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Department of Agricultural and Resource Economics

An Analysis of the Structure of Myanmar's Exports and Its Implications for Economic Development

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Summary

This research aims to analyze the role of agricultural exports in Myanmar assessing the trade performance for 45 years from 1962 to 2006 by using different methodologies such as descriptive analyses and various econometric models to analyze the data series of export, import and GDP. These data are obtained from several sources such as the United Nations commodity trade statistics, world development indicators, international financial statistics, etc.

The changes for improved outcomes in trade policy reforms in Myanmar are related to the domestic policies practiced by the government of Myanmar and international demand. The study examines selected trade policy issues in the country. The research strategy in each chapter has been conducted in order to understand the process of economic growth of the country within the solid theoretical framework. Looking insights gained from this study would be valuable guidance for the policy makers in identifying the issues that may apply in the reform process. Moreover, empirical analyses in this study are important in order to inform the policy debate in Myanmar.

Chapter 2 describes the performance of Myanmar economy in a descriptive way. Initially, this chapter highlights the importance of agriculture and aquaculture sectors contributed nearly 50 percent of GDP in 2004 using recent economic indicators. According to the chapter, economically active labor force of the country which is between 15-60 years is nearly 66 percent of the total population. Most of this active labor force is engaging in agriculture sector which is about 63 percent of total labor force. Country's government plus personnel consumption was increased overtime. It was about nearly Kyat 8 trillion in 2004.

Though the consumption was increased, trade dependence was declined on the other hand. Its value was 5.58 percent in total GDP in 1990. But in 2004, its value was only 0.31 percent of total GDP. Meanwhile, total value of trade was also increased. The main export commodity groups of the country are food and live animals, crude materials and mineral fuels. Among these groups, food and live animals group consists of agricultural and aquaculture commodities contributed 17.27 percent in 2005. Within the group, peas and beans and shrimps and prawns are main export items of the country. The export value of these two commodities contributes about 50 percent of the total agricultural and aquaculture exports starting from 2000.

Chapter 3 analyzes the regional integration, bilateral trade flow and Myanmar. The purposes of this task are to examine whether ASEAN bloc, in which Myanmar is being a membership, has trade integration or not under the free trade agreement and how neighboring countries and domestic crisis affect on the economic growth of Myanmar. First it express about ASEAN and its free trade area. Then it explains the role of Myanmar in ASEAN and obligations that Myanmar has to perform as being a membership of the association.

This chapter divides into two studies. First, it analyzes the trade integration among ASEAN member plus China, India, Japan and Korea. These countries are chosen in this study as they are major trade partners of Myanmar since western countries embargo on Myanmar's products. The gravity model is used in this regional study. According to the results from random effects model, interesting result is trade integration between Japan and other countries and trade integration between Korea and other countries are more favorable in the short run.

In the case of Myanmar study, the same model is employed. In this analysis, three dummy variables are added. According to the results of neighbor dummy, the country's bilateral trade and economic growth is much influenced by its neighbors. Very interesting finding is the

results of domestic crisis dummy. The results show Myanmar's economic growth could not be achieved without stability in political situation inside the country. In other words, even Myanmar is getting benefits from ASEAN free trade agreement; the country cannot exploit those benefits without addressing domestic political turmoil. Another dummy, regional financial crisis dummy shows no direct relationship between the crisis and the bilateral trade flow of the country since Myanmar is financially isolated since the country is not getting sufficient loan from international organizations.

Chapter 4 examines the export-import structure between Myanmar and its major trading partners, and revealed comparative advantages of major commodities are calculated. It aims to explore the trade structure to know the specialization of production that is targeted for export. When a country specializes in the production of a few goods, it exports those goods that have comparative advantage. Consequently, it increases national income, which in turn raises the level of output and the growth rate of economy. Therefore, study on the structure of trade and comparative advantage of the commodities for a country is important.

Myanmar has limited affluent trading partners because of the sanction imposed by US and the western countries for its human rights conditions inside the country. It leads closer ties with its neighboring countries and other countries in the region in all sectors. The country especially has to depend on its emerging neighbors. RCA indexes indicated that Myanmar is still depending on its natural resources rather on the value added products which are the kinds of the vertical export diversification. To diversify the country's export vertically, Myanmar needs technical assistance from its neighboring and major trading countries.

Chapter 5 analyzes the factors contributing to the agricultural export performance. The challenging issue of Myanmar's agricultural export has been greater reliance on a smaller number of exportable commodities for foreign exchange earnings. Thus export dependency on

traditional products of Myanmar can be reduced through diversification of export portfolio. In theory, export diversification can be attained by changing the shares of commodities in the existing export pattern or by including new commodities lines in the export portfolio. In this section I analyze the relative importance of international demand conditions on the one hand and diversification and competitiveness on the other hand to determine whether these factors played for export performance or not. If the results show that the international demand factor is exogenous, then the export success is mainly attributed by domestic policy orientation. This is done by using constant market share analysis based on three factors of diversification, competitiveness and market. It is an interesting research since agricultural export is considered one of the most promising means of increasing income and augmenting foreign exchange earnings especially for a less-developed country.

The estimated coefficients for world demand and diversification have the theoretically expected signs though the coefficients of the latter are not statistically significant. The coefficient of the world demand variable is statistically significant in both first and second period at 1 percent level. Coefficient for the competitiveness in the first period has negative sign but not statistically significant. But in the second period, coefficient for this factor is positive indicating that the improvement in agricultural export performance also comes from competitiveness of the country's products.

The results show external demand certainly plays an important role in the one hand, Myanmar can expand its exports under given world market conditions by improving upon its market share in its traditional exports and diversifying into new product lines providing it pursue appropriate domestic economic policies. The country needs flexible adjustments to changing world market conditions to be able to switch from one line of agricultural exports to another.

During the past few years, Myanmar has been diversifying its industry and agriculture. Through horizontal and vertical diversification, Myanmar is trying to build a diverse export base which includes a variety of products. However, without encouraging research and development, Myanmar cannot create a diverse production with different level of processing. To accomplish the goal of export diversification and to be competitive its products in the world market, the government should provide an environment conducive to attracting new investment into the country. In terms of horizontal diversification of agricultural production, land development strategies should be considered. Agricultural services and the provision of basic infrastructure should also be provided to achieve crop diversification in production. In terms of vertical diversification, agricultural and marketing research should be encouraged and supported.

In chapter 6, the research studies major markets for major commodities of Myanmar to investigate the role of price in trade. This task is accomplished by using linear approximation almost ideal demand system. The price and expenditure elasticities of demand are estimated by utilizing export demand model for Myanmar and selected competing countries in a same market. The purpose of this study is to investigate price and expenditure elasticity empirically at HS 6 digit level of export flow for major commodities of Myanmar.

This chapter explores the major commodities and major markets of Myanmar. The most important agricultural export partner of Myanmar is India. India is a biggest buyer of Myanmar's peas and beans (SITC 0542) and wood (SITC 24231) through 2000 to 2006. Thailand and China import wood products (SITC 24231 and 24331) from Myanmar. Japan stand as an important export partner of Myanmar's shrimps and prawns (SITC 0313) throughout the study periods. Though the United States is buying shrimps and prawns from Myanmar, its value is lower than that of Japan. Singapore is also buying shrimps and prawns. But its import for that product is far lower than that of Japan. Bangladesh, EU, Taiwan and Vietnam are buying wood

products from Myanmar. Among these products, I focus only on the export of peas and beans to India market and export of shrimps and prawns to Japan market since the export shares of these two commodities is nearly 50 percent of total agricultural exports. Thus, the study of these products would reflect the domestic economic policy on the farmers and fishermen who are producing those commodities.

All of the own price elasticities have expected signs. The magnitude of the own price elasticities varies for different suppliers in India market. It might be because consumers in India market consider products are different if the sources are different even though the products have a common commodity name. The own price elasticity for Myanmar is largest value of 1.6112 indicating that consumers prefer black gram importing from Myanmar. Two trade flows out of a total of 3 in India market and 2 out of a total of 5 trade flows in Japan market have own price elasticities valued greater than one in absolute values. Elasticity for other remaining trade flows are also greater than 0.5. These large own price elasticities are indicating that the exporter can increase not only the quantity of exports but also they can increase their export income by reducing the cost of production, marketing, and distribution. All import expenditure elasticities of two selected markets show greater than one or nearly one and positive signs in all cases. Expenditure elasticity of Thailand and Vietnam has highest value of 1.0062 and 1.0013 for shrimps and prawns commodity in Japanese market, respectively, and Thailand has highest value of expenditure elasticity for black gram in India market.

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Chapter 1:

Introduction

1.1 Background of the Study

1.1.1 Geography

Myanmar is geographically located between 9 Degree 58' to 28 Degree 31' N and 9 Degree 29' to 10 Degree 10' E. Bounded by land on the northeast, north, east and the remaining sides by sea, it stretches for about 1275 miles from north to south and 582 miles from east to west, while approximating 261228 square miles, in total area. Myanmar is situated in Southeast Asia and is bordered on the north and northeast by China, on the east and southeast by Laos and Thailand, on the south by the Andaman Sea and the Bay of Bengal and on the west by Bangladesh and India (Figure 1). Myanmar's coastline defines the eastern shore of the Bay of Bengal, running from the Bangladesh border in the down to the Malay Peninsula and Thai territory in the southeast. Southern Myanmar consists largely of the broad river valley of the Ayeyarwaddy. The Ayeyarwaddy rushes down through great mountain gorges in northern Myanmar before spreading out into one of the largest river delta in Asia. Both of Myanmar's principal cities- Yangon and Mandalay- are situated along the Ayeyarwaddy, and 1600km river is navigable for almost two thirds of its length. The vast majority of Myanmar's people live in the lowland regions of this river valley in the Ayeyarwaddy basin. This fertile expense, which sits within the tropical monsoon belt, is one of the world's great rice growing regions.

1.1.2 Economic History

Tin Soe (2007) noted that, in one of his unpublished papers, feudalism under absolute monarchy lasted for over one thousand years in Myanmar before the British introduced capitalist commercialism in the 19th century, which lasted for about a century. Myanmar's history of economic development since independence can be divided into three chronological segments as: the parliamentary democracy period (1948-1962); the command and socialist period under military rule (1962-1988); and the market-oriented economy period under military rule (1988-present). During the first period, a mixed-economy system has been practiced, followed by a socialistic centrally planned economy system in the second period and a market-oriented economy in the third period.

Figure 1.1.Map of Myanmar

Source: http://go.hrw.com/atlas/norm_map/myanmar.gif

Myanmar is endowed with rich natural resources with favorable land-man ratio, but Myanmar and her people remained poor and were left far behind most other developing

countries. This is conceived generally as a country under a "resource curse", meaning a resource-rich developing country which has underperformed when compared with resource-poor developing countries.

National economic planning was being formulated in much the same way as in the past – mainly in terms of output indicators and often based on faulty or unreliable data. However, since the early 1960s, heavy losses faced continuously by the inefficient SOEs, constant fiscal deficits as a result of expenditures exceeding revenues, persisting high inflation, balance of payments problems (shortage of foreign exchange) and low investment in the productive activities, dual or multiple exchange rates and severe exchange controls, and declining inflow of FDI have all adversely affected the performance of national economy. All these developments eventually led Myanmar to down-graded status of Least Developed Country (LDC) in 1987. This resulted in general uprising in the country in 1988 with the end result of replacing military government of the old with the new, but with the same behavior and mentality. In 1997, Myanmar concurrently became a member of two regional organizations, ASEAN and BIMST-EC, and tried to integrate more closely with the region but, as 1997 was coincidentally a year of the Asian economic crisis, Myanmar's efforts had been thwarted. So Myanmar still is in a state of underdevelopment and poverty, and in desperate search of a development path or formula.

1.1.3 Importance of Agricultural Export

Myanmar is agriculture-based country. Nearly 40 percent of the gross domestic product (GDP) comes from agricultural sector and about 70 percent of the people live in rural areas. Agriculture sector contributes major source of foreign exchange, and supplies of the bulk of basic food. Agricultural output of the country rose starting from 1990 at an annual average rate

of one percent per year. The linkage between agriculture sector and other sectors of the country' economy stimulates for growth and income generation.

Starting from 1980, with the growing integration of markets due to globalization and trade liberalization, economies of the less developed countries face a more fiercely competitive external trading environment. Myanmar is also not an exceptional country. Myanmar continue to export a limited range of primary commodities that are highly vulnerable to instability in supply, demand and a decline in terms of trade before 1988 under the then centrally controlled Burmese socialist government. Given the rapid pace of globalization, Myanmar could assess larger and more affluent market like Japan favors growth and development through trade after 1990 but still facing many internal supply side constraints associated with its underdeveloped economy which renders its exports uncompetitive.

The share of agricultural export of some commodities (for example, rice) from Myanmar to the world market has fluctuated from 185 million US dollars in 1980-1982 to about 84 million US dollars in 2000-2002. But market share of other products such as peas and beans and shrimps and prawns has increased because of rapid expanding demand of beans from India and shrimps and prawns from Japan. But Myanmar' agricultural export largely consists of a few low value-added primary commodities. On average, these two export items, which are predominantly primary agricultural commodities, account for more than 60 percent of total agricultural export earnings. Moreover, because of the sanction practiced by EU and US, Myanmar' exports are concentrated particularly on only a few markets of which Thailand is by far largest, followed by India, Japan and China. Intra-ASEAN trade is not so much in volume compared with trade of those countries.

1.1.4 Premise and purpose of the Study

Athukorala (1991) noted that trade policy encompasses various policies that the government adopts towards international trade. Through its influence on the level and composition of imports and exports, trade policy impacts on the structure of production and pattern of development of the economy. The precise nature of the trade regime, therefore, in particular the mechanism used to repress import demand, could have important implications for resource allocation, efficiency, and income distribution in the economy. Therefore, trade policy has remained at the center of the debate on economic policy making in Myanmar.

In his Nobel Prize Lecture, Sir Arthur Lewis (1980) argued that the prosperity in the developed world during the 1950-73 (which provided a conducive setting for the East-Asian success) was special and in the future developing countries could expand exports only if industrial countries were willing to allow the former a greater share of their slowly expanding markets. A number of studies has been conducted about export orientation and import substitution in development policy in developing countries, arguing that bleak prospects for access to industrialized countries do not justify the reliance on the former as the prime focus of industrialization (see Cline 1982; Dornbusch 1988; Faini et at 1992).

The proponents of export-promotion strategy continue to argue that despite economic slowdown in industrial countries and the rising protectionist sentiment, developing countries still have ample opportunity to prosper through manufactured exports provided they adopt correct domestic policies (Hughes and Krueger 1984; Bhagwati 1988 and 1993a, Krugman 1995). The main arguments of these scholars are as follows; (1) the developing countries have shown a remarkable ability to maintain export growth even in the face of slow demand expansion, by obtaining a larger share in industrial-country markets through price competition; (2) the degree of penetration of developing country exports into industrial country markets still remains very

low even for traditional manufactures. There is therefore a great deal of unexploited absorptive capacity in the market sense; (3) the actual impact of protection is far less strong than one presumes it to be simply because there are many ways (both legal and illegal) in which exporting countries can get around it in search of an 'as-if-free-trade' solution. The globalization of the economic activities of multinational corporations opens up new opportunities. Krueger (1984) further argued that if openness conveys benefits through competition and the nature of policy instruments used, then the gains from export orientation will be almost as great with slower growth of world trade as with more rapid growth, provided of course the world economy continues to remain reasonably open to trade.

For many least developed countries and developing countries, agricultural trade remains an important part of overall economic activity and continues to play a major role in domestic agricultural production employment. But greater reliance on a small number of primary exportable commodities for export earnings is a challenging issue for those countries. Johnston and Mellor (1961) reported that expansion of agricultural exports is considered one of the most promising means of increasing income and augmenting foreign exchange earnings, particularly for a country stepping up its development efforts. In the international trade literature, a number of empirical studies have been undertaken in this context (Michaely 1977; Feder 1983; Hsiao 1987; and Dutt and Ghosh 1996).

However, protectionist hypothesis such as import substitution and infant industry arguments were provided by some analysts in 1950s. This notion leaded to the discussion of the terminology of export pessimism which was debated about that exports only contribute significantly to a country's economic growth when the external demand is favorable in the 1950s and 1960s. The proponents of this pessimistic view argued that the gap between developed and developing countries would increase at a growing rate under the condition of declining global prices of commodities and the lack of industrial base in developing economies.

But after 1980s, globalization brought outward-looking policies in the world. Since then it became popular policy prescription among economists and policy makers. Many developing countries liberalized their trade and harvested the benefits of such openness. At the same time, another hypothesis related to structural changes of exports and diversification of the exports was used to debate in the trade literature. Many economists have been argued that a more diversified export mix may enable a country to be stable in economic growth (Ali and others 1991; Gutierrez de Pineres and others 1997). In this context, Honma (2003) noted that for a small country, the price elasticity of demand for exports of a homogeneous commodity is large and there is a huge potential to be gained if it is successful in reducing the export price by more efficient production. Therefore, least developed countries and/or developing countries should create markets for their agricultural commodities with large price and income elasticities of demand to achieve sustainable long-term growth by means of export diversification.

This research aims to analyze the role of agricultural exports in Myanmar assessing the trade performance for 45 years from 1962 to 2006 using different methodologies. The changes for improved outcomes in trade policy reforms in Myanmar are related to the issues discussed in above. The study examines selected trade policy issues in the country. The research strategy in each chapter has been conducted in order to understand the process of economic growth of the country within the solid theoretical framework. Looking insights gained from this study would be valuable guidance for the policy makers in indentifying the issues that may apply in the reform process. Moreover, empirical analyses in this study are important in order to inform the policy debate in Myanmar.

1.2 Research Questions

The role of agricultural export in the economy of Myanmar would be an interesting research if it can provide the following key questions.

(1) What is the causal relationship between export and growth of the economy?

(2) Does Myanmar's participation in ASEAN contribute the country' economy?

(3) What is the structure of export-import of Myanmar with major markets of the country?

(4) Which factors determine the growth of agricultural export?

(5) How international market plays in the growth of Myanmar' agricultural export?

1.3 Structure of the Dissertation

Chapter 1 provides background of this dissertation. It describes the economic history of Myanmar. This chapter expresses the premise of the study why agricultural export is important for a less-developed country. And it sets research questions. Moreover, it highlights the importance of trade in the country's economy. Figure 1.2 shows the dissertation framework.

Chapter 2 examines the Myanmar economy with trade patterns after 1980s. It discusses about overview and recent trend of Myanmar economy by highlighting the structure of GDP, per capita income and employment. Then, the chapter traces out the concentration of trade based on merchandise trade by sector, specific commodity export group and direction of trade. Finally, it discusses about the production of major export commodities.

Chapter 3 analyzes the importance of regional integration among member countries of ASEAN plus China, India, Japan and Korea using gravity method. First, it explores about

ASEAN and ASEAN free trade area (AFTA). Second, it describes about Myanmar and ASEAN. Third, it presents the impact of AFTA on Myanmar. Finally, this chapter examined the effects of neighboring countries on the trade flow of Myanmar and study on how domestic political crisis affects on the trade.

Chapter 4 searches the export-import structure between Myanmar and its major trading partners. It conducted the relationship between Myanmar and China, Myanmar and India, Myanmar and Japan, Myanmar and Thailand. In addition, revealed comparative advantages (RCA) of major export commodities of Myanmar are calculated.

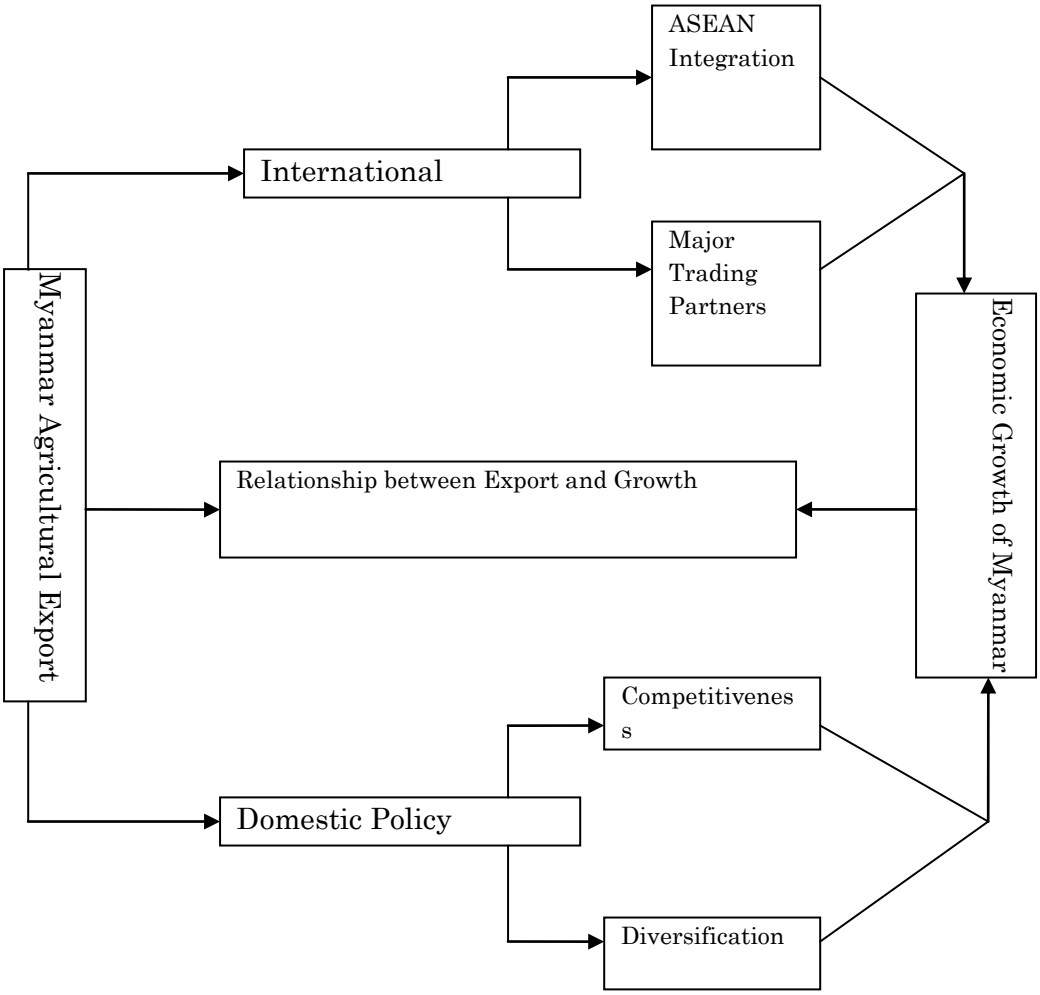
Chapter 5 analyzes the export-led growth driven by diversification, competitiveness and market by using constant market share analysis (CMSA). This chapter says what are the motives behind export diversification, how export diversification relates with economic growth. Trade policy context in brief of Myanmar is expressed. Moreover, it explores the export performance of Myanmar starting from 1962 to 2006 for 44 years. Finally it examines the important factors of export performance namely diversification, competitiveness and market in a solid econometric framework.

Chapter 6 is an empirical analysis of markets for major commodities of Myanmar in a time series analysis from 1980 to 2006. It illustrates the role of price in agricultural export performance. It provides the major agricultural commodities and major markets of Myanmar. Then this chapter goes and sees inside the major markets. Finally, price and expenditure

elasticities of import demand are estimated by using linear approximate almost ideal demand system.

Chapter 7 provides the conclusion of this dissertation and offers some policy implications that may be useful Myanmar stepping toward the goals of economic growth of the country and its participation as a membership in regional integration. It also gives some aspects of the role of neighboring countries. Finally, this chapter points out the issues beyond the scope of this study that should be considered in future research in order to gain a long-term and sustainable development.

Figure 1.2.Structure of Dissertation



Chapter 2:

Performance of Myanmar Economy

2.1 Introduction

The importance of increasing exports as an engine for economic growth has long been the subject of considerable debate in the economic development and growth literature. However, economic growth is one of the requirements for raising the standard of living and increasing the per capita GDP in a country. There are different strategies and policies that enable an economy to grow, such as export promotion and import substitution.

Export promotion is a characteristic of an economy that allocates substantial resources to increase the production of goods that the country exports. The policy exposes domestic firms to foreign competition. Theoretically, domestic industry achieves better production technology and a higher quality of output. In addition, it would reduce its costs and increase its efficiency and credibility in the international market. Conversely, import substitution policy is a characteristic of an economy that allocates substantial resources to produce goods that the country currently imports. Import substitution policy is frequently implemented in the form of tariffs and other import barrier mechanisms to protect a domestic industry.

Numerous studies have discussed both export promotion (or export-oriented) policy and import substitution policy. However, there remains a debate among economists about the correct policy instrument for developing countries. Thus, each country must decide which policies and strategies to adopt. The decision might depend on improving an industry's competition in the international market or protecting a local industry.

Exports are one of the factors in promoting economic growth. This view suggests that an increase in productivity provides more efficient use of resources, increases specialization of export products, increases the level of skills in the export sector, and improves overall efficiency. In addition, increased productivity reallocates the economic resources from less productive sectors to more productive ones based on comparative advantage and increases the sales of export products in domestic and foreign markets. To study the export policies practiced by a country, however, it is necessary to know the general performance of the economy as a basic requirement

In this regard, this chapter examines the Myanmar economy with trade patterns after 1980s. It discusses about overview and recent trend of Myanmar economy by highlighting the structure of GDP, per capita income and employment. Then, the chapter traces out the concentration of trade based on merchandise trade by sector, specific commodity export group and direction of trade. Finally, it discuss about the production of major commodities.

2.2. Population, Employment and Per capita income

According to the Asian Development Bank (ADB), Myanmar's population for year 2000 is nearly 48 million and it reached 51 million in year 2005. The population was composed of 29.48 percent in the 0-14 age group, 65.58 percent in the 15-64 age group and 4.94 percent in the 65 and above age groups in 2005. It is indicating that nearly 66 percent of the population can be considered as potential human resources for the economic development of Myanmar. As shown in table 2.1, the demographic structure of the country's population has changed overtime. The economically active group, between 15 and 64 years old, accounted for 55.31 percent of the population in 1980, and 25 years later this cohort comprised nearly 66 percent of the total population.

Nearly 63 percent of the population was engaging in the agriculture sector in 2000. It was about 67 percent in 1980. These figures are indicating that Myanmar economy is still much depending on agriculture sector. At the same time, employed labor force in service sector stands within 20 to 25 percent from 1980-2000. This is also implying that sectored contribution of services remains unchanged for 20 years. If we also look at the industry sector, we will see not much change during this time. It was nearly 10 percent in 1980 and 12.2 percent in 2000. Generally speaking, the employment distribution of the different sectors reflects their respective contribution to GDP. The share of the agriculture sector in total GDP was 46.54 percent in 1980 and it was increased to 60.1 percent in 1995 and decreased again to 57.23 percent in 2000. This figure also indicating that the sector plays still important for Myanmar economy.

Steadily declining of agriculture's contribution, from 1995 to 2000, to job creation is to be expected as the economy moved to development, but the industry share in total GDP was declining from 1985 to 2000. Thus, industry sector failed to absorb the labor force of agriculture sector. On the other hand also, share of service sector in total GDP was declining from 1980 to 1995. But it was increasing from 1995 to 2000 indicating that labor force in agriculture sector moved to the service sector after 1995. In overall, agriculture sector is the largest provider of jobs in Myanmar economy.

According to the ADB data, per capita GDP in Myanmar has been growing since 1980. In 1980 per capita income was Kyat 3726 while in 2005 it was Kyat 167205. However, if we divide the per capita income in 2005 by market exchange rate, which is about Kyat 1200 per one US dollar in average, it is about US$ 160. This income is far less than if comparing with other developing countries those are neighbor to Myanmar (ADB).

