ANALYSIS ON INTERNATIONAL TRADE OF MYANMAR (1998 ~ 2007)

ABSTRACT

Since its participation in AFTA, Myanmar's trade volumes have being grown rapidly while its trade patterns and directions have significantly changed. Recognizing the importance of international trade in Myanmar economies, this study attempts to analyze the trade patterns of Myanmar based the gravity model. The empirical analysis is conducted to identify the determining factors of each country's bilateral trade flows and policy implications for promoting their trade.

The results indicate that Myanmar trades are mainly affected by partner country's GDP, the difference between per capita GDPs of two countries, distance, common border, and presence in particular FTA. Their trade relations with East Asian countries mainly China, Japan and Korea have yet to be exploited to their full potential. These findings suggest that Myanmar needs to promote its bilateral trade with countries in close proximity and having large economic size and high consumers' purchasing power through accelerating its trade liberalization efforts in FTAs in progress.

Keywords: CLM countries, ASEAN, East Asia, FTA, Bilateral trade

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1.   Introduction

Myanmar became a full-fledged member of ASEAN in July 1997 and since then Myanmar endeavored to integrate its economies to the region through several institutional and economic reforms. As a result, Myanmar can be seen as the fastest-growing economy in the region and have enjoyed a certain degree of macroeconomic stability in recent years. However, in fact, Myanmar is still included in the least developed countries characterized by primary sector-based transition economies with high poverty rate, insufficient infrastructure, and weak institutions. The economy is still facing huge challenges in tackling poverty, reducing income gap and narrowing development gap in the region.

Indeed, since its membership in ASEAN Free trade Area (AFTA), trade volumes of Myanmar have grown rapidly. At the same time, the pattern and direction of trades have significantly changed with the various reasons. To explore the determinants of trade flows in Myanmar, this study empirically analyses the bilateral trade flows between Myanmar and its trading partners in a framework of the gravity model over the period for 1998 to 2007. The aims of this paper are to investigate the determinants of bilateral trade flow of Myanmar, to examine whether bilateral trade flows Myanmar and it trade partners are lower or higher than what is predicted by the economic model, and to extract implications for trade policies of Myanmar.

The gravity model has been widely used in the empirical literature to explain bilateral trade. Hassan (2001) examined the issue of whether intra-SAARC trade is lower or higher than what is predicted by the gravity model. Sohn (2005) estimated a gravity model of bilateral trades between Korea and its 30 trading partners. Bussière and Schnatz (2006) practiced the gravity model to examine whether China's share in international trade is consistent with fundamentals of the gravity model. Huot and Kakinaka (2007) analyzed Cambodia's bilateral trade flows through investigating the impact of trade structure in a framework of the gravity equation for the period of 2000-2004. However, there is not such a comparison study between the underlying factors in pattern and direction of bilateral flows of Myanmar by using gravity model.

Considering the importance of international trade in economic development of Myanmar, it would be an essential task to identify which are determinant factors of their bilateral trade flows as it would assist in understanding trade patterns and formulating trade policies of Myanmar. This study will, in addition to basic gravity model, look at the impacts of the generalized systems of preferences offered by developed countries and free trade agreements on bilateral trade flows of Myanmar.

2.   Overview of CLM Economies

Since its accession to ASEAN, Myanmar has implemented specific measures and provisions under the several agreements of ASEAN including ASEAN Free trade Area (AFTA), ASEAN Framework Agreement on Services (AFAS) and (ASEAN Investment Area) AIA, together with the other member countries, in the areas of liberalization, facilitation and promotion of trades, services and investment. Moreover, with the intention to promote trade and attract greater FDI, Myanmar has also undertaken several institutional and economic reforms.

