Brazil	Canada	Chile	US
1993	0.41	0.45	0.83	1.56
1994	0.42	0.38	0.78	1.61
1995	0.60	0.43	1.36	1.77
1996	0.59	0.40	1.55	1.79
1997	0.54	0.37	2.17	1.82
1998	0.44	0.25	1.60	1.78
1999	0.32	0.41	1.05	1.66
2000	0.35	0.36	1.07	1.60
2001	0.37	0.36	0.91	1.62
2002	0.43	0.35	0.66	1.70
2003	0.45	0.37	0.77	1.81
2004	0.53	0.38	0.74	1.81
2005	0.44	0.41	0.86	1.86
2006	0.45	0.45	1.01	1.90
2007	0.63	0.53	1.19	1.99

Sources: INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 33 Mexico TB (Asia)

Mexico Trade Bias (Asia)

Year	China	Japan	Korea	Thailand
1993	0.02	0.13	0.02	0.01
1994	0.02	0.17	0.02	0.02
1995	0.01	0.13	0.04	0.02
1996	0.01	0.16	0.07	0.04
1997	0.05	0.15	0.10	0.16
1998	0.06	0.09	0.09	0.16
1999	0.04	0.13	0.12	0.14
2000	0.05	0.11	0.09	0.09
2001	0.06	0.14	0.08	0.09
2002	0.08	0.14	0.06	0.10
2003	0.10	0.14	0.06	0.12
2004	0.08	0.12	0.06	0.09
2005	0.08	0.14	0.06	0.10
2006	0.10	0.13	0.09	0.10
2007	0.09	0.15	0.11	0.13

Sources: INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 34 Mexico TB (Europe)

Mexico Trade Bias (Europe)

Year	France	Germany	Netherlands	Spain	UK
1993	0.12	0.07	0.07	0.51	0.07
1994	0.12	0.06	0.05	0.46	0.07
1995	0.09	0.06	0.06	0.32	0.10
1996	0.08	0.06	0.06	0.30	0.09
1997	0.08	0.07	0.12	0.34	0.10
1998	0.06	0.11	0.10	0.22	0.10
1999	0.05	0.17	0.10	0.23	0.08
2000	0.05	0.12	0.09	0.30	0.10
2001	0.05	0.11	0.10	0.28	0.10
2002	0.05	0.09	0.21	0.29	0.08
2003	0.05	0.13	0.16	0.28	0.09
2004	0.04	0.11	0.12	0.32	0.10
2005	0.04	0.14	0.15	0.42	0.12
2006	0.06	0.15	0.20	0.40	0.08
2007	0.06	0.20	0.22	0.38	0.14

Sources: Data from INEGI, DGIE, UNCTAD, UNCOMTRADE, authors' calculations.

Table 35 Thailand IX (Asia)

Thailand Trade Intensity for Exports (Asia)

Year	China	Hong Kong	Indonesia	Japan
1989	1.31	1.47	1.13	1.79
1990	0.69	1.63	0.83	1.86
1991	0.62	1.47	0.83	1.99
1992	0.49	1.24	0.94	2.19
1993	0.46	1.24	0.53	1.86
1994	0.67	1.24	0.96	1.92
1995	0.94	1.21	1.34	1.86
1996	1.07	1.34	1.53	1.81
1997	0.99	1.41	2.05	1.82
1998	1.09	1.37	2.57	1.96
1999	0.93	1.45	2.64	1.92
2000	1.06	1.45	2.37	2.03
2001	1.03	1.48	2.75	2.20
2002	1.02	1.55	3.14	2.20
2003	1.21	1.66	3.95	2.28
2004	1.13	1.64	4.52	2.30
2005	1.24	1.86	4.37	2.33
2006	1.26	1.86	3.27	2.20
2007	1.27	1.95	3.79	2.16

Sources: Data from BOT, UNCTAD, authors' calculations

Table 36 Thailand IX (Asia II)

Thailand Trade Intensity for Exports (Asia II)