Table 2.1.Basic Economic Indicators

Indicators	*1980*	*1985*	*1990*	*1995*	*2000*	*2005*
Population						
Ages 0-14 (% of total)	40.56	39.27	37.31	35.34	32.49	29.48
Ages 15-64 (% of total)	55.31	56.41	58.21	60.06	62.78	65.58
Ages 65 and above (% of total)	4.14	4.32	4.48	4.60	4.72	4.94
Total (in millions)	33.68	37.24	40.75	44.50	47.72	50.52
Sectored contribution to GDP (%)						
Total GDP (MM Kyat in billions)	44.25	55.99	50.26	66.74	96.84	148.57
Agriculture value added (% of GDP)	46.54	48.20	57.26	60.10	57.23	
Industry value added (% of GDP)	12.67	13.07	10.54	9.80	9.69	
Services value added (% of GDP)	40.79	38.73	32.20	30.10	33.07	
Education, school enrollment (%)						
Primary (gross %)					89.35	99.64
Secondary (gross %)					37.65	40.27
Tertiary (gross %)					6.93	11.30
Employment distribution by sector (%)						
Agriculture (%)	67.1	66.1	69.7	68.7	62.7	
Industry (%)	9.8	10.6	9.2	9.8	12.2	
Services (%)	23.1	23.3	21.1	21.5	25.1	
Savings and Investment						
Gross national saving (% of GDP)	17.34	10.59	11.51	14.00	12.34	
GDP per capita (MM Kyat)	3726	13517	50927	107823	144984	167205

Source: Asian Development Bank (ADB)

2.3 Macroeconomic Environment and Concentration of Trade

Over the past 15 years, Myanmar economy has changed in several important aspects, as reflected in the selected economic indicators in table 2.2. It has become decreasingly integrated with the rest of the world because trade dependence decreased from 5.58 percent in 1990 to 0.31

percent in 2004 though the average annual value of export and import were increased in those years. These figures are consistent with the result of testing causal relationship (see appendix). The value of export in 1990 was Kyat 2962 million and increased to Kyat 16697 million in 2004. The value of import was also increased. Their values were Kyat 5523 million in 1990 to Kyat 11339 million in 2004.

The expansion in the value of exports has been at the expense of personal consumption expenditure and gross domestic capital formation. The average annual value of government plus personal consumption increased from Kyat 134188 million in 1990 to Kyat 7979598 million in 2004. Although their values were increased during those years, annual share of consumption expenditure to GDP was stagnant about 88 percent. The corresponding figures for capital formation were Kyat 22318 million in 1990 to Kyat 1060038 million in 2004.

On the supply side, the sectored composition of GDP has also changed slightly as shown in the same table. In 1990, the share of agriculture in GDP was 57.3 percent. But later, this share was declined steadily to reach 48.4 percent in 2004. The share of agriculture in the country's economy was decreased nearly 10 percent in this period. Unlike this, on the other hand, the share of industry to GDP was 10.5 percent in 1990 and increased to 16.2 percent in 2004 indicating nearly 6 percent increase during those years. In the services sector too, the share were slightly climb up from 32.2 percent to 35.4 percent in the same period.

These changes in the composition of aggregate demand and supply were indicative of the country's declining in trade integration with the rest of the world, but apparently show a corresponding mobilization of domestic resources. Increasingly, merchandise exports depend on imported inputs and have relatively smaller value added content (see appendix for testing the variance decomposition among export-import-GDP).

Table 2.2.Selected Economic Indicators (MM Kyat million)

Indicators	*1990*	*1995*	*2000*	*2002*	*2003*	*2004*
GDP by industrial origin	151941	604729	2552733	5625255	7716616	9078929
Agriculture	86999	362750	1461150	3067357	3906194	4389837
Mining	1036	3170	15032	25163	34583	56636
Manufacturing	11824	41594	182897	516243	756183	1050447
Electricity, gas and water	386	1872	3444	4654	5992	7470
Construction	2763	13057	46044	185611	303496	356770
Trade	34542	140358	613686	1326615	1743643	2022045
Transport and communications	4045	18770	153371	358124	776704	933588
Finance	270	1041	2641	4799	5297	6602
Public administration	6024	10782	39354	50724	64742	103890
Others	4052	11335	35114	85965	119782	151644
Net factor income abroad	47	-689	-118	-20	-16	-116
GNI	151988	604040	2552615	5625235	7716600	9078813
Sector Composition (% of GDP)						
Agriculture	57.3	60	57.2	54.5	50.6	48.4
Industry	10.5	9.9	9.7	13	14.3	16.2
Services	32.2	30.1	33.1	32.5	35.1	35.4
Expenditures						
Total (Government+ Private) consumption	134188	523876	2237476	5049366	6865352	7979598
Gross domestic capital formation	22318	82582	300981	551749	850124	1060038
International Trade						
Export (fob)	2962	5044	12736	19955	14119	16697
Import (cif)	5523	10302	15073	14910	13398	11339
Trade balance	-2561	-5258	-2337	5045	722	5359
Trade dependence* (trade to GDP in %)	5.58	2.54	1.09	0.62	0.36	0.31
Official exchange rate (Kyat per 1US$)	6.2755	5.6106	6.4257	6.5734	6.0764	5.7459
Free market exchange rate (Kyat per 1US$)				900.00	950.00	1175.00

Source: Asian Development Bank (ADB); * Owned calculation

Table 2.3.Myanmar merchandise trade by sector in millions Kyats (SITC)

Sectors	*1990*	*1995*	*2000*	*2002*	*2003*	*2004*
Export by sector						
Food and live animals	867	2566	3206	3789	2998	2697
Beverages and tobacco	11	2	28	114	131	170
Crude materials excluding fuels	1271	1511	1401	2104	2383	2425
Mineral fuels	8	29	1180	5919	3478	5925
Chemicals	9	2	3	4	2	3
Basic manufactures	206	346	1240	864	836	1308
Machines, transport equipment		49	28	12	12	13
Miscellaneous manufactured goods	17	325	1570	88	105	106
Other exports	565	202	1357	3362	1665	1990
Import by sector						
Food and live animals	105	356	586	684	339	358
Beverages and tobacco	10	77	112	159	110	127
Crude materials excluding fuels	29	47	248	81	57	56
Mineral fuels	239	215	1145	2105	1953	1409
Animal, vegetable oil and fats	434	1194	412	272	445	463
Chemicals	312	1996	1924	1760	1413	1099
Basic manufactures	674	1615	4401	4091	3420	2651
Machines, transport equipment	2045	3000	3754	3558	3435	3001
Miscellaneous manufactured goods	206	248	1000	557	409	320
Other imports	1469	1554	1491	1643	1817	1855

Source: Asian Development Bank (A DB)

Table 2.3 shows the shares of merchandise export and import of key sectors of Myanmar economy in the country's total trade between 1990 and 2004. The composition appears to have moved away from concentration in one key sector which is food and live animal to some extent of diversification. Analyzing the basket of import, the shares of the country's import consist of such products as mineral fuels, chemicals, basic manufactures, machines and transport equipments.

More interesting observations can be seen from the composition of export portfolio. The share of total export of products such as food and live animals, crude materials, mineral fuels was increased. The main increases were crude materials and mineral fuels (Table 2.4 and figure 2.1). This shows that the country's trade has becoming concentrated only in a few exportable items while it lacks to search competitiveness in new export items. But if we observe the product lines in a same commodity group, it shows losing competitiveness in its traditional export. For example, the export value of rice which is the one of traditional exports was decreased from US$ 125.83 million in 1980 to US$ 22.41 million in 2005 (Table 2.5).

Table 2.4.Share of specific commodity group export in total export

	1980	1985	1990	1995	2000	2005
Food and live animals	39.95	33.12	25.68	37.35	17.02	17.27
Beverages and tobacco	0.01	0.02	0.07	0.05	0.09	0.17
Crude materials	42.24	54.37	55.90	45.42	22.94	22.90
Mineral fuels	8.99	1.57	0.50	0.17	4.98	37.67
Animal and vegetable oils and fats	0.01	0.02	0.01	0.03	0.00	0.00
Chemicals	0.35	0.72	1.36	1.00	0.16	0.13
Manufactured goods	7.46	7.60	12.00	6.04	4.84	4.76
Machinery and transport equipment	0.72	1.04	1.47	0.72	1.27	0.47
Miscellaneous manufactured articles	0.22	1.05	2.60	9.09	48.40	16.38
Other commodities	0.07	0.48	0.41	0.14	0.31	0.26

Source: World Integrated Trade Solution (WITS)

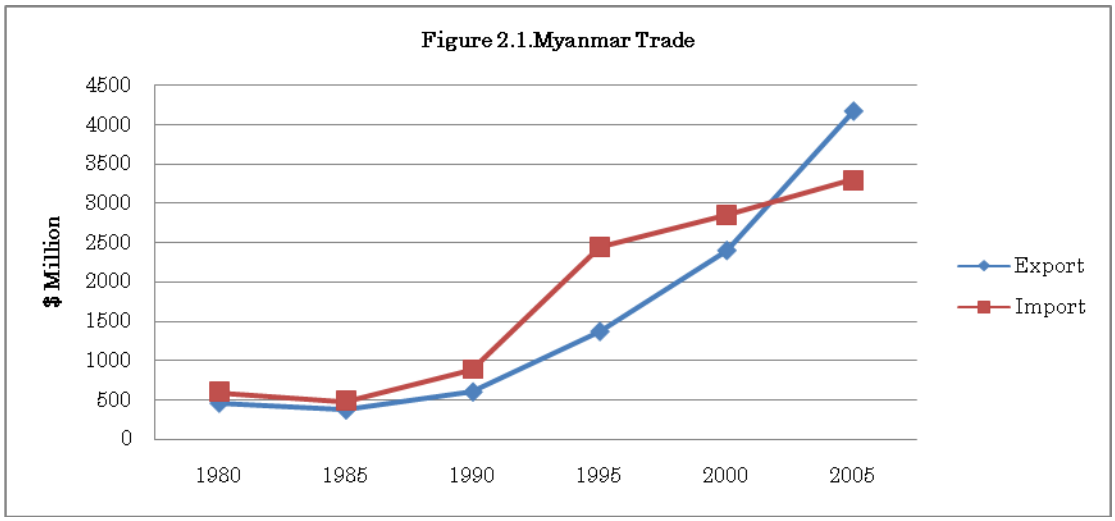
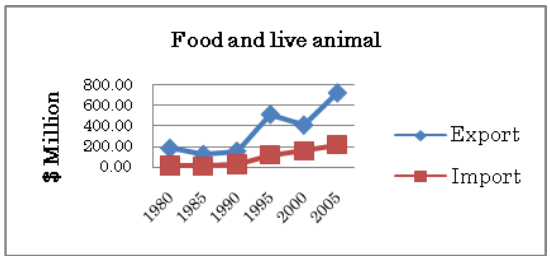
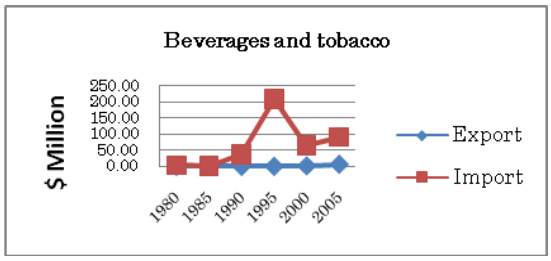
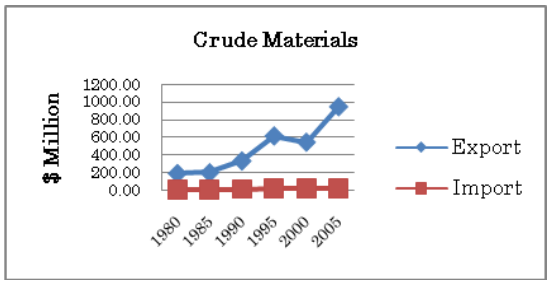
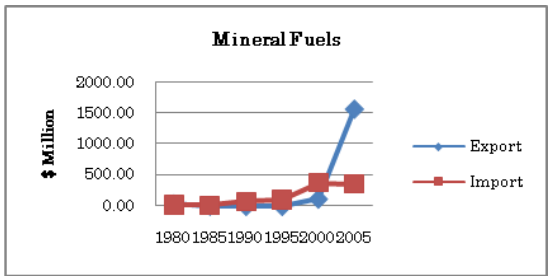


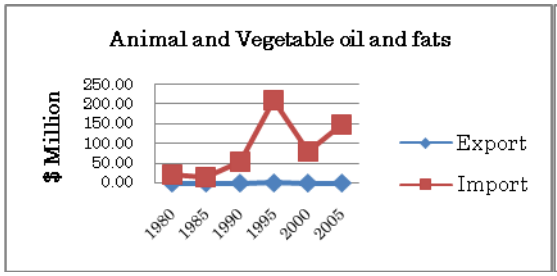
Figure 2.1.Myanmar Trade
$ Million
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1980
1985
1990
1995
2000
2005
Export
Import

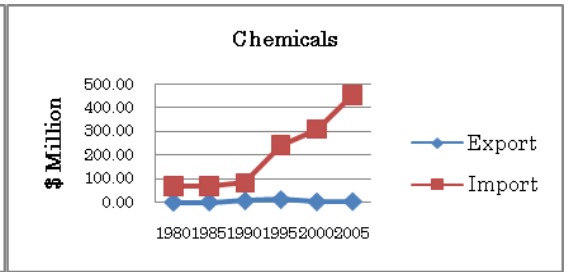

Food and live animal
$ Million
800.00
600.00
400.00
200.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import

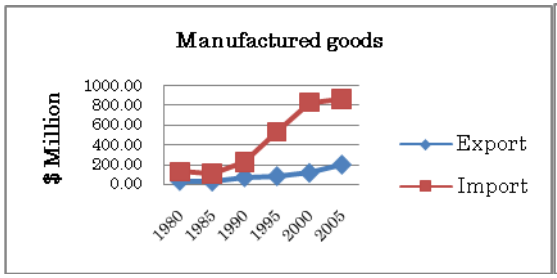

Beverages and tobacco
$ Million
250.00
200.00
150.00
100.00
50.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import

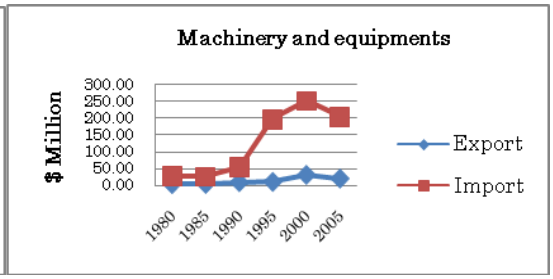

Crude Materials
$ Million
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import


Mineral Fuels
$ Million
2000.00
1500.00
1000.00
500.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import


Animal and Vegetable oil and fats
$ Million
250.00
200.00
150.00
100.00
50.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import


Chemicals
$ Million
500.00
400.00
300.00
200.00
100.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import


Manufactured goods
$ Million
1000.00
800.00
600.00
400.00
200.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import


Machinery and equipments
$ Million
300.00
250.00
200.00
150.00
100.00
50.00
0.00
1980
1985
1990
1995
2000
2005
Export
Import

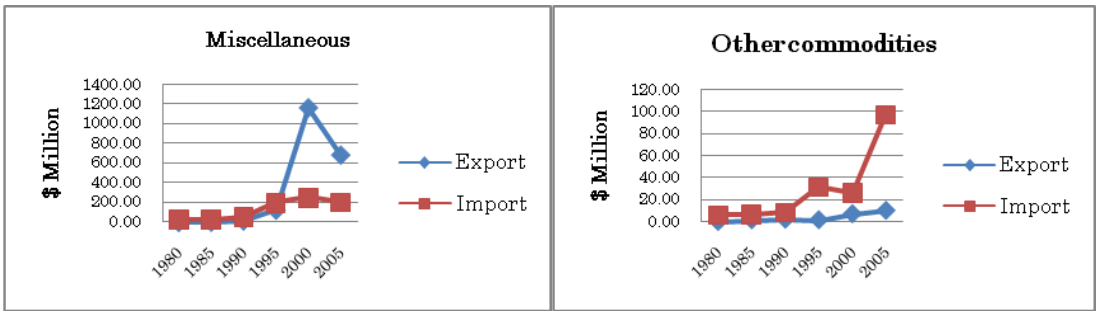


Table 2.5.Export of principal commodities (US$ millions)

Commodities	*1980*	*1985*	*1990*	*1995*	*2000*	*2005*
Peas and beans	18.58	36.96	73.64	185.39	109.25	348.27
Variety of fishes	17.67	21.87	53.58	172.77	202.09	263.82
Shrimps and prawns					155.00	128.71
Rice	125.83	49.70	14.13	107.67	24.48	22.41
Wood	58.58	86.25	204.90	384.21	345.60	613.18
Natural gas		352.14			108.61	1493.19

Source: Asian Development Bank (ADB)

Although the export of rice was fluctuated from 1980 to 2005, the exports of other commodities were increased (Table 2.5). The export of peas and beans, for instance, were increased from US$ 18.58 million in 1980 to US$ 348.27 million in 2005. The value was increased nearly 19 times from 1980 to 2005. Wood export, one of the traditional exports of Myanmar, was also increased nearly 10 times in the same period. Meanwhile, the new product lines were emerged. For example, export of shrimps and prawns and natural gas were significantly appeared starting from 2000. The value of shrimps and prawns export was US$ 155 million in 2000 and US$ 128 million in 2005 indicating that the export of this commodity was unstable. The export of another new product, natural gas, was US$ 108.61 million in 2000 and US$ 1493.19 million in 2005. According to table 2.4 and table 2.5, most of the exports of the country consist of the natural resource based commodities.

International trade is the backbone of less developed countries to expand their markets. Most scholars and policy makers today agree that the best strategy for a poor country to develop is to take advantage of international trade. Accordingly, international markets are vital to expand exports of less developed countries. In this regard, composition of main markets for Myanmar is studied.

Table 2.6.Direction of Trade (US$ million)

Country	*1990*	*1995*	*2000*	*2002*	*2003*	*2004*	*2005*	*2006*
Total exports	*408.7*	*1197.9*	*1979.3*	*2752.5*	*2767.3*	*3158.8*	*3701.5*	*4361*
Thailand	48.9	36.5	233	831.2	827	1230.3	1623	2134.8
India	44.2	145.9	162.9	314.2	355.2	363.7	449.1	526.9
China	33.3	136	113.5	124.5	154.1	187.7	249.5	229.7
Japan	28.4	85.5	108.4	100.3	126.9	163.5	184.8	223.3
United States	9.4	79	442.7	345.4	268.6			
Germany	8.7	24.2	77.8	73.1	94	118.3	102.2	114.8
Malaysia	8.6	37.6	63.2	69.8	72.6	97.1	121.5	113.5
United Kingdom	4.7	13.3	67.3	69.8	72.6	97.1	121.5	113.5
Singapore	46.2	192	99.8	97.3	76.2	64.5	98.5	63.2
France	3.3	7.3	71.3	79.5	56.7	71.2	39.7	33.5
Total imports	*667.7*	*2341.6*	*3039.2*	*2968*	*3225.9*	*3451.8*	*3569.1*	*3909.6*
China	137.7	679.6	546	797.3	998.7	1029.2	1028.4	1328
Singapore	119.2	701.2	479.7	576.6	716	717.1	656.1	619.6
Thailand	19.8		554.7	355.9	483.3	665.9	777.3	837.4
Malaysia	31.6	252.3	254.1	263.1	154.3	164.3	270.3	181.5
South Korea	23.3	95	318.2	157.8	202.4	178.2	132	154.9
Japan	110.8	173.4	215.6	126.9	137	115.8	101	105.7
India	1.4	23.4	52.9	78.7	94.6	115.2	121.8	142.9
Indonesia	3.2	66.5	71.2	59.8	50.2	66.3	85.8	107.9
Hong Kong	8.6	69.2	97.9	69.9	48.4	48.7	39.4	44.2
North Korea	4	8.4	15	18	22.8	30	34.2	40.2

Source: Asian Development Bank (ADB)

Table 2.6 shows the structure of the country's markets. Myanmar's main export markets are Thailand, India, China and Japan. Thailand stands first position as the Myanmar's export to that country was US$ 48.9 million in 1990 to US$ 2134.8 million in 2006. India followed as a second main importer of Myanmar's products. Its imports value was US$ 44.2 million in 1990 and US$ 526.9 million in 2006. Myanmar has a great importance in the Indian pulses market as majority of the pulses exported to India goes from the country. Being the largest supplier of pulses, Myanmar plays an important role in deciding pulses prices in the Indian market. In 2007, India imported 0.9 million ton of pulses from Myanmar. In the current year also, Myanmar has gained great significance in deciding the supplies and prices of pulses in India, which is already facing scarcity of food grains and pulses. China and Japan stands third and fourth positions in importing Myanmar's commodities, respectively.

On the other hand, the main exporters to Myanmar are China, Singapore, Thailand and Malaysia. China's export to Myanmar was US$ 137.7 million in 1990 to US$ 1328 million in 2006. Thailand follows second main exporter to Myanmar. In 1990, its export to Myanmar was only US$ 19.8 million. But in 2006, its value was increased to US$ 837.4 million. Singapore still stands as a main exporter to Myanmar. Its export values to Myanmar were US$ 119.2 million and US$ 619.6 million in 2006. Myanmar has limited affluent markets because the United States and European Union embargo on the country's products because of human right conditions in Myanmar.

2.4 Production of Major Export Commodities

As we see in the previous section, the agricultural sector constitutes 49 percent of the total GDP and 11 per cent of foreign exchange earnings in 2005. Thus, Myanmar is basically an agricultural country. The vast potential of land resources is available with different weather

and various soil conditions by the combination of technology can enhance the production of cash crops and industrial crops. Various types of cash crops and industrial crops are able to cultivate in Myanmar, such as rice, pulses and beans, maize, sesame, rubber, coffee, tea, sugarcane, jute, wheat, cotton, pepper, oil palm, various kinds of herbs, variety of fruits and vegetables, etc. Among the production of these crops, peas and beans production were increased in recent years due to the demand from India and Pakistan.

Myanmar's major food export items are peas and beans and rice. The production of these commodities was increased overtime except in some years. The production and consumption of rice which was the main export item in the past were also increased though its export value was declined overtime (Table 2.7). In 1980, rice was produced about 8.9 million metric ton. But in 2003, it was increased to 15.43 million metric ton. At the same time, domestic consumption of rice was also gone up. Domestic consumption of rice was 6.2 million metric ton in 1980 and increased to 9.74 million metric ton in 2003. The share of consumption was about 69.7 percent in 1980 and 63.12 percent in 2003. Though the share of consumption was slightly declined, the export of rice was fluctuated during the period. Export was declined in most of the years.

On the other side, production of peas and beans as a replacement of rice was increased due to the strong demand from abroad and government's favorable policy. In 1980, the production of peas and beans was only about 0.27 million metric ton. But in 2003, its production was increased to 1.54 million metric ton. Meanwhile, domestic consumption of this commodity was round about 0.2 percent per year since it is not a staple food crop in the country. Because of these strong favorable conditions, export of peas and beans were gradually increased from 0.066 million metric ton in 1980 to 1 million metric tons in 2003. Therefore, export of peas and beans attributes to a main source of foreign income.

Second prospective sector is livestock and fisheries sector. Myanmar is endowed with rich and varied marine and inland fishery resources, with production potential of 1.05 million metric tons per annum from marine source only. Inland water bodies such as natural lakes, reservoirs, river systems, ponds, etc. cover an area of about 8.2 million hectares. Processing and marketing of this sector are carried out by the private sector. All state owned fishing vessels, carried vessels, ice plants, processing plants, cold stores, fishmeal plants, dehydration plants, etc. are sold or leased to the private sector. There is no state owned institution competing with the private sector in fishery and fishery related industry. Myanmar has a long coastline with 2,832 kilometers, which provides a very good base for the development of shrimp and prawn culture.

With the adoption of the new market economic system, Myanmar has opened its doors for foreign investment. Steps have been taken to ensure mass participation with maximum utilization on the basis of equality and mutual benefit with other countries. The recent government has envisaged objectives as exploitation of abundant resources of the country with a view to: catering to the needs of the nation in the first instance; exporting surplus; creation of new employment opportunities through expansion of economic activities, economic and social development of various regions of the state along with expansion and improvement of transport and communication.

Foreign investors who invest and operate on equitable principles would be given the right to enjoy appropriate economic benefits, and to take their legitimate assets back home if closing their business. They would also be given proper guarantees by the government against nationalization of their business while in operation. To make legal provisions for investment in Myanmar, the government has enacted the Foreign Investment Law on 30 November 1988. The state had promulgated four relevant fisheries laws such as Law Relating to the Fishing Rights

of Foreign Fishing Vessels, Myanmar Aquaculture Law, Myanmar Marine Fisheries Law and Freshwater Fisheries Law have been enacted and procedures have been prescribed.

Table 2.7.Production of main commodities (ton)

	Peas and beans			Rice		
	production	food	export	production	food	export
1980	274769	175667	65600	8882706	6190023	660027
1981	238103	129402	79700	9435782	6385975	681048
1982	272500	139059	103500	9587058	6593334	708738
1983	280300	182741	65300	9530163	6807391	867504
1984	358000	255840	65500	9508418	7025629	628395
1985	337100	212241	89500	9549472	7252981	587667
1986	362200	241169	85665	9422776	7489512	603534
1987	362400	254784	73000	9096813	7736895	306214
1988	323900	275517	17100	8782456	7986500	48307
1989	215500	132521	53200	9208935	8246304	169984
1990	263500	52597	174500	9319191	8511187	215866
1991	351900	35095	217418	8807201	8699980	185057
1992	484800	8796	375000	9898547	8977097	200908
1993	577600	60392	535900	11181054	9174444	265284
1994	591300	91995	424900	12138666	9374704	943717
1995	752600	51578	609600	11977252	9461827	357553
1996	967300	118919	594800	11792427	9648060	93309
1997	936500	67218	768900	11106484	9708923	28600
1998	1077570	84586	621500	11390819	9970167	121677
1999	1235337	240689	560900	13424069	9765167	54895
2000	1285259	213701	831300	14223021	9837769	254066
2001	1467330	180664	1034800	14617972	9905994	949060
2002	1527100	184130	1100800	14543935	9905769	801916
2003	1538000	295722	1000000	15431712	9740830	392115

Source: FAO

Although the favorable laws were enacted, export potential of shrimps and prawns is rather limited due to lack of capital market, insufficient facilities such as ice plants, cold storages, canning factories and fish-meal plants. In order to increase shrimp production and export, construction of cold storage facilities, fish meal plants, canning plants and also establishment of marine as well as freshwater and shrimp hatcheries along the entire coast has been included in the sectored development plans of fisheries department of Myanmar.

Table 2.8.Export of fishery products (1000 US$)

HS code	Name	2000	2001	2002	2003	2004	2005	2006
030420	Frozen fishes	3142.287	2696.038	4120.973	5576.137	6910.758	7466.063	9263.487
030613	Shrimps and prawns	154982.62	130365.332	145096.3	125615.7	129008.1	128704.14	141240.46
030614	Crabs	833.757	876.602	915.273	1315.129	2211.662	3039.668	2364.937

Source: World Integrated Trade Solution (WITS)

According to the UN COMTRADE data jointly provided by WITS and World Bank, export of fishery products was increased starting from 2000. The export of frozen fish was US$ 3.14 million in 2000 and US$ 9.26 million in 2006. Export of crabs was US$ 0.833 million in 2000 and US$ 2.36 million in 2006. One of the promising of foreign exchange export items, shrimps and prawns, was also increased but value was unstable in some years. Its value of export was US$ 154.98 million in 2000 and US$ 141.24 million in 2006.

2.5 Concluding Remarks

It has long been thought that international trade can increase a country's growth rate. While shifting production more in line with a country's comparative advantage should raise

income per capita, it does not have any implications for long-run growth. Recent development in growth theory have considered various sources of long-run growth each of which involves an externality associated with such activities as human capital accumulation through either learning by doing or education and technology advance through research and development activities. Here one question may be raised. How these activities can be achieved?

Needless to say, trade influences a country's growth rate by impacting upon the level of these activities and by facilitating the transmission of technology across borders. In Myanmar, like other less developed countries, it is likely that research and development activity is limited. However, trade can still improve a country's growth rate by allowing the importation of capital and intermediate goods and by facilitating the transmission of knowledge. Such knowledge can be used to adapt and imitate developed countries products.

At the same time, to improve the trade related matters, the study of macroeconomic environment is important. Understanding the trade policy and the structure of the economy is vital for a comprehensive economic analysis that aims at identifying policy measures that would boost pro-poor growth of the country. A number of macroeconomic indicators could be explained to assess whether the current economic environment in Myanmar is generally favorable or not. Though the government is trying to promote the trade, the previous sections indicate that current trade with various countries did not achieve as expected. Why Myanmar's international trade was not achieved as expected?

