BILATERAL TRADE IN THE ASEAN TRANSITION ECONOMIES: A GRAVITY APPROACH

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Abstract

This study empirically investigates the effect of intra-regional trade in the ASEAN Transition Economies, namely Cambodia, Myanmar, Laos and Vietnam. Using the gravity model, this study examines whether the decision to join the ASEAN membership and the formation of the ASEAN Free Trade Area (AFTA) resulted in an increase in intra-regional trade for the period 1990 to 2005. From basic gravity variables, the study found that GDP as a proxy for market size, population, relative endowment, distance and common border are the main determinants of bilateral trade in the ASEAN Transition Economies. Overall results found that the intra imports decreased with the ASEAN Transition Economies but increased with the original ASEAN. Closer examination shows that Cambodia, Lao and Vietnam traded more with new members; meanwhile Myanmar imported more from the original ASEAN. This study also found that Vietnam increased exports more than imports to the original ASEAN.

Keywords: Transition Economies, ASEAN, Gravity Model, AFTA
JEL: F15, F19, F53

1. Introduction

The ASEAN Transition Economies refers to the new ASEAN members namely Cambodia, Lao, Myanmar and Vietnam (CLMV). From a relatively closed economy (autarky) to a gradually opened economy to the global market, these countries have recently shown tremendous achievement in trade. The ASEAN is a regional arrangement which was formed in 1967 with original members namely Indonesia, Malaysia, the Philippines, Thailand and Singapore. The expansion of the ASEAN's membership was the peak of a process of gradual rapprochement between the original ASEAN members and Brunei, Cambodia, Laos, Vietnam and Myanmar. On 8th January 1984, Brunei Darussalam became the sixth member of the ASEAN, followed by Vietnam on 28th July 1995, Laos and Myanmar on 23rd July 1997, and Cambodia on 30th April 1999.

In 1993, the region set up the ASEAN free trade area (AFTA) which main objective was to increase the ASEAN region's competitive advantage as a single production unit. The key feature is the CEPT scheme which covers manufactured products as well as agricultural products. Under the CEPT scheme, tariffs on a wide range of products traded within the region should be totally eliminated or at least reduced to a maximum of 5 percent. The CEPT scheme classified products into three lists: the Inclusion list (IL), the Temporary Exclusion List (TEL) and the Sensitive List (SL). The elimination of tariff and non-tariff barriers expected to promote greater economic efficiency, productivity and competitiveness.

The average tariff rates in the ASEAN6[1] by mid 2004 had been reduced to 1.91% compared to 1993, when the CEPT was launched, when the average was 12.76%. By 2003, 98.8% of the total tariff lines (products) for the ASEAN6 were already in the inclusion list, for which 99.6% had tariffs between 0 to 5 percentage ranges. In fact, about 60.89% of the products' tariffs were completely eliminated. Meanwhile for the new members, they were required to transfer products still on the temporary exclusion list to the inclusion list no later than 2003 (for Vietnam), 2005 (for Laos and Myanmar) and 2007 (for Cambodia). In 2003, their average tariff was about 6.22%. By the end of 2003, 79.13% of the products which were traded had been moved into the inclusion list, and tariffs on 69.88% of these products have already been brought down to the 0 to 5 percent range. According to the tariff schedule, the ASEAN6 should have completely reduced tariffs to 0% by 2010. As for new members, Vietnam has been given until 2013, meanwhile Laos and Myanmar until 2015 and Cambodia until 2017 to complete the tariff reduction to 0 – 5 percent.

Prior to their membership, the CLMV were a real threat and enemies to the ASEAN, but now they are standing together and united to form a regional cooperation. Through the AFTA, they hope to stimulate domestic economic

[1] ASEAN6 represents the five original ASEAN5 and Brunei.

development, increase standards of living and have a further impact on global markets. Along with great diversity in size, economic and social institutions, natural and human resources, cultural background, language, race, religion and historical background, the countries are different at levels of economic development

Therefore, this study aims to investigate whether the decision to join with the ASEAN membership has affected the CLMV in intra-exports and imports within the CLMV as well as within the ASEAN5. It also evaluates whether the ASEAN Free trade agreements have had the added positive effects on intra-imports and exports from the CLMV as anticipated. The estimation is carried out with panel data spanning from 1990 to 2005 using the Gravity Model to examine bilateral trade determinants in the CLMV.

