THE RELATIONSHIP OF EXPORTS, IMPORTS AND ECONOMIC GROWTH BETWEEN CHINA AND SELECTED ASEAN COUNTRIES

Li Ying Xian

Bachelor of Economics with Honours
(International Economics)
2012
THE RELATIONSHIP OF EXPORTS, IMPORTS AND ECONOMIC
GROWTH BETWEEN CHINA AND SELECTED ASEAN COUNTRIES

LI YING XIAN

THIS PROJECT IS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF BACHELOR OF INTERNATIONAL
ECONOMICS WITH HONORS

(INTERNATIONAL ECONOMICS)

Faculty of Economics and Business
UNIVERSITI MALAYSIA SARAWAK
2012
Statement of Originality

The work described in this Final Year Project, entitled *The Relationship of Exports, Imports and Economic Growth between China and selected ASEAN Countries* is to the best of the author's information that of the author except where due reference is made.

20th June 2012
(Date submitted)

(Student's signature)
LI YING XIAN
25474
ABSTRACT

THE RELATIONSHIP OF EXPORTS, IMPORTS AND ECONOMIC GROWTH BETWEEN CHINA AND SELECTED ASEAN COUNTRIES

By
Li Ying Xian

This study examines the relationship between the exports, imports and economic growth among China and the five selected ASEAN countries over the period of year 1993 to 2010. The annual time series data are collected from the Asian Development Bank and World Data Bank statistic databases in 2011. The variables used are includes the exports, imports, and GDP growth rate. The estimation methods of the study includes the Dickey Fuller Generalized Least Squares (DF-GLS) Unit Root Tests, Autoregressive Distributed Lag (ARDL) bound test, Error correction representation for ARDL model, and the Granger causality test. The empirical results show that the exports and imports between China and the five selected ASEAN countries contribute to the economic growth for those selected ASEAN countries which are Philippines, Vietnam, Indonesia, Thailand and Malaysia.

Keywords: exports, imports, economic growth, ARDL bound test.
ACKNOWLEDGEMENT

This study would have been impossible without the guidance and the assistance of numerous individuals who has contributed and extended their valuable assistance in the preparation and the achievement of this study.

First and the most important, I would like to thank my supervisor, Associate Professor Dr. Venus Khim Sen Liew for his helpful suggestion and guidance in preparing and carrying out this project. I sincerely appreciated the ideas and comments that have been given by him.

I owe my deepest gratitude to other lecturers and all staffs in Faculty of Economic and Business, Universiti Malaysia Sarawak, who directly or indirectly give me the valuable assistances and advices on this research project.

I deeply appreciative to my be loved family members and my friends for giving me a lot of moral supports as well as financial supports. Thanks to their understanding on my duty from the start of this study until the end by not disturbing me.

Last but not least, I would like to show my appreciation to Universiti Malaysia Sarawak for giving me an opportunity to improve myself and giving me chances for achievement. I appreciate any comments, suggestions, corrections and helps that have been given to me for the improvement of my skills.
# TABLE OF CONTENTS

## CHAPTER ONE: INTRODUCTION

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>1-5</td>
</tr>
<tr>
<td>1.2</td>
<td>Background of Study</td>
<td>6-18</td>
</tr>
<tr>
<td>1.2.1</td>
<td>China and Malaysia</td>
<td>8-10</td>
</tr>
<tr>
<td>1.2.2</td>
<td>China and Thailand</td>
<td>10-11</td>
</tr>
<tr>
<td>1.2.3</td>
<td>China and Vietnam</td>
<td>12-13</td>
</tr>
<tr>
<td>1.2.4</td>
<td>China and Indonesia</td>
<td>14-15</td>
</tr>
<tr>
<td>1.2.5</td>
<td>China and Philippines</td>
<td>15-16</td>
</tr>
<tr>
<td>1.2.6</td>
<td>Competitions between China and selected ASEAN countries</td>
<td>17-18</td>
</tr>
<tr>
<td>1.3</td>
<td>Motivation of Study</td>
<td>19-22</td>
</tr>
<tr>
<td>1.4</td>
<td>Problem Statement</td>
<td>23-24</td>
</tr>
<tr>
<td>1.5</td>
<td>Objective of Study</td>
<td>25</td>
</tr>
<tr>
<td>1.5.1</td>
<td>General Objective</td>
<td>25</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Specific Objectives</td>
<td>25</td>
</tr>
<tr>
<td>1.6</td>
<td>Significant of Study</td>
<td>26</td>
</tr>
<tr>
<td>1.7</td>
<td>Organization of Study</td>
<td>27</td>
</tr>
</tbody>
</table>
# CHAPTER TWO: LITERATURE REVIEW