Table - 1

Socio-economic Indicators of ASEAN Countries (2008)

Country	GDP Growth Rate	Per capita GDP	GDP Structure (2007) (% of GDP)			Trade Openness (% of GDP)	
	%	US$ PPP	Agriculture	Industry	Services	Exports	Imports
Brunei	0.4	50,235	0.7	71.0	28.3	61.9	22.0
Cambodia	6.0	1,794	31.9	26.8	41.3	38.3	40.4
Indonesia	6.1	3,705	13.8	46.7	39.4	26.8	25.3
Lao, PDR	8.4	2,237	41.8	32.2	26.0	15.6	34.1
Malaysia	4.6	13,192	10.2	47.7	42.0	87.3	64.8
Myanmar	**4.5**	**1,083**	**43.7**	**19.8**	**36.5**	**24.4**	**14.0**
Philippines	3.6	3,421	14.1	31.7	54.2	29.4	34.0
Singapore	1.1	50,347	0.1	31.1	68.8	131.1	125.3
Thailand	2.6	7,890	11.4	43.9	44.7	63.9	64.9
Vietnam	6.3	2,595	20.3	41.6	38.1	68.1	87.7
ASEAN	**4.4**	**5,007**	**11.0**	**43.0**	**46.0**	**58.3**	**55.2**

Source: World Development Indicator Database, World Bank; Asian Development Outlook 2009, ADB; and ASEAN Secretariat

Despite these efforts, as shown in Table 1, Myanmar is far behind the other ASEAN members in terms of per capita GDP and economic structure which highlight their development stage. Although, Myanmar shows higher GDP growth rate than other countries in the region, their per capita GDP are much lower than ASEAN average per capita GDP of US$5000. Moreover, its economic structure are quite different from the original members countries, with the agriculture sector accounting for more than 40 percent while representing only 11 percent of the GDP in ASEAN on

average. Although Myanmar has rapidly increased its participation in regional trade since its accession in AFTA, its trade openness ratios is very low even comparing with other new members of ASEAN.

3.   Structure and Performance of Myanmar's International Trade

Myanmar has become a much more open economy over the past decades, a process spurred by the trade liberalization that occurred gradually since early 1990s. As a result, its trade values grew at an average annual growth rate of roughly 16 percent during the period of 1998-2007. Myanmar experienced rapid increases in exports and imports volumes about three times during one decade. However, the trade to GDP ratio was around 40 percent in 2008. Myanmar has experienced continual trade deficits throughout the study period.

Table - 2
Top-Ten Trade Partners of Myanmar (1998-2007)

(US$ Million & Percent of Total)

		Exports				Import	
		1998	2007			1998	2007
Myanmar							
1	Thailand	9.0	44.3	China		24.9	33.7
2	India	14.9	14.5	Thailand		18.5	19.1
3	China	4.9	7.1	Singapore		21.3	15.5
4	Japan	7.1	5.7	Korea		6.9	5.8
5	Malaysia	4.6	2.7	Indonesia		7.8	5.2
6	Germany	4.0	2.3	Malaysia		13.7	4.2
7	Korea	1.1	1.5	Japan		8.7	3.5
8	Hong Kong	3.6	1.5	India		1.6	3.4
9	Vietnam	0.1	1.4	Italy		0.9	1.9
10	United Kingdom	2.3	1.2	Germany		2.4	1.1
	Intra-ASEAN	15.5	50.2	Intra-ASEAN		42.9	44.6
	Total Exports	**1138.60**	**4753.74**	**Total Imports**		**2358.47**	**5520.09**

Source: Direction of trade Statistics (DOTS) 2009, IMF

Myanmar trades have grown at an average annual rate of 13 percent over the last decade to reach over US$10 billion in 2007. The major export destinations are Thailand, India and China whereas its import sources are China, Thailand and Singapore, in order. In 2007, Thailand took 44 percent of exports, mainly natural gas, and 19 percent of imports while China held 7 percent of exports and 20 percent of imports. Since early 2000, Myanmar export has been mainly dominated by natural gas, which accounted for 40 percent of total exports in 2007 mainly channeled to Thailand. Wood, woven apparel and vegetables are also top export commodities, with 19 percent, 12 percent

and 11 percent, respectively, of total exports in 2007. Major import items are machinery, mineral fuel, oil, electrical machinery and vehicles, altogether taking 40 percent of total imports in 2007. Since imposition of trade sanction by the United States and European countries Myanmar trade mainly concentrates on its neighboring countries and, hence, the share of intra-ASEAN in Myanmar's trade takes around 50 percent in both exports and imports.