There might be several answers. First, despite ongoing discussion of the Myanmar's competitiveness and diversification problem, most scholars agree that macroeconomic development in the country is the root cause of the trade fluctuation. Macroeconomic conditions continued to disrupt normal trading relationships, and the burden of dealing with resulting fluctuation continued to fall on those directly responsible for trade matters. Second, domestic

business environment also plays a crucial role in the extent to which trade liberalization actually leads to increased foreign investment and how the domestic firms are able to exploit new business opportunities in the world market. Third, the country has limited affluent markets those can buy huge amount of commodities from Myanmar. Lastly, one of the possible answers to the above question could be development of trade finance infrastructure inside the country and lack of access to international credit markets on the other hand.

Chapter 3:

Regional Integration, Bilateral Trade Flow and Myanmar

3.1 Regional Integration

3.1.1 Regionalism

Countries with a comparative advantage in production of some products are expected to export their products in a free world trade. The recent empirical literature shows that free trade brought economic growth for many developing countries. Rivera Batiz and Romer (1991b) studied whether free trade leads to foster growth or not. Vamvakidis (1998) estimated the impact of international trade on growth from 1870 to 1990 and found that free trade and growth were positively correlated only in the 1970s and 1980s. Donny Tang (2005) studied whether the free trade areas such as NAFTA, ANZCER and ASEAN would result in trade creation among the member countries or trade diversion with the non-member countries.

Regionalism has become a fashion in international trade to form regional free trade agreement. The growing importance of intra-regional trade and foreign direct investment (FDI) during the last twenty years has raised the issue of whether countries in Asia are becoming more integrated or not. In 1992, leaders from six countries (Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand) of ASEAN agreed to create the ASEAN free trade area (AFTA). The tariffs on intra-ASEAN trade of manufactured goods will be lowered to a minimum of five percent by the year 2008. The remaining four countries (Cambodia, Laos, Myanmar and Vietnam) joined ASEAN later. Myanmar joined ASEAN in 1997. Most of previous studies

focused on the original five ASEAN members (Indonesia, Malaysia, The Philippines, Singapore and Thailand).

3.1.2 ASEAN

The Association of South-East Asian Nations (ASEAN) is a regional cooperative organization that was established on 8 August 1967. It has now been more than 40 years since ASEAN was established and cooperation has widened and deepened. ASEAN countries are advocates of open regionalism, simply because the region is too small for inward-looking regionalism. In reality, ASEAN is the world's largest free trade area (FTA) grouping in terms of population, but the smallest in terms of GDP.

It is building external linkages with Asia-Pacific Economic Cooperation (APEC), Australia and New Zealand Closer Economic Relations Trade Agreement (CER), the European Union (EU), North American Free Trade Association (NAFTA), and other organizations. ASEAN has also deepened its economic, political, social and security cooperation. ASEAN Preferential Trading Arrangement (PTA) was formed to promote intra-regional trade to a Free Trade Area (FTA) scheme. The dialogue partners of ASEAN are Japan, the United States, the European Community, Australia, New Zealand, Canada, the Republic of Korea (South Korea), China, Russia and India. Among these countries, China is of growing importance both economically and strategically. India is also expanding its economic and geopolitical links with ASEAN.

3.1.3 ASEAN Free Trade Area (AFTA)

In 1987, ASEAN started a framework for the ASEAN Free Trade Area (AFTA). Prior to form AFTA, Common Effective Preferential Tariff (CEPT) scheme which harmonizes internal tariff rates was took place. In other word, CEPT scheme is the basis with the goal of reducing tariffs and non-tariff barriers on all intra-ASEAN trade in manufacturing processed goods. It will be accomplished by two different tracks namely a fast track and normal track. Under the fast track, for the important tariffs for items with more than 20 percent, the tariff fell to 0 to 5 % by 1 January 2000, and the tariff fell 0 to 20 % by 1 January 1998. ASEAN agreed to reduce the tariff rates in normal track under CEPT to 0-5 percent within 15 years starting from 1993 according to the original plan. For products on the fast track list, the tariff reduction will be completed by the year 2003. Later, ASEAN agreed to accelerate the CEPT scheme for the normal track by one year from 2003 to 2000 and set the target to achieve a minimum of 90 percent tariff lines to 0-5 percent by 2000.

Under CEPT, there are four product lists: the inclusion list (IL), the temporary exclusion list (TEL), the sensitive list (SL), and the general exception list (GEL). These lists are used as key instruments to determine the pace and scope of trade liberalization. The IL consists of the items subject to the tariff reductions immediately to bring down in the range of 0-5 percent by the year 2003. Although the TEL items were initially excluded from the tariff reductions, these items were transferred to the IL by 2000 in five equal installments beginning from 1996 and then reduced to 0-5 percent by the year 2003. The SL consists of unprocessed agricultural product items to be phased into the IL during the period of 2001-2003 and to be reduced to 0-5 percent by 2010 for original ASEAN-6.

3.1.4 Myanmar and ASEAN

Myanmar joined to the ASEAN on 23rd July 1997. There were many reasons the country join to the ASEAN. First, Myanmar realized that the country cannot stand alone in the age of globalization and regionalism. Second, Myanmar sees ASEAN as an association of non-interference in each state's internal affairs. Third, the US and western countries embargo Myanmar's products due to the political reason, the country needed international recognition and this led to the decision to join ASEAN. Fourth, Myanmar needed development assistance and economic cooperation since the country was facing economic sanctions imposed by the West.

Once Myanmar joined ASEAN, it automatically became a part of AFTA. As a member of AFTA, it also has obligations and commitments. The main obligation is to reduce tariff rates between 0-5 percent by 2005. Myanmar started its tariff rate reduction process in 2000. About 60 percent of the products from Myanmar were already within 0-5 percent tariff rates while joining to ASEAN since the country is a member of WTO. Of the 5400 tariff lines in Myanmar's product list for the AFTA, about 2400 products were in the IL list. Over 2900 were in the TEL while 108 in GEL, and 21 in the SL.

3.1.5 Myanmar's Politics in Brief

Myanmar was a monarchy ruled by various dynasties before 19th century. The British colonized Myanmar between 1820's to 1948. In 1948, Myanmar got independence from British. After getting independence, three chronological segments could be roughly divided as: parliamentary system from 1948 to 1961 in which the country had first people-elected president and prime minster and practiced full democracy; military socialist era from 1962 to 1988 in which the military led a coup d'état and established a centrally command socialist government; and the current military ruled era starting from 1988 until now.

Because of unfavorable policies practiced by the socialist government, the economy of the country divined from once richest country in the region to the less developed country. Finally, people were not patient on the government. This led to the general uprising in 1988. It had been widely reported that many people were killed by security forces. Country was become unstable. No political party or no politicians were not ready to take collapsed power from the government. As a consequence, another coup d'état was staged by the military in a same manner as in the previous period.

The military named themselves as the State Law and Order Restoration Council (SLORC) in September 1988. But people protest was still widespread. The military regime declared martial law in 1989 and announced that there would be people election for parliament member. The regime held the free elections in 1990 as the previously declared. In the election, the National League for Democracy (NLD) led by Aung San Suu Kyi won the majority of the parliament. But the regime did not recognize the election results by saying the country needs to create a new constitution through national convention started from 1993. It had been reported that the most of participants in the national convention were pro-government persons. In 1992, the regime changed their name as the State Peace and Development Council (SPDC) because of power struggle within the military itself was reported in the international media.

Unfortunately, the so-called national convention was not finished within a short time. It was used to continue to convene and adjourn. Major political parties including NLD were boycott the national convention and quit from it since the regime did not accept the proposals made by those parties. In June 1997, the country was admitted as a member of the Association of Southeast Asian Nations (ASEAN). One year before entering to ASEAN, it has been reported, one people demonstration was happened. In 2004, well-known centralist prime minister who was also a general in the military was removed. In 2007, the regime made a surprise announcement that the government-subsidized fuel price which is much lower than market

price would be as free market price. Consequently, the price of consumer goods went up and the cost of transportation was climbed up. Under these circumstances, people showed their will by demonstration led by monks on the street to the regime. The peaceful demonstrators were violently cracked down. In May 2008, one of the worst cyclones, Nargis, in the world hit the main economic regions of the country. But the government finalized their so-called national convention which was started from 1993. The government held referendum for the new constitution. They declared that the new constitution was overwhelmingly voted by 92 percent of voters. Now, the government is planning to hold general election in 2010.

3.2 Impact of ASEAN Free Trade Area

3.2.1 Objectives

This study has two objectives. First, it is attempted to test the suitability of the gravity model to the proposed Regional Trade Area (RTA). Second, it seeks to find out if policy implications exist for both the proposed RTA governments and the Multilateral Trade System (MTS). The underlying objectives of this study are important for three reasons. First, it helps to gauge the effects, if any; the proposed FTA will have on the multilateral trade system by way of trade creation and trade diversion and the possible effects on the economic welfare of the integrating and non-integrating members. Second, it addresses the issue of whether regional economic opportunities would result following the proposed economic integration and how these opportunities would affect the welfare of the economic units of the member countries especially on Myanmar. Third, it helps to give an insight into whether the proposed FTA will have any effect on the economic geography of production, trade, and development within the proposed regional trade area. The gravity model has been widely used to evaluate the implications of already existing FTAs and to provide answers to varying objectives of interest.

This study will also use a gravity model to examine the trade effects of ASEAN implementation. It differs from the previous studies in two ways. First, this study uses time series data with a period of 25 years, 1980-2004. Second, this study will focus on how the neighboring countries are important for the trade flow of Myanmar. I study Myanmar because its economy is lagging behind other countries' though it has rich natural resource endowments and high potential in the region, to test whether trade brings economic growth for Myanmar or not and to investigate the importance of trade with its neighbors.

3.2.2 Gravity Model

Tinbergen (1962), Poyhonen (1963), and Linnemann (1966), showed that trade between two countries is analogous to the gravitational force between two objects: directly related to the countries' size (or income), and inversely related to the distance between them. Anderson (1979), Bergstrand (1985), and Helpman and Krugman (1985), have provided a better understanding in theoretical foundation for gravity models. The basic gravity model for bilateral trade flow is written as follows:

$$\log(X_{ij}) = \alpha_0 + \alpha_1 \log(Y_i) + \alpha_2 \log(Y_j) + \alpha_3 \log(D_{ij})$$

where X_{ij} is the bilateral trade flow between two countries, Y_i is gross national product (GNP), Y_j is per capita gross national product, and D is the distance between them. Linneman (1966) expanded the model by including a population variable.

The crude form of the model shows that trade between two countries is directly related to the countries' national income and inversely related to the geographical distance between them. Though the model was developed in the early 1960s its application to the study of RTAs became popular following Krugman' (1991) study in which he posits that geography (proximity)

plays a role in the decision to forming RTAs. He shows how proximity can lead to agglomeration of production to a given region and in the process biasing trade to that region by promoting a regional integrating area (RIA).

Despite its simplicity and intuitive nature, the gravity model has come under heavy criticisms. Baldwin (1994) and Leamer (1994) criticized the model on grounds that it lacked a theoretical foundation. This criticism was, however, short-lived given the assumptions made by studies employing the model to show how proximity, among other explanatory variables, influence decisions on regional integration. Anderson (1979) settled the criticism of "theoretical foundation" when he underpinned the model with trade theory. Work done by Deardorff (1998), Eaton and Kortum (1997), and Helpman and Krugman (1985) derived the Gravity model from a Heckscher-Ohlin, Ricardian, and the "New International Trade Theory" framework, respectively.

Issues of spatial dependence (caused by spatial aggregation and externalities) and heteroskedasticity (Anselin, 1998) are also of another concern. Porojan (2000) pointed out that Spatial Econometrics technique can resolve the spatial dependence problem. The asymptotic nature of the sample along with the underlying provisions of the Central Limit Theorem makes the issue of spatial dependence and heteroskedasticity less of a concern (Gujarati, 2003). Other criticisms relates to the argument by some, for example, Evenett and Keller (1998), that the success of the model depends on its assumption of increasing returns to scale production techniques outside of which the model becomes less robust.

3.2.3 Econometric Specification of Gravity Model

3.2.3.1 Data Sources and Measurement of Variables

For the regional study, the data set covers the bilateral trade flows for 14 countries from 1980 to 2004. The sample countries in this study include the 10 members of ASEAN and China, India and Japan and Korea. The ASEAN countries are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. China, India, Japan and Korea are chosen in this study as they trade with all ASEAN member countries, and as they are big economies in Asia as well as in the world. Therefore, it is of particular interest to study trade between and among these countries. My focus will be on Asia in this study.

In the case of the Myanmar study, the data set of the bilateral trade flow of Myanmar and 26 other countries ranges from 1980 to 2004, which covers 25 years. The sample consists of nine countries from ASEAN, 11 industrialized countries and six countries from the rest of Asia. The industrialized countries in this study are the United States, Canada, Australia, Austria, Belgium, Denmark, France, Germany, Italy, Japan, and the United Kingdom. These countries were chosen as they are long standing trade partners of Myanmar and they still are now. The other ASEAN countries were chosen to discover the importance of the region on the trade flow of Myanmar. The other Asian countries are Bangladesh, China, Hong Kong, India, Pakistan and Sri Lanka. These countries are also long standing trade partners with Myanmar.

For independent variables all the real per capita GDP based on purchasing power parity and population figures for each year were obtained from the Penn World Table for 25 years except for Myanmar. Then GDP data were calculated by real per capita GDP multiplied with population for each year. The data on the geographical distance between cities were obtained from the Surface Distance between Two Points Latitude and Longitude (http://www.wcrl.ars.usda.gov/cec/java/lat– long.htm). The physical distances between capital cities of all 27 countries are measured in kilometers.

For the case of Myanmar, annual population, real per capita GDP and real GDP described as constant prices were obtained from the IMF World Economic Outlook (http://www.econstats.com/ weo/C111V015.htm). For estimation, all time series and cross-section data were pooled. In the regional analysis, there are 25 periods (1980-2004) for 14 countries. In the case of Myanmar, there are 27 countries and 25 periods.

3.2.3.2 Regional Study

The gravity model used in this study is analogous to the one utilized by Egger (2002). According to the endowment-based new trade model with Dixit and Stiglitz (1977) preferences, bilateral trade is an increasing function of bilateral sum of factor income, relative country size, and the difference in relative factor endowment. Accordingly, bilateral trade can be expressed as follows.

$$\log(trade_{ij}) = \alpha_0 + \alpha_1 \log G_{ijt} + \alpha_2 \log S_{ijt} + \alpha_3 \log R_{ijt} + \alpha_4 \log(geoD_{ij}) + \beta_1(China) + \beta_2(India) + \beta_3(Japan) + \beta_4(Korea) + u_{ijt}$$

$$u_{ijt} = u_{ij} + v_{ijt}$$

u_{ij} is as the (fixed or random) unobserved bilateral effect and v_{ijt} is as the remaining error. I use the sum of exports between two countries as the dependent variable, and the GDPs and the GDPs per capita, distance and ASEAN, China, India, Japan and Korea are as the independent variables. Then factor income G, relative country size S, and the difference in relative factor endowments R can be defined as follows:

Where, $G_{ijt} = \log(GDP_{it} + GDP_{jt})$

$$S_{ijt} = \log\left(1 - \left(\frac{GDP_{it}}{GDP_{it} + GDP_{jt}}\right)^2 - \left(\frac{GDP_{jt}}{GDP_{it} + GDP_{jt}}\right)^2\right)$$

$$R_{ijt} = \left|\log\left(\frac{GDP_{it}}{N_{it}}\right) - \log\left(\frac{GDP_{jt}}{N_{jt}}\right)\right|$$

$geoD_{ij}$ = Geographical distance between countries i and j,

$(China)$ = 1 when either country i or j is China, otherwise equal to 0,

$(India)$ = 1 when either country i or j is India, otherwise equal to 0,

$(Japan)$ = 1 when either country i or j is Japan, otherwise equal to 0,

$(Korea)$ = 1 when either country i or j is Korea, otherwise equal to 0, and

$u_{ijt} = u_{ij} + v_{ijt}$ = Error term

N denotes a country's population; and GDP per capita is as commonly used as a proxy for a country's capital-labor ratio. For the panel econometric projection of potential bilateral trade, the random effects model (REM) are usually used which requires that $u_{ij} \approx (0, \sigma_\mu^2), v_{ijt} \approx (0, \sigma_v^2)$, and u_{ij} are independent of the v_{ijt}. Moreover, the X_{ijt} (i.e. the explanatory variables) have to be independent of the u_{ij} and v_{ijt} for all cross-sections (ij) and time periods (t). Whereas the fixed effects models (FEM) are always consistent in the absence of endogeneity or errors in variables, the REM is only consistent if the above-mentioned conditions are fulfilled. Then, the REM has the advantage of more efficiency as compared to the FEM. If these conditions are not hold, only the FEM is consistent since it wipes out all the time-invariant effects (u_{ij}). The decision between FEM and REM can be based on Hausman (1978) test.

However, in the FEM time-variant variables cannot be estimated any longer and it wastes a lot of degrees of freedom, since the u_{ij} may be correlated only with a few explanatory variables. Therefore, Hausman and Taylor (1981) provide an alternative which makes use of the several dimensions of panel data in order to overcome this correlation without any variables from outside the model. The appropriateness of the latter can be based on a Hausman and Taylor test for over-identifying restrictions. Finally, it is assumed that there is no serial correlation of the error term v_{ijt} and the only correlation over time is due to the presence of the same individuals over time. If v_{ijt} follows an auto-regressive process and this is ignored, it results in consistent but inefficient parameter estimates and standard errors also rendering the Hausman (1978) and Hausman and Taylor (1981) tests in appropriate, since they require to use the efficient estimator under the null hypothesis.

Trade flows represent total export value from country i to j and are expressed in thousands of current U.S. dollars. The GDP and per capita GDP variables are stated in thousands of current U.S. dollars. Distance represents the transportation cost between two countries. A longer distance will cost more. So it is expected that the distance variable has a negative effect. The latter dummy variables are constructed to measure the trade diversion effects of the free trade area on the non-member countries, namely China, India, Japan and Korea. Establishment of a free trade bloc will bring member countries trade and would decrease trade with non-member countries. Hence negative signs of those coefficients tell that there is an effect of trade diversion with non-member countries and positive signs suggest that there is an absence of trade diversion effects with non-member countries.

3.2.3.3 Empirical Results for Regional Study

In regional study, FEM, REM, BEM and Auto-correlation model (AR1) for random effects are estimated to compare the results for which model is greatest relevance for the calculation of bilateral trade potentials. FEM, REM results can be associated with short-term parameter estimates whereas the between estimator (BEM) gives long-run parameter estimates. Since I find auto-correlation of the residuals, REM for the case of first-order auto-correlation (AR1) is estimated in addition to the REM model (Pirotte 1999).

The regional study provides insights into the relevance of the appropriate estimator choice for the analysis of bilateral trade flows. Given the statistical significant of the coefficient of distance variable, it is evident that trade between the studied countries would increase following a comprehensive development of the land infrastructure, especially among the least developed ASEAN economies though geographical favor exists among the countries. Other conventional gravity variables showed expected signs and statistically significant indicating that importance of the income of countries, similarity and relative factor endowments in bilateral trade.

Table 3.2 represents the estimation results for four different panel estimators. As already mentioned that the between model should reflect long-term influences. All other estimators reflect short-run impacts if the parameters can be consistently estimated. According to the results of Table 3.1, FEM could not explain all variables because of co-linearity problem. REM and REM (AR1) model are the best estimates for short-run and BEM is the best estimate for the long-run.

Estimated coefficients for bilateral sum of GDP, similarity in country size, factor endowments and distance variables have expected signs and significant at 1% in REM as expected. Japan and Korea dummies are positive and significant. Japan shows relatively

greater trade integration with study countries since its dummy has positive sign and significant at 10 percent. China and India dummy shows negative and significant at 1 percent. Estimated coefficients from REM (AR1) have similar results for bilateral sum of GDP, similarity, factor endowments and distance though coefficient for factor endowment is not statistically significant. India dummy also shows negative sign and statistically significant at 1 percent.

Table 3.1.Panel Regression Results for Bilateral Trade Flow among ASEAN plus Four

Independent variables	Fixed Effects Model	Random effects Model	Between effects Model	AR(1) Random effects Model
Constant	-36.502***	-29.492***	-45.242***	-29.620***
	(0.9288)	(2.474)	(5.395)	(2.589)
Bilateral Sum of GDP	1.7593***	1.830***	2.497***	1.818***
	(0.0361)	(0.0356)	(0.2208)	(.0628)
Similarity country size	-0.0398	0.246***	1.372***	0.3832***
	(0.0657)	(0.0593)	(0.1299)	(0.0700)
Relative factor endowments	0.1621***	0.1333***	0.0757	0.0595
	(0.0493)	(0.0411)	(0.0717)	(0.0485)
Geographical Distance		-1.097***	-1.009***	-0.994***
		(0.3136)	(0.3325)	(0.2933)
China Dummy		-1.035**	-1.691***	-1.047***
		(0.5002)	(0.6229)	(0.4735)
India Dummy		-2.210***	-3.004***	-2.186***
		(0.5241)	(0.5826)	(0.4901)
Japan Dummy		0.932*	0.2220	0.9822**
		(0.4803)	(0.5784)	(0.4525)
Korea Dummy		1.009*	0.1596	0.8838**
		(0.4832)	(0.4922)	(0.4506)
No of observations	3583	3583	3583	3583
R-squared	0.1984	0.4111	0.5639	0.4528
Wald chi2		3071.52		958.16

Note: The dependent variable is annual export values of the countries for 1980 to 2004. Standard errors are in parentheses. All values are in logs. * denotes significant at 10% level; ** denotes significant at 5%level; and *** denotes significant at 1% level.

Interestingly, BEM which reflect the long-run parameter estimates show that the estimated coefficients for China and India are also negative and statistically significant at 1 percent level. Japan and Korea dummies have positive signs but their coefficients are not statistically significant. These results indicate that trade integration among the study countries would probably be decreased in the long-run.

Striking interest is trade integration between Japan and other studied countries would be more favorable in the short run according to the results of random effects model (REM) which tell us about shorter period (Pirotte 1999). But in the longer run, trade integration among studied countries would be questionable. There might be two reasons; first, member countries expand their markets such as EU and the US markets as they are big buyers of the products from ASEAN. They set most favor nation (MFN) to the member countries of ASEAN; second, exports from ASEAN mostly consist of agricultural and resource based products in which they all have rich in natural resources and the same commodities so that they cannot compete within the region. ASEAN can expand their trade with new emerging economies like China and India.

3.2.3.4 Myanmar Study

In addition to the basic conventional variables of gravity model, this study will utilize the some dummy variables to examine the trade effects of the neighboring countries of Myanmar, effects of domestic political crisis and effects of Asian financial crisis on Myanmar trade in a different approach because of the limited number of observations for panel data. It will address the issue whether trade would increase between Myanmar and the studied countries. The model used in this section will be estimated by the ordinary least squares (OLS) method for Myanmar and other 26 countries during 1980-2004 which covers 25 years.

The gravity model used in the case of Myanmar study is analogous to the one utilized by Frankel (1997). It allows the role of income, per capita income, geographical distance, and preferential trading bloc. I use the sum of exports as the dependent variable, and the product of GDPs and the product of GDPs per capita, distance and neighbor, domestic and financial crisis are as the independent variables. Thus the gravity model used in this study is given as:

$$\log(trade_{ij}) = \alpha_0 + \alpha_1 \log(GDP_i \cdot GDP_j) + \alpha_2 \log(perGDP_i \cdot perGDP_j) + \alpha_3 \log(geoD_{ij}) + \beta_1(neighbor) + \beta_2(dcrisis) + \beta_3(fcrisis) + u_{ij}$$

Where

$trade_{ij}$ = Sum of exports between countries i and j,

$GDP_i \cdot GDP_j$ = Product of gross domestic product of countries i and j,

$perGDP_i \cdot perGDP_j$ = Product of per capita of countries i and j,

$geoD_{ij}$ = Geographical distance between countries i and j,

$(neighbor)$ = 1 when country j is neighboring of Myanmar, otherwise equal to 0,

$(dcrisis)$ = 1 when domestic crisis is happen in Myanmar, otherwise equal to 0,

$(fcrisis)$ = 1 if year 1997 in which Asian financial crisis was occurred, otherwise equal to 0, and

u_{ij} = Error term.

The first three independent variables are conventional variables in the gravity model. The basic gravity model specifies the trade between two countries is proportionate to the product of their GDPs and inversely related to the distance between them (Frankel et al. 1998). Both the GDP and distance are considered the most crucial variables to measure the country

differences between Myanmar and others. First of all, the product of GDPs variable, $GDP_i \cdot GDP_j$ measures the size of the economy. Trade between two countries should increase directly with the size of their economies as clearly reflected in their income levels. Therefore, the products of GDPs should have a positive effect on trade. Second, the product of per capita GDPs variables represents the level of economic development that is necessary to promote trade. As countries become more developed, they tend to trade more with each other. Hence, the product of per capita GDPs should have a positive effect on trade. Third, the distance variable measures the geographical distance between two countries. The distance variable reflects the degree of trade resistance between Myanmar and other countries as measured by the transportation costs. Trade between two distant countries would usually involve higher transportation costs, which in turn decrease trade between these countries. Therefore, distance should have a negative effect on trade.

Neighbor dummy variable is included to measure the effects of neighbors on Myanmar's trade. Since the United States and Western countries embargo on Myanmar's products, this dummy would show how importance of trade with Myanmar and its neighbors. Myanmar is not a politically stable country. So public uprising is often occurred in the country. Thus, to test the impact of this situation on Myanmar's trade, dummy variable for domestic crisis is added in the estimation. Another dummy, Asian financial crisis is also added to investigate whether the financial crisis affects on the trade of Myanmar or not.

3.2.3.5 Results for Bilateral Trade Flow of Myanmar

The results are presented in Table 3.2. All of the regression models are fairly satisfactory as the independent variables explain about 40 percent of the trade variation between Myanmar and other countries. Conventional gravity variables have expected signs as

in the previous study. First, the incomes of the countries have a positive effect on the bilateral trade between Myanmar and other countries.

The level of economic development of the country, the coefficient for the product of per capita GDPs, also has a positive effect on trade. Its coefficient has positive sign and statistically significant at 1 percent level. This indicates that while trade between countries would increase as the countries become more developed. All conventional variables show expected signs and statistically significant at various levels. This means bilateral trade between Myanmar and other countries depend on those factors clearly.

In addition, it is worth noting that the value of the coefficient for GDP is larger than that of the per capita GDP in domestic crisis and financial crisis regressions. This suggests that the size of the economies rather than the level of economic development can better predict trade between Myanmar and its trading partners in those cases. But in the case of neighbor regression, per capita GDP can better predict trade between Myanmar and its neighbors. The coefficient for the geographical distance has a negative effect on bilateral trade. Its coefficient is negative and statistically significant at 1 percent level.

In addition to those variables, I added three dummy variables. Myanmar's bilateral trade is mostly influenced by its neighbors. The neighbor dummy shows the importance of trade with neighbors. In both regressions with full variables and with the neighbor dummy, its value is around 0.8. It suggests that trading with its neighbors is important for Myanmar's economy. This is consistent with real situation since EU and western countries have imposed sanction on Myanmar. So Myanmar has to approach to the countries in the region, especially neighboring countries, to sell its products.

Table 3.2.OLS Estimates for Bilateral Trade Flow Analysis for Myanmar (1980-2004)

Independent Variables	Regression			
	Neighbor	Domestic Crisis	Financial Crisis	All Dummies
Constant	-28.55***	-31.184***	-30.157***	-29.488***
	(2.1979)	(2.147)	(2.144)	(2.2002)
GDP	0.6165***	0.7292***	0.7089***	0.6403***
	(0.0551)	(0.0471)	(0.0471)	(0.0551)
Per capita GDP	0.6681***	0.6177***	0.5857***	0.6783***
	(0.0638)	(0.0598)	(0.0601)	(0.0638)
Geographical Distance	-1.094***	-1.3268***	-1.283***	-1.135***
	(0.1129)	(0.0954)	(0.0955)	(0.1127)
Neighbor	0.7888***			0.7434***
	(0.2469)			(0.2451)
Domestic Crisis		-0.6516***		-0.6053***
		(0.1949)		(0.1944)
Financial Crisis			0.5742	0.4395
			(0.3326)	(0.3295)
No of Observation	574	575	575	574
Adjusted R-squared	0.3935	0.3948	0.3862	0.4043

Note: The dependent variable is annual export values of the countries for 1980 to 2004. Standard errors are in parentheses. All values are in logs. * denotes significant at 10% level; ** denotes significant at 5%level; and *** denotes significant at 1% level.