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Introduction</td>
<td>28</td>
</tr>
<tr>
<td>2.2</td>
<td>Theoretical Framework</td>
<td>29-31</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Economic Growth</td>
<td>29</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Exports &amp; Economic Growth</td>
<td>30</td>
</tr>
<tr>
<td>2.2.3</td>
<td>Imports &amp; Economic Growth</td>
<td>31</td>
</tr>
<tr>
<td>2.3</td>
<td>Empirical Model</td>
<td>32-39</td>
</tr>
<tr>
<td>2.4</td>
<td>Empirical Evidence</td>
<td>40-43</td>
</tr>
<tr>
<td>2.5</td>
<td>Summary of Literature Review</td>
<td>44-64</td>
</tr>
<tr>
<td>2.6</td>
<td>Concluding Remarks</td>
<td>65-66</td>
</tr>
</tbody>
</table>

# CHAPTER THREE: METHODOLOGY

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Introduction</td>
<td>67-68</td>
</tr>
<tr>
<td>3.2</td>
<td>Data Description</td>
<td>69</td>
</tr>
<tr>
<td>3.3</td>
<td>Conceptual and Empirical Model</td>
<td>70-72</td>
</tr>
<tr>
<td>3.4</td>
<td>Methodology</td>
<td>73-83</td>
</tr>
<tr>
<td>3.4.1</td>
<td>ARDL model</td>
<td>73-79</td>
</tr>
<tr>
<td>3.4.2</td>
<td>DF-GLS Unit Root Test</td>
<td>79-80</td>
</tr>
<tr>
<td>3.4.3</td>
<td>Diagnostic Checking Test</td>
<td>80-82</td>
</tr>
</tbody>
</table>
3.4.3. A Jarque-Bera (JB) Test 81-82
3.4.3. B Breusch-Godfrey Serial Correlation LM Test 81-82
3.4.3. C ARCH Test 82
3.4.3. D Cumulative Sum of the Squared (CUSUMSQ) Test 83

3.5 Concluding Remark 84

CHAPTER FOUR: ANALYSIS AND EMPIRICAL RESULTS

4.1 Introduction 85
4.2 Unit Root Test(DF-GLS) 86-88
4.3 Optimal lag selection for ARDL bound tests 89-90
4.4 Diagnostic Checking for ARDL bound test 91-93
4.5 Cumulative Sum of the Squared (CUSUMSQ) tests for ARDL model 94-96
4.6 Results for the ARDL Bound test 97-100
4.7 Error correlation representation for the selected ARDL model 101-104
4.8 Cumulative Sum of the Squared (CUSUMSQ) tests for ECM 105-107
4.9 Granger Causality test for ARDL model 108-114
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction 115
5.2 Summary of Findings 116-117
5.3 Policy Implications 118-119
5.4 Limitation and recommendation for further study 120-121
5.6 Concluding Remarks 122

Reference 123-133
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Summary of Literature Review</td>
<td>44-64</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>DF-GLS Unit Root Test</td>
<td>87</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>The optimal lag order based on AIC</td>
<td>91</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Diagnostic tests statistics for ARDL model</td>
<td>93</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Results of bounds test (F-statistics) for cointegration</td>
<td>99</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Error correction representation for the selected ARDL model</td>
<td>104</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Granger Causality Test Result for Philippines</td>
<td>110</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Granger Causality Test Result for Malaysia</td>
<td>111</td>
</tr>
<tr>
<td>Table 4.8</td>
<td>Granger Causality Test Result for Thailand</td>
<td>112</td>
</tr>
<tr>
<td>Table 4.9</td>
<td>Granger Causality Test Result for Indonesia</td>
<td>113</td>
</tr>
<tr>
<td>Table 4.10</td>
<td>Granger Causality Test Result for Vietnam</td>
<td>114</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1.1  The percentage of GDP growth rate for China and ASEAN 5 countries 7
Figure 1.2  The Exports and Imports of Malaysia to China 9
Figure 1.3  The Exports and Imports of Thailand to China 11
Figure 1.4  The Exports and Imports of Vietnam to China 13
Figure 1.5  The Exports and Imports of Indonesia to China 14
Figure 1.6  The Exports and Imports of Philippines to China 16
Figure 4.1  Plot of CUSUMSQ tests for Philippines (ARDL) 95
Figure 4.2  Plot of CUSUMSQ tests for Vietnam 96
Figure 4.3  Plot of CUSUMSQ tests for Malaysia 96
Figure 4.4  Plot of CUSUMSQ tests for Thailand 97
Figure 4.5  Plot of CUSUMSQ tests for Indonesia 97
Figure 4.6  Plot of CUSUMSQ tests for Philippines (ECM) 106
Figure 4.7  Plot of CUSUMSQ tests for Malaysia 107
Figure 4.8  Plot of CUSUMSQ tests for Thailand 107
Figure 4.9  Plot of CUSUMSQ tests for Indonesia 108
Figure 4.10 Plot of CUSUMSQ tests for Vietnam 108
Figure 4.11 Short run relationship based on the Granger causality test 114-115
CHAPTER ONE
INTRODUCTION