Table - 3
Shares of Top-Ten Trade Commodities of Myanmar (1998-2007)

(Percent of Total)

HS		Commodity	Exports		HS	Commodity	Import	
			1998	2007			1998	2007
Myanmar								
1	27	Mineral Fuel, Oil Etc	0.1	39.4	84	Machinery	17.3	17.2
2	44	Wood	17.8	18.6	27	Mineral Fuel, Oil Etc	6.9	10.7
3	62	Woven Apparel	18.7	12.4	85	Electrical Machinery	10.2	6.8
4	7	Vegetables	6.1	11.0	87	Vehicles, Not Railway	3.4	6.2
5	3	Fish And Seafood	15.2	5.1	73	Iron/Steel Products	6.7	5.8
6	71	Precious Stones, Metals	4.6	2.1	15	Fats And Oils	6.8	5.3
7	61	Knit Apparel	19.9	1.9	72	Iron And Steel	2.6	5.1
8	64	Footwear	1.0	1.2	39	Plastic	2.3	4.3
9	12	Misc Grain, Seed, Fruit	3.1	1.2	30	Pharmaceutical	1.5	2.8
10	40	Rubber	0.9	1.1	55	Manmade Staple Fibers	2.5	2.2
		Top-10	87.3	94.0		**Top-10**	60.2	66.4
		Total Exports	100	100		**Total Imports**	100	100

Source: Global Trade Atlas
Note: All shares are derived from partner countries trade data

In fact, relatively low records of economic performance of Myanmar reflect its struggles in a number of challenging domestic and international problems. Moreover, the stagnation of economy has been highly deepened by the investment restrictions and trade sanctions imposed by Western countries.

4. Empirical Analysis by using Gravity Model

4.1 Literature Review

Following the Newton's law of gravity, gravity model of international trade estimates the bilateral trades as a function of attraction factors such as economic mass and resistance factors such as distance or various obstacles to trade. Specifically, trade volume between two countries should increase with their GDPs, since rich countries should trade more than poor ones and decrease with

geographical distance because proximity reduces transportation and information costs. Moreover, population (or per capita income) and land area are frequently included in the model as proxies for economic size. This standard model is commonly extended to include other factors generally perceived to affect bilateral trade relationships.

The gravity model was first applied to the international trade field by Tinbergen (1962) and Linneman (1966) as an econometric analysis of bilateral trade flows based on gravity-type equations to provide empirical evidence. Since then, many researchers applied variants of the gravity equation as an empirical benchmark for the bilateral trade volume. It is generally accepted that a number of trade models are responsible for the empirical success of the gravity equation. While the Heckscher-Ohlin (H-O) theory would account for the success of the gravity equation in explaining bilateral trade flows among countries with large factor proportion differences and high shares of inter-industry trade, the Differentiated Product Model would serve well in explaining the bilateral trade flows among countries with high shares of intra-industry trade. Frankel (1997) formulated a more complex and advanced form of gravity equation by including geographical factors, such as distance, landlockedness and population as determinants of bilateral trade flows, and regional trading blocs in order to estimate the impact of regional integration on bilateral trade flows.

Hassan (2001) applied the gravity model to analyze trade creation and trade diversion effect of South Asian Association for Regional Cooperation (SAARC) and examine whether intra-SAARC trade is lower or higher than what is predicted by the model. Sohn (2005) used the gravity model to identify the underlying trade model of Korea's bilateral trade flows. He used such determinants of trade as GDP, distance, and trade conformity index and dummy variables for (Asia-Pacific Economic Cooperation) APEC. Empirical results proved that gravity model is very effective in explaining Korea's bilateral trade flows. By comparing actual trade volume with predicted trade by the model, he also pointed out that there is significant un-exhausted trade potential from which Korea can enjoy a large trade expansion by forming a FTA with respective countries.

Bussière and Schnatz (2006) practiced the gravity model to examine whether China's share in international trade is consistent with fundamentals of the model such as economic size, distance. They also included dummy variables for common language, common border, being same territory in the past and participation in a free trade area (FTA) on sample of 61 countries for the period of 1980-2003. Huot and Kakinaka (2007) analyzed Cambodia's bilateral trade flows through investigating the impact of trade structure in a framework of the gravity equation. They regressed the bilateral trade with the product of GDPs, the product of per capita GDPs, distance, exchange rate volatility, trade conformity index and dummy variables for ASEAN. The result showed that all explanatory variables

have significant impact on Cambodia's trade flows, which are notably dependent on inter-industry trade that comes from factor endowment difference rather than intra-industry trade from monopolistic competition.