2. Literature Reviews

The growing empirical literatures include a number of studies that have examined various types of REI, such as European Union, NAFTA, Mercosur, and SAFTA. They find mixed results regarding the decision to sign such Free Trade Agreements (FTA). Many previous studies have investigated the effects of FTA related to ASEAN or AFTA. However, there are relatively few that consider examining bilateral trade in transition economies, and even fewer studies that focus on the Southeast Asian transition economies.

For instance, Paas (2000) uses a gravity approach in analysing trade pattern between Estonia and her 46 trading partners including other transition economies. He concluded that small transition economies like Estonia should look for a regional niche to penetrate into the international market. By using similar model, Babetskri et. Al (2003) investing the extent of integration of the transition economies with refereed to Eastern Europe and the Soviet Union found that South-Eastern Europe (SEE) and the Commonwealth of Independent States (CIS) trade less with the world than the accession countries. Furthermore, they found that CIS trade more with itself but less with the outside of the world.

Martin (2001) compares the performance in export and income growth between East Asian Transition economies (including China, Cambodia, Lao and Vietnam) and Eastern Europe and Soviet Union. He found that the former have achieved remarkably high growth trades in output and export after they have made many changes in both domestic as well as trade policies to secure both export and income growth. In recent empirical studies done by Clarete et al. (2003) estimates the effects of Preferential Free Trade Agreements on trade flows within and across membership including new ASEAN members such as Cambodia, Lao PDR, Myanmar, and Vietnam found ASEAN Free Trade Area has no effects in intra bloc. In addition, the results show that export and imports have been reduced between members and the rest of the world. The estimation was carried out by using gravity model for cross sectional data sets of selected single year (1980, 1985, 1990, 1995 and 2000).

3. The Gravity Model

In this study the effects of bilateral imports and exports from the ASEAN Transition Economies (CLMV) were estimated spanning the period from 1990 to 2005. Therefore, the dependent variable in this model is bilateral imports from the CLMV with their trading partners. In the second stage, the dependent variable is bilateral exports from the CLMV with their trading partners.

The gravity model, which originates from Newton's law of gravity[2], has been widely used in regional science, economic geography as well as international trade (Paas, 2000). The gravity model was first used in analysing international trade flows by Tinbergen (1962) and Poyhonën (1963)[3]. The model explained the volume of trade flows in terms of the ratio of the product of the gross domestic product (GDP) of countries *i* and *j* to the distance between them.

$$Trade_{ij} = A\frac{\left(GDP_i \cdot GDP_j\right)}{DISTANCE_{ij}} \quad (1)$$

By taking the logarithm of equation (1) we get the following:

$$Log\left(Trade_{ij}\right) = A + b_1 \log(GDP_i \cdot GDP_j) - b_2 \log(distance_{ij}) + \varepsilon_{ij} \quad (2)$$

The gravity equation used in this study is presented in equation (3a) and (3b). The estimation is carried out based on bilateral imports as well as bilateral exports as a dependent variable[4]. For linearizing the model, variables are in logarithmic form in year *t*.

$$\ln(EX)_{ijt} = \alpha_0 + \gamma_i + \gamma_j + \gamma_t + \gamma_{ij} + \ln GDP_{it} + \ln GDP_{jt} + \ln POP_{it} + \ln POP_{jt} + \ln DIST_{ij} + BOR + \varepsilon_{ijt}$$

(3a)

$$\ln(IM)_{ijt} = \alpha_0 + \gamma_i + \gamma_j + \gamma_t + \gamma_{ij} + \ln GDP_{ti} + \ln GDP_{jt} + \ln POP_{it} + \ln POP_{jt} + \ln DIST_{ij} + BOR + \varepsilon_{ijt}$$

(3b)

Equation (3a) and (3b) are a basic gravity model which contains basic determinants of bilateral trade such as market size (l*GDP*), population (l*POP*), relative endowment (ENDOW), distance (l*DIST*), and binary variables which are set equal to one if two countries share a common border (*BOR*) and common language (*LANG*), and zero otherwise.