1.1 Introduction

This study aims to investigate empirically the relationship between exports, imports, and economic growth among China and the five selected ASEAN countries which include Malaysia, Thailand, Indonesia, Vietnam, and Philippines. The relationship between exports, imports and economic growth between China and ASEAN countries has become one of the hottest topics over the past few years. In the recent five years, the exports and imports between China and these five selected countries have increased rapidly (Asian Development Bank, 2011). This study will further understand the current corporation situation and future prospects among China and the five selected ASEAN countries via the relationship between the exports, imports and economic growth between both parties.

Based on a thorough review of related studies, the relationship between the exports, imports and economic growth has been examined by many previous economists and their findings are rather massive. They have identified positive and significant relationship between these three variables. These studies include Marwah and Tavakoli (2004), Esfahani (1989), Hsiao and Hsiao (2006), Arize (2001), Awokuse and Christopoulos (2009), Reppas and Christopoulos (2005), Oholm (1999), Fosu (1990),

On the other hand, there are also some economists who have found out that the exports, imports and economic growth exists in a negative relationship. For example, Voivodas (1973), Mahadevan and Suardi (2006), Mahadevan and Suardi (2010) who have used the Open-economy Harrod-Domar model, Two-gap model, VECM-GARCH-M model to imply a negative relationship between the quantity of exports to total product and its rate of growth. They discovered that export and import growth volatility exerted a greater negative influence on total factor productivity growth but the reverse was true for labor productivity growth.

The Association of Southeast Asian Nations (ASEAN) was born in Bangkok, Thailand in 1967 (Wikipedia, 2011). In the earlier period, there were only five Southeast Asian countries in the association, namely Thailand, Malaysia, Singapore, Indonesia and Philippines. After 1984, more Southeast Asian countries including Brunei Darussalam, Vietnam, Lao, Myanmar and Cambodia gradually joined in and eventually formed the world’s second largest economic union – ASEAN 10 (Association of Southeast Asian Nations Website, 2011).

The aims of the ASEAN countries are to be in beneficial relationship with other regional organizations, to promote the economic growth, and cultural development, as well as in ensuring peace and stability in the region (Association of Southeast Asian...
Nations Web, 2011). ASEAN consists of various economics group which is in economic size and level with technological development, ability and motivation to trade, and investment actors to foreign competition (Chia, 2004). Because most of the ASEAN countries are the developing countries which also have lower labor forces and raw materials, it becomes one of the biggest competitors to China in order to attract foreign direct investment from other countries into Southeast Asia.

The Chinese government has put ASEAN as one of the most important partners in their long-term development strategy. China's attitude, political and strategic factors do significantly change their own economic policy and relations with its Asian neighbors (Baviera, 1999). The relations in politics between China and ASEAN countries are determining the economic development strategy and corporations for both parties to a certain extent.

However, there are many unresolved disputes between them such as South China Sea disputes. Because some of the sensitive historical reasons related the unreceptive and stable environment in Asia, Chinese government also confirms their roles to other Asian countries as a basic part of a secured and safe environment. Therefore, the Chinese government has agreed to comply with all agreements with other ASEAN countries in order to give an agreement to worldwide development, and in cooperation to improve the each other's economic growth. In fact, the Chinese government has indeed complied with these agreements and has always been sociable and joint help with other Asian countries whether in politics or economy. China’s action and location of the
state indicated that China and ASEAN countries are having a very close relationship in the future development.