4.2   Methodology and Data

Since the theoretical foundation of gravity model had been establish in 1960s, most of the empirical studies have confirmed that the gravity equation remains at the center of applied researches on international trade of the day. However there is a little work that has been done on examining whether the gravity equation fits to the trade flows of new members of the ASEAN. This paper attempts to test to what extent the gravity model is applicable to explain the trade flows of Myanmar and to extract implications for its trade policies. The empirical analysis is conducted by using bilateral trade data with 27 trading partners of Myanmar, over the period from 1998 to 2007.

The gravity equation that this paper seeks to estimate follows closely the standard gravity model developed by Frankel (1997), in which emphasis is given to the role of geopolitical factors such as distance, adjacency and regional trading blocs. In this study, the model uses five basic variables; GDP, gap in per capita income between each pair of trade partners, distance, adjacency, and FTA. Moreover, to address the peculiarity of its trade patterns, this paper adds two more variables, generalized system of preference (GSP) and dummy variables for trade sanction as the United States imposed the trade sanctions on Myanmar since 2003.

The empirical gravity equation takes the form:

$$Ln\ T_{ij} = \alpha + \beta_1 Ln[Y_i] + \beta_2\ Ln[Y_j] + \beta_3\ Ln\ [GAP_{ij}] + \beta_4\ Ln\ D_{ij} + \beta_5\ FTA_{ij} + + \beta_6\ GSP_{ij} + \beta_7\ ADJ_{ij} + \beta_8 SANC_{ij}\ \varepsilon_{ij}$$

where T_{ij} is the bilateral trade flow (exports + imports) between Myanmar (i) and its trading partner (j). Since national products are valued at current exchange rates, the influence of exchange fluctuation can distort the underlying trade pattern. Drysdale (2005) recommended to use the purchasing power parity (PPP) valuations of national product in order to estimate the relative size of economies. Thus, Y_i and Y_j stand for GDPs of country i and partner j based on PPP, which are considered as an approximation for economic sizes of respective countries, in terms of both production capacity and market size. GAP_{ij} is the absolute value of difference in per capita GDP (PPP) of country (i) and partner (j), which is used as a proxy for level of development stage gap of each pair of countries to determine the trade pattern between Myanmar and its trading partners. D_{ij} is the distance variable, measured in terms of great circle distances between the capitals of country i and

partner j. *FTA$_{ij}$* is a dummy variable assuming the value "1" if country i and partner j have a free trade agreement and "0" otherwise. *GSP$_{ij}$* is also a dummy variable which takes on a value of "1" if partner country j grants preferential tariff treatment to Myanmar and a value of "0" otherwise. *ADJ$_{ij}$* is a dummy variable with the value "1" if country i and partner j share a common land border and "0" otherwise. Finally, one important dummy variable, SANC, is added in the model to examine the impact of trade sanctions on bilateral trade flows of Myanmar, which is "1" if partner country imposes trade sanction on Myanmar and "0" otherwise, and ε$_{ij}$ is the error term. In the equation, all variables are in natural logarithm except for dummy variables.

Since countries seem to export more or import more as their size and purchasing power increase, bilateral trade volume is expected to rise when the GDPs of respective countries increase. This implies that our estimated coefficients, β$_1$ and β$_2$, are predicted to be positive. Bergstrand (1989) and Frankel (1997) among others suggest the gravity equation should include both income and per capita income. This study incorporates GAP into our gravity model in order to identify the trade pattern of respective countries since the GAP reflects some of the differences in location advantages and factor endowments between exporting and importing countries. The coefficient of GAP, β$_3$ would be positive when trade volume increases with higher gap in per capita income which implies that the country trade more with more developed countries. On the other hand, the coefficient becomes negative when trade volume increase with falling income gap, which implies that the country has strong trade relationship with the country at similar development stage.