Year	Korea	Malaysia	Singapore	Viet Nam
1989	0.65	3.29	3.89	0.00
1990	0.74	2.48	3.66	0.00
1991	0.62	1.99	4.03	0.00
1992	0.64	2.15	3.94	0.00
1993	0.46	1.52	4.60	2.49
1994	0.45	1.46	5.02	3.29
1995	0.45	1.51	4.89	4.04
1996	0.52	1.94	4.06	3.98
1997	0.56	2.47	4.01	3.55
1998	0.55	2.56	3.88	4.15
1999	0.61	2.63	3.69	3.84
2000	0.65	2.83	3.62	4.39
2001	0.72	3.06	3.61	4.14
2002	0.73	2.90	3.66	4.11
2003	0.72	3.87	3.46	4.28
2004	0.68	4.28	3.30	5.13
2005	0.71	4.29	3.03	5.62
2006	0.68	4.11	2.67	5.80
2007	0.62	4.15	2.64	5.21

Sources: Data from BOT, UNCTAD, authors' calculations

Table 37Thailand IX (Out of Asia)

Thailand Trade Intensity for Exports (Out of Asia)

Year	Australia	Mexico	NL	UK	US
1989	0.98	0.00	1.15	0.47	1.12
1990	1.00	0.00	1.07	0.51	1.23
1991	1.06	0.00	0.97	0.50	1.21
1992	1.05	0.00	0.85	0.48	1.22
1993	0.86	0.00	0.77	0.45	1.09
1994	0.88	0.00	0.65	0.44	1.10
1995	0.89	0.00	0.70	0.44	0.99
1996	0.92	0.00	0.70	0.47	0.95
1997	1.06	0.11	0.75	0.51	1.02
1998	1.22	0.19	0.92	0.53	1.11
1999	1.48	0.17	0.85	0.49	1.00
2000	1.77	0.18	0.82	0.53	0.98
2001	1.70	0.22	0.79	0.53	0.96
2002	1.78	0.25	0.67	0.50	0.93
2003	1.93	0.21	0.72	0.49	0.87
2004	1.80	0.20	0.67	0.49	0.86
2005	2.05	0.19	0.64	0.42	0.83
2006	2.52	0.21	0.63	0.42	0.83
2007	2.61	0.25	0.61	0.40	0.75

Sources: Data from BOT, UNCTAD, authors' calculations

Table 38 Thailand IM (Asia)

Thailand Trade Intensity for Imports (Asia)

Year	China	Hong Kong	Indonesia	Japan
1989	1.63	0.48	1.41	3.11
1990	1.77	0.45	0.73	3.35
1991	1.38	0.62	0.65	2.90
1992	1.19	0.31	0.72	2.81
1993	0.85	0.26	0.75	2.70
1994	0.77	0.29	0.77	2.76
1995	0.88	0.25	0.90	3.00
1996	0.82	0.28	1.20	3.09
1997	0.94	0.31	1.21	2.85
1998	1.08	0.45	2.00	2.77
1999	1.24	0.37	2.18	2.80
2000	1.24	0.37	1.87	2.86
2001	1.23	0.35	2.16	2.94
2002	1.33	0.37	2.32	3.03
2003	1.23	0.39	2.51	3.27
2004	1.20	0.41	2.66	3.25
2005	1.18	0.38	2.80	3.27
2006	1.17	0.36	2.86	3.06
2007	1.21	0.34	3.04	3.37

Sources: Data from BOT, UNCTAD, authors' calculations

Table 39 Thailand IM (Asia II)

Thailand Trade Intensity for Imports (Asia II)

Year	Korea	Malaysia	Singapore	Viet Nam
1989	1.31	3.00	4.56	0.00
1990	1.52	3.66	4.10	0.00
1991	1.85	2.86	3.90	0.00
1992	1.88	3.20	3.42	0.00
1993	1.65	2.51	2.58	1.81
1994	1.34	2.96	2.19	0.54
1995	1.18	2.67	2.04	0.39
1996	1.27	2.79	1.90	0.50
1997	1.20	2.76	1.80	1.30
1998	1.16	3.18	2.21	2.40
1999	1.14	2.86	2.34	1.80
2000	1.09	3.06	2.11	1.98
2001	1.18	2.99	1.90	1.82
2002	1.30	3.31	1.84	1.21
2003	1.27	3.96	1.78	1.42
2004	1.17	3.74	1.63	1.39
2005	1.05	4.48	1.69	2.15
2006	1.24	4.26	1.57	1.85
2007	1.21	4.22	1.70	2.03

Sources: Data from BOT, UNCTAD, authors' calculations

Table 40 Thailand IM (Out of Asia)

Thailand Trade Intensity for Imports (Out of Asia)