After the Trade in Goods Agreement such as ASEAN-China Free Trade Area (ACFTA) built between China and ASEAN, it has become the largest free trade zone in Asia. Moreover, it has provided greater significance between ACFTA members whether on economic side or political side. The ACFTA is a free trade area organization signed in 2002 and effective in 2010 between China and ASEAN 10 countries which include the China, Myanmar, Laos, Vietnam, Malaysia, Singapore, Indonesia, Philippine, Cambodia, Thailand and Brunei Darussalam (Hoontrakul, 2006; Tong and Chong, 2010). At present, the ACFTA are leading their members to further corporation and development.

The Free Trade Area between ASEAN and China not only includes liberalizing trade, but also include the liberalization of technology and investment and economic cooperation, the ACFTA will provide positive effects on GDP and welfare (Yuan, Chen, and Wand, 2010). The purpose of ACFTA is to eliminate the tariffs, quotas, and preferences on goods passing between the ACFTA countries resulting in a redistribution of FDI flows and trade in the combined region (Tong and Chong, 2010).

Under the ACFTA Trade in Goods Agreement, the ASEAN members and China have to eliminate tariffs on 90 percent of their products by 2010 (DBS Group research, 2009). Based on the relationship between China and ASEAN countries above, the study
is also important in using different models to determine the relationship between Exports and Imports, and Economic growth between China and ASEAN since many previous economists have mentioned that exports and imports may have both positive and negative significance with economic growth.

The general purpose of this study is to determine and investigate the contributions of export and import, and GDP growth between China and five selected ASEAN countries. Specifically, the objective of this study is to find out the relationship among exports and imports, and economic growth among China and the five selected ASEAN countries to further understand the current corporation situation and prospects between both of them.
1.2 Background of the Study

In terms of corporation to ensure economic growth prospects between China and ASEAN countries, the WTO and CAFTA are the two main organizations influenced the links of economic growth between them. Under the background of the Global economic condition, the Free Trade Area between China and ASEAN (CAFTA) is not only to observe the development trend of regional economic integration, but also to aggressively promote the trade liberalization policies of specific performance (Cai, 2009). Engaging in free trade area can help ASEAN countries to improve their efficiency and competitiveness and their economic growth prospects (Chia, 2004).

Some institutions have given the prospects for China and ASEAN further relations such as ASEAN-China Expert Group (2001) has assumed that if both regions could agree on a program of further trade and investment liberalization and facilitation actions, the prospects for economic relations between China and ASEAN countries could be further bolster. After the Chinese culture revolution in 1976, the Chinese government opened their market to the world in 1978; the economic development of China has achieved a huge improvement until today. After the impact of ASEAN-China Free Trade Area (ACFTA) in 2010, the economic corporation relationship between China and ASEAN countries has advanced a further.

As compared with other ASEAN countries, Figure 1 shows that the economic growth rate of China and Vietnam are higher than other countries and in a stable level.
from year 1993 to 2010. This indicates that the economic growth speed for these three countries is faster than other countries during this period. On the contrary, the economic growth rate for Thailand, Indonesia, Malaysia and Philippines are lower than the other countries.

Figure 1.1 The percentage of GDP growth of China and ASEAN 5 countries (1993-2010).

In addition, the economic growth for Thailand, Indonesia, Malaysia and Philippines are influenced by financial crisis which occurred in 1998, and after that, the GDP growth of Indonesia is staying at a stable level, but not for Philippines, Thailand and Malaysia. As shown in Figure 1, the GDP growth rate for these three countries is unstable form year 1998 until 2009. However, the GDP growth rate for all countries is in an increasing trend from year 2009 to 2010. The following studies will further
discusses the current corporation situation and future prospects between China and the five selected ASEAN countries.

1.2.1 China and Malaysia

Since China and Malaysia established the political ties in 1974, the economic and trade relations between the two countries has developed significantly (Ministry of Foreign Affairs of the China, 2011). The total trades between both countries continue to increase. Both between China and Malaysia made contributions for the promotion of trade development. In contrast with other ASEAN countries selected in this study, the Malaysian economy has performed much better and the amount of trade between China and Malaysia is also greater than other ASEAN countries.