Furthermore, the distance between Myanmar and its trading partner j, *D$_{ij}$*, reflects trade barriers such as transportation cost, delivery time, and market access barriers, etc. Most of previous literature interpreted the coefficient of distance variable as the elasticity of trade with respect to an absolute level of geographical distance. Since a larger trade resistance factor is likely to lessen bilateral trade volume, in this study, the coefficient β$_4$ is anticipated to be negative. To examine the extent to which a regional trade arrangement is important in determining Myanmar's bilateral trade flows, a dummy variable, *FTA$_{ij}$*, is included in the model. This provides a means of determining how much trade within each FTA is due to factors common to trade throughout the world and how much remains to be explained by the effects of FTA. Since each country's bilateral trade volumes are expected to expand through FTA membership, the sign of the coefficient β$_5$ is expected to be positive.

In addition, since the preferential tariff privilege granted by partner countries can directly stimulate the exports volume of respective country and also encourage imports from them with the lesser extent, *GSP$_{ij}$* may have a positive impact on bilateral trade volumes. As the existence of a

common border usually facilitates trade, the coefficient of adjacency, β_6, is supposed to be positive. Moreover, the trade sanction imposed by the United States has an impact on its direction of trade after 2003, the coefficient of trade sanction, $SANC_{ij}$, is likely to be negative.

In this study, ordinary least-squares (OLS) linear regression is conducted by using Statistical Package for the Social Sciences (SPSS version-17). Although SPSS is given the tremendous popularity throughout the social science community, it provides no means for correcting OLS standard error estimates for the possible effects of heteroscedasticity to the user. In this paper, therefore, the heteroscedasticity-consistent standard error estimates of OLS regression (HCREG) is conducted by using the SPSS macro formulated by Hayes (2003). The macro is implemented based on the methods described in MacKinnon and White (1985) for computing a heteroscedasticity-consistent covariance matrix (HCCM) and heteroscedasticity-consistent standard error estimates in OLS regression (HCREG).

Top twenty-seven trade partners of Myanmar are selected for analysis which covers more than 90 percent of its total trade volume. Nominal trade flows are from the Direction of Trade Statistics, DOTS (May 2009) from International Monetary Fund (IMF) for the period from 1998 to 2007; these data are deflated by U.S. GDP deflator to generate real trade flows. Missing trade flows are excluded and $\ln(1+T_{ij})$ is used to deal with zero trade values in logs.

GDP, per capita GDP and U.S GDP deflator come from IMF's World Economic Outlook Database (2009) and then GDP and per capita GDP are deflated by U.S. GDP deflator. The distance is measured in kilometers as the direct line distance between the capital cities of the two countries which is taken from GEOBYTES. GSP statuses are collected from Handbooks on the GSP Schemes of United Nations Conference on Trade and Development (UNCTAD).

4.3   Empirical Results

4.3.1   OLS Regression Results

The pooled cross-sectional OLS regression results for the period of 1998-2007 are presented in Table 4. It is observed that the overall performance of the model seems to be good with high R^2 values of over 70 percent and almost all estimates of the coefficients are highly significant with expected signs, indicating that the gravity models are fitting and efficient in explaining bilateral trade flows of CLM countries.

The power of the model to explain the variation in bilateral trade flows of Myanmar is considered to be strong as the value of the R^2 is roughly 0.80 and the value of F-test, the overall significance of the model, come out highly significant at 1 percent level. Almost all explanatory variables show expected sign in coefficients and highly significant at the 1 percent level whereas Adjacency is significant at 5 percent level. The coefficient of GDPi and GSP are insignificant while former shows unexpected sign.

The estimated coefficient of GDPj is around 1.156, suggesting that the increase in partner country's GDP by 1 percent point will rise up almost 1.2 percent point of bilateral trade volume which is consistent with the basic hypothesis of the gravity model that trade volumes will increase with an increase in economic size of trade partners. The unexpected negative sign in the coefficient of GDPi suggests that Myanmar's GDP is inversely related with its bilateral trade volume with trading partners even though it is insignificant. The coefficient of GAP variable is highly significant with 0.664. As per capita GDP of Myanmar is fixed, the greater the GAP means the higher the per capita GDP of partner country. The positive and significant coefficient of GAP indicates that Myanmar's trade flows are dependent on its trading partners' income level. However, the coefficient of GAP is much lower than that of GDPj. It can be concluded that Myanmar's trade patterns would be affected by its trading partner's overall economy size rather than their consumers' purchasing power. Moreover, it can be envisaged that Myanmar export items are quantity-based standardized products that are sensitive to the overall market size rather than quality-based high value-added products that are sensitive to the trading partner's income level.