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[2] Ghosh and Yamarik (2004) defined as 'the flow of people, idea or commodities between two locations positively related to their size and negatively related distance.

[3] He analyzed the trade flows among the European countries.

[4] Soloaga and Winters (2001) and Elliot and Ikemoto (2004) use bilateral imports as dependent variable meanwhile other studies such as Sharma and Chua (2000) and Martinez and Lehman (2003) use exports as dependent variable.

In this study, the gravity model predicts that bilateral trade should increase with market size, log of absolute difference in GDP per capita between exporters and importers as a proxy for relative endowment, common border and common language, but decrease with distance. A higher level of income in the exporting country suggests a high level of production, which increases the availability of goods for exports. This suggests the idea that the larger and richer countries are more likely to have more trade links. A dummy variable (binary variable) for common border is used as a control for countries that share a border which allows them to have border trade. Meanwhile the dummy variable for language is a control for countries which use the same language. Distance is a proxy for transportation cost[5] which shows the shorter the distance, the lower the transportation cost and the higher the volume of trade between any two countries. However, the expected result of the size of population and FTA are ambiguous. According to Martinez (2003) and Imalculada and Felicitas (2003), the coefficient estimates of the size of population may have a positive or negative sign because it depends on the absorption effect[6] and economies of scale[7]. Frankel (1997) and Endoh (1999), considers that countries with a large population would be better able to exploit their own economies of scale in their larger domestic market than smaller countries. On the other hand, Brada and Mendez (1985) believe that a larger population in the importing country allows imports to compete better with domestic goods and compensates exporters for the cost of foreign sales activities.

α_0 is a constant term which is common to all years and country pairs, γ_i and γ_j are exporters and importers effects respectively which control country characteristics, γ_{ij}; are bilateral effects used to capture the interaction effects between two countries and $\lambda_{t;}$ time effects to capture business cycle and common to all countries in the sample. The disturbance term, ε_{ijt}, is assumed to be normally distributed with zero mean and constant variance for all observations and used to capture any other external shocks that may affect bilateral imports (exports) between the countries.

[5] Linnerman (1966) defined transportation cost as shipping cost including freight and insurance, the cost of time and cultural cost, meanwhile Bougheas et al. (1999) showed transportation cost is also considered as public infrastructure.
[6] Absorption effects occur when a big country exports less.
[7] It depends on economies of scale whether a big country exports more than a small country.

To account for other factors such as trade integration and intra regional trade that may influence bilateral exports or imports, dummy variables have been added to the basic equation. Hence, the augmented gravity equation is expressed as follows:

$$\ln(IM)_{ijt} = \alpha_0 + \gamma_i + \gamma_j + \gamma_t + \gamma_{ij} + \ln GDP_{it} + \ln GDP_{jt} + \ln POP_{it} + \ln POP_{jt} + \ln DIST_{ij} + BOR + IT + IT\_ASEAN5 + AFTA + indivIT + indiv\_ASEAN5 + \varepsilon_{ijt}$$

(4a)

$$\ln(EX)_{ijt} = \alpha_0 + \gamma_i + \gamma_j + \gamma_t + \gamma_{ij} + \ln GDP_{it} + \ln GDP_{jt} + \ln POP_{it} + \ln POP_{jt} + \ln DIST_{ij} + BOR + IT + IT\_ASEAN5 + AFTA + indivIT + indiv\_ASEAN5 + \varepsilon_{ijt}$$

(4b)

IT denotes a dummy for intra-CLMV-imports (or exports), IT_ASEAN5 is a dummy for intra imports (or exports) with the five original ASEAN members namely Indonesia, Malaysia, the Philippines, Singapore and Thailand. The AFTA dummy denotes the value of one if the exporters in equation 4a (or importers in equation 4b) were ASEAN members after 1993, where the region has formed the free trade area, otherwise it is zero.

indivIT represents the bilateral trade from Cambodia, Laos, Myanmar and Vietnam to the CLMV and to the ASEAN5.The estimated coefficient will tell us how much of the intra imports (or exports) can be attributed within the new members of the ASEAN, (in this case the ASEAN transition economies) as well as the original members of the ASEAN.