A very interesting finding in Myanmar study is the relationship between trade and political situation. It has negative effects on the Myanmar's economy as its coefficients are negative and statistically significant at 1 percent level. It is indicating that political instability situation create downward movement of Myanmar's trade. In turn it affects on the growth of Myanmar's economy since most of foreign currency earnings is depend on the export. It means whatever the external situations are favorable Myanmar's economy could not be achieved without stability in political situation inside Myanmar. In other words, even Myanmar is

getting AFTA advantages in the region Myanmar cannot exploit those benefits without addressing the domestic political turmoil.

Myanmar was not so much affected by Asian financial crisis since its dummy shows positive signs though it is not statistically significant. This might be because of two reasons; first, Asian financial crisis was cured immediately after it was happen. Many countries supported the financial crisis and the affected range is not so wide (i.e. was only happened in Asia); second, Myanmar itself is isolated in the financial sector among the region. Myanmar is not getting sufficient loan for economic development like other neighboring countries from international organizations such as Asian Development Bank (ADB), International Monetary Fund (IMF), and World Bank.

3.3 Concluding Remarks

The growing importance of intra-regional trade during last two decades has raised the issue of whether countries in Asia are becoming more integrated. Formation of European single market and the North America Free Trade Agreement (NAFTA) in early 1990s made a push for Asian countries to establish their own FTAs. Finally, the ASEAN countries agreed to form the ASEAN free trade area (AFTA) in 1992. For AFTA agreement, CEPT scheme is the centerpiece of the AFTA proposal. In other words, the CEPT scheme is the basis with the goal of reducing tariffs and non-tariff barriers on all intra-ASEAN trade in manufacturing processed goods. ASEAN agreed to reduce the tariff rates in normal track under CEPT to 0-5 percent within 15 years starting from 1993.

Myanmar joined to the ASEAN in 1997. As becoming a member of ASEAN, Myanmar has also obligation to reduce its tariff rates. Other new member such as Cambodia, Laos and Vietnam also need to reduce their tariff rates. Myanmar, like other new member countries,

expects general regional trade area advantages joining ASEAN and AFTA. Moreover, it will be easier to sell its agricultural products to the other ASEAN member countries since its tariff rates and non-tariff barriers were reduced under the CEPT scheme. This means more exports of agricultural products from Myanmar to other member countries can be expected.

Although trade is based on the law of comparative advantage, it will be influenced by the realities of geography. As far as comparative advantage is concerned, there would be an improvement in the competitiveness of Myanmar's export products due to the CEPT scheme would significantly increase the new member's competitiveness in three ways; first, by lowering import tariffs, goods and materials will be available at lower prices and hence replace inefficient domestic production; second, business firms of Myanmar will get an opportunity for the exploitation of economies of scale because of enlarged market (ASEAN); third, competitiveness of Myanmar's products would be gradually increased as a result of free trade.

But there are two questions. Is there actual trade integration among studied countries? Is Myanmar really integrated to the AFTA? To address these questions, I conducted a research whether there was trade integration among ASEAN member countries and whether Myanmar really integrated to the region by using expanded gravity model in each case. I separated two studies in this section_ regional study and Myanmar study.

There might be several issues to address in Myanmar to get fruitful benefits for joining with ASEAN; first, ASEAN original member countries are moving to more capital-intensive manufacturing while Myanmar might be lagged behind those countries as it can become just only the sole supplier of raw materials. Myanmar should try to export value added products; second, because of its insufficient power supply, Myanmar's business firms could not compete well with those of other countries; third, inclusion of Myanmar in ASEAN still obstacle for the region in dealing with other regional blocs as Myanmar delay in solving political situation;

fourth, China's influence on Myanmar would be increased if the US and EU are still practicing sanction on the country. This in turn will affect on the economy of the country as well as poor people of the country; fifth, Myanmar's participation to the ASEAN bloc would be Win-Win game for the country if it can deal with the region more flexible in the short-run. But in the longer-term, unless Myanmar fulfils its commitment and economic reforms as its obligation in AFTA and the country solve its political situation in a more flexible way, Myanmar would be a country like as a country in 18th century. Myanmar would be still isolated in this 21st century competitive world if it could not address those problems.

Chapter 4:

Export-Import Structure between Myanmar and Major Trade Partners

4.1 Myanmar-China

4.1.1 Relationship between Myanmar and China

The tightening sanctions imposed by US and western countries on Myanmar makes the country closer to neighboring countries especially China which says Myanmar's domestic situation is only a country's internal affairs. Because of this enforcement the bilateral economic and trade relations between Myanmar and China increased in recent years. According to COMTRADE data source, China-Myanmar bilateral trade exceeded 1 billion US dollars starting from 2003 with Myanmar's exports to China accounts for about 170 million and its imports from China 900 million. Among the Myanmar's major trade partners, China becomes second biggest trade partner through 2003 to 2006 (Table 4.1a).

Myanmar and China are historically friendship neighbors sharing the longest border of 1384 miles. They used to call each other 'Paukphaw' meaning sibling or fraternal friendship or intimate word used by people from Myanmar. In 1988, people boycotted then Socialist Party government due to economy recession, political failure and many reasons. Tatmadaw_ the word used for military in Myanmar language_ took power by coup. After military coup, China and Myanmar relations in diplomatic, political, security and economy have grown stronger than ever before throughout 1990s and up to now. Under the economic and technical cooperation between two countries, Chinese companies are favored to lay down projects in Myanmar covering hydropower plants, commercial network projects, cement and paper plants, agricultural machinery factories, bridge projects, processing of forest and marine products and

so on. Beginning December 1988, Myanmar set up border trade offices in Lashio, Muse, Namkham and Kunlong (Map 1). In 1995, Muse area was selected and opened as a border trade point with one-stop service being introduced. Later, Myanmar transformed border trade to normal trade zone to enhance the bilateral trade between two countries. The trade zone is connected China's Ruili in Yunnan province with Myanmar's border town of Muse. Bilateral trade and economic relations between China and Myanmar have continued to develop in recent years.

Table 4.1a.Myanmar's major export partners (US$ millions)

Year	CHN	FRA	DEU	HKG	IND	IDN	JPN	KOR	MYS	PAK	PHL	SGP	THA	UK	US
2000	***124.8***	74.7	85.6	31.6	***184.8***	22.0	***119.4***	22.7	69.4	20.4	2.7	***109.7***	***259.9***	***100.3***	***507.4***
2001	134.2	91.3	110.4	27.6	378.4	20.8	102.1	50.7	78.2	17.5	3.4	113.2	805.7	117.5	501.9
2002	136.9	82.2	80.9	24.8	334.5	31.5	109.8	56.2	76.8	15.1	1.9	107.0	906.8	96.6	379.9
2003	***169.5***	73.6	104.2	28.4	***404.1***	14.9	***139.0***	29.3	80.2	9.2	2.5	***83.9***	***899.0***	***121.4***	***295.3***
2004	206.9	92.1	129.9	40.4	395.2	17.4	179.9	30.1	106.5	21.1	2.8	71.1	1354.1	158.5	0.0
2005	274.4	52.2	112.5	48.3	528.1	14.2	203.6	56.3	133.7	39.3	1.3	107.9	1787.2	74.2	0.1
2006	***252.6***	48.3	128.1	53.8	***781.1***	19.7	***246.0***	96.4	125.2	53.2	1.7	***68.5***	***2341.4***	***75.0***	***0.0***

Source: World Integrated Trade Solution (WITS)

4.1.2 Export-Import structure between China and Myanmar

China is second runner position for trade with Myanmar beginning from 2000 (Table 4.1a and 4.1b). Myanmar's export to China constituted 6.18 percent of Myanmar's total export to all countries in 2000. In the same year, Myanmar's import from China was 18.06 percent of total trade. Share of Myanmar's export to China were 6.04 percent and 5.52 percent in 2003 and 2006, respectively. In contrast, share of import from China to Myanmar were increased from 18.06 percent in 2000 to 31.32 percent in 2003 and 34.61 percent in 2006. Myanmar's total trade

with China were 621.2 US million dollars in 2000, US$ 1079.7 million and US$ 1460 million in 2003 and 2006, respectively.

Unlike trade relationship with China, export of garment products, which needs intensive labor resources especially to US through 1990s up to 2000, stimulated the economy of Myanmar. But this was not longer because of US sanctions on Myanmar due to failure of creating democracy (Kudo 2005). Another good example is export products of beans and pulses. The cultivation of beans and pulses rapidly grew by utilizing untapped domestic resources, including arable land and labor in the dry season (Fujita and Okamoto 2006).

Table 4.1b.Myanmar's major import partners (US$ millions)

Year	CHN	FRA	DEU	HKG	IND	IDN	JPN	KOR	MYS	PAK	PHL	SGP	THA	UK	US
2000	***496.4***	13.4	40.2	89.0	***53.5***	64.7	***195.2***	289.3	231.1	3.8	10.2	***435.1***	***503.1***	***13.1***	***17.1***
2001	497.3	10.5	16.1	63.7	61.6	69.0	186.9	232.0	197.0	3.3	6.2	423.0	354.3	13.6	11.4
2002	724.7	10.5	17.8	63.6	74.7	54.4	115.7	143.5	239.2	7.8	3.7	524.1	324.6	11.0	10.3
2003	***910.2***	11.1	13.7	44.0	***88.5***	45.7	***123.3***	184.0	140.2	5.3	3.9	***651.9***	***439.5***	***8.2***	***6.9***
2004	938.4	20.8	24.9	44.7	108.8	60.3	104.9	161.9	149.6	2.4	7.3	651.8	604.7	3.9	11.6
2005	934.8	14.3	32.0	35.6	111.1	78.0	91.8	120.0	245.4	2.2	9.1	594.9	704.9	18.1	5.5
2006	***1207.4***	8.8	40.5	37.2	***139.8***	137.7	***103.7***	121.3	165.3	2.0	7.6	***563.3***	***761.8***	***6.7***	***7.5***

Source: World Integrated Trade Solution (WITS)

Myanmar's exports to China are mainly constituted wood, pearls, crude rubber, ores, vegetables, roots and tubers. According to UN COMTRADE data in WITS jointly provided by UNCTAD and World Bank (http://wits.worldbank.org/witsweb/), the export share of wood in the rough or roughly square are increased. WITS still does not provide the data for Myanmar. I got the Myanmar data by checking its partner country. In 2000, it was US$ 59.82 million, and US$ 76.98 million and US$ 113.5 million in 2003 and 2006, respectively (Table 4.2a). The share

of SITC 242 and 243 exports to China are increased from 64.52 percent in 2000 to 68.28 percent in 2003; and decreased again to 59.56 percent in 2006. Though the income of wood export to China is increased, forests are limited resources. It has widely reported that there is smuggling of forest product between China and Myanmar border. If government cannot control well in logging the forests, export earnings from forest products could be lost. And it should also be considered from environmental impact. China should also help Myanmar to reestablish the forests. If China does not pay attention the lost of its neighbor's forests, the environmental impact may also affect on China as well as on neighboring countries in future.

On the other hand export of rubber to China was consecutively increased from US$ 0.35 million in 2000 to US$ 3.17 million and US$ 21.23 million in 2003 and 2006, respectively. This sector helps to utilize underemployed labor resources because it needs intensive labor resource. And it is also a kind of forest rehabilitation. Myanmar may shift from exporting of long-lived forest products to relatively short-lived forest products like rubber wood. Export of fresh and preserved fishes and dried fruits are ups and downs through 2000 to 2006. Export of vegetables, roots and tubers are consecutively increased from 2000 to 2006 though its shares are small in total export to China.

Myanmar is importing large number of consumer goods from China. Table 4.2b shows some import commodities from China. Among these, textile, iron and steels, machinery and appliances, electric power machines, motor vehicles are main imports from China. If we see the trade value for 2000 (Table 4.1a and 4.1b), Myanmar's export to China was only US$ 124.82 million while import from China was US$ 496.44 million making trade deficit of US$ 371.62 million. This trade deficit was US$ 740.70 million in 2003 and US$ 954.77 million in 2006. China's trade with Myanmar is less than one percent of China's external trade (Kudo 2006).

Table 4.2a.Myanmar's main export items to China in US$ (1000)

SITC	*Description*	*2000*	*2003*	*2006*
031	Fish, fresh & simply preserved	6964.2	2624.9	3973.8
052	Dried fruit including artificially	8967.0	10811.1	5730.8
054	Vegetables, roots & tubers	1398.3	1300.2	5027.9
221	Oil-seeds, oil nuts and oil kernels	316.5	7795.6	3366.4
231	Crude rubber-including synthetic	346.5	3169.6	21228.6
242	Wood in the rough or roughly square	59818.8	76981.0	113497.7
243	Wood, shaped or simply worked	20705.7	38756.7	36975.2
251	Pulp & waste paper			11914.3
276	Other crude minerals	7275.2	4125.4	4171.1
281	Iron ore & concentrates			8800.3
283	Ores & concentrates of non-ferrous	3689.6	9115.1	7797.7
292	Crude vegetable materials	2946.2	3699.9	3092.2
631	Veneers, plywood boards & other wood	186.0	1513.7	1162.3
667	Pearls and precious and semi-precious	8367.5	5287.2	10717.4
891	Musical instruments, sound recorders	2084.4	0.1	1523.6

Source: World Integrated Trade Solution (WITS); SITC: Standard International Trade Classification

4.2 Myanmar-India

4.2.1 Relationship between Myanmar and India

Myanmar is located as a strategic position between South and Southeast Asia. Myanmar shares a 1640 kilometer long land and maritime boundary with India. India-Myanmar relationship was strained during the socialist era. Starting from 1990, India changed its policy on Myanmar based on three major factors. First, India was concerned China's influence in the region_ four pro-China countries which are Pakistan, Bangladesh, Myanmar and Sri Lanka encircled India. Second, insurgents in the northeastern part of India who have based in Myanmar' soil are fighting with Indian Army. Third, India laid down its 'Look East Policy' and intended to engage with ASEAN. Myanmar is the only country which shares border with India.

In this context India sees Myanmar as a gateway to East. Therefore, India decided to shift its policy on Myanmar.

Table 4.2b.Myanmar's main import items from China in US$ (1000)

SITC	Description	2000	2003	2006
122	Tobacco manufactures	2449.3	16387.3	7738.7
332	Petroleum products	24419.8	44871.7	108804.2
512	Organic chemicals	3801.8	15834.6	15857.3
541	Medicinal & pharmaceutical products	10527.3	10926.7	12105.4
561	Fertilizers manufactured	15516.7	17321.0	6135.7
651	Textile yarn and thread	26455.9	27986.9	30215.5
652	Cotton fabrics, woven	15022.6	37677.9	40440.6
653	Text fabrics woven	53867.3	60482.8	103160.1
673	Iron and steel bars, rods, angles	14147.2	28490.5	58349.8
678	Tubes, pipes and fittings of iron	3730.4	13376.4	29643.7
691	Finished structural parts	11207.0	22057.5	14097.4
711	Power generating machinery	23445.6	49113.0	39569.6
719	Machinery and appliances fro non electronics	22533.4	68413.3	49157.3
722	Electric power machinery and switch	10422.5	58231.5	23694.6
729	Other electrical machinery and appliances	15855.6	15897.5	18679.7
732	Road motor vehicles	10179.7	101999.6	80806.5

Source: World Integrated Trade Solution (WITS); SITC: Standard International Trade Classification

From that time, trade between the two countries has increased consecutively. In 2000, trade between two countries is about 200 million US dollars. But it reached nearly about 1 billion US dollars in 2006 (Table 4.1a and 4.1b). India also invested to build an inter-countries road among India, Myanmar and Thailand. India plans to invest many other projects in Myanmar. The current Indian government has infused a new momentum to keep its contacts

robust with Myanmar. Indo-Myanmar relationship as a result is witnessing an unprecedented upswing in the recent years. India is engaged in several river and land-based projects in Myanmar. The reconstruction of the Sittwe port in Myanmar, Kaladan Multi-Model Transport project and Tamu-Kalewa-Kalemyo road project are to name a few. The India-Myanmar gas pipeline project is another area where India is deeply involved in Myanmar. India recently signed three important agreements with Myanmar; exploration of natural gas, satellite-based remote sensing and promotion of Buddhist studies in Myanmar. India is also looking for joint cooperation with Myanmar in several other fields including IT, automobile, textiles, and agro-based industries.

India stands Myanmar's 4th largest trading partner after Thailand, China and Singapore. India is Myanmar's second largest export market after Thailand, absorbing 25 percent of its total exports. India is also the seventh most important source of Myanmar's imports.

India's four states namely Mizoram, Manipur, Nagaland and Arunachal Pradesh share common border with Myanmar's two states namely Chin and Sagaing. The bilateral border trade agreement of 1994 provides framework facilities by which trade is carried out between India and Myanmar. Under the agreement trade is currently carried out through three designated border points one each in Manipur, Mizoram and Nagaland. Another trading point at Pangsau Pass in Mizoram is currently under discussion.

Only 22 items are allowed to be exported and imported under the free trade agreement signed between India and Myanmar recently. They include mustard seeds, pulses and beans, fresh vegetables, fruits and soybean. On the other hand, India supply clothes, shoes, medicines, woolens and engineering goods to Myanmar. These items are in great demand from Myanmar. Myanmar supplies majority of pulses requirement of India. India and Myanmar are vying with each other to dominate the world spice market particularly in curry or sauce ingredients-

turmeric. While the Indian turmeric was selling at $1,350 per ton in the international market; the same was sold by Myanmar at $500 per ton. Myanmar produces about 90 million kilograms of tea annually with about 65 percent of the crop grown in northern Shan state. There are three types of tea produced in Myanmar; Green, Black and Pickled. Green-tea accounts for 52 percent of its production, Black-tea 31 percent and Pickled-tea 17 percent. Black tea is an essential ingredient of a popular national snack. Myanmar is considering getting tea production technology from India to improve in quality.

India and Myanmar are also part of the BIMSTEC, a regional body comprising Bay of Bengal nations. BIMSTEC consist of Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand. The free trade agreement (FTA) among BIMSTEC nations is a pressing demand to facilitate free trade flow among its member countries. India has already concluded a free trade agreement with Sri Lanka in 1998 and with Thailand in 2004. It is yet to finalize this agreement with Bangladesh and Myanmar. Currently the BIMSTEC countries are discussing the list of items that may enjoy "preferential rules of origin" facilities.

4.2.2 Export-Import Structure between Myanmar and India

India is fourth position for trade with Myanmar beginning from 2000 (Table 4.1a and 4.1b). Myanmar's export to India constituted 7.7 percent of Myanmar's total export to all countries in 2000. In the same year, Myanmar's import from India was 1.87 percent of total import. Share of Myanmar's export to India were increased 12.46 percent and 15.54 percent in 2003 and 2006, respectively. Share of import from India to Myanmar were also increased from 2.99 percent in 2003 to 3.88 percent in 2006. Myanmar's total trade with India were about 238 US million dollars in 2000, US$ 493 million and US$ 921 million in 2003 and 2006, respectively. This trade increase was due to export from Myanmar to India.

Myanmar's exports to India are mainly constituted wood, vegetables, roots and tubers especially peas and beans. According to UN COMTRADE data in WITS jointly provided by UNCTAD and World Bank (http://wits.worldbank.org/witsweb/), the export share of various kinds of peas and beans are increased. In 2000, it was US$ 41 million, and US$ 229 million and US$ 495 million in 2003 and 2006, respectively (Table 4.3a).

Table 4.3a.Myanmar's main export items to India in US$ (1000)

SITC	Description	2000	2003	2006
031	Fresh fish and simply preserved		1004.519	
051	Fresh Fruit and nuts	2785.212	1469.864	
075	Spices		1405.999	
211	Hides and skins	1027.164		1073.882
231	Crude rubber			1997.604
242	Wood in the rough or roughly square	134472.814	167153.771	273700.691
251	Pulp and waste paper			
422	Other fixed vegetable oils		1186.01	
0542	Beans and leguminous vegetables	40620.541	228888.573	494640.704
631	Veneers, plywood boards and other wood			

Source: World Integrated Trade Solution

Myanmar is importing engineering goods from India. Table 4.3b shows some import commodities from India. Among these, pharmaceutical and construction products are main imports from India. If we see the trade value for 2000 (Table 4.1a and 4.1b), Myanmar's export to India was US$ 185 million while import from India was US$ 54 million making trade surplus of US$ 131 million. This trade surplus was US$ 316 million in 2003 and US$ 641 million in 2006.

Table 4.3b.Myanmar's main import items from India in US$ (1000)

SITC	Description	2000	2003	2006
011	Fresh meat, chilled or frozen		7090.086	
541	Medicinal and pharmaceutical products	11412.933	14934.631	37759.452
581	Plastic materials		2937.705	4516.758
629	Articles of rubber	1140.406	3505.324	6380.116
672	Ingots and other primary forms of iron	1083.18	5933.704	
673	Iron and steel bars, rods	2187.504	14781.047	2036.036
674	Universals, plates and sheets of iron	3737.817	8505.744	41964.455
697	Household equipment of base metals		2349.106	3457.422
698	Manufactures of metal			1663.111
718	Machines for special industries			2139.956
722	Electric power machinery and switch			4376.372

Source: World Integrated Trade Solution

4.3 Myanmar-Japan

4.3.1 Relationship between Myanmar and Japan

Myanmar and Japan are friendship historically. General Aung San who was national hero of Myanmar and his comrades, we called Thirty Comrades who fought for independence of Myanmar, were trained for military practices by Japanese army officers. Steinberg (1990) noted that there was a so-called “Burmese lobby” in Tokyo including a former Prime Minister Nobusuke Kishi, a former Foreign Minister Watanabe Michio, and an LDP member Yoshiko Yamaguchi, and so on.

Japan provided ODA for Myanmar which played an important role in both economic and diplomatic relations between the two countries. Between 1978 and 1988, Myanmar received US$3712.3 million in assistance, a sum equivalent to 15.1% of Myanmar’s total imports for the same period (Kudo and Mieno 2007). Japan’s ODA accounted for 66.7% of the total bilateral

ODA received by Myanmar between 1976 and 1990. Myanmar had also long been one of the largest recipients of Japanese ODA. It consistently ranked within the top ten recipients and often ranked within the top five (Kudo 2007).

This relationship has drastically changed after military regime took power by coup in 1988. Japan suspended its ODA to Myanmar on account of the junta's poor human rights record and delay in democratization. Sanction practiced by the US and Western countries pushed Myanmar closer to its neighboring countries such as China, India and Thailand. This relationship of Myanmar with its neighbors reduced the Japan's influence in Myanmar. Kudo (2007) reported that the value of gas exports to Thailand increased from US$114.2 million in 2000 to US$1497.4 million in 2005 and further to US$2062.2 million in 2006, and accounted for 88% of Myanmar's exports to Thailand. All the revenues go into the national treasury since the gas reserves have been explored and exploited in the form of production-sharing between the Myanmar Oil and Gas Enterprise (MOGE), a State-owned Economic Enterprise (SEE) under the jurisdiction of the Ministry of Energy, and foreign developers. Supposing that one fourth of the total export value is claimed by MOGE for its share, more than US$500 million went to the Myanmar treasury in 2006. The military government thus obtained an alternative revenue source in lieu of foreign aid.

4.3.2 Export-Import Structure between Myanmar and Japan

Japan stands fourth position for export and fifth position for import of Myanmar beginning from 2000 (Table 4.1a and 4.1b). Myanmar's export to Japan constituted 4.98 percent of Myanmar's total export to all countries in 2000. In the same year, Myanmar's import from Japan was 6.83 percent of total import. Share of Myanmar's export to Japan were 4.28 percent and 4.89 percent in 2003 and 2006, respectively. Share of import from Japan to Myanmar were up and down from 4.16 percent in 2003 to 2.87 percent in 2006. Myanmar's total trade with

Japan were 314 US million dollars in 2000, US$ 262 million and US$ 350 million in 2003 and 2006, respectively.

Table 4.4a.Myanmar's main export items to Japan in US$ (1000)

SITC	Description	2000	2003	2006
031	Fresh Fish and simply preserved	51455.244	49397.304	80962.029
081	Feed.-stuff for animals			2857.516
221	Oil-seeds, oil nuts and oil kernels	10896.375	12009.202	14226.386
241	Fuel wood and charcoal			9323.573
242	Wood in the rough or roughly square	3203.387	1823.31	1744.674
243	Shaped wood or simply worked	2736.469	1911.742	1835.509
0542	Beans, peas, lentils and leguminous vegetable	7703.138	5184.056	6944.231
656	Made-up articles		1006.834	
667	Pearls and precious and semi-precious stones	1024.107	2050.18	8721.451
682	Copper	15161.7		
722	Electric power machinery and switch	4158.84	3301.397	2899.538
841	Clothing except fur clothing	4678.772	32142.752	71679.832
851	Footwear	11405.655	25749.856	39740.12

Source: World Integrated Trade Solution

Myanmar's exports to Japan are mainly constituted shrimps and prawns, vegetables, roots and tubers, and clothes. According to UN COMTRADE data in WITS jointly provided by UNCTAD (http://wits.Worldbank.org/witsweb/) and World Bank, the export share of shrimps and prawns are increased. In 2000, it was US$ 51 million, and US$ 49 million and US$ 81 million in 2003 and 2006, respectively (Table 4.4a). The values of SITC 841 (clothes) exports to Japan are also increased from 4.7 US dollar millions in 2000 to 32 millions in 2003 and 72 millions in 2006.

Myanmar is importing various commodities from Japan. Table 4.4b shows some import commodities from Japan. Among these, machinery products for large industry and motor and vehicles are main imports from Japan. Import for road motor vehicles (SITC 732) were increased from 18 US dollar millions in 2000 to 19 millions in 2003 and 28 millions in 2006.

Table 4.4b.Myanmar's main import items from Japan in US$ (1000)

SITC	Description	2000	2003	2006
581	Plastic materials	1718.888		2205.604
653	Text fabrics woven ex narrow, spec,	1426.353	6369.469	9998.491
674	Universals, plates and sheets of iron	5922.78	1061.651	
678	Tubes, pipes and fittings of iron	2565.788	1708.8	
711	Power generating machinery	9423.694	12202.291	2216.803
712	Agricultural machinery and implements	1729.712	3542.057	2141.263
715	Metalworking machinery	6217.754		
718	Machines for special industries	49304.576	34872.052	21597.848
719	Machinery and appliances	48493.74	9924.187	6762.123
722	Electric power machinery and switch	14166.238	6309.877	3106.87
723	Equipment for distributing electric	3629.262	3257.862	
724	Telecommunications apparatus	1893.112	1679.684	1207.027
729	Other electrical machinery	2266.393		1158.535
732	Road motor vehicles	18530.032	19902.884	28315.261
861	Scientific, medical, optical	1760.985	1155.042	

Source: World Integrated Trade Solution

4.4 Myanmar-Thailand

4.4.1 Relationship between Myanmar and Thailand

Myanmar shares 2400 kilometers border with Thailand. To comprehend the nature and complexity of Myanmar-Thai political and economic relationship we need to understand the

transformation of their friendship over the past 500 years. But the history is not focus of this section, it is skipped. Border trade between the two countries has a long history, but real regulated border trade occurred after Myanmar gained its independence in 1948. During the parliamentary era (1948-1962), the value of trade was marginal since the structure of trade and level of economic was similar. In this era, major traded items were rice, timber and other agricultural products.

After 1962, Myanmar turned socialism. The relationship between two countries was strained. All business enterprises were nationalized in Myanmar. As a result, the black market was proliferated along the border. Armed-ethnic minority groups who were fighting with Myanmar's army controlled the smuggling market based on border. During the socialist period, the huge demand for consumer goods encouraged smuggling across the border. These minorities used to have freedom to levy tax and collected other service charges.