Highly significant negative coefficient of distance variable (1.787) indicate that when the distance between Myanmar and its trading partner is increased by 1 percent point, the bilateral trade between them falls by about 1.8 percent point, holding other variables constant. FTA variable is highly significant with positive coefficient of 0.960, which implies that if Myanmar and its trading partner belong to any specific FTA, their bilateral trade flows will be more than 2.6 times [exp(0.960)=2.612] as large as those with a non-member. The estimated coefficient of GSP is 0.084 which means that Myanmar's bilateral trade flows with the countries which offer GSP privilege is 1.1 times [exp(0.084)=1.088] as much as two otherwise similar countries. The coefficient on adjacency is about 0.687 which suggests that two countries sharing a common border trade roughly 2 times [exp(0.687)= 1.988] as high as those with non-border. Combining with high significant of distance variable, it can be conjectured that the Myanmar's trades mainly concentrate on its neighboring countries. The sanction variable is statistically significant with negative coefficient of -3.738, which stipulates that Myanmar's bilateral trade flows with the countries which imposed trade sanction on it is roughly 0.02 times [exp(-3.738)=0.024] as low as two otherwise similar countries.

Table – 4

Regression Result of Gravity Equation of Myanmar

Explanatory Variables	Myanmar	
	OLS Coefficient (B)	Standardized. Coefficient (β))
Constant	5.757*** (1.310)	-
GDP of Country i	-.185 (.171)	-.034
GDP of Partner j	1.156*** (.053)	.730
GAP	.664*** (.090)	.464
Distance	-1.787*** (.096)	-.801
FTA	.960*** (.133)	.211
GSP	.084 (.117)	.022
Adjacency	.687** (.269)	.129
Trade Sanction of U.S.	-3.738*** (.233)	-.241
No. of observation	270	
R^2	.795	
Adjusted R^2	.788	
F-statistics	142.240***	

Note: 1. Heteroskedasticity-consistent standard errors (White) are in parentheses.
2. *** and ** and * mean significant at 1%, 5% and 10% level, respectively.
3. All variables except dummy variables are in natural logs.

Overall, the standardized regression coefficient (β-coefficient) of distance has the largest value among explanatory variables, explaining 30 percent of the ability to predict the variability of Myanmar's bilateral trade flows when the variance explained by other variables is controlled for. The next most important variables is partner country's GDP, taking 28 percent, followed by GAP with 18 percent. β-coefficient of FTA and trade sanction are 9 percent and 8 percent, respectively, indicating lesser contribution to variability of bilateral trade flows between Myanmar and its partners. The relative influence of Myanmar's GDP sand GSP seems to be almost 0 each as it proved to be an insignificant factor.

4.3.2   *Comparison of Actual Trade with Trade Potential*

The gravity model is supposed to provide a long-term equilibrium view of trade flows. The difference between actual trade flow and its long-term equilibrium value can be regarded as unexhausted trade potential. Baldwin (1994), Nilsson (2000) and Sohn (2005) suggested that the ratio of potential trade to actual trade as a measure of the degree of trade integration. Indeed, the gravity model prediction can be differed from actual trade volume due to various reasons. The most obvious reason is exclusion of immeasurable variables in gravity estimation like domestic policies including competition and antitrust rules, corporate governance, product standards, worker safety, regulation and supervision of financial institutions, environmental protection, tax codes and other national issues. In this paper, the important viable that left out in the gravity equation is trade barriers which encompass various forms such as tariffs, non-tariff barriers, and other trade restrictions due to the unavailability of data, thus, the unrealized trade potential can be seen as the result of trade barriers.[1] The comparison between actual and potential trade volume of Myanmar in 2007 is presented in Table 5, in which the potential trade is predicted by using gravity equation.