Year	Australia	Mexico	NL	UK	US
1989	1.40	0.00	0.21	0.41	0.74
1990	1.22	0.00	0.16	0.35	0.72
1991	1.19	0.00	0.19	0.33	0.64
1992	1.55	0.00	0.22	0.34	0.70
1993	1.39	0.00	0.20	0.35	0.67
1994	1.33	0.00	0.20	0.33	0.69
1995	1.34	0.00	0.20	0.33	0.75
1996	1.28	0.00	0.17	0.33	0.76
1997	1.35	0.14	0.22	0.30	0.79
1998	1.51	0.12	0.21	0.23	0.79
1999	1.43	0.11	0.21	0.20	0.73
2000	1.42	0.07	0.19	0.24	0.69
2001	1.65	0.07	0.18	0.25	0.71
2002	1.74	0.08	0.16	0.20	0.62
2003	1.64	0.10	0.17	0.20	0.69
2004	1.85	0.08	0.15	0.22	0.60
2005	2.11	0.08	0.13	0.19	0.60
2006	2.00	0.08	0.12	0.18	0.60
2007	2.09	0.10	0.14	0.21	0.58

Sources: Data from BOT, UNCTAD, authors' calculations

Table 41 Thailand C (Asia)

Thailand Trade Complementarity (Asia)

Year	China	Hong Kong	Indonesia	Japan
1989	0.94	1.49	1.21	1.51
1990	0.98	1.16	1.12	1.26
1991	0.98	0.82	1.13	1.24
1992	1.00	0.63	1.13	1.24
1993	0.99	0.63	1.14	1.13
1994	1.05	0.66	1.20	1.16
1995	1.09	0.68	1.25	1.14
1996	1.13	0.72	1.34	1.17
1997	0.82	0.52	0.87	0.78
1998	0.82	0.52	0.81	0.78
1999	0.86	0.53	0.77	0.81
2000	0.90	0.60	0.72	0.83
2001	0.91	0.60	0.85	0.81
2002	0.93	0.63	0.84	0.82
2003	0.97	0.67	0.82	0.83
2004	0.99	0.72	0.96	0.84
2005	1.01	0.77	0.92	0.83
2006	1.03	0.80	0.82	0.82
2007	1.08	0.85	0.89	0.86

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations.

Table 42 Thailand C (Asia II)

Thailand Trade Complementarity (Asia II)

Year	Korea	Malaysia	Singapore	Viet Nam
1989	1.16	1.18	0.97	n/a
1990	1.07	1.07	0.69	n/a
1991	1.06	1.05	0.70	n/a
1992	1.06	1.05	0.70	n/a
1993	1.00	1.05	0.71	n/a
1994	1.03	1.08	0.76	n/a
1995	1.03	1.08	0.77	n/a
1996	1.07	1.17	0.82	n/a
1997	0.80	0.98	0.70	1.17
1998	0.79	0.99	0.71	1.15
1999	0.83	1.02	0.74	1.21
2000	0.87	1.06	0.79	1.25
2001	0.84	1.03	0.77	1.25
2002	0.86	1.04	0.77	1.23
2003	0.88	1.08	0.80	1.28
2004	0.88	1.09	0.83	1.26
2005	0.89	1.12	0.84	1.27
2006	0.88	1.10	0.83	1.27
2007	0.93	1.15	0.86	1.17

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations.

Table 43 Thailand C (Out of Asia)

Thailand Trade Complementarity (Out of Asia)

Year	Australia	Mexico	NL	UK	US
1989	0.63	0.74	1.05	0.96	0.92
1990	0.65	0.70	0.94	0.91	0.69
1991	0.65	0.60	0.93	0.86	0.69
1992	0.65	0.60	0.93	0.86	0.69
1993	0.65	0.69	0.79	0.78	0.67
1994	0.69	0.73	0.77	0.82	0.71
1995	0.71	0.74	0.76	0.84	0.72
1996	0.75	0.85	0.78	0.89	0.76
1997	0.59	0.62	0.53	0.64	0.60
1998	0.57	0.61	0.51	0.61	0.59
1999	0.61	0.65	0.54	0.65	0.61
2000	0.68	0.69	0.55	0.64	0.63
2001	0.63	0.71	0.53	0.60	0.61
2002	0.64	0.70	0.49	0.59	0.62
2003	0.66	0.72	0.55	0.63	0.63
2004	0.68	0.75	0.58	0.66	0.64
2005	0.71	0.77	0.56	0.66	0.65
2006	0.69	0.77	0.57	0.64	0.66
2007	0.73	0.76	0.60	0.72	0.70