However, the situation was changed after 1988. Myanmar troops attacked those armed-minorities without solving the conflicts in a political way, and tried to exert control over their strongholds. Later, the government was searching for ways to disarm the minorities and wrest direct control of the border trade. From that time, economic and political relations have always become the main focus between the two countries. Thailand has provided aid, scholarships and training courses to Myanmar officials. After 1995, Thailand broadened the scope of the cooperation with Myanmar in agriculture, education, public health and other sectors.

4.4.2 Export-Import Structure between Myanmar and Thailand

Thailand is first position for trade with Myanmar beginning from 2000 (Table 4.1a and 4.1b). Myanmar's export to Thailand constituted 10.84 percent of Myanmar's total export to all countries in 2000. In the same year, Myanmar's import from Thailand was 17.6 percent of total

import. Share of Myanmar's export to Thailand were 27.7 percent and 46.6 percent in 2003 and 2006, respectively. Share of import from Thailand to Myanmar were also increased from 14.8 percent in 2003 and 21.1 percent in 2006. Myanmar's total trade with Thailand were 763 US million dollars in 2000, US$ 1339 million and US$ 3103 million in 2003 and 2006, respectively. This trade increase was due to export from Myanmar to Thailand.

Table 4.5a.Myanmar's main export items to Thailand in US$ (1000)

SITC	Description	2000	2003	2006
001	Live animals	9321.912	8198.608	7867.179
031	Fresh fish and simply preserved	7161.367	14772.741	54374.687
054	Vegetables, roots and tubers		1493.097	3733.894
075	Spices	1271.436	3733.92	2293.859
242	Wood in the rough or roughly square	67354.554	63179.079	79030.624
243	Shaped wood or simply worked	9374.186	14521.161	15856.191
291	Crude animal materials		2718.83	5020.321
321	Coal, coke and briquettes	10674.372	18953.948	7174.877
341	Gas, natural and manufactured	108603.65	710065.89	2018559.888
632	Wood manufactures	2304.542	1591.805	5701.286
672	Ingots & other primary forms of iron		15215.324	
682	Copper	25526.804	28970.168	83875.721
821	Furniture	2613.208	1483.685	4684.123

Source: World Integrated Trade Solution

Myanmar's exports to Thailand are mainly constituted fish, forest products, metals and gas. According to UN COMTRADE data in WITS jointly provided by UNCTAD and World Bank (http://wits.worldbank.org/witsweb/), the export share of natural gas is increased. In 2000, it was US$ 109 million, and US$ 710 million and US$ 2019 million in 2003 and 2006, respectively

(Table 4.5a). The share of SITC 242, 243, and 682 exports to Thailand were also increased. The export values of SITC 242 were 67 US dollar millions in 2000 to 63 millions in 2003; and increased again to 79 millions in 2006.

Myanmar is importing large number of consumer goods from Thailand. Table 4.5b shows some import commodities from Thailand. Among these, petroleum is main import from Thailand. If we see the trade value for 2000 (Table 4.1a and 4.1b), Myanmar's export to Thailand was US$ 260 million while import from Thailand was US$ 503 million making trade deficit of US$ 243 million. In contrast, this trade deficit was turned to trade surplus from US$ 459 million in 2003 and US$ 1579 million in 2006.

Table 4.5b.Myanmar's main import items from Thailand in US$ (1000)

SITC	Description	2000	2003	2006
052	Dried fruit including artificially			18200.344
099	Food preparations	7312.221	6667.033	20267.668
111	Non-alcoholic beverages	18682.051	10523.177	28458.132
332	Petroleum products	32515.196	27557.445	126927.446
422	Other fixed vegetable oils	7419.433	28087.587	9893.463
431	Animals and vegetable. oils and fats	20769.404	15426.2	7519.101
512	Organic chemicals	34108.272	25890.699	22207.473
581	Plastic materials	31730.257	38695.465	54719.078
629	Articles of rubber	21029.489	16504.388	23332.963
652	Cotton fabrics, woven	10098.783	12187.324	17011.883
661	Lime, cement	22825.501	6277.587	24058.919
674	Universals, plates and sheets of iron	13363.367	20558.993	26872.481
729	Other electrical machinery	10200.956	9850.246	23468.732
732	Road motor vehicles	16078.705	15959.363	19331.556

Source: World Integrated Trade Solution

4.5 Comparative Advantages of Myanmar's Major Export Products

Balassa (1965) proposed indicators of revealed comparative advantage (RCA). The RCA or Balassa index (BI) is calculated as the ratio of the share of a given product in a country's export to another country or region to the share of the same product in that country or region's total export. There are many studies using RCA method to analyze specialization patterns in trade. For instance, (Kaitila 2001; and Algieri 2004) studied between EU 15 and the new member states of EU and Russia. Batra and Khan (2005) studied RCA for India and China. Richardson and Zhang (1999) used the Balassa index of RCA for the US to analyze the patterns of variation across time, sectors and regions. Weiss (2004) analyzed the aspect of threat/opportunity in the context of China's economic relations with South East and East Asia.

In order to analyze Myanmar's export and import structure in a form comparable with other countries, revealed comparative advantage (RCA) is most appropriate method which is defined as follows:

$$RCA_{xih} = (X_{ih} / X_i) / (W_h / W)$$

Where RCA_{xih} is the RCA index of the country i in commodity h, X_{ih} is the exports of commodity h from country i to the rest of the world, X_i is country i's total exports, W_h is the world total trade in commodity h, and W is the total world trade volume. If the RCA index is above the unity, the country has comparative advantage in the commodity.

In this section, I calculate the RCA for Myanmar's major export items. The pattern of comparative advantage may differ across different levels of dis-aggregation and sectors (based on HS classification system). This section only focuses on three digit level of SITC. Table 4.6 shows share of some selected commodities and their revealed comparative advantage. Most of RCA indexes are above one. As see in the table the trend for RCA is ups and downs through

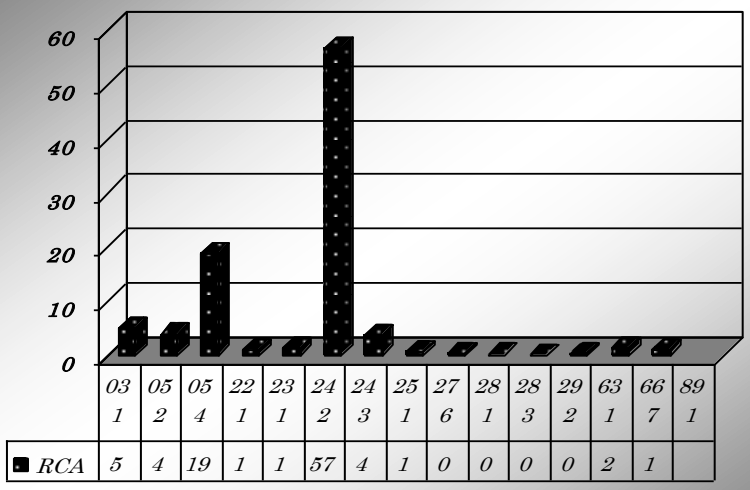
2000 to 2006. If we see for wood products (SITC 242 and 243), the RCA figures are going down. It is clearly stated that government cannot manage well in this sector too. Most of selected commodities shows same trend. Only the vegetables, roots and tubers have shown increased trend. Its RCA value was 5.92, 9.93 and 13.31 in 2000, 2003, and 2006, respectively.

Table 4.6.Share of selected commodities and their revealed comparative advantage (RCA)

SITC	Description	2000		2003		2006	
		Share (%)	RCA	Share (%)	RCA	Share (%)	RCA
031	Fish, fresh & simply preserved	9.25	6.61	6.06	4.48	5.56	5.10
052	Dried fruit including artificially	0.46	8.96	0.44	7.15	0.15	3.99
054	Vegetables, roots & tubers	5.92	8.25	9.93	12.09	13.31	19.01
221	Oil-seeds, oil nuts and oil kernels	1.67	3.27	1.33	2.12	0.52	1.15
231	Crude rubber including synthetic	0.83	2.20	0.49	1.21	0.75	1.41
242	Wood in the rough or roughly square	16.52	58.34	14.28	58.91	11.90	56.93
243	Wood, shaped or simply worked	4.84	5.41	4.50	5.73	2.55	3.87
251	Pulp & waste paper	0.01	na	na	na	0.38	0.73
276	Other crude minerals	0.37	1.58	0.15	0.40	0.09	0.46
281	Iron ore & concentrates	na	na	na	na	0.19	0.29
283	Ores & concentrates of non-ferrous	0.52	0.99	0.41	0.82	0.26	0.27
292	Crude vegetable materials	0.32	0.62	0.27	0.57	0.17	0.48
631	Veneers, plywood boards & other wood	1.05	1.91	0.59	1.17	0.68	1.52
667	Pearls and precious and semi-precious	1.26	0.72	0.93	0.53	1.58	1.11
891	Musical instruments, sound recorders	0.42	0.17	na	na	0.04	na

Source: Author's calculation; **na**: data not available; **SITC**: Standard International Trade Classification

Figure 4.1.RCA for some selected commodities (2006)



4.6 Concluding Remarks

It is widely admitted that low income countries are characterized by small size of market. The small size of market fails to absorb sufficient volume of output that leads to low inducement to invest. But international trade can expand the size of the market because it increases the inducement to invest, promote the growth of income and saving through more efficient allocation of resources. It also helps to transform the subsistence sector into a monetized sector by providing market for their farm produce and raise the income level and the standard of living of the people. And trade also leads to specialization and division of labors. When a country specializes in the production of a few goods, it exports those goods that have comparative advantage. Consequently, it increases national income, which in turn raises the level of output and the growth rate of economy. Therefore, study on the structure of trade and comparative advantage of the commodities for a country is important.

In this section, I study the export-import structure between Myanmar and its major trading partners, and comparative advantages of major export items of Myanmar. But, Myanmar has limited affluent trading partners because of the sanction imposed by US and the western countries for its human rights conditions inside the country. It leads closer ties with its neighboring countries and other countries in the region in all sectors. The country especially has to depend on its emerging neighbors. RCA indexes indicated that Myanmar is still depending on its natural resources rather on the value added products which are the kinds of the vertical export diversification. To diversify the country's export vertically, Myanmar needs technical assistance from its neighboring and major trading countries.

Chapter 5:

Export-led Growth Driven by Diversification, Competitiveness and Market

5.1 Motives behind Export Diversification

Policy makers in developing countries, especially in LDCs, are concerned by the economic and political risk associated with heavy dependence on commodity exports. This concern stems from a widely held view that the high concentration of exports on primary commodities and natural resources can have detrimental effects on a country's growth prospects. In other words, resource-rich economies would grow slower than others, as if natural resources were a "curse". World demand for primary commodities has some unfavorable characteristics that can lower the income accruing to commodity-exporting countries. Supply-side features also have the potential to hamper growth: the difficulties in establishing linkages with the rest of the economy and creating opportunities for skill and technological improvement; the risk of causing excessive real exchange-rate overvaluation; and the possibility of inducing rent-seeking activities. Besides, it has been argued that resource wealth increases the likelihood of civil wars, favors authoritarian rule, and worsens income inequality. Hence, diversification to non-traditional goods has been considered as a primary goal of national development strategies in many LDC countries.

While there is some truth in these arguments, the "resource curse" view should be taken with a pinch of salt. For one thing, resource-based activities can sustain growth over long periods. For another, export diversification has in practice taken different forms in different countries, though some have been more successful than others. Actually, natural resources are

not necessarily a "curse" condemning low-income countries to underdevelopment. There must be considerable potential for export diversification in both low-skilled and resource-based production.

Myanmar must use (rather than "sit on") its natural wealth to build new areas of competitive advantage in non-traditional products. But the traditional view of export promotion often taken by public agencies dealing only with the overseas marketing of existing products is no longer appropriate for this task. They are not able to tackle in a comprehensive manner the inter-linkages of multiple trade challenges, such as the need for importing essential materials at world prices to facilitate export diversification, the need for enhancing the ability of firms to meet price and quality requirements of the global supply chains, the need for building the legal and physical infrastructures conducive to international business development, and so on.

The underlying question is why does Myanmar diversify its export and does it benefit the country's economic growth? This chapter will highlight to realize this potential for export diversification. It is attempted to review the existing literature and arguments for export diversification as well as provide an empirical analysis of the relationship of export diversification and growth. Lederman and Maloney (2007) have provided some robust empirical evidence of a positive effect of export diversification on per capita income growth.

5.2 Export Diversification and Growth

Economic development is the most important policy objective in Myanmar and export is seen as an engine for growth. Johnston and Mellor (1961) reported that expansion of agricultural exports is considered one of the most promising means of increasing income and augmenting foreign exchange earnings, particularly for a country stepping up its development

efforts. In the international trade literature, a number of empirical studies have been undertaken in this context (Michaely 1977; Feder 1983; Hsiao 1987; and Dutt and Ghosh 1996).

However, protectionist hypothesis such as import substitution and infant industry arguments were provided by some analysts in 1950s. This notion leaded to the discussion of the terminology of export pessimism which was debated about that exports only contribute significantly to a country's economic growth when the external demand is favorable in the 1950s and 1960s. The proponents of this pessimistic view argued that the gap between developed and developing countries would increase at a growing rate under the condition of declining global prices of commodities and the lack of industrial base in developing economies.

But after 1980s, globalization brought outward-looking policies in the world. Since then it became popular policy prescription among economists and policy makers. Many developing countries liberalized their trade and harvested the benefits of such openness. At the same time, another hypothesis related to structural changes of exports and diversification of the exports was used to debate in the trade literature. Many economists have been argued that a more diversified export mix may enable a country to be stable in economic growth (Ali and others 1991; Gutierrez de Pineres and others 1997).

5.3 Export Earning from Agricultural Commodities

Traditional and non-traditional agricultural exports of Myanmar are to be instrumental in restoring the country's balance of payments by increasing total export earnings and reducing fluctuations in revenues from exports. This objective has been partly realized. Non-traditional agricultural exports have increased Myanmar's export earnings by US$ 100 to 500 million starting from 2000. Over the last decade, the growth in non-traditional agricultural exports has been bigger than that of traditional agricultural exports. However, non-traditional agricultural

exports have not replaced traditional agricultural exports. Most of Myanmar's export revenue still comes from forest products though export earnings from rice have been fluctuated.

Agricultural exports are expected to provide income for (poor) rural households, either through production or employment. Large numbers of people have indeed benefited: peasant farmers, farm laborers, fishermen, intermediate traders and purchasing agents who deliver to processors and exporters, the processors and exporters themselves, local and international transporters, input suppliers, government officials, and local and foreign consultants though the total number of beneficiaries is difficult to estimate.

5.4 Trade Policy Context

The then Myanmar Socialist Government pursued closed-door policy for many years which actually suited the centrally-planned socialist economic system. Many analysts agree that the economic policy of Myanmar during the socialist period (1962-1988), especially up to the early 1970s, was essentially a policy of agricultural exploitation, with heavy emphasis on rice production (Soe and Fisher 1990; and Thein 1997). Because of the economic and political deterioration of socialist system, popular uprising was happened in 1988. As a consequence, military took the power by coup in the same year.

Starting from the late 1980s and 1990s, Myanmar initiated economic reforms and export-oriented policies. The military regime further encouraged state economic enterprises (SEEs) to form the joint ventures with private entrepreneurs. However, the export growth has declined slightly in the late 1990s and early 2000s because of the heavy reliance on very few commodities and regional financial crisis and deterioration overall macro-economic conditions inside the country. Asian financial crisis leaded to the reduction of the inflow of foreign direct

investment into the country. Consequently it increased the trade deficit because imports are increasing while exports are stagnant due to decrease in demand of export.

Myanmar implemented a series of reforms since late 1980s. It liberalized the agriculture sector, expanded the private sector for trade to some extent, opened the border trade and allowed foreign investments to inflow into the country. These were done by the licensing of private bank operations, the legitimizing of foreign exchange transactions in the parallel market, the privatizing of SEEs and the simplifying of the tariff system. The country's GDP grew by more than 6 percent between 1993 and 1996. But after 1997, its economic growth was slowed to 4 percent per annum due to adverse weather conditions, the regional financial crisis and deterioration in overall macroeconomic conditions. Myanmar signed PTA with Malaysia in 1998 whereby Myanmar received crude oil on beneficial terms in exchange for agricultural products.

Foreign trade is engaged in Myanmar both by public and private sector. All public sector exports and imports are recorded using the official exchange rate, even though actual transactions may use one of several exchange rates. Private sector imports require import licenses for each transaction and are financed through the importers' foreign trade account. Private sector trade is transacted at the parallel market rate, although a range of other exchange rates may be applied.

Myanmar entered AFTA on January 1998 a year after being a membership in ASEAN. Under this scheme, imports are classified under several lists: the inclusion list, temporary exclusion list, sensitive list and general exception list. About 43 percent of all imports were on the inclusion list which consisted of commodities on the fast track (0-5 percent tariff rate within 5-8 years) and normal track (0-5 percent tariff rate within 10 years). Products on the temporary exclusion list (about 55 percent) were phased into the inclusion list by 2005.

The government practiced an unrealistic official exchange rate to overvalue the Kyat. Although the official rate has remained fixed at Kyat 8.5 per Standard Drawing Right (SDR) since 1977, the market rate of the Kyat has significantly depreciated and business transactions are conducted at market rate. SEEs are required to record their transactions at the official rate as well as foreign firms are also. This practice distorts the accounts and reduces transparency. In 1993, the government introduced foreign exchange certificates which have been used in external trade and selected invisible private sector transactions (means unrecorded business transactions).

Despite moves to encourage foreign trade and investment, extensive regulations and procedures tend to hinder commercial activities in the country. The procedure for requesting permits that required for exports, imports and other business activities has been cited as not being transparent and the list of prohibited exports has been frequently changed. Commercial disputes are handled solely under the arbitration among the persons involved in the disputes. As a result, business involved in disputes tend to seek settlement informally rather than legal system.

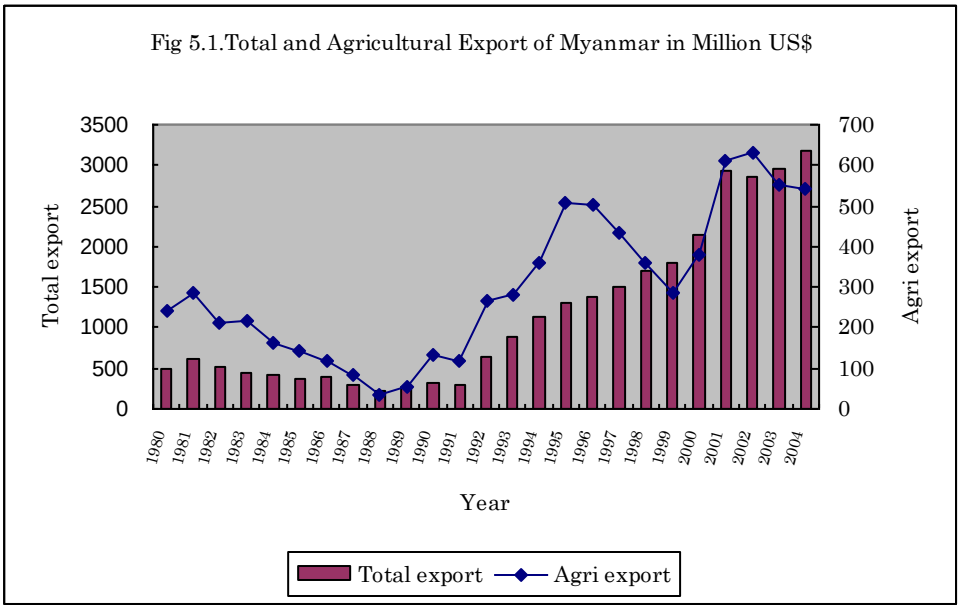
Government monopolizes for the export of rice, teak, petroleum, natural gas, gems and jade and prohibits the export of these products at border points. The government partially liberalized rice production in 1996 and encouraged the farmers to diversify the crop production away from so-called industrialized crops such as pulses, sugarcane and cotton. However, the restrictions on rice export made the domestic prices far lower than international prices. In 2004, government announced that domestic rice marketing and export of rice are freed. But unfortunately, export of rice has been again prohibited to stabilize the rice prices inside the country not to happen riot because of the power struggle within the government and political situation inside country. As a result, the export capabilities in Myanmar are restrained by the unintended effects of agricultural and trade policies as well as by political situations.

5.5 Export Performance

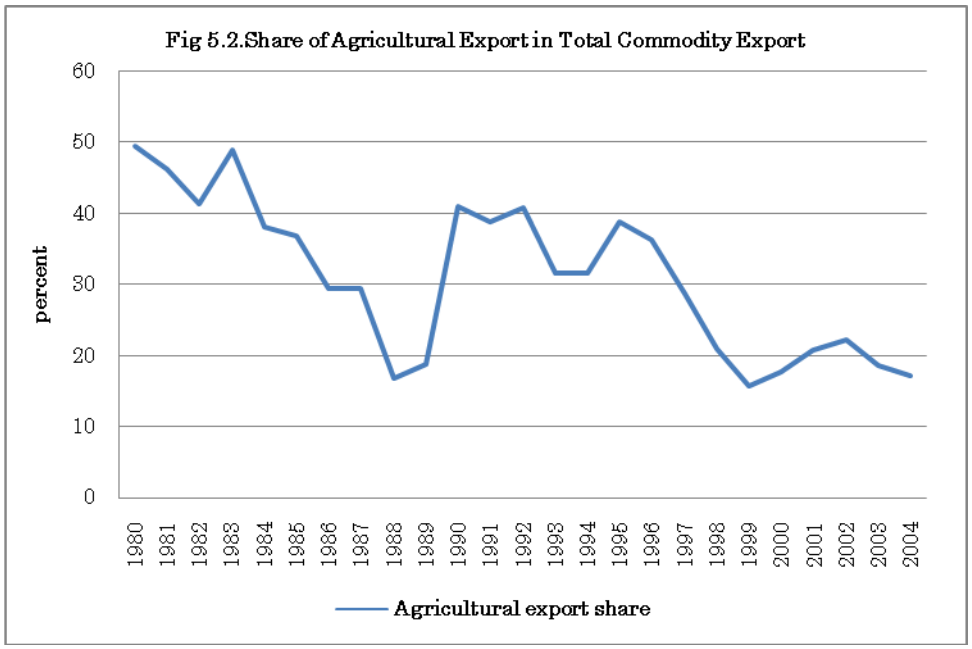
5.5.1 Total Agricultural Export Performance

In this section, I briefly look up the export performance of Myanmar during 1980-2006. Total value of agricultural exports and annual compound growth rate of agricultural products excluding natural rubber and forestry products are summarized in Table 5.1. Growth rates are reported for the nine sub-periods in order to highlight on possible effects of the domestic politics and economic situation. Table 5.2 generally supports the view on how domestic policy orientation is important in explaining export performance. Data for the first period to third period in which the then Myanmar Socialist Government control on export and marketing provides clear signal in declining growth rate of export. During these sub-periods economic and political situations were seriously deteriorating. People were ready to boycott the government. Finally it leaded to people uprising against socialist government. Riots were happened everywhere. Any politicians and political parties could not control the situations and were not stand by position to take power. As a result, military took the power.

Fig 5.1.Total and Agricultural Export of Myanmar in Million US$



Source: FAO, FAOSTAT database



Source; FAO, FAOSTAT database

From that time military practiced strong enforcement in production of agricultural products and expansion of cultivated lands. But marketing and export of some commodities were still under the control of state marketing agency. Later the government liberalized the production of some crops except some pillar crops namely rice, sugarcane, cotton and jute. The growth rate of 1992-1994 sub-periods was 1.28 and exports were reached to 120.97 million US dollars in 2000 price. This growth rate was continued to 1995-1997 sub-periods before the Asian financial crisis took place in 1997. Because of decreasing demand from abroad the growth rate of agricultural products were declined in this period. But from 1998 onward, Myanmar expanded its agricultural export in real terms.

Figure 5.2 shows the changes in the share of agricultural exports in total commodity exports starting from 1980. The share values were up and down in all periods. The higher the share value means the higher in agricultural contribution in the country's economy. In the 1980s the share of agriculture in total exports was between 30 to 50 percent. During first half of 1990s, agriculture's share was high again and stand between 30 and 40 percent of exports. But

starting from 1995 its share was sharply declined because exporting of off shore natural gas exploration in Myanmar's sea to neighboring countries. Though the share of agriculture was declined, its nominal and real values were increased because of rapid expanding demand of vegetable products especially beans from India and Pakistan. But the share and value of rice were clearly down since government's policy was not favor for its producers. Government's policy failure in production, domestic marketing and export of rice made the country to loss its market in the world.

If we compare figure 5.1 and 5.2, the agriculture share of Myanmar had fluctuated until 1995 and after that it gained again growth rate indicating that agricultural exports was much lower than that of non-agricultural commodities. It does not mean Myanmar is moving to industrialization. The experience of Myanmar in fact suggests that the shift in export of traditional products to some extent of other variety of crops as well as other natural resources. Though its growth rates of agricultural exports are increased continuously, if we compared the actual value of agricultural exports to other neighboring countries, the values are far lower than that of those countries (Honma 2003).

5.5.2 Export Performance by Commodity

Table 5.2 describes the export performance in terms of export quantity and value of major 11 commodities in Myanmar. Commodities are selected if its export value was accounted for more than 1 million US dollars in 1980-82 sub-periods. The export values of these major commodities also account for more than 75 percent of the total value of agricultural exports. The export value of traditional commodity, rice, decreased consecutively. In 1980-1982 sub-periods, its value was about 185 million US dollars. But in 2000-2002 periods, its value was sharply down over two fold from starting level in this analysis. Instead of this loss of traditional

promising commodity, export of dried beans took place in its position. The value of the export of beans was only about 31 million US dollars in 1980-1982 periods. But in 2000-2002 sub-periods, its export value reached to 220 million US dollars. Its value increased about seven folds of its initial study level.

Table 5.1.Agricultural Export Performance of Myanmar

Three year average of:	Total agri export value (mil US$)	Annual compound growth rate (%)a	Total agri export value at 2000 price (mil US$)	Annual compound growth rate based on 2000 prices (%)
1980-1982	245.15	-0.03	66.88	-0.07
1983-1985	174.02	-0.12	35.62	-0.18
1986-1988	80.05	-0.34	12.02	-0.44
1989-1991	101.22	0.61	21.25	1.28
1992-1994	301.88	0.52	120.97	0.91
1995-1997	481.52	0.09	242.09	0.13
1998-2000	340.39	0.02	269.84	0.26
2001-2003	598.69	0.17	962.95	0.46
2004-2006	721.96	0.22	1487.88	0.43

Source: UN COMTRADE, [a]: growth rate from the previous period; Compound annual growth rate can be calculated by using following formula:

$$CAGR = \left\{ (EndingValue / BeginingValue)^{\frac{1}{Years}} \right\} - 1$$

As like dried beans, the values of other variety of exports were increased except cotton, jute and natural rubber. The export values of these exceptional commodities were up and down during the study periods. These figures clearly indicate that domestic policy orientation for these crops is unstable because of government intervention in marketing and export of those commodities. But on the other hand, the export values of other commodities were increased consecutively because government do not control and intervene in production and marketing of those crops. Combination of Table 5.2 and 5.3 shows success of diversification of the variety of

export commodities to some extent in one hand and on the other hand decreasing trend of the value of traditional export clearly express that the failure of government policies.