Among top-ten trading partners of Myanmar, the actual trade volumes of many Asian countries such as Thailand, China, India, Japan, and Korea are lower than trade potentials predicted by the model. Among ASEAN, Singapore, Malaysia, Indonesia and Vietnam record high trade volume with more than 100 percent. There are several reasons for significantly high ratio at Singapore. Main reasons are the import-export transactions of the branch offices located in Singapore, which are set up by the many Myanmar business firms to facilitate their trades and the convenience of bank transactions between Singapore banks and stated-own Myanmar Foreign Exchanged Bank (MFTB) and Myanmar Industrial and Commercial Bank (MICB). Another reason is Myanmar's reliance on logistic services of Singapore. As there are very few cargo ships and container services in Myanmar, most exporters and importers normally use Singapore's logistic services.

Although Thailand and China are two largest trade partners as well as sharing the same border with Myanmar, the trade with these two partners has yet to be exploited to the full potential predicted by the gravity model. The low ratios of Thailand and China also suggest the existence of some trade barriers and the extent of unrecorded informal trades and smuggling in the border area. And the bilateral trade volumes with India, which is the second largest export destination of Myanmar, also left far behind the potentials estimated by the model, indicating the latent trade

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[1]   The exchange rate volatility is also excluded due to the reason that any exchange rate volatility affects all trading partners equally as US dollar is the invoicing currency of most trades in CLM economies. Moreover, common language and historical ties are also omitted as they are irrelevant for CLM countries.

potential. Even though the United States and European Union have imposed the investment restrictions and trade sanctions on Myanmar, their actual trade volume are generally higher than the potential predicted by the model as an indication of reaching full trade potential. On the other hand, the actual trade volumes with all East Asia countries: China, Japan and Korea are lower almost by 20 percent than their potentials projected by the model, highlighting an urgent need to further liberalize the trade with them in order to realize the full potential.

Table – 5

Actual and Predicted Trade Flows (2007)

(US$ Million, Percent)

		Actual Trade	Predicted Trade	Actual as a % Predicted			Actual Trade	Predicted Trade	Actual as a % Predicted
1	Thailand	2637.0	3491.7	76%	15	Australia	42.3	27.8	152%
2	China	1834.5	2215.8	83%	16	Spain	37.8	31.8	119%
3	Singapore	760.7	297.0	256%	17	Bangladesh	27.8	17.5	159%
4	India	730.9	769.9	95%	18	Ukraine	24.2	3.8	628%
5	Japan	386.6	493.6	78%	19	Netherlands	22.2	19.7	112%
6	Korea	329.3	410.7	80%	20	Belgium	12.8	9.7	132%
7	Malaysia	299.0	263.0	114%	21	Denmark	8.2	5.6	147%
8	Indonesia	263.9	95.1	278%	22	USA	7.9	7.8	101%
9	Germany	140.6	111.2	126%	23	Canada	7.4	20.3	37%
10	Italy	125.4	58.4	215%	24	Sweden	4.6	10.7	43%
11	Hong Kong	106.0	115.3	92%	25	Switzerland	2.8	9.3	30%
12	Vietnam	77.2	72.4	107%	26	Poland	1.3	13.1	10%
13	UK	53.4	69.6	77%	27	Ireland	1.2	4.4	27%
14	France	50.9	64.4	79%					

Overall, Myanmar has already reached the trade potential with almost all ASEAN countries except for Thailand. Myanmar's trade volumes with the United States and most European countries are larger than the forecasted trade volumes of the gravity equation highlighting their well-integration with these economies. On the other hand, the trade relations with East Asian countries, namely China, Japan and Korea, have yet to reach their full potential albeit ASEAN+1 FTAs have being implemented. Since it is an indicator for the existence of substantial trade barriers between trade partners, Myanmar should endeavor to promote bilateral trade through elimination of trade barriers, thus Myanmar can enjoy large benefits from unexhausted trade potential.

5.   Findings and Policy Recommendations

Generally, Myanmar possesses rich factor endowments and low cost advantage. However, at the present, the low level of industrialization and, hence, insufficient diversification of production base creates mainly dependence of its exports on very few commodity groups mainly dominated by natural gas. And then, wood products share almost 14 percent in exports of Myanmar. Aside from wood products, garments and footwears are important export items in exports. Even though garment industry is classified as a manufacturing sector, it is greatly labor-intensive and low technology involvement, accordingly, limited opportunity for technology transfer and industrial development. These figures highlight the high dependence on natural factor endowments and low level of industrialization in its economies.Regarding the direction of trades, the trade sanction of the United States and economic restriction of European countries are apparent reasons for concentration of its trades on Asia countries.