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations

Table 44 Thailand TB (Asia)

Thailand Trade Bias (Asia)

Year	China	Hong Kong	Indonesia	Japan
1989	1.40	0.98	0.93	1.19
1990	0.71	1.41	0.74	1.48
1991	0.63	1.79	0.73	1.61
1992	0.49	1.96	0.83	1.77
1993	0.47	1.97	0.46	1.64
1994	0.64	1.88	0.80	1.65
1995	0.86	1.78	1.07	1.63
1996	0.95	1.86	1.15	1.54
1997	1.22	2.72	2.37	2.33
1998	1.32	2.64	3.16	2.51
1999	1.08	2.72	3.43	2.37
2000	1.18	2.43	3.31	2.46
2001	1.13	2.48	3.23	2.72
2002	1.10	2.48	3.75	2.69
2003	1.24	2.46	4.85	2.76
2004	1.14	2.28	4.73	2.74
2005	1.22	2.41	4.78	2.81
2006	1.22	2.33	4.00	2.67
2007	1.18	2.29	4.24	2.51

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations.

Table 45 Thailand TB (Asia II)

Thailand Trade Bias (Asia II)

Year	Korea	Malaysia	Singapore	Vietnam
1989	0.56	2.79	4.00	n/a
1990	0.69	2.32	5.33	n/a
1991	0.58	1.90	5.76	n/a
1992	0.61	2.05	5.62	n/a
1993	0.47	1.45	6.44	n/a
1994	0.43	1.34	6.60	n/a
1995	0.43	1.39	6.36	n/a
1996	0.49	1.67	4.93	n/a
1997	0.71	2.52	5.73	3.04
1998	0.70	2.58	5.46	3.61
1999	0.74	2.58	5.01	3.18
2000	0.74	2.67	4.60	3.52
2001	0.85	2.97	4.71	3.32
2002	0.85	2.78	4.75	3.33
2003	0.82	3.58	4.31	3.34
2004	0.77	3.94	3.99	4.06
2005	0.80	3.85	3.61	4.42
2006	0.76	3.72	3.22	4.58
2007	0.67	3.60	3.06	4.45

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations.

Table 46 Thailand TB (Out of Asia)

Thailand Trade Bias (Out of Asia)

Year	Australia	Mexico	Netherlands	UK	US
1989	1.56	n/a	1.10	0.49	1.22
1990	1.53	n/a	1.13	0.56	1.78
1991	1.62	n/a	1.05	0.57	1.76
1992	1.60	n/a	0.92	0.56	1.78
1993	1.33	n/a	0.97	0.58	1.64
1994	1.28	n/a	0.84	0.54	1.54
1995	1.25	n/a	0.92	0.52	1.37
1996	1.23	n/a	0.90	0.53	1.25
1997	1.80	0.18	1.43	0.80	1.70
1998	2.14	0.32	1.83	0.87	1.90
1999	2.41	0.27	1.57	0.76	1.63
2000	2.59	0.27	1.49	0.82	1.55
2001	2.71	0.32	1.50	0.89	1.56
2002	2.77	0.36	1.39	0.84	1.50
2003	2.91	0.29	1.30	0.77	1.38
2004	2.64	0.27	1.16	0.74	1.33
2005	2.89	0.24	1.13	0.63	1.27
2006	3.64	0.27	1.11	0.66	1.26
2007	3.57	0.33	1.03	0.56	1.07