As shown in Figure 2, both the exports and imports of Malaysia to China were gradually increasing from 1993 to 2009. After that, the exports and imports of Malaysia to China increased rapidly. China gained more benefits by the international trade because the imports of Malaysia from China are more than the exports of Malaysia to China. In addition, ASEAN - China Expert Group (2001) has indicated that Malaysia has cut its import tariffs by almost 50 percent since 1993 at the same time reducing the protection for most agricultural and manufactured goods, and the average applied tariff rate has declined from 15.2 percent in 1993 to 8.1 percent in 1997.
Malaysia was one of the biggest trading partner of China in Southeast Asia, while China was the fifth largest export market for Malaysia in 2002 (Liao, 2003). Furthermore, the DBS research group pointed out that China has become the fourth largest trading partner of Malaysia in 1990, and Malaysia is the ninth largest trading partner of the world for China (DBS, 2009). According to the Asian Development Bank (2011), China has become the second largest exports and imports market for Malaysian.

Figure 1.2 The exports and imports of Malaysia to China (1993-2010).


Along with the continuing list of corporation agreements which were agreed and signed, China and Malaysia have made great achievements in economic development corporations. In addition, the primary minister of Malaysia has indicated that Malaysia will aim to take benefit of China’s “go global” economic strategy by encouraging
Chinese companies to invest in Malaysia and he has identified five key sectors for Chinese investors: transportation, energy, manufacturing, services and finance (Seng, 2009).

1.2.2 China and Thailand

China and Thailand established the diplomatic ties in 1975 (Ministry of Foreign Affairs of the China, 2011). Of all the ASEAN member states, Thailand maintains the warmest relationship with China (Yuan, 2006). In fact, the economic policies of Thailand are more dependent on the U.S, Japan, Europe and other foreign markets. However, both China and Thailand have emphasized full collaboration in trades and investments such as in technologies and scientific cooperation, and cultural exchanges (Baviera, 1999). Since then, economic and trade corporation continued to grow between these two countries in past decades.

As indicated in Figure 3, the exports and imports are keeping increase gradually between China and Thailand from 1993 until 2010. After the year 2002 when China joined the WTO, the Exports and Imports between China and Thailand have increased rapidly. China has gained more benefits from export to Thailand because the exports of China into Thailand are more than their imports from China. China has become the

Thailand is a newly industrial country and the economic development of Thailand has been like a tale of the marvelous and fireworks. It has been the world’s highest GDP growth rate country which is 12.4 percent on average annually from 1985 to 1996 (Marwah and Tavakoli, 2004). However, because the discovered financial sector weaknesses of float the currency increased the pressure on Thailand’s currency (Baht) in 1997 so that the economy contracted by 1.9 percent and lead to the Asian Financial Crisis (Marwah and Tavakoli, 2004).

Figure 1.3  The exports and imports of Thailand to China (1993-2010).

Thailand is one of the biggest rubber producer countries in Asia, and most of the rubber is exported (Wikipedia, 2011). The main export products of Thailand include latex, standard rubber, natural rubber, tobacco film and so on (Chia, 2004). China is the biggest market for Thailand in rubber consumption so that Thailand has becomes the biggest rubber imports partner of China in Southeast Asia today.

1.2.3 China and Vietnam

Since Vietnam joined the WTO in 2007, it has become one of the highest economic growth countries in Southeast Asia and even in the world today. In fact, it has become the first competitor to China in Southeast Asia countries. The relationship between China and Vietnam are not favored by two nations in history. This refers to the China-Vietnam border conflict in the past decades. Especially, from year 1979 to 1989, the war has made further fall of relations between China and Vietnam to the worst point, and this cold relationship persists until today (Wang and Zhang, 2008).

Although there are problems in terms of cooperative relations, both countries have engaged in several corporation agreements. Although the disputes occur between two nations, the international trade and economic corporation have developed steadily between China and Vietnam in past 20 years. The two leaders between China and Vietnam are working to establish partnership in economy and politics. Meanwhile, the
agreement of cross-border economic corporation zones can set the advantages to both countries.

Figure 4 shows that both the exports and imports of China into Vietnam are increasing gradually from 1993 until 2010, and the exports of China into Vietnam are more than their imports from Vietnam. In 2010, Vietnam has become the largest trading partner of Guangxi (a part of Southeast China) in Southeast Asian (Ministry of Commerce of China, 2011). In addition, according to the Asian Development Bank (2011), China has become the third exports market and the largest imports market for Vietnam.

Figure 1.4 The exports and imports of Vietnam to China (1993-2010).