The empirical results of the analysis highlight the fact that major determinants of trade flows between Myanmar and its trading partners are partner country's GDP, GAP, distance, FTA and adjacency. It implies that their trade volumes grow up with an increase in economic size of trade partners and larger differences in per capita income between them. Myanmar's trade pattern is more affected by its trade partner's overall economy size than their consumers' purchasing power. In fact, GAP represents the different level of income with different production and consumption pattern, rising GAP lead to increase in inter-industry trade rather than intra-industry trade. Moreover, geographical distance is an important resistance factor for bilateral trade flows. At the same time, FTA has a significant impact on increasing bilateral trade flows between Myanmar and its partners. Since the trade sanction also has large impact on Myanmar trades, it can be envisioned that improving political process in Myanmar will lead to increase in its international trades.

Myanmar has already reached the trade potential with almost all ASEAN countries except for Thailand. Although Thailand and China are sharing the border with Myanmar, their trade volumes are far behind the trade potential predicted by the model. Large extent of unrecorded informal trades and smuggling in border is likely to be one of the reasons for lowering the ratio of actual trade to trade potential. On the other hand, high trade ratio of Singapore indicates its entrepôt position in ASEAN and a hub of the financial and business services. The trade volumes with the United States and most European countries are higher than the forecasted trade volumes, reflecting their well-integration with these economies. However, the trade relations with East Asian countries mainly China, Japan and Korea have yet to be exploited to their full potential even though ASEAN+1 FTAs have being implemented.

The outcomes of the study highlight the need for a set of development and reform policies for Myanmar. Given rich natural endowments and the importance of resource-based sectors, in the short-term, industrialization process in Myanmar should focus on the value-added natural resource-based products and labor-intensive manufactured goods for exports with the purpose of conserving capital and providing as much employment as possible. However, since natural resources-based sector has a limited opportunity for intra-industry trade whereas technology-intensive structures offer better prospects to realize economic benefits associated with intra-industry integration, Myanmar should move upward in the development ladder by shifting from primary sector to secondary sector in the long-term. For this purpose, Myanmar need to speed up foreign trade liberalization, financial sector reforms, improvement in investment regime, privatization of state-owned economic enterprises and private sector development especially the promotion of small and medium enterprises, infrastructure development, and intensification of domestic savings mobilization.

Having large extent of informal trades and smuggling in border areas, Myanmar needs to take possible measures to formalize these trade activities, thereby, the government can enjoy the custom duty to improve their revenues at least in the short-term before full realization of implementing FTAs while consumers benefits from wider varieties of safety products at a lower price. At the same time, there is an urgent need to promote bilateral trades between Myanmar and East Asian trade partners through elimination of trade barriers in order to enjoy large benefits from unexhausted trade potential. For this purpose, Myanmar needs to accelerate the pace of trade liberalization by speeding up the elimination of tariff and non-tariff barriers and simplification of trade facilitating procedures under the context of ASEAN+1 FTAs.

6.   Conclusion Remarks

Recognizing the importance of international trade for Myanmar, this study attempted to analyze the trade patterns of Myanmar based the gravity mode. This paper also seeks to identify the determining factors of each country's bilateral trade flows and policy implications for promoting their trade.

According to the results of this study, it can be conjectured that Myanmar needs to promote their bilateral trade with countries in close proximity and having large economic size and high consumers' purchasing power through accelerating their trade liberalization efforts in FTAs in progress with those countries. Moreover, since the trade sanction has large impact on its trade flows,

improving political process is expected to increase its trade volumes and ultimately lead to development of the whole economy.

This paper has attempted to identify empirically the underlying trade patterns and to provide applicable trade policy implications under the framework of basic gravity model without analyzing the corresponding theoretical basis. The empirical outcomes might differ if such omitted explanatory variables as tariffs, NTBs, and other trade restrictions are included in the model or if bilateral trade volumes are disaggregated into commodity level. Although this study used total trade volumes (sum of exports and imports) as a dependent variable, the separated analyses for exports and imports might also have more specific implications for trade policy of respective countries. Nonetheless, this study is believed to have significant implications for promoting bilateral trades in CLM countries and more detailed researches on this topic are expected to continue in the near future.

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