Sources: Data from BOT, UNCTAD, UNCOMTRADE, authors' calculations

Appendix C: Gravity Model Estimation Summary

Table 47 Estimation for Mexico

Dependent Variable: T?				
Method: Pooled Least Squares				
Sample: 1997 2007				
Included observations: 11				
Cross-sections included: 13				
Total pool (balanced) observations: 143				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.86E+08	36238279	5.139328	0
GDPI	11.32705	2.844066	3.982696	0.0002
DRR	125.8873	84.93548	1.482152	0.1434
GOV	30.52379	33.81976	0.902543	0.3703
BFDI	-0.072519	0.018694	-3.879381	0.0003
GDPJ_BRAZIL	0.275043	0.759493	0.36214	0.7185
GDPJ_CANADA	2.257399	0.803265	2.810281	0.0066
GDPJ_CHILE	-20.41653	20.90777	-0.976504	0.3327
GDPJ_CHINA	1.223019	1.087505	1.12461	0.2652
GDPJ_FRANCE	1.446606	0.73856	1.958684	0.0547
GDPJ_GERMANY	1.458908	0.543961	2.682009	0.0094
GDPJ_JAPAN	0.119367	0.515804	0.23142	0.8178
GDPJ_KOREA	0.149988	1.270134	0.118089	0.9064
GDPJ_NETHERLANDS	6.044763	2.704667	2.234938	0.0291
GDPJ_SPAIN	2.478932	1.200105	2.065595	0.0431
GDPJ_THAILAND	-4.158712	6.659855	-0.624445	0.5347
GDPJ_UK	0.679473	1.171505	0.58	0.5641
GDPJ_US	52.65955	7.538047	6.985835	0

Table 47 continues

DIST_BRAZIL	-7784.48	2922.092	-2.664009	0.0099
DIST_CANADA	-16454.52	6770.199	-2.430434	0.018
DIST_CHILE	2605.9	7880.254	0.330687	0.742
DIST_CHINA	-7962.334	4463.287	-1.783962	0.0794
DIST_FRANCE	-8227.115	1711.382	-4.807292	0
DIST_GERMANY	-7443.042	2995.8	-2.484492	0.0157
DIST_JAPAN	-3916.491	2007.647	-1.950787	0.0557
DIST_KOREA	-4474.175	1636.2	-2.734492	0.0082
DIST_NETHERLANDS	-6730.649	2372.669	-2.836741	0.0062
DIST_SPAIN	-6918.397	2594.659	-2.666399	0.0098
DIST_THAILAND	-2797.492	1518.925	-1.841758	0.0704
DIST_UK	-8475.445	2879.983	-2.94288	0.0046
DIST_US	-571945.5	154935.9	-3.691498	0.0005
TP_BRAZIL	107.2904	151.2468	0.709373	0.4808
TP_CANADA	-107.2327	75.56427	-1.419093	0.161
TP_CHILE	910.1162	436.5996	2.084556	0.0413
TP_CHINA	-262.611	176.6204	-1.486866	0.1422
TP_FRANCE	137.3352	187.8165	0.73122	0.4674
TP_GERMANY	-30.06144	122.8539	-0.244693	0.8075
TP_JAPAN	55.80926	611.0343	0.091336	0.9275
TP_KOREA	-39.39345	118.6011	-0.332151	0.7409
TP_NETHERLANDS	163.0434	199.3238	0.817982	0.4166
TP_SPAIN	-104.7248	151.1551	-0.69283	0.491
TP_THAILAND	29.55239	175.4807	0.168408	0.8668
TP_UK	-132.3807	114.0156	-1.161075	0.2501
TP_US	9403.148	6638.974	1.416356	0.1618
TC_BRAZIL	5288.156	7138.686	0.740774	0.4617
TC_CANADA	11990.09	4065.799	2.949013	0.0045
TC_CHILE	9299.933	4522.752	2.056255	0.044
TC_CHINA	5301.98	10804.27	0.49073	0.6254
TC_FRANCE	566.0417	5193.304	0.108995	0.9136
TC_GERMANY	6078.641	6871.389	0.884631	0.3798
TC_JAPAN	-7173.313	11747.24	-0.610638	0.5437
TC_KOREA	-4239.737	6763.062	-0.626896	0.5331
TC_NETHERLANDS	-10044.2	5461.288	-1.839163	0.0708
TC_SPAIN	-1238.351	1685.223	-0.734829	0.4653
TC_THAILAND	2469.128	3473.551	0.710837	0.4799
TC_UK	-5693.035	6210.374	-0.916698	0.3629
TC_US	-79850.27	142169.5	-0.561655	0.5764

Table 47 continues

TB_BRAZIL	3944.636	1847.754	2.134827	0.0368
TB_CANADA	5029.322	2144.24	2.345503	0.0223
TB_CHILE	633.3685	895.8631	0.706993	0.4823
TB_CHINA	-6073.331	13589.17	-0.446924	0.6565
TB_FRANCE	-18879.61	11746.51	-1.607253	0.1132
TB_GERMANY	13758.49	2971.741	4.629774	0
TB_JAPAN	10069.52	9750.083	1.032762	0.3058
TB_KOREA	227.8559	7400.115	0.030791	0.9755
TB_NETHERLANDS	-6734.479	5922.295	-1.13714	0.2599
TB_SPAIN	3539.604	2443.522	1.448567	0.1526
TB_THAILAND	10218.87	7398.36	1.381235	0.1722
TB_UK	16088.68	11076.17	1.452548	0.1515
TB_US	-77752.49	26405.96	-2.944505	0.0046