Table 5.2.Quantity and Value of Major Export Commodities

Three year average of:	1980-1982	1983-1985	1986-1989	1990-1992	1993-1995	1996-1999	2000-2002
Milled rice							
Value (1000 US$)	184988.00	125599.00	39797.33	43768.00	109885.33	17745.00	83655.67
Quantity (1000 Mt)	676.10	687.23	316.0	193.79	516.70	803.00	696.83
Maize							
Value (1000 US$)	2456.00	2958.33	977.00	3784.67	6995.33	14507.67	11575.33
Quantity (1000 Mt)	19.57	27.40	12.38	35.18	57.60	108.93	120.63
Dried beans							
Value (1000 US$)	30558.67	26705.67	15631.00	98990.33	195510.00	197111.67	219661.67
Quantity (1000 Mt)	82.93	73.43	58.59	255.64	523.47	661.73	988.97
Groundnut cakes							
Value (1000 US$)	596.67	506.67	343.33	960.00	1843.33	286.67	533.33
Quantity (1000 Mt)	3.716	4.17	2.20	8.03	13.77	1.97	2.80
Sesame cakes							
Value (1000 US$)	1100.00	1266.67	1100.00	740.67	2042.00	536.67	1066.67
Quantity (1000 Mt)	6.28	9.70	8.50	5.33	11.60	3.50	5.63
Dried onions							
Value (1000 US$)	0	0	0	197.00	500.00	5333.33	10300.00
Quantity (1000 Mt)	0	0	0	0.244	1.67	17.80	52.27
Pimento							
Value (1000 US$)	0	0	1166.67	5931.00	6383.67	590.00	1497.67
Quantity (1000 Mt)	0	0	1.27	6.79	10.43	61.33	2.77
Spices							
Value (1000 US$)	0	0	0	867.33	1300.00	2383.33	1066.67
Quantity (1000 Mt)	0	0	0	1.75	3.00	5.48	2.79
Cotton lint							
Value (1000 US$)	1913.33	1850.00	973.33	1055.68	1231.33	2679.00	351.33
Quantity (1000 Mt)	1.79	1.70	0.54	1.10	1.20	2.27	0.40
Jute							
Value (1000 US$)	6434.33	200.00	0	0	649.67	302.33	2368.00
Quantity (1000 Mt)	30.23	0.67	0	0	2.60	0.67	10.45
Natural rubber							
Value (1000 US$)	10658.00	7117.33	4437.00	5234.00	20622.00	21961.33	10629.66
Quantity (1000 Mt)	10.90	9.70	5.87	8.19	21.37	25.83	22.57

Source: FAO, FAOSTAT

Table 5.3.Composition of Food and Live Animal Exports by Destination

	1988-1990	1991-1993	1994-1996	1997-1999	2000-2002	2003-2005	2006-2007
Australia	1.02	1.97	1.26	1.67	1.31	1.56	1.33
Bangladesh	0.01	0.27	2.22	6.12	5.08	0.00	0.00
China	0.00	7.07	2.47	1.38	3.49	2.48	3.86
EU15	9.18	5.97	6.00	6.74	4.30	3.81	2.55
India	23.64	24.81	22.87	23.27	30.62	37.57	52.27
Indonesia	0.56	8.46	11.53	3.54	3.12	1.90	1.48
Japan	15.88	7.76	9.54	16.65	11.05	12.00	9.41
Malaysia	3.56	4.92	4.15	7.22	7.27	8.46	7.68
Singapore	28.06	20.39	15.88	13.85	7.14	4.74	1.45
Thailand	10.62	5.58	4.54	5.31	5.01	11.00	3.66
USA	7.47	2.90	1.62	5.08	5.49	0.00	0.00
ROW	0.00	9.89	17.94	9.18	16.12	16.48	16.33
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: UN COMTRADE

5.5.3 Agricultural Exports by Markets

As Myanmar is agriculture-based country, demand for the production of its agricultural commodities is important for the country's economy. This section, therefore, highlights the importance of markets for Myanmar's products through analysis of its destinations over time. Table 5.3 set out the compositions of food and live animal (SITC code 0) exports by destinations. The United Nations Commodity Trade Statistics provides such kind of data.

The most important export partner of food exports of Myanmar for all sub-periods was India though values of export to that country were not stable in some periods. India is a biggest buyer of Myanmar's peas and beans. Japan plays second important export partner for Myanmar's food export throughout the study periods. The most promising export product to Japan is a variety of fish exports. Food export share of Myanmar to Japan for the last study

period is about 10 percent of Myanmar's total agricultural export by destinations in 2006-2007. Singapore was once biggest importer of Myanmar's commodities in early 1990s. But export share to Singapore sharply went down after 1997-1999 sub-periods. Malaysia followed Japan. Food export to Malaysia is about 8 percent in 2006-2007 periods. Export share of food to China from Myanmar is relatively lower than those of India, Japan, Malaysia and Thailand.

5.6 Impact of Export Diversification, Demand and Competitiveness on Export Performance

5.6.1 Methodology

Aforementioned sections clearly indicated that the export performance is not only depends on international demand but also on its competitiveness and diversification. The challenging issue of Myanmar's agricultural export has been greater reliance on a smaller number of exportable commodities for foreign exchange earnings. Thus export dependency on traditional products of Myanmar can be reduced through diversification of export portfolio. In theory, export diversification can be attained by changing the shares of commodities in the existing export pattern or by including new commodities lines in the export portfolio.

In trade literature, there are two well-known forms of diversification namely horizontal and vertical diversifications. The first one entails alteration of the traditional export mix in order to neutralize the volatility of global commodity prices while the latter one involves well planning of further uses for existing and new innovative commodities by means of value added measures such as processing and marketing.

The performance of the agricultural export of Myanmar is the result of the movements of markets that the country participates in and the supply response of the country. Therefore, the export growth could be explained by investigating the changes in demand and supply factors in the markets. The expansion of the international market for traditional export commodity is

considered a major factor on the demand side. The major factor on the supply side that influences export performance is the country's ability to maintain its competitiveness in exports of traditional products and to diversify into new product lines (Athukorala 1998).

Therefore, in this section I will analyze the relative importance of international demand conditions on the one hand and diversification and competitiveness on the other hand to determine whether these factors played for export performance or not. If the results show that the international demand factor is exogenous, then the export success is mainly attributed by domestic policy orientation.

To test whether abovementioned factors are important for export performance, I have used a conventional approach namely constant market share analysis (CMSA) that was developed by Kravis (1970) which was later applied by Love (1984), Athukorala (1991) and Honma (2003). But the approach has major limitation: the method is based on the choice of "base year", if I choose initial periods as base year it will be calculated the effects of each factor according to my selection but it cannot explain the effects of new products (vertical diversification) introduced into the markets. But fortunately, Athukorala (1991) overcome these limitations by measuring these three factors separately using specific indices and then used them as explanatory variables in a time series regression model to explain changes in real exports. Thus, in this analysis, I will follow his way. The model can be expressed as follows.

$$XV_t = f(WD_t, CM_t, DV_t), \quad f'_1 \geq 1, \qquad f'_2 \geq 1, \qquad f'_3 \leq 1, \qquad (1)$$

Where XV the volume of total agricultural exports is in real terms, WD is world demand for exports of traditional agricultural products for Myanmar, CM is competitiveness in exports of traditional agricultural products, DV is the export diversification, and t represents time.

World demand (export market potential) for the set of traditional export commodities (WD) is measured in terms of a weighted-average index of constant price world exports of relevant commodities:

$$WD = \sum_{i=1}^{n} \alpha_{it} WX_{it} \qquad (2)$$

Where α_{it} is the share of commodity i in Myanmar's total agricultural exports, WX_{it} is an index of constant price world export of commodity i, and n is the number of commodities. The commodities chosen in this study are fish, rice, maize, rubber, wood ad jute (SITC 3 digit level).

The index of competitiveness in traditional exports is constructed as the ratio of actual (observed) exports to hypothetical exports. The latter is estimated by assuming that the country had maintained its "initial" market shares in the exports of these commodities:

$$CM_t = 100\left[\sum_{i=1}^{n} XP_{it} / \sum \beta_i XW_{it}\right] \qquad (3)$$

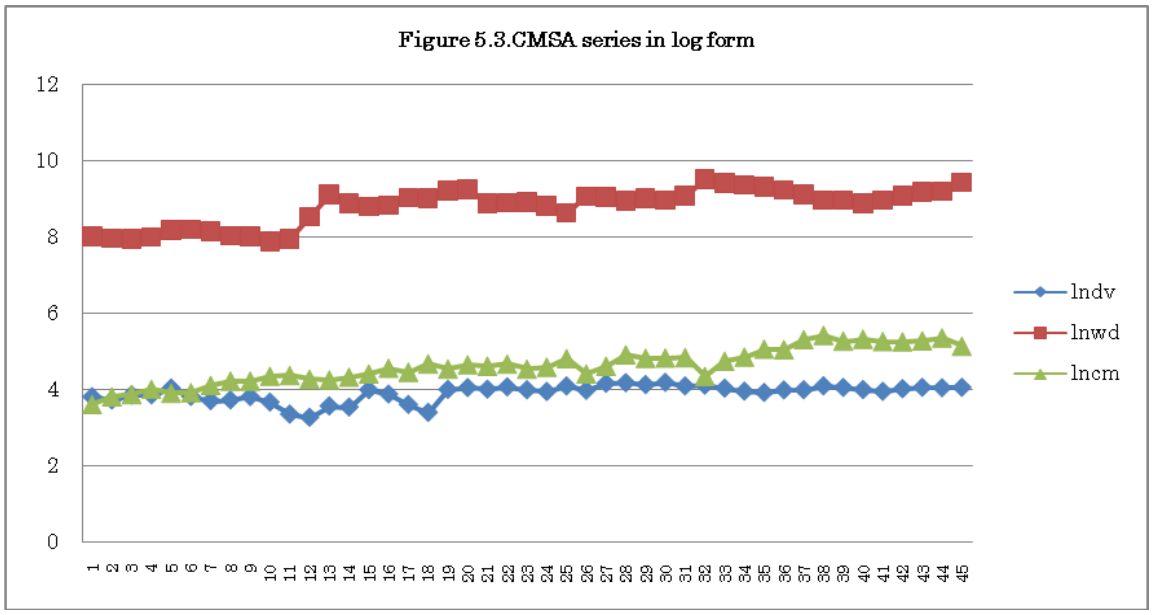
Where, for each i^{th} principal commodity, XP is export earnings of Myanmar for commodity i at time t, XW represents world export earnings, and β is the initial-period world market share of commodity i from Myanmar (1962-1964 annual average).

Export diversification (DV) is measured using the Gini-Hirschman coefficient:

$$DV_t = 100\sqrt{\sum_{i=1}^{n}\left(X_{it} / \sum_{i=1}^{n} X_{it}\right)^2} \qquad (4)$$

Where, X is the value of exports of the given commodity. DV is an indirect (direct) measure of diversification (concentration). Its highest possible value is 100 which occur when total export is composed of only one commodity. The increase in the number of goods exported and/or a more even distribution of export among these goods is reflected in a lower value of DV.

Calculated series of diversification, competitiveness and world demand are shown in figure 5.3 (1 to 45 refers 1962 to 2006 in the figure).



The sign of the coefficients of world demand and competitiveness factors are expected to get positive. Negative sign is expected for diversification factor since it is an inverse measure of diversification. If international market conditions are the endogenous factors, *WD* would explain about export performance. On the other hand, if domestic policy orientation is relatively more important, export performance would be explained by competitiveness and diversification.

Necessary data were taken from FAO stat, the UN Commodity Trade Statistics, and International Financial Statistics of IMF. In this analysis, the model was estimated using annual time series data for 45 years ranging from 1962 to 2006. Three digit level of SITC code are used to construct the series of world demand, competitiveness and diversification factors. For constructing the series of competitiveness factors, the commodities which accounted for more than one million US dollars of total agricultural exports during 1962-1964 were selected

as traditional exports. All variables were measured as indices with year 2000 export unit prices from world development indicators provided by World Bank.

5.6.2 Estimation Method and the Results

Before estimating the equation, I tested whether each data series are stationary or non-stationary using Augmented Dickey-Fuller procedure. The test results are shown in Table 5.4. The test suggested that the all data series are violated the assumption of stationary. These non-stationary data series are sufficiently important to impart bias to the regression estimates. Thus, I used the data series in first-difference form. After testing the ADF, I traced out whether data series are in cointegrtion or non-cointegration by using Unstricted Cointegration Rank test (Table 5.5). This trace test clearly indicates that there is no cointegration at the 5% level. After finding that there is no-cointegration, the model was estimated by OLS.

Table 5.4.Unit root tests (Augmented Dickey-Fuller, ADF test)

Variables	Test statistics (level form)	Order of integration	Test statistics (first difference)	Order of integration
LNXV	-2.10	I(1)	-6.59*	I(0)
LNWD	-1.53	I(1)	-5.51*	I(0)
LNCM	-3.12	I(1)	-8.78*	I(0)
LNDV	-2.48	I(1)	-7.17*	I(0)

Critical values are based on Mackinnon (1991). * Significant at 1% level. ** Significant at 5% level. *** Significant at 10% level.

Table 5.5.Unrestricted co-integration rank tests (Johansen Co-integration test)

Equation	Trace statistic	Critical value (0.05)	Probability**
None	39.87	47.86	0.2272
At most 1	20.39	29.79	0.3964
At most 2	9.86	15.49	0.2916
At most 3	0.15	3.84	0.6977

Trace test indicates no cointegration at the 0.05 level. ** denotes MacKinnon-Haug-Michelis (1999) p-values.

The regression results are reported in Table 5.6. The estimated coefficients can be interpreted as elasticities since all variables have been used in logarithmic form. I divided the time series data into two main sub-periods before 1988 and after 1988 to examine that before and after military regime took power for testing the possibility of domestic political failure.

The estimated coefficients for world demand and diversification have the theoretically expected signs though the coefficients of the latter are not statistically significant. The coefficient of the world demand variable is statistically significant in both first and second period at 1 percent level. Coefficient for the competitiveness in the first period has negative sign but not statistically significant. But in the second period, coefficient for this factor is positive and significant at 1% level indicating that the agricultural export performance of Myanmar comes from competitiveness of its products while world demand also plays crucial role. This result supports the theoretical view.

Table 5.6.Determinants of agricultural exports

Independent Variables	1962-1988		1989-2006	
	Coefficient	Std. Error	Coefficient	Std. Error
Constant	7.66	1.04	-2.51	9.14
World Demand	0.62***	0.14	1.57***	0.47
Competitiveness	-0.14	0.23	1.20***	0.34
Diversification	-0.03	0.21	-1.00	1.14
R-squared	0.57		0.68	
Adjusted R-squared	0.51		0.61	
No. of observations	27		18	
Sum squared residual	1.40		1.01	
F-statistic	10.02		9.88	
Probability(F-statistic)	0.00		0.00	

* denotes significant at 1% level. ** denotes significant at 5% level. *** denotes significant at 10% level.

By using these estimated coefficients I conducted the growth accounting analysis in the same manner as in Honma (2003) to explain the growth rates of agricultural exports for the first (1962-1988) and the second (1989-2006) periods. The growth accounting equation can be derived from equation 1. Specifically the model is written as:

$$G(XV) = \beta_1 G(WD) + \beta_2 G(CM) + \beta_3 G(DV) \qquad (2)$$

Where G denotes percent changes in the variables of following parentheses and β s represent estimated coefficients of WD, CM and DV in OLS estimation. The results are shown in Table 5.7.

Table 5.7.Factors accounting for agricultural export growth of Myanmar

Period	Growth rate of XV	Contribution of changes in			Residual
		World demand	Competitiveness	Diversification	
1962-1988	-0.59	0.29	-0.23	0.002	
(%)	100	49.15	-38.98	0.34	89.49
1989-2006	1.43	0.46	0.56	0.18	
(%)	100	31.51	39.16	12.59	16.74

Source: Own calculation based on percent growth rates of XV, WD, CM and DV series

Table 5.8 shows the unexplained residual is 89.49% in the first period showing that the model does not fit well for export performance in this period. The world demand is the major contributor accounting for 49.15 percent in the first and 31.51 percent in the second period. It is noted that the competitiveness accounts for -38.98 percent in the first period indicating that Myanmar lost its market shares in traditional exports. But it became 39.16 percent in the second period meaning that Myanmar regained its market shares in this latter period. On the other hand, contribution of export diversification is relatively larger in the second period though

the estimated coefficient is not statistically significant (Table 5.6). It is important to note that the growth rate of export performance could not have been achieved without contribution of competitiveness and diversification.

In determining the export performance of Myanmar by three factors namely world demand, competitiveness and diversification by dividing into two sub-periods, it is found that world demand plays crucial role in both periods. Athukorala (1991) reported that export prospects for agricultural products are considered to be determined predominantly by the long-term pattern of world demand leaving little room for supply side factors to achieve export success. But according to the analyses in the previous sections, competitiveness and diversification plays some important role though the results of the diversification factor are not statistically significant. This fact implies that there is still a potential to diversify the export products in the supply side by improving the factors such as market promotion, infrastructure investment and productivity increases in terms of horizontal and vertical diversification.

5.7 Concluding Remarks

In this section it has been examined the relative importance of external demand conditions and internal supply factors for agricultural export performance. The results show external demand certainly plays an important role in the one hand, Myanmar can expand its exports under given world market conditions by improving upon its market share in its traditional exports and diversifying into new product lines providing it pursue appropriate domestic economic policies. The country needs flexible adjustments to changing world market conditions to be able to switch from one line of agricultural exports to another.

But the situation facing the farmers of Myanmar today may be more difficult than that of other developing countries that achieved sustained agricultural growth in the last three

decades. Myanmar's economy now has to compete in a more fiercely competitive world market. The gradual removal of trade barriers, rising demand for higher quality products and higher standard, the continuous erosion of trade preferences and the costly compliance with the new trade rules are particular problems that may hamper the competitiveness of the producers. To raise agricultural productivity and to generate agricultural income, farmers need to keep pace with increasing domestic demand for food and to meet requirements for enhancing competitiveness and diversification.

In Myanmar, the government has often intervened markets in inappropriate ways and has invested in SEEs that have often been inefficient. Reforms should be taken more importantly to privatize those inefficient SEEs and to eliminate state marketing boards and other regulatory agencies. Instead of intervention, the government should develop input-output markets, agricultural extension and agricultural research that are vital to the growth of agriculture. The government should invest not only in the irrigation and rural infrastructure but also for human resource development and institutions relating to agricultural research and marketing. If the government lagged behind other countries to encourage developing new advanced technologies such as biotechnology and bio-energy production (vertical expansion of agricultural products), it may pose threats to agricultural export of the country because developed countries can increase their productivity very easily using such advanced technologies.

Lewis (1989) noted that it is now widely accepted by the mainstream development economists that, in terms of key criteria such as the rate of labor absorption, better distribution of income, linkage effects on the other sectors of the economy and net balance of payments impact, primary export-led growth strategy is comparable with, or perhaps superior to, a growth strategy based on labor-intensive manufactured export expansion. Fortunately, Myanmar still has a comparative advantage in producing agricultural commodities using its cheap labor

resource and vast arable agricultural land. The most fundamental factor influencing the agricultural production potential of the country is the availability of arable land. Myanmar has widely diverse agro-ecological zones with varying availability and quality of land and varying climatic conditions. Horizontal expansion of agricultural products can be done by bringing the more land under cultivation.

During the past few years, Myanmar has been diversifying its industry and agriculture. Through horizontal and vertical diversification, Myanmar is trying to build a diverse export base which includes a variety of products. However, without encouraging research and development, Myanmar cannot create a diverse production with different level of processing. To accomplish the goal of export diversification and to be competitive its products in the world market, the government should provide an environment conducive to attracting new investment into the country. In terms of horizontal diversification of agricultural production, land development strategies should be considered. Agricultural services and the provision of basic infrastructure should also be provided to achieve crop diversification in production. In terms of vertical diversification, agricultural and marketing research should be encouraged and supported.

Chapter 6:

An Empirical Analysis of the Markets for Major Agricultural Export Commodities

6.1 The Role of Price in Agricultural Export Performance

Export is generally considered to play an important role in the economic growth of a country. Once a country establishes a certain share of the world market for a particular product, export performance is then highly dependent on external demand factors. In this regard, the size of the price and expenditure elasticities of Myanmar's export is focal point in export demand argument. And also the estimation of price and expenditure elasticities for exports has been a traditional area of research in international economics. Moreover estimated elasticity can be applied to many relevant macroeconomic policy issues such as study on the effect of monetary and fiscal policy, exchange rate policy, subsidy policy, tariff policy, and on a country's balance of payments, and so on.

Goldstein and Khan (1985) argued that disaggregation is preferred as the estimates obtained directly from the aggregate relationship are likely to be biased. In aggregate trade equations, goods with relatively low price elasticities can display the largest variation in prices and exert a dominant effect on the estimated aggregate price elasticity biasing the estimate downwards. Panagariya et al (1996) reported that a major advantage of using disaggregated data is the unit value indices that must inevitably be used to represent prices are far more meaningful in these data than in aggregated data.

Accordingly, the price and expenditure elasticities of demand are estimated by utilizing export demand model for Myanmar and selected competing countries in a same market. The

purpose of this study is to investigate price and expenditure elasticity empirically at HS 6 digit level of export flow for major commodities of Myanmar.

6.2 Major Commodities and Markets

As Myanmar is agriculture-based country, demand for the production of its agricultural commodities is important for the country's economy. Table 6.1 presents value of the top ten agricultural imports from major markets of Myanmar. The United Nations Commodity Trade Statistics provides such kind of data. The most important agricultural export partner of Myanmar is India. India is a biggest buyer of Myanmar's peas and beans (SITC 0542) and wood (SITC 24231) through 2000 to 2006. Thailand and China import wood products (SITC 24231 and 24331) from Myanmar. Japan stand as an important export partner of Myanmar's shrimps and prawns (SITC 0313) throughout the study periods. Though the United States is buying shrimps and prawns from Myanmar, its value is lower than that of Japan. Singapore is also buying shrimps and prawns. But its import for that product is far lower than that of Japan. Bangladesh, EU, Taiwan and Vietnam are buying wood products from Myanmar. Among these products, I focus only on the export of peas and beans to India market and export of shrimps and prawns to Japan market contributes nearly 50 percent of total agricultural and aquaculture exports starting from 2000. Thus the study of these products would reflect the domestic economic policy on the farmers and fishermen who are producing those commodities.

6.2.1 Overview of India's Peas and Beans Imports

India is the largest producer and consumer of pulses (peas and beans) in the world, accounting for about 25 percent of global production, 27 percent of consumption, and 34 percent of food use (FAO). It is also the top importer, with an 11-percent share of world imports during

1995-2001, although imports have only accounted for about 6 percent of domestic consumption during the same period. Pulse production in India has fluctuated widely with no long-term trend, leading to a steady decline in per capita availability over the past 20 years. Imports have been unrestricted with relatively low tariffs during that period—virtually the only food item afforded such open access to the Indian market. Even with domestic pulse prices increasing faster relative to other foods, imports have remained a surprisingly small share of supplies.

Table 6.1.Top ten agricultural exports of Myanmar including timber by markets

2000			2003			2006		
SITC	Country	Export Value	SITC	Country	Export Value	SITC	Country	Trade Value
24231	India	134465.192	0542	India	228888.573	0542	India	494640.704
24231	Thailand	67354.554	24231	India	167103.604	24231	India	273038.189
24231	China	57927.498	24231	China	72865.970	24231	China	111366.225
0313	Japan	49567.876	24231	Thailand	63179.079	24231	Thailand	79030.624
0542	India	40620.541	0313	Japan	47068.772	0313	Japan	75717.604
0313	USA	27862.314	24231	Bangladesh	37303.636	24231	Vietnam	40544.701
0313	Singapore	23575.966	24331	China	34969.849	0542	Pakistan	39504.284
24231	Bangladesh	20129.934	24331	EU	23944.276	0311	Thailand	39372.265
24331	China	19103.501	0313	USA	17113.904	24331	China	36496.665
0422	Bangladesh	16442.005	24231	EU	15828.359	24231	Taiwan	24814.389

Source: COMTRADE, World Integrated Trade Solution (WITS)

India has permitted unrestricted imports of pulses with low duties for about 20 years (http://agricoop.nic.in/Agristatistics.htm). Despite unrestricted imports and low tariffs, India's imports have remained a relatively small share of supply and consumption. For many pulses, large shares of imports of various pulses including chickpeas, pigeon peas, mung-beans, black gram, kidney beans go from Myanmar.

Table 6.2.Top ten suppliers of peas and beans in India market (1000 US$)

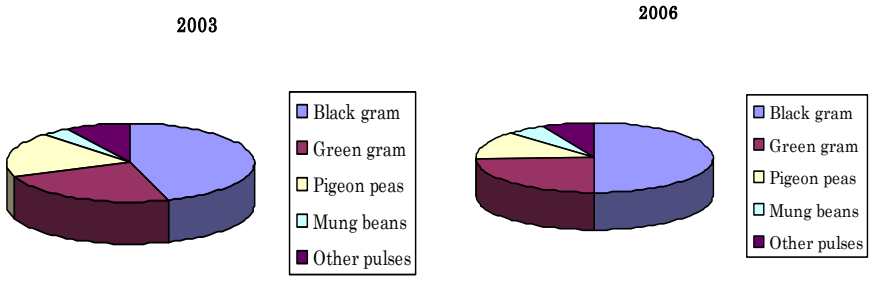
2000		2003		2006	
Country	Import Value	Country	Import Value	Country	Import Value
Myanmar	40620.541	Myanmar	228888.573	Myanmar	494640.704
Canada	27919.342	Canada	118508.092	Canada	234692.696
Australia	15027.074	Australia	43053.267	Australia	80236.081
Nepal	6891.301	France	34151.941	USA	41171.408
Singapore	6827.996	Pakistan	25256.517	China	40399.404
Pakistan	3935.546	Tanzania	20419.481	Ukraine	29616.397
China	2351.531	Iran	19881.505	France	26924.176
USA	2174.006	China	19332.839	Tanzania	18192.522
Mexico	1267.440	Turkey	12144.829	Russia	5490.451
Mozambique	1058.168	Nepal	6889.061	Nepal	5225.247
World	112178344	World	555918507	World	1006038.426

Source: UN COMTRADE

Importers of India favor Myanmar's peas and beans because the country offers many varieties with qualities similar to those produced in India as well as reasonable prices, low freight rates, and relatively fast delivery. Myanmar shares about 50 percent in India's market for pulses through 2000 to 2006 (Table 6.2 and). Canada and Australia are major suppliers of dry peas and chickpeas to the Indian market, each supplying about one-third of India's pea imports. Exports of pulses from China and USA to India market are fluctuated through 2000 to 2006.

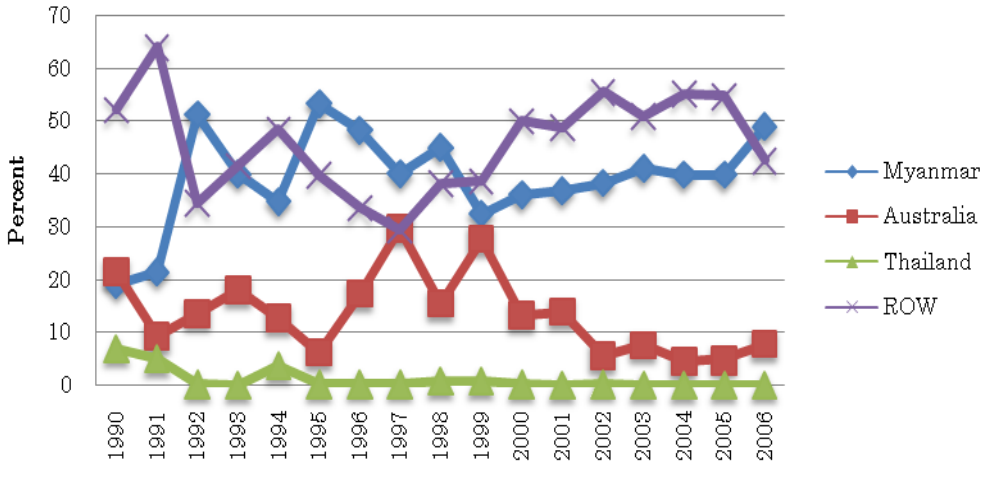
Among these pulses, export of black gram (HS code 071331) from Myanmar to India contributes 50 percent of total value of pulses export from Myanmar (Figure 6.1). Competitors of Myanmar for black gram export to India are Australia and Thailand though the total trade value of pulses from Thailand to India is relatively smaller than that of other countries (Figure 6.2).