Fixed Effects (Cross)	
BRAZIL--C	-1.33E+08
CANADA--C	-1.27E+08
CHILE--C	-2.04E+08
CHINA--C	-86962151
FRANCE--C	-1.11E+08
GERMANY--C	-1.16E+08
JAPAN--C	-1.42E+08
KOREA--C	-1.32E+08
NETHERLANDS--C	-1.24E+08
SPAIN--C	-1.23E+08
THAILAND--C	-1.42E+08
UK--C	-1.10E+08
US--C	1.55E+09

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.998678	Mean dependent var	12665.29
Adjusted R-squared	0.999251	S.D. dependent var	41703.56
S.E. of regression	1141.685	Akaike info criterion	17.21328
Sum squared resid	79510189	Schwarz criterion	18.91226
Log likelihood	-1148.75	Hannan-Quinn criter.	17.90366
F-statistic	2338.39	Durbin-Watson stat	3.381965
Prob(F-statistic)	0		

Table 48 Estimation for Thailand

Dependent Variable: T?				
Method: Pooled Least Squares				
Sample: 1997 2007				
Included observations: 11				
Cross-sections included: 13				
Total pool (balanced) observations: 143				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6411222	7439363	-0.861797	0.3922
GDPI	9.114434	5.542119	1.644576	0.1052
DRR	72.9773	25.98325	2.808629	0.0067
GOV	-25.64237	17.77668	-1.442472	0.1543
BFDI	0.044855	0.028817	1.556541	0.1248
GDPJ_AUSTRALIA	-1.309391	1.550179	-0.844671	0.4016
GDPJ_CHINA	4.356625	0.690854	6.306147	0
GDPJ_HONGKONG	36.58605	8.397572	4.356742	0.0001
GDPJ_INDONESIA	0.54126	3.361034	0.16104	0.8726
GDPJ_JAPAN	1.077373	0.526343	2.046903	0.045
GDPJ_KOREA	-0.678175	1.106362	-0.612977	0.5422
GDPJ_MALAYSIA	19.9678	8.447773	2.363676	0.0213
GDPJ_MEXICO	-2.65792	2.073803	-1.281664	0.2048
GDPJ_NETHERLANDS	-2.141222	1.78121	-1.202116	0.234
GDPJ_SINGAPORE	42.6896	10.542	4.049478	0.0001
GDPJ_UK	0.142897	0.442439	0.322976	0.7478
GDPJ_US	3.6577	1.561051	2.343101	0.0224
GDPJ_VIETNAM	-26.55	37.50927	-0.707825	0.4817

Table 48 continues

DIST_AUSTRALIA	6278.552	1692.628	3.709352	0.0005
DIST_CHINA	-1353.923	10647.47	-0.127159	0.8992
DIST_HONGKONG	16783.33	9978.5	1.68195	0.0977
DIST_INDONESIA	2576.647	5846.786	0.440695	0.661
DIST_JAPAN	8998.945	6564.483	1.370854	0.1754
DIST_KOREA	1206.185	1514.745	0.796296	0.4289
DIST_MALAYSIA	10616.37	18860.7	0.562883	0.5756
DIST_MEXICO	-1950.683	725.9739	-2.686988	0.0093
DIST_NETHERLANDS	2903.904	1632.852	1.778425	0.0803
DIST_SINGAPORE	-11683.71	5956.359	-1.961552	0.0544
DIST_UK	-547.8579	1110.186	-0.493483	0.6234
DIST_US	-5451.639	5277.361	-1.033024	0.3057
DIST_VIETNAM	51203.16	19919.75	2.570472	0.0126
TP_AUSTRALIA	454.7704	116.4771	3.904374	0.0002
TP_CHINA	10.20627	48.06405	0.212347	0.8325
TP_HONGKONG	-8319373	13397684	-0.620956	0.5369
TP_INDONESIA	-228.7572	232.4348	-0.984178	0.3289
TP_JAPAN	-1946.643	1027.43	-1.894672	0.0629
TP_KOREA	-30.91819	49.92371	-0.619309	0.538
TP_MALAYSIA	-33.58263	354.9074	-0.094624	0.9249
TP_MEXICO	-10.52556	45.57821	-0.230934	0.8181
TP_NETHERLANDS	60.87649	233.6789	0.260513	0.7953
TP_SINGAPORE	12610516	59491868	0.21197	0.8328
TP_UK	-175.141	182.9429	-0.957353	0.3422
TP_US	1575.887	922.838	1.707652	0.0928
TP_VIETNAM	140.7869	64.79428	2.172829	0.0337
TC_AUSTRALIA	-865.8748	2210.085	-0.391784	0.6966
TC_CHINA	12367.15	8289.287	1.491943	0.1409
TC_HONGKONG	1877.907	4846.757	0.387456	0.6998
TC_INDONESIA	8014.254	2822.721	2.839195	0.0061
TC_JAPAN	16208.55	20711.18	0.782599	0.4369
TC_KOREA	5414.527	2734.763	1.979889	0.0522
TC_MALAYSIA	4433.794	4450.478	0.996251	0.3231
TC_MEXICO	17967.51	7802.533	2.302779	0.0247
TC_NETHERLANDS	6204.272	2666.578	2.326679	0.0233
TC_SINGAPORE	12507.11	6545.809	1.910704	0.0607
TC_UK	332.912	3218.654	0.103432	0.918
TC_US	8819.614	45830.26	0.192441	0.848
TC_VIETNAM	-3587.429	2014.34	-1.780945	0.0799

Table 48 continues

TB_AUSTRALIA	-9.739275	12.15397	-0.801325	0.4261
TB_CHINA	2391.577	836.8814	2.857725	0.0058
TB_HONGKONG	394.7891	412.6731	0.956663	0.3425
TB_INDONESIA	206.0124	123.9027	1.662695	0.1015
TB_JAPAN	615.2186	1436.771	0.428195	0.67
TB_KOREA	1726.715	831.6856	2.076163	0.0421
TB_MALAYSIA	352.0048	258.2497	1.36304	0.1779
TB_MEXICO	8687.904	2600.198	3.341247	0.0014
TB_NETHERLANDS	2189.832	409.9841	5.341262	0
TB_SINGAPORE	468.8178	410.3909	1.142369	0.2578
TB_UK	2017.698	874.457	2.307373	0.0244
TB_US	4617.882	3511.422	1.315103	0.1934
TB_VIETNAM	40.96465	98.09341	0.417609	0.6777

Fixed Effects (Cross)	
AUSTRALIA--C	-40614877
CHINA--C	10860980
HONGKONG--C	-22550142
INDONESIA--C	418005.2
JAPAN--C	-35105122
KOREA--C	1908636
MALAYSIA--C	-6167383
MEXICO--C	37139928
NETHERLANDS--C	-20264960
SINGAPORE--C	23162888
UK--C	11634676
US--C	83606337
VIETNAM--C	-44028967

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.998349	Mean dependent var	4669.682
Adjusted R-squared	0.996158	S.D. dependent var	4533.677
S.E. of regression	281.027	Akaike info criterion	14.40966
Sum squared resid	4817547	Schwarz criterion	16.10863
Log likelihood	-948.2908	Hannan-Quinn criter.	15.10004
F-statistic	455.5027	Durbin-Watson stat	2.759593
Prob(F-statistic)	0		

BIOGRAPHY

Indra Guillermo Eckstein Fernandez was born in Mexico City, Mexico on 20 April 1977. He grew up in the Yucatan Peninsula, Mayan Riviera, where tourism is the main economic sector. Indra received his B.B.A. degree with specialization in tourism in 2001 from the Universidad Tecnológica de Cancun, in Mexico. After his graduation he continued working in the tourism sector. He gained extensive management experience in hotel operations especially while working in the largest resort of the Latin America. Indra was selected to study a Diploma on High Direction Hotel Management and a Certificate on Leading Hotels of the World, which he completed as part of his training at work. After moving from Mexico, Indra focused on improving his language skills in Finnish and English through studying and working in Finland. He enrolled in the M.A. Program in International Economics and Finance in the Chulalongkorn University, in Thailand in May 2007. Indra studied development economics, finance and Swedish for one semester in Sweden at the Uppsala University in 2008 to gain additional experience, after which he returned to Thailand to finish his M.A. degree.