Figure 6.1.Myanmar's export share of various peas and beans in India market



Source: Central Statistical Organization (CSO), Myanmar

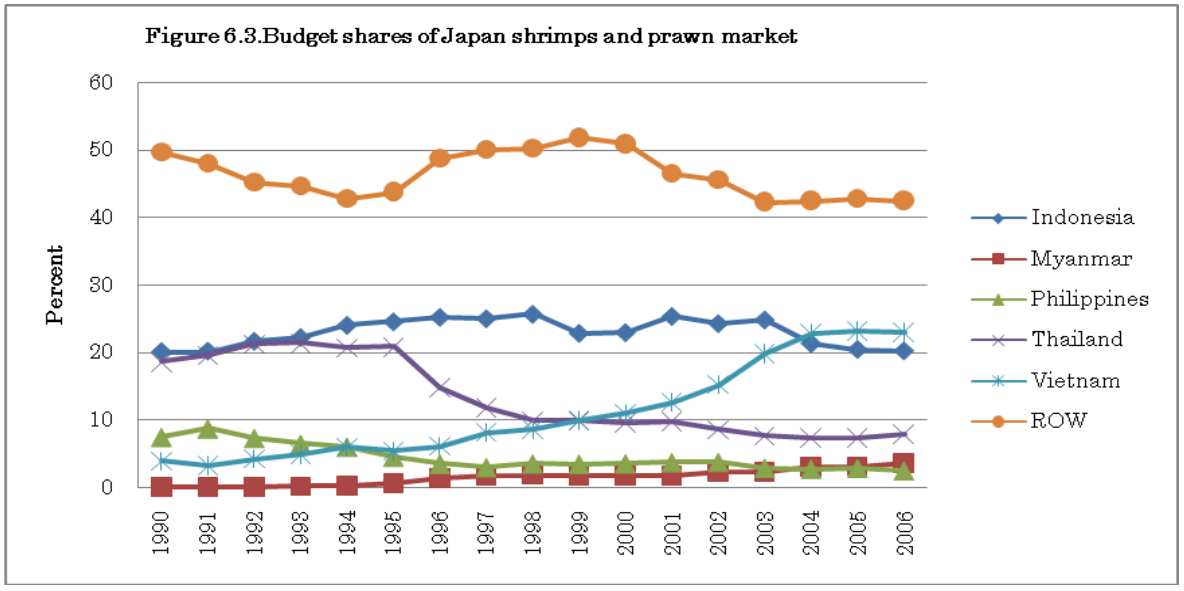
Figure 6.2.Budget share of India black gram market



6.2.2 Overview of Japan's Shrimps and Prawns Imports

Aquaculture sector is an important pillar to the economies of developing countries through export revenues, income generation and employment. Among aquaculture products, demand for shrimps and prawns is expanding globally. World demand for shrimp products grew

round about 5 percent per year starting from 2000 (FAO Globefish, 2008). At the same time, international competition is increasing in export of shrimp sector especially in the leading importing markets. There are three major international leading markets which are Japan, the United States and Europe. The main supply comes from about 30 countries of which Indonesia, Myanmar, Philippines, Thailand and Vietnam are the Association of Southeast Asian Nations (ASEAN).



One of the main export markets of these ASEAN countries for shrimps and prawns commodity is Japan. Japan is importing large quantities of shrimps and prawns from various countries of the world. It imports various kinds of shrimps and prawns products. Table 6.3 presents import trend of shrimps and prawns in Japan market. Figure 6.3 shows the share of shrimps and prawns imports of Japan from selected ASEAN leading suppliers. Vietnam is a leading exporter of shrimps and prawns in Japan market. Its market share was about 23 percent in 2005 followed by Indonesia.

The share of Indonesia's shrimps and prawns in Japan market was in a decreasing trend though its share was about 20 percent in 2005. Thailand's share of shrimps and prawns in Japan market was in a sharply decreasing trend. Its share for the product was about 20 percent in 1995 but it was only about 7 percent in 2005. Philippines's share for shrimps and prawns is decreasing. Though Myanmar's share for the product is increasing, its export value of shrimps and prawns is far lower than those of other ASEAN countries.

As export is generally considered an important role in the economic growth of a country, once a country establishes a certain share of the world market (Japan) for a particular product (shrimps and prawns), export performance is then highly dependent on external demand factors. In this regard, the size of the price and expenditure elasticity of export is focal point in export demand argument. And also the estimation of price and expenditure elasticities for exports has been a traditional area of research in international economics (see Goldstein and Khan, 1985; Bond, 1987; Riedel, 1995; Marquez, 1990). Therefore, the price and expenditure elasticity of shrimps and prawns for selected ASEAN countries are calculated in this section. In this section, I focus my attention on single market, Japan, and five ASEAN exporters.

Table 6.3.Import trend of shrimps and prawns in Japan market (Metric Ton)

Product	2004	2005	2006	2007
Live	383	271	184	167
Fresh/Chilled	34	19	7	0.4
Frozen (Raw)	241445	232443	229952	207257
Dried/Salted	2351	2008	2035	1648
Cooked/Frozen	16745	17051	18269	17893
Cooked/Smoked	618	422	414	324
Preserved	39692	42181	50013	48156

Source: FAO stat

Accordingly, the price and expenditure elasticity of demand for shrimps and prawns in Japan market are estimated by utilizing export demand model for those selected ASEAN countries. This analysis is conducted at six digits level (030613) of the harmonized commodity description and coding system (HS). In this analysis, I use linear approximate almost ideal demand system (LA-AIDS) model for the data set from 1990 to 2006 for 17 years. By utilizing the estimates from LA-AIDS model, I calculate price and expenditure elasticities for export demand of peas and beans in India market, and shrimps and prawns in Japan market.

6.3 Methodology

There are two underlying assumptions in consumers' demand. First assumption is that internationally traded products are differentiated by country of origin, and second that the commodity is weakly separable from all other commodities. The demand for imports of the commodity by source can be expressed as a function of import prices by supplying countries and the total expenditure on the imports of this specific commodity (Armington 1969). In this analysis I used the almost ideal demand system of Deaton and Muellbauer (1980) to estimate the demand equations for two selected commodities namely shrimps and prawns in Japanese market, black gram beans in India market. The data were analyzed at six digit level of HS code.

In dealing with Myanmar's export demand for those selected commodities, it is appropriate to employ the almost ideal demand system as the one used by Honma (1993). In this analysis, the author used two-stage budgeting procedure to estimate the Japan's import demand for some selected horticultural commodities. But in this analysis, my intention is just to investigate the role of price and the export performance. Thus, I estimated only the own price, cross price and expenditure elasticities.

After Deaton and Muellbauer (1980) introduced the AIDS model, a number of empirical applications followed their model and replaced the translog price index with Stone's index to deflate income. This generated the linear approximate almost ideal demand system (LA-AIDS), which is linear in the unknown parameters and therefore simpler to estimate. LA-AIDS model is presumed to be the "true" model and symmetry of the matrix of log price coefficients is presumed to be the correct way to obtain Slutsky symmetry and economic rationality of the demand equations that are estimated. Therefore, I used (LA-AIDS) model to estimate the parameters to get these elasticities. Specifically, the budget share of imports of a commodity from a supply source is given by:

$$w_i = \alpha_i + \sum_{j=1}^{n} \gamma_{ij} \ln p_j + \beta_i \ln(M / P) \qquad i = 1,...,n \qquad (1)$$

Where w_i is the expenditure share of source i in total imports of selected commodity from Myanmar, p_j is the price of imports from source j, M is the total expenditure on imports of the selected commodity from all sources, and P is the aggregate price index defined by;

$$\ln p = \alpha_0 + \sum_k \alpha_k \ln p_k + \tfrac{1}{2} \sum_j \sum_k \gamma_{kj} \ln p_k \ln p_j \qquad (2)$$

This equation followed these assumptions;

$$\sum_i \alpha_i = 1 \ , \quad \sum_i \gamma_{ij} = 0 \text{ and} \sum_i \beta_i = 0 \ ; \sum_i \alpha_i = 1 \ , \ \sum_j \alpha_j = 0; \text{ and } \gamma_{ij} = \gamma_{ji} \qquad (3)$$

But estimating the price index using equation 2 is empirically difficult, so it is replaced by linear approximation (LA-AIDS) in the form of Stone's price index which is the one used by Blanciforti and Green (1983) is defined as;

$$\ln p^* = \sum_{k=1}^{n} w_k \ln p_k \qquad (4)$$

Then uncompensated price elasticities and expenditure elasticities can be calculated under the given condition of total expenditure on imports. Specifically, expenditure elasticity is defined as follows.

$$\mu_i = 1 + \beta_i / w_i \qquad (5)$$

And uncompensated price elasticity is defined as;

$$\eta_{ij} = \frac{\gamma_{ij}}{w_i} - \frac{\beta_i}{w_i} w_j - \delta_{ij} \qquad (6)$$

Where δ_{ij} is the Kronecker delta (δ_{ij} =1 for i= j; δ_{ij} =0 for $i \neq j$).

The linear approximate almost ideal demand system which is the one used by Blanciforti and Green (1983) is adopted in this analysis. To estimate the model, data for import values, import quantities at six digit level of HS code were obtained from the online United Nations Commodity Trade Statistics. Import prices were then calculated total import values divided by total import units. Because of the lack of tariff rate data, import prices were not adjusted for tariff.

6.4 Results

Prior to the estimation I tested the data series whether the variables are stationary or non-stationary as I did in the previous chapter. If there is a non-stationary series, it may lead to incorrect inferences. According to the ADF test, share series, price series and expenditure series are stationary varying at 1%, 5% and 10%. After confirming the data series are stationary, I tested whether the data are cointegrated or non-cointegrated. This test tells us whether the long-run behavior of export demand is adequately specified. Accordingly, the residual-based Unrestricted Cointegration Rank test is employed to determine the possible cointegration between the variables. The test results show there is no cointegration between data series.

Then the model was estimated by using iterative seemingly unrelated regressions (SUR) techniques with restrictions imposed as discussed in above. Using SUR estimation, three equations were run for black gram beans in India market; five equations were run for shrimps and prawns commodity in Japan market simultaneously.

Most of all variables in the estimated equations have the theoretically expected signs with R-squared values are reported in Table 6.4 and 6.5 for two selected commodities (black gram beans; shrimps and prawns), six exporters (Australia, Indonesia, Myanmar, Philippines, Thailand and Vietnam), and two different markets (India and Japan). The statistical values of R-squared (coefficient of determination) for Australia's black gram in India market suggest that the equation is not appropriately regressed. But it should not take an account because the intention of this study is to calculate the elasticities.

The own price coefficients which are the diagonal elements in the import price block in Table 6.4 and 6.5, are statistically significant at various level in 6 of the 8 equations. Cross-price coefficients are negative in some cases which may result in negative cross-price elasticities suggesting exist of complementarity. But most of the cases are positive correlations between the price of imports especially from the major exporting country and from the rest of the world for each commodity.

Table 6.4.Estimates of the LA-AIDS Model in India Market for Black Gram Beans (1990-2006)

Exporter	Constant	Import price from				Import	R-squared
		Myanmar	Australia	Thailand	ROW	expenditure	
Myanmar	-1.57**	-0.39**	0.01	0.21**	0.49**	0.02	0.6129
	(-1.88)	(-2.10)	(0.09)	(1.86)	(1.73)	(0.64)	
Australia	1.34	0.11	0.02	-0.07	-0.22	-0.05*	0.2399
	(1.40)	(0.52)	(0.16)	(-0.49)	(-0.68)	(-1.30)	
Thailand	0.15	0.01	-0.06***	-0.003	0.03*	0.002	0.5691
	(0.76)	(0.13)	(-2.54)	(-0.12)	(0.48)	(0.76)	

*denotes 90% significant. ** denotes 95% significant. *** denotes 99% significant. Figures in parentheses are t values.

It is an interesting that the expenditure coefficients are not significantly from zero in all equations except in Australia's black gram in India market indicating that demands for the imports from different sources are mostly homothetic and the import shares are not affected by the total import expenditure. Those exporting countries which have negative coefficients cannot well take advantage of the markets chosen in this study.

Table 6.5.Estimates of the LA-AIDS Model in Japan Market for Shrimps and Prawns (1990-2006)

Exporter	Const:	Import price from						Import	R-squared
		(A)[1]	(B)	(C)	(D)	(E)	ROW	expenditure	
(A) Indonesia	0.87	0.27*	0.38***	-0.002	0.02	0.09***	-0.64***	-0.07	0.8491
	(1.06)	(1.41)	(2.47)	(-0.03)	(0.31)	(2.48)	(-5.29)	(-1.02)	
(B) Myanmar	0.09	-0.06*	-0.004	0.07***	-0.04***	0.03***	0.03	-0.01	0.9801
	(0.58)	(-1.58)	(-0.14)	(5.47)	(-3.28)	(4.15)	(1.04)	(-0.70)	
(C) Philippines	0.32	0.07	-0.09	-0.09**	0.02	-0.09***	-0.08	-0.01	0.9159
	(0.57)	(0.57)	(-0.83)	(-2.05)	(0.48)	(-3.62)	(0.97)	(-0.14)	
(D) Thailand	-0.95	0.23	0.23*	-0.27***	-0.16***	-0.15***	0.21*	0.07	0.9766
	(-1.08)	(1.12)	(1.37)	(-3.84)	(-2.76)	(-3.92)	(1.62)	(0.90)	
(E) Vietnam	-0.56	-0.24	0.17	-0.08	-0.21***	0.22***	0.14	0.06	0.9756
	(-0.50)	(-0.91)	(0.81)	(-0.88)	(-2.77)	(4.47)	(0.88)	(0.63)	

[1] denotes A, B, C, D and E are the countries designated as such in the first column and ROW is the rest of the world. *denotes 90% significant. ** denotes 95% significant. *** denotes 99% significant. Figures in parentheses are t values.

Table 6.4 and 6.5 provides the LA-AIDS model estimates. By using those AIDS estimates, elasticities were calculated by utilizing equation (5) and (6). The calculated elasticities are summarized in Table 6.6 and Table 6.7. All of the own price elasticities have expected signs. The magnitude of the own price elasticities varies for different suppliers in India market. It might be because consumers in India market consider products are different if the sources are different even though the products have a common commodity name. The own price

elasticity for Myanmar is largest value of 1.6112 indicating that consumers prefer black gram importing from Myanmar. In the case of shrimps and prawns in Japan market, own price elasticities are not so different.

The calculated own price elasticities for black gram beans in India market and shrimps and prawns in Japan market show how price is sensitive for each trade flow. As seen in Table 6.6 and 6.7, 2 trade flows out of a total of 3 in India market and 3 out of a total of 5 trade flows in Japan market have own price elasticities valued greater than one in absolute values. Elasticity for other remaining trade flows are also greater than 0.5. These large own price elasticities are indicating that the exporter can increase not only the quantity of exports but also they can increase their export income by reducing the cost of production, marketing, and distribution.

Table 6.6.Calculated elasticities from LA-AIDS estimates of black gram beans in India market

Elasticity	Myanmar	Australia	Thailand	Row	Expenditure
Myanmar	-1.6112	0.0162	0.5429	1.2273	1.0482
Australia	0.9631	-0.8144	-0.4737	-1.4684	0.6620
Thailand	0.4640	-5.4553	-1.2691	0.0675	1.1780

All import expenditure elasticities of two selected markets show greater than one or nearly one and positive signs in all cases. Expenditure elasticity of Thailand and Vietnam has highest value of 1.0062 and 1.0013 for shrimps and prawns commodity in Japanese market, respectively, and Thailand has highest value of expenditure elasticity for black gram in India market. Expenditure elasticity indicates that percent change in demand for imports from the given country to the percent change in total expenditure on imports from all countries. If its value is greater than unity, the share of given country is increasing if the market is expanding.

For example, the expenditure elasticity of import demand for Myanmar's black gram beans in India market is greater than one. That means if Myanmar can expand the market of these products, the share of these commodities will be expanding in those markets. Expenditure elasticity can also be interpreted as an indicator of non-price competitiveness in each market (Honma 2003). Thus, for example, shrimps and prawns from Myanmar and the same product from other countries maintained their shares in most of the markets in the world due to the strong non-price competitiveness.

Table 6.7.Calculated elasticities from LA-AIDS estimates of shrimps and prawns in Japan market

Exporter	Price Elasticity						Expenditure Elasticity
	(A) *	(B)	(C)	(D)	(E)	ROW	
(A) Indonesia	-0.9153	0.0215	0.0143	0.0357	0.1508	-0.0276	0.9968
(B) Myanmar	0.1070	-0.9925	0.0753	0.0931	0.3138	0.0165	0.9936
(C) Philippines	0.0466	-0.0170	-1.0142	0.0185	0.0416	0.0176	0.9987
(D) Thailand	-0.1230	0.0106	-0.0529	-1.0836	-0.3032	0.0191	1.0062
(E) Vietnam	-0.0360	0.0016	-0.0078	-0.0193	-1.0572	0.0032	1.0013

* denotes A, B, C, D and E are the countries designated as such in the first column and ROW is the rest of the world.

Black gram and shrimps and prawns are most important agricultural exports of Myanmar. I have examined India and Japan markets for these two products. The import demand analysis which assumed product differentiation by country of origin, showed relatively large sensitivity of imports to price although the elasticities vary widely. The results may refer some suggestive information for the country. The estimated large price elasticities indicate that why the country is much interested in export of those products. The country has abundant labor and land relative to capital. These favorable conditions make the country to have comparative advantage in the production of agricultural and aquaculture commodities.

However, the production and exporting of shrimps and prawns needs special processing stages such as fishing vessels, carried vessels, ice plants, processing plants, cold stores, fishmeal plants, dehydration plants, etc. For this commodity, final consumer price originates from the cost of processing, distribution, marketing, and the transporting the product. The proportional cost of these stages may be relatively higher for the commodity. Therefore, a key for the country to pursue its potential comparative advantage in this export is how efficiently and effectively it can organize such facilities and services to exploit scale economies. The results from this chapter suggest that such efforts to get the economy of scale will be benefit for the country and the persons involved in this industry.

6.5 Concluding Remarks

It has been widely believed that the magnitude of the export demand elasticity is one of the most important parameters used in the policy decisions among agricultural economists and policy makers. This is because policy makers would like to know how much the demand for exports of a commodity will change for a specific change in the price of that commodity. For example, the government of Myanmar liberalized the trade and marketing of pulses after 1990 encouraged the farmers to cultivate pulses more to meet the increasing demand from the countries of South Asia especially from India. The government's liberalization act regained export market share of pulses. Like that, certainly, if the government of Myanmar will lift the restrictions on the export of rice which is a traditional export of the country, the export share of rice of the country in the world will be regained soon.

The premise underlying such a policy was that the export demand elasticities for pulses were greater than unity. Export earnings increase with lower prices if the export demand elasticity is greater than unity. Thus the magnitude of the export demand response, whether

elastic or inelastic, is considered to be crucial not only for trade policy decisions and export marketing strategies but also for determining certain domestic policy parameters such as credit policy and land development program.

However, despite its importance there is no professional calculation of those elasticities in Myanmar. Therefore, in this section, export demand elasticities for two major agricultural commodities in two major markets are calculated. According to the results from the previous sections, Myanmar has relatively large value of price and expenditure elasticities for the selected two commodities in the selected two markets in this study indicating that the farmers and fishermen in the country are much interested in producing those two commodities because of the government's favorable policy to those commodities. The price and expenditure elasticities of other countries in the study are not quite different with the values for Myanmar suggesting that Myanmar is competing a lot to gain the market shares for those commodities.

But one important thing to remember is export demand elasticities may vary over time due to the continuous changes in numerous factors which influence their values. These factors include the overall change in world trade volume and in Myanmar's share of trade; changes in foreign countries' populations, income, employment, inflation, deflation, tastes, and weather conditions; changes in the policies of the government of importing countries such as tariffs, quotas, subsidies, exchange rates, and transportation costs. For example, depreciation of India's rupee resulted from recent global financial crisis leaded fewer purchase of pluses from Myanmar. This is one of the reasons why India buys less quantity of pulses from Myanmar in 2008.

As a result of the changes in these factors the export demand schedule facing Myanmar will shift and/or rotate, and the elasticity of export demand will depend on the new equilibrium level of the export price and quantity and the shape and position of the excess demand schedule.

However, Myanmar still have abundant labor and land relative to capital with comparative advantage of producing of various kinds of agricultural and aquaculture commodities because it has various climatic zones. Importantly, the government should effectively use this opportunity to diversify the product lines horizontally by laying down favorable policies. On the other hand, the government should invest in public infrastructures such as airports, docking facilities, etc. Moreover, to pursue the potential of the country's comparative advantage in diversifying export portfolio, not only the government but also the people involving in those business activities should aware how efficiently and effectively exploit every possible scale economies.

Chapter 7:

Conclusions and Policy Implications

7.1 Conclusions

The study aims to determine structure of exports and its implications for the economic development in Myanmar. Development in trade theory has led to changing views on the relative importance of factors influencing export-import and their pattern and on the role of economic development. Moreover, if the economic growth is to be fostered by developing new products and by increasing the value added of existing products, it is required to conduct product specific analysis. The research, therefore, examines these developments with a view to drawing out some implications relevant to development efforts in Myanmar. The research begins by identifying the macroeconomic environment and trade concentration in Myanmar to highlight on how they are interlinked with each other. Second, I search how importance of ASEAN bloc and neighbors on Myanmar economy in an aggregate level. Third, I describe the structure of export-import of Myanmar with its major trading countries. Then I pick up the major commodities for studying how exports of those products are influenced by world demand, diversification and competitiveness. Finally, I investigate the role of price and market on export of those major commodities of the country.

7.1.1 Performance of Myanmar Economy

Macroeconomic factors such as human resources, domestic demand, trade dependence, composition of GDP are crucial for study the economic growth of the country. Understanding the basic economic structure should be fundamental in an economic analysis complemented by more

detailed information about the macroeconomic policy in the country. Balance of payments, structure of export-import, GDP growth rates, government budgets are important sources of information in analyzing the status of economy and trade performance. In this regard, performance of Myanmar economy is conducted. According to the analysis, most of economically active group about 66 percent of the total population are working in agriculture sector in 2005. Industry and service sector employment consists of about 40 percent of total population. Consequently, agriculture sector provides nearly 50 percent of total GDP in 2004. International trade dependence of the country declined overtime. It was only 0.31 percent in total GDP in 2004. Government plus personnel consumption was nearly Kyat 8 trillion in 2004. The country's main export groups are food and live animals, crude materials and mineral fuels. Though the export of food and live animals group is increased, rice export which is one of the traditional exports is declined. On the other hand, the export of peas and beans is increased overtime starting from 1990. Other two new product lines namely shrimps and prawns and natural gas were significantly emerged from 2000.

7.1.2 Bilateral Trade Flow and Myanmar

Myanmar has transformed into market-oriented economy since military took power by coup starting from 1989. It joined to ASEAN in 1997. As becoming a member of ASEAN bloc, the country gets benefit from ASEAN free trade area (AFTA). But there might be a question; does the country get actual advantage from AFTA? To answer this question, bilateral trade flow of Myanmar is analyzed using gravity model. I added the three dummy variables in addition to conventional variables of gravity model; first, domestic crisis dummy which will catch the effects of political turmoil in the country since the country is unstable in political situation; second, neighbor dummy is added to investigate how those neighboring countries are important of trade for Myanmar; third, Asian financial crisis dummy is added to know the effect of the

crisis on the country. According to the analysis, the results show coefficients of the conventional gravity variables have expected signs and statistically significant. Results of neighbor dummy are positive and significant indicating that the country's trade is depending on its neighbors. This is consistent with real situation since US and EU embargo on the products of the country. Interestingly, the result of domestic crisis dummy shows trade is inversely related political situation. Its value is negative and statistically significant at 1% level. The result of ASIAN financial crisis dummy is positive and not significant suggesting that the country was not much affected by the crisis.

7.1.3 Export-Import Structure of Myanmar

The globalization process brought the growing importance of a nation's competitiveness through combination of industry-specific competitive advantages as well as a nation's comparative advantages which is reflected in its ability to create an environment conducive for trade and development. Within the globalization context, the developing or emerging nations seem to be the ones that should take advantage or capture as much as possible of the potential gains in expanding trade and investments. Although analysts seem to differ on the policy implications of globalization, most would concur that the post-1980s period is likely to push more rapid international economic integration than the pre-1980s period. Rapid technological change coupled with falls in barriers to international trade has driven the globalization. Under this globalization era, developing countries face fiercely competitive markets. Myanmar is not an exceptional one. In this condition, the country needs to know the trade structure and comparative advantage of its products to exploit the benefits from this process. Therefore I study the export-import structure between Myanmar and its major trading partners, and comparative advantages of country's major exports. Most of the RCA indexes in the study are above one. The trend for RCA is ups and downs through 2000 to 2006. Myanmar has

comparative advantage in producing agricultural products and aquaculture products since the country has large labor force, vast arable land and wide marine and inland water resources with different climatic zones. The main export earning of the country comes from the agriculture sector and natural resources. Among the products from these two sectors, peas and beans and shrimps and prawns contribute nation's foreign income significantly.

7.1.4 Diversification, Competitiveness and Market

The idea that export diversification contributes to an acceleration of growth in developing countries is a recurrent idea in development economics. By increasing the number of export product lines, horizontal export diversification can reduce the dependence on a limited number of commodities that are subject to major price and volume fluctuations. Such swings in foreign exchange revenues may hamper well-directed economic planning, reduce import capacity and contribute to an undersupply of investment by risk adverse producers. Thus, decreasing export instability through horizontal export diversification may provide significant development process. Vertical export diversification into manufactures may be useful if there is a general trend toward declining terms of trade for primary products. On the other hand, international demand for Myanmar's commodities is necessary to generate the nation's income in turn to improve the well-being of the producers. At the same time, competitiveness pressures on world markets have risen substantially. Moreover, the competitiveness of the products from developing countries has become increasingly blurred due to the lack of advanced technology.

Given these conditions, I try to highlight the potential for export diversification together with competitiveness of the country's products and world demand for two sub-periods for 45 years to determine the effects before present military regime took power and after that. The first sub-period is from 1962-1988. The second sub-period ranges from 1989 to 2006. The

estimated coefficients for world demand and diversification have the theoretically expected signs though the coefficients of the latter are not statistically significant. The coefficient of the world demand variable is statistically significant in both first and second period at 1 percent level. Coefficient for the competitiveness in the first period has negative sign but not statistically significant. But in the second period, coefficient for this factor is positive and significant at 1% level indicating that the agricultural export performance of Myanmar comes from competitiveness of its products. This result supports the theoretical view. Thus the results clearly suggest that the export diversification was not fully brought as much expected as in these two periods.

7.1.5 Markets and Major Agricultural Commodities

Myanmar is a small economy which has been transformed during past two decades from a mono-trend export to a multi-trend export economy. The structural change in the economy attributes to the adoption of market-oriented economy after 1988. Currently, the variety of exports which provides the country foreign exchange mainly comprises the exports of agriculture and aquaculture products and natural resources. Exporting of the products from these two sectors create the employment for untapped land and labor resources of the country. Among these products groups, peas and beans, shrimps and prawns became leading commodities for foreign income earning. The comparative advantages of these two products were increased overtime starting from 1990. Once a country establishes a certain share of the world market for specific products, export performance is then highly dependent on external demand factors.

Accordingly, export demand and expenditure elasticity are estimated for black gram (HS 071331) which is one of the variety of peas and beans in India market, and shrimps and prawns

(HS 030613) in Japan market. In India market, there are three competitors namely Myanmar, Australia and Thailand. In Japan shrimps and prawns market, Indonesia, Myanmar, Philippines, Thailand and Vietnam were chosen since export shares of these countries in Japan are relatively higher than other countries.

According to the results, 2 trade flows out of a total of 3 in India market and 3 out of a total of 5 trade flows in Japan market have own price elasticities valued greater than one in absolute values. Elasticity for other remaining trade flows are also greater than 0.5. These large own price elasticities are indicating that the exporter can increase not only the quantity of exports but also they can increase their export income by reducing the cost of production, marketing, and distribution. All import expenditure elasticities of two selected markets show greater than one or nearly one and positive signs in all cases. Expenditure elasticity of Thailand and Vietnam has highest value of 1.0062 and 1.0013 for shrimps and prawns commodity in Japanese market, respectively, and Thailand has highest value of expenditure elasticity for black gram in India market.

7.2 Policy Implications

Historically, Myanmar agricultural exports have been highly erratic, with fluctuation in growth often followed by interludes of reduced demand especially before 1990 under the then Myanmar socialist government. But after 1990, the growth of agricultural export had been increased though it was still fluctuated in some years. Recently, rising exports to a broader spectrum of commodities, with limited markets due to sanction imposed by the US and western countries, became strong but moderating demand for exports appear to a signal a reversal of past trends. Many different factors, particularly changes in the government's policies and

demand from new markets for new products, are altering the course of Myanmar's agricultural export.

In previous two decades, Myanmar's agricultural export growth relied heavily on mono-trend export of rice and teak for a long period from key markets. In the absence of significant openings in affluent markets such as EU and the US with limited economic growth and instable agricultural production of the country contributed as importance factors. Currently, however, increased demand from two emerging neighboring countries namely China and India, and affluent market Japan is offsetting weaker growth of the country elsewhere, leading to upward revisions in Myanmar's long-term export projections. Also, the unprecedented recent growth of agricultural export was reflected from domestic policy and international demand. However, is the growth of exports will be sustained? Previous two decades of fluctuated growth have rarely been sustained for more than a few years at a time. Clarifying the influence of international demand and domestic policy especially comes from macroeconomic forces on export may enable domestic producers and various strata involved in the trading to gauge the future direction of Myanmar's agricultural export.

To distinguish between the impacts of global demand and macroeconomic influences on agricultural export, various economic models were employed in this study. Myanmar's economic growth could not be increased without addressing the country's political situation. It means that even the country is getting advantages from being a membership of ASEAN free trade area, economic growth of the country will be retard as it cannot solve the political turmoil.

Under the condition of limited markets, neighboring countries and regional integration played a strong role in shaping Myanmar's export patterns. Increasing income and high population in two emerging markets, Japan and the countries of ASEAN, and a high propensity for consumers in these countries to spend additional income on food have encouraged the

exports to these markets since 1990. The impact on Myanmar's agricultural exports is becoming more appreciable as emerging markets continue to raise their share of world trade.

The study has offered the role of government as a main player to be accomplished the agricultural growth which in turn will generate the income of the rural people. Through horizontal and vertical diversification, Myanmar is trying to build a diverse export base which includes a variety of products. However, without encouraging research and development, Myanmar cannot create a diverse production with different level of processing. To accomplish the goal of export diversification and to be competitive its products in the world market, the government should provide an environment conducive to attracting new investment into the country. In terms of horizontal diversification of agricultural production, land development strategies should be considered. Agricultural services and the provision of basic infrastructure should also be provided to achieve crop diversification in production. In terms of vertical diversification, agricultural and marketing research should be encouraged and supported. These can be accomplished by the government in a rationalized way getting consult from well-known and well-experienced experts in various fields. Without considering the role of experts in a flexible manner in this changing world, the country looks like a frog thinks a little well-water a lot.

The study has also demonstrated that markets are important to Myanmar agriculture, absorbing a substantial portion of total production of many important commodities. During the last two decades there have been periods of expansion and periods of contraction. Also, the mix of Myanmar's agricultural products exports has changed and so have the destinations for these products. The research describes the Myanmar's export-import patterns and examines the major markets of two major commodities for the country's exports.

However, several issues need to be studied further. Although multilateral trade liberalization offers Myanmar the prospect of increased access to developed country markets, it is often argued that whether this will allow the country the opportunity to increase its agricultural exports with beneficial consequences on economic growth and poverty reduction. It still needs to explore whether the level of market access in developed countries is an important determinant of agricultural exports from Myanmar; whether agricultural exports have beneficial impacts on poverty in the country.

These tasks can be fulfilled by analyzing three main components: (1) a clear conceptual framework should be constructed that links domestic and international trade policies, agricultural exports and poverty reduction in the country. This task will clarify the effects of preferential tariff reductions, increased export quotas and domestic export promotion; (2) cross-country statistical analysis in comparison with Myanmar should be done to present evidence on levels of market access and domestic export promotion among different countries and to test whether developing countries which have greater access to developed country markets, or which have less restrictive trade policies, or which have higher agricultural exports; (3) case study analyses of each commodity at disaggregated level should be conducted to explore the underlying factors that will increase in exports, and the impact of those commodities exports on poverty.

APPENDIX:

Causal Relationship between Export and GDP Growth

1. Export Led Growth

Developing countries have historically approached the issue of how to achieve economic development as a tradeoff between the export and economic growth. Export-led growth (ELG) is an economic development strategy in which export and foreign trade in general play a central role in a country's economic growth and development. There has been a general global shift towards the ELG strategy in recent years. This change has been found to be due to the actual and potential economic benefits this strategy accords to both developing and developed countries alike. First, export growth is said to result in increased output, employment and consumption, all of which lead to an increase in the demand for a country's output (Jung and Marshall 1985). Furthermore, export sector enlarges the domestic market so that firms achieve economies of scale and thus lower unit costs. This may be expected because an export sector allows a country to trade along its lines of comparative advantage, specializing not only in commodities that use its abundant factors intensively, but also where it's per unit costs are lower (Tyler 1981). This generally leads to efficient resource allocation. This efficiency is further enhanced by exposure to international competition which forces firms to adopt modern technology and produce quality products that meet the demands of sophisticated consumers in international markets (Mayer 1996).

Second, trade may also benefit a country with positive export externalities which lead to increased productivity and economic growth (Feder 1983; Sengupta 1991; Sengupta and Espana 1994). Furthermore, trade may help a developing country to overcome the ax-ante saving-investment gap and the ax-ante import-export gap by providing the necessary foreign exchange for development (Chenery and Strout 1966; Wilbur and Haque 1992). Moreover, countries engaged in trade are thought to be more able to respond to and whether unfavorable external shocks than those following the inward-looking development strategy.

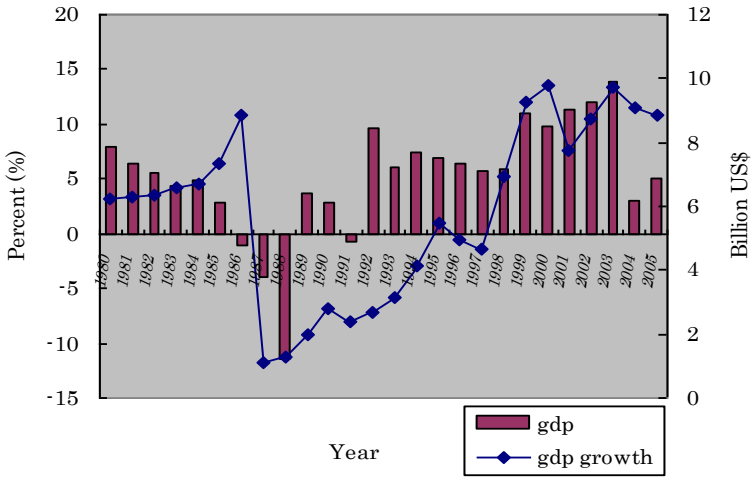
These benefits of the ELG strategy have led not only to the adoption of this strategy by many countries but also to a mushrooming of many studies to test the empirical validity of the hypothesis (Greenaway and Sapsford 1994, Shan and Sun 1998). Kugler (1991) stated four arguments related to ELG hypothesis. These are as follows; first, export leads to output expansion through foreign trade multiplier; second, exports bring foreign exchange which can be used to import capital goods, leading in turn to economic growth; third, competition gives rise to economies of scale and an acceleration of technical progress in production which is potentially important sources of economic growth; fourth, given the theoretical arguments above, the observed strong correlation of export and economic growth is interpreted as an evidence of export-led hypothesis.

2. Export growth and GDP growth of Myanmar

Myanmar has experienced the fluctuation in GDP and GDP growth (Figure 2.1). Both figures dramatically declined starting from 1980 until 1988 when popular uprising for democracy was happened in Myanmar. After 1988, GDP growth was increased gradually though its value was less than zero until 1995. The growth of GDP was again declined in 1997 when Asian financial crisis was hit in the region.

Export was increased from 1989 after military regime exercised trade liberalization (Figure 2.2). But interesting point is export growth. Export growth was fluctuated during those periods. Export growth reached its peak in 1993. But after 1993, it was decreased again until 1997. Though export growth was decreased during financial crisis, export value was steadily increased.

Figure 2.1.Real GDP and GDP growth rate

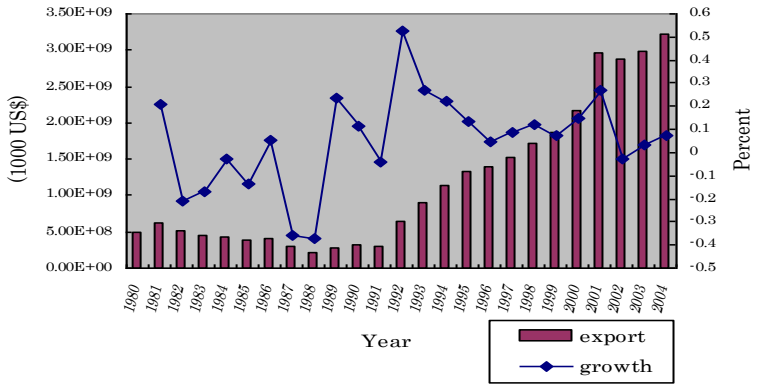


3. Methodology

3.1. Vector Auto Regression Model

The vector auto-regression (VAR) is commonly used for forecasting systems of interrelated time series (export-import-GDP) and for analyzing the dynamic impact of random disturbances on the system of variables. The VAR approach treats every variable as endogenous variables and the exogenous variables are the lagged values of all endogenous variables in the system. Then the system is estimated using the OLS.

Figure 2.2.Export and Export growth in real value



Letting x_1, x_2, ….., x_n be the endogenous variables and z_1, ….., z_m be the exogenous variables, a VAR is given by the following set of n linear equations:

$$x_{1,t} = a_{10} + \sum_{j=1}^{p} a_{11j} x_{1,t-j} + \sum_{j=1}^{p} a_{12j} x_{2,t-j} + \ldots + \sum_{j=1}^{p} a_{1nj} x_{n,t-j} + \sum_{j=0}^{r} b_{11j} z_{1,t-1} + \ldots + \sum_{j=0}^{r} b_{1mj} z_{m,t-j} + \varepsilon_{1t} .$$

$$x_{n,t} = a_{n0} + \sum_{j=1}^{p} a_{n1j} x_{1,t-j} + \sum_{j=1}^{p} a_{n2j} x_{2,t-j} + \ldots + \sum_{j=1}^{p} a_{nnj} x_{n,t-j} + \sum_{j=0}^{r} b_{n1j} z_{1,t-1} + \ldots + \sum_{j=0}^{r} b_{nmj} z_{m,t-j} + \varepsilon_{nt}$$

Before estimating the VAR model, the first step is to check whether the variables are stationary or non-stationary. This can be calculated using the unit root by the Augmented Dickey-Fuller (ADF) test. If the calculated ADF statistic is less than its critical value, than the variable is said to be stationary or integrated to the order zero or I(0). If this is not the case, the ADF test is performed on the first difference of the variable and if the first difference found to be stationary then the variable is I(1). If the variables are stationary, the VAR model can be directly estimated using the current data set.

3.2. Testing for Co-integration

The I(1) variables then is checked for the co-integration using Johansen co-integration test. If there is no cointegration exists, the VAR model can be calculated using the first difference of every variable. If the variables are co-integrated, in order to calculate VAR model, the error correction term (ECT) must be included in the model.

In order to determine the lag in the VAR model, Akaike Information Criterion (AIC) is used. The lag with the lowest AIC is the best. Granger causality can also be calculated using the same number of lag in calculating the VAR model. The Granger causality explains which variable cause the other variable vice versa.

Besides Granger causality, impulse responses and variance decomposition are also calculated. An impulse response function traces out the responsiveness of the dependent variables in the VAR to shocks to each of the variables (Brooks, 2002). Meanwhile, variance decomposition gives the proportion of the movements in the dependent variables that are due to their "own" shocks, versus shocks to the other variables (Brooks, 2002).

3.3. Data and their characteristics

Annual data for the period 1980-2004 were used for estimation. The data for export and import for Myanmar are from the World Development Indicators (WDI) website. Constant GDP values are taken from World Economic Outlook (WEO) (http://www.econstats.com/weo/C111V019.htm). The data used in this chapter are real GDP and real export. Both variables are expressed in logs and in constant international prices. Real output is measured by per capita real GDP in constant US dollars. The nominal values of the export and import values were deflated divided by export value index and import value index for year 2000 to express them in real terms. These export-import value indexes are obtained from WDI.

3.4. The Results of the Tests

The first step in any time series analysis is to test the stationary of every variable using the Augmented Dickey-Fuller (ADF) test. The lag is determined by using the Akaike Information Criterion (AIC). Table 3.1 represent the ADF test for level and first difference data. The ADF test indicates that the unit root hypothesis cannot be rejected in the level data. The test confirms that the variables are integrated of the order one i.e., I(1) in level. It means that the level data is non-stationary. Therefore, first difference was checked and from the results it

shows that all the variables reject the null hypothesis of a unit root at a 1% significance level and it can be concluded that all of the variables became stationary at I(0) level.

The next step, considering that all the variables are I(0), is to check the existence of co-integration between the three variables by using the Johansen Co-integration test. Table 3.2 shows the result of Johansen Co-integration test. The Johansen Co-integration test uses two tests, trace test and Max-Eigen value test. Table 3.2 implies that there is no co-integration among variables. This can be concluded by comparing the 1% critical value with the trace test statistic and Max-Eigen statistic at every hypothesized number of co-integration rows. All the numbers in the trace test statistic and Max-Eigen statistic have lower value than the 1% critical values.

Table 3.1.Unit Root Test (Augmented Dickey Fuller, ADF test)

Variable	Test statistics (level form)	Order of integration	Test statistics (first difference)	Order of integration
GDP	-1.77	I(1)	-4.84***	I(0)
Aggregate export	-2.77	I(1)	-5.03***	I(0)
Aggregate import	-2.27	I(1)	-5.27***	I(0)

Critical values are based on Mackinnon (1991). * denotes significant at 10% level. ** denotes significant at 5% level. *** denotes significant at 1% level.

Since there is no co-integration, therefore, the VAR model can be calculated by using the first difference without including the error correction term (ECT). In calculating VAR model, the number of lag must be determined by comparing the Akaike Information Criterion (AIC). The lag which has the lowest AIC will be used in the VAR model. Since the data is an annual data, therefore only two lags are considered, 1 and 2. By comparing the AIC in these two lags,

lag 1 gives the lowest AIC with 2.03 compared with lag 2 (2.67). Table 3.3 represents the result of VAR model estimates at lag 1.

Table 3.2.Unstricted Co-integration Rank Test (Johansen test)

Hypothesized no of co-integration equations	No of lags	Trace test		Max Eigen-Value test	
		Trace statistics	1% critical value	Max-Eigen stat	1%critical value
Intercept (no trend) in CE and Test VAR					
None	0	14.90	35.65	7.77	25.52
At most 1	0	7.13	20.04	5.47	18.63
At most 2	0	1.66	6.65	1.66	6.65
Intercept and trend in CE – no trend in VAR					
None	0	22.59	48.45	11.83	30.34
At most 1	0	10.76	30.45	6.34	23.65
At most 2	0	4.42	16.26	4.42	16.26

The VAR model estimated is as follows:

$$\Delta LGDP_t = a_1 + \Delta LGDP_{t-1} + \Delta LEXP_{t-1} + \Delta LIMP_{t-1} + \varepsilon_1$$

$$\Delta LEXP_t = a_2 + \Delta LGDP_{t-1} + \Delta LEXP_{t-1} + \Delta LIMP_{t-1} + \varepsilon_2$$

$$\Delta LIMP_t = a_3 + \Delta LGDP_{t-1} + \Delta LEXP_{t-1} + \Delta LIMP_{t-1} + \varepsilon_3$$

In order to prove the export-led hypothesis, the Granger causality test is employed at lag 1. Table 3.4 represents the Granger Causality test between the three variables. The Granger Causality test indicates that there are no relations among three data series. Thus it cannot reject the null hypotheses. From the test it cannot prove in the favor of the export-led growth

hypothesis or it implies that the export does not cause the economic growth. Hypothesis on high export supports the high economic growth may not be applied. Meanwhile the hypothesis for export is not causal to import, it rejects the null hypothesis at 10 percent significance level. The test suggesting that the export also causes import implying that Myanmar's exported product contains a relatively high import component in producing them. Despite there is no causal relationship between export and GDP, previous Table 3.3 shows that the relationship between GDP and previous year export is positive indicating that an increase in export will cause an increase in GDP too.

Table 3.3.Vector Auto-Regression Estimates (VAR)

Exogenous Variables	Endogenous variables		
	LOGY	LOGX	LOGM
LOGY(-1)	0.721374	0.020240	-0.024472
LOGX(-1)	0.247095	0.540272	-0.039353
LOGM(-1)	-0.245737	-0.085276	0.636764
Constant	0.568674	9.227335	7.006496
Adj. R-squared	0.479335	0.205376	0.325084
F-statistic	8.058104	2.981498	4.692765
Determinant Residual Covariance	0.000563		
Log Likelihood (d.f. adjusted)	-12.36969		
Akaike Information Criteria	2.030807		
Schwarz Criteria	2.619834		

Table 3.4.Granger Causality Test at lag 1

Null Hypothesis:	Observations	F-Statistic	Probability
LOGX does not Granger Cause LOGY	23	0.23562	0.79248
LOGY does not Granger Cause LOGX		0.11235	0.89436
LOGM does not Granger Cause LOGY	23	0.47045	0.63219
LOGY does not Granger Cause LOGM		0.03130	0.96923
LOGM does not Granger Cause LOGX	23	2.19701	0.14004
LOGX does not Granger Cause LOGM		3.86544	0.04012

A more meaningful way to interpret the results of a VAR model is to look at the impulse response functions and variance decompositions. In analyzing the impulse response function, the ordering of the variables is important. The order is determined by the correlation between the variables, the variable with the highest correlation will be the first and so on. It can be seen in Table 3.5, export has the highest correlation with the other variables, followed by import and GDP.

Table 3.5.Correlation Matrix

Variable	GDP	Aggregate export	Aggregate import
GDP	1.0000	0.1480	-0.0421
Aggregate export	0.1480	1.0000	0.2188
Aggregate import	-0.0421	0.2188	1.0000

The impulse response function traces out the response of the dependent variable in the VAR system to shocks in the error term (Gujarati, 2003). Figure 3.3 represents the impulse response function. The effect of shocks on export and import especially on GDP will be focused in this section.

A shock in export will increase GDP after the second year but will decrease GDP after the third year. Meanwhile a shock in export will reach the peak on GDP after the third year. A shock on import and export will last for only five years after the shock. A shock in import also affects export after the second year and decrease until the fourth year.

In addition to the impulse response function, variance decomposition is analyzed. The variance decomposition gives information about the relative importance of the random innovations. It gives information on the percentage of variation in the forecast error of a variable explained by its own innovation and the proportion explained by innovations in other variables. Table 3.6 summarizes the results of the variance decomposition on the effects of export and import on GDP and effects of import on export.

Figure 2.3. Response to Cholesky One S.D. Innovations ± 2 S.E.

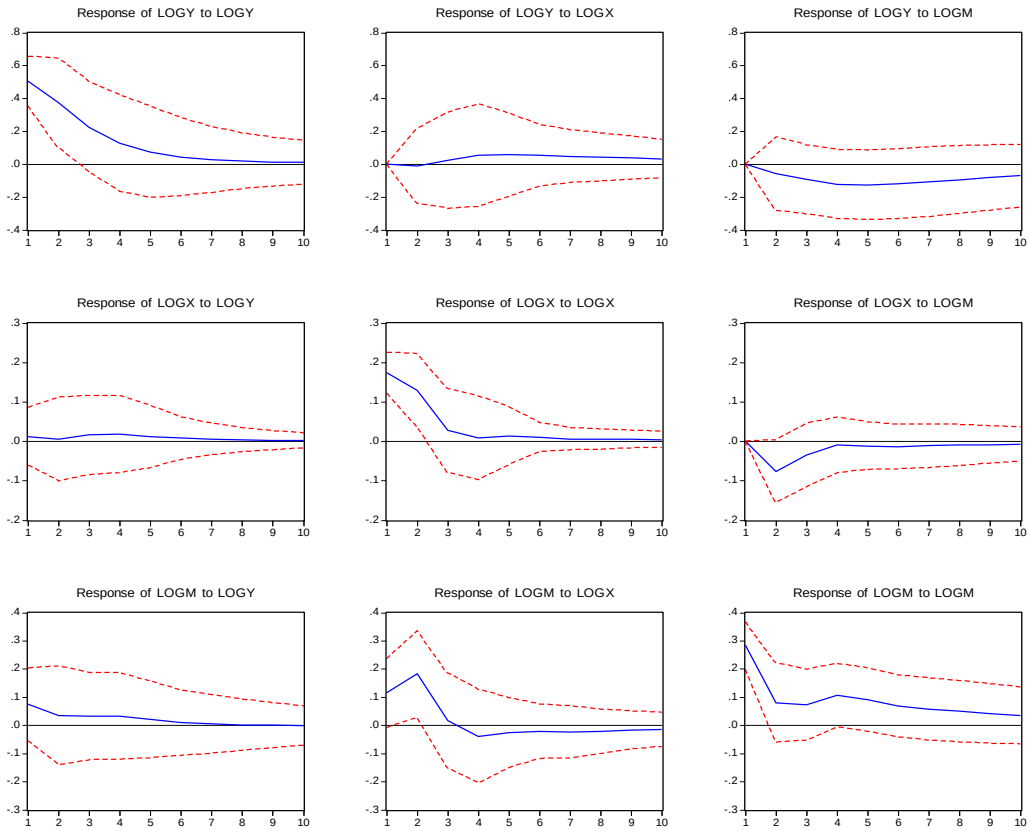


Table 3.6 shows that on average only 1.36 percent of the variation for GDP can be explained by export and 8.63 percent can be explained by import and 90 percent can be explained its own innovation or other factors outside the model. This evidence shows that import have relatively higher an important effect than the export to the GDP of Myanmar. Moreover, the growth of Myanmar's economy is not only affected by export-import but also affected by other factors that are not considered in this research.

Table 3.6 also indicates that 11.71 percent of the variation for export can be explained by import, 87 percent by its own innovation or other factor outside the model and only 1.29 percent by GDP. It can be concluded that import has an important effect on the export of Myanmar more than the effect of GDP to export. But in the case of import, 27.61 percent of the variation can be explained by export and 67.23 percent can be explained by its own innovation or other factors, and only 5.16 percent can be explained by GDP for import of Myanmar. This can be explained Myanmar's imported commodities contain relatively high export component.

4. Relationship between Agricultural GDP and Export-Import

In addition to the testing of causal relationship between GDP and export-import, I also tested the effect of export-import on agricultural GDP (Table 4.7). The growth of agriculture as percentage of total GDP is used as proxy for agricultural GDP. These data are also obtained from WDI. The agricultural GDP (AGDP) can be explained by total export about 6 percent, and 93.5 percent is effects of other factors such as domestic policies on agriculture. But for the case of export, 21 percent can be explained by AGDP, and 10 percent can be explained by import. Thus agriculture sector plays important sector for the growth of export for Myanmar. In the case of import, about 11 percent can be explained by AGDP, and 53 can be explained by export

to the growth of import in Myanmar. According to the results of this variance decomposition, therefore, agriculture sector is relatively high important to the growth of import as well.

Table 3.6.Variance Decompositions of GDP, Export and Import

Variance Decomposition of Gross Domestic Product				
Period	S.E.	LOGY	LOGX	LOGM
1	0.505255	100.0000	0.000000	0.000000
2	0.630771	99.11443	0.034973	0.850600
3	0.676477	97.16863	0.146476	2.684898
4	0.701066	93.71716	0.700895	5.581945
5	0.718616	90.18839	1.281153	8.530458
6	0.731626	87.35038	1.734997	10.91463
7	0.741482	85.17491	2.093235	12.73185
8	0.748962	83.53860	2.367599	14.09380
9	0.754549	82.33367	2.569111	15.09722
10	0.758681	81.45450	2.715827	15.82967
Variance Decomposition of Aggregate Export				
1	0.174821	0.470254	99.52975	0.000000
2	0.230550	0.307174	88.75728	10.93554
3	0.235325	0.749789	86.49667	12.75354
4	0.236360	1.321273	85.87865	12.80008
5	0.237379	1.563065	85.47057	12.96637
6	0.238101	1.650335	85.11462	13.23505
7	0.238498	1.690377	84.88653	13.42310
8	0.238771	1.707346	84.73148	13.56117
9	0.238986	1.713157	84.61124	13.67560
10	0.239147	1.714949	84.51971	13.76534
Variance Decomposition of Aggregate Import				
1	0.314041	5.502025	13.24326	81.25471
2	0.373142	4.750155	33.10987	62.13998
3	0.381789	5.214727	31.82014	62.96514
4	0.399665	5.403283	30.05625	64.54046
5	0.411009	5.345907	28.83049	65.82361
6	0.417274	5.236337	28.24243	66.52123
7	0.421862	5.132366	27.94101	66.92662
8	0.425251	5.051699	27.74393	67.20437
9	0.427606	4.996407	27.60712	67.39647
10	0.429272	4.958933	27.51475	67.52631
Cholesky Ordering:		LOGY	LOGX	LOGM

Table 4.7.Variance Decomposition of AGDP, Export and Import

Variance Decomposition of Agricultural GDP				
Period	S.E.	LOGAY	LOGX	LOGM
1	0.044962	100.0000	0.000000	0.000000
2	0.068623	98.87605	0.226283	0.897666
3	0.085921	97.41123	1.936076	0.652691
4	0.097920	94.90357	4.205520	0.890914
5	0.106653	93.02954	6.002770	0.967692
6	0.113644	91.90610	7.213824	0.880077
7	0.119794	91.08955	8.117419	0.793035
8	0.125381	90.31603	8.947812	0.736161
9	0.130448	89.50775	9.793519	0.698730
10	0.135030	88.67718	10.64494	0.677884
Variance Decomposition of Aggregate Export				
1	0.211203	9.057153	90.94285	0.000000
2	0.289898	9.740120	88.18190	2.077983
3	0.347945	13.07028	79.05017	7.879549
4	0.402418	17.81473	70.45259	11.73268
5	0.452281	21.81454	65.38327	12.80218
6	0.496531	24.48090	62.83986	12.67924
7	0.535766	26.27459	61.35642	12.36899
8	0.571266	27.69753	60.15112	12.15136
9	0.604179	28.98103	59.01239	12.00658
10	0.635129	30.17099	57.96282	11.86619
Variance Decomposition of Aggregate Import				
1	0.230194	1.389247	30.12260	68.48815
2	0.313550	6.906701	46.03739	47.05591
3	0.376449	7.909769	53.27881	38.81142
4	0.426808	8.877984	56.38983	34.73219
5	0.470324	10.14702	57.31314	32.53985
6	0.509596	11.69377	57.42387	30.88236
7	0.545605	13.29365	57.34105	29.36530
8	0.578807	14.81670	57.21972	27.96358
9	0.609609	16.24164	57.04373	26.71462
10	0.638420	17.59056	56.79186	25.61758
Cholesky Ordering:	LOGAY	LOGX	LOGM	

5. Concluding Remarks

In this chapter, a vector auto-regression model (VAR) is employed to analyze the export-led hypothesis for Myanmar. The variables analyzed are real GDP, real export and real import. All of the variables indicate there is a unit root at I(1), but among the three variables, there is no any co-integration. In the absence of co-integration, the VAR equation can be constructed by using the first difference of the variables excluding the error correction term (ECT). Lag 0 exhibit the best lag used in the VAR equation.

The Granger causality test does not prove in favor of export-led hypothesis for Myanmar. The test also indicates that export causes import in the 10 percent significance level. It shows that imported product from Myanmar contains relatively high export components; therefore an increase in import will cause an increase in export too.

The impulse response function shows that a change in import will change GDP more than a change in export but the change in import will decrease GDP in the third year. Meanwhile, in the third year, a shock on export will reach it peaks on GDP. Variance decomposition analysis indicates that variation for GDP and export can be explained mostly by import, and even greater than its own variable innovation. It shows that import is an important factor for export since it supplies the input to produce output that eventually will affect the GDP. It can also be explained that the export brings foreign currency that can be used to import capital goods which will affect the GDP.

The study, finally, for causal relationship between AGDP and export-import tell us that the agricultural economy of Myanmar plays very important factor to the growth of export and import.

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