4. Results and Estimation

Table 1 reports the estimation of bilateral imports in the ASEAN Transition Economies with their trading partners based on five estimations. The first column shows the results of the OLS which revealed that both estimated coefficients for exporters and importers have a positive sign and are statistically significant. However, the coefficient for exporter population is positive, meanwhile the coefficient for importer population is negative, and both of these are significant. The coefficient for relative endowment is positive and statistically significant. Meanwhile, the coefficient for common border is positive and significant; conversely, the coefficient for distance is negative and significant as expected prior to the estimation. However, the result of the OLS is said to have biased results since it ignores the heterogeneity problem which are carried from individual country characteristics and business cycle. Therefore, in column 2, the time effect is included in the OLS regression. The

results in column (2) are quite similar to the one in column (1) albeit with a difference in coefficient size.

Alternatively, the estimation was based on the Random Effect Model (REM) and the Fixed Effects Model (FEM) reported in column 3 to 5. The Hausman test which has null hypothesis that REM is consistent and efficient is rejected. Therefore, the FEM model is the preferred model. Column 4 represents the FEM estimation with the inclusion of bilateral effects and time effects as proposed by Egger and Pffafmayr (2003). In this specification, the coefficient for border is not significant meanwhile the distance's coefficient has a wrong sign.

In column 5, the FEM estimation with the inclusion of time, exporters and importers effects as proposed by Matyas (1997) is presented. The model fits the data well and explains 62% of the variation in bilateral imports across the sample countries. In this estimation, both GDP's coefficients for importer and exporter are positive and statistically significant, indicating that higher GDP increases trade. In addition, the size of GDP' coefficient for trading partners is higher than that of the CLMV. However, only the estimated coefficient for importers shows it to be positive and statistically significant. The estimated coefficient on the variable bilateral distance has the expected negative sign and it is statistically significant suggesting that the shorter the distance, the less the cost of transportation, and the more trade would occur with their trade partners. The coefficient of common border has a positive sign implying that trade increases if the exporters and importers are sharing a common border. All importers, exporters and time effects are highly significant

Table 1: The effects of bilateral imports in the ASEAN Transition Economies - a basic gravity model

Dependent Variable: Bilateral Imports					
	1-OLS	2-OLS	3-REM	4-FEM	5-FEM
GDP exporters	.214***	.170***	.190***	.213***	.179***
	(.016)	(.017)	(.013)	(.062)	(.084)
GDP importers	.636***	.595***	.726***	1.131***	1.472***
	(.027)	(.027)	(.066)	(.254)	(.332)
POP exporters	.983***	.987***	.998***	-8.22***	-7.30***
	(.030)	(.030)	(.028)	(1.007)	(1.35)
POP importers	-.060**	-.023	-.121	.478	.550
	(.032)	(.030)	(.091)	(.735)	(1.002)
ENDOW	.077***	.149***	.025	.211***	-.005
	(.029)	(.030)	(.031)	(.043)	(.033)
lDIST	-1.22***	-1.211***	-1.25***	1.906***	-1.52***
	(.057)	(.055)	(.139)	(.291)	(.210)
BOR	.664***	.702***	1.44***	1.783	1.499***
	(.152)	(.149)	(.155)	(.830)	(.164)
constant	-24.09***	-23.98***	-25.56***	96.51***	80.1***
	(.859)	(.811)	(1.806)	(20.57)	(26.7)
Time effects		7.33***		11.15***	5.12***
Bilateral effects				25.85***	
Importer effects					13.77***
Exporter effects					24.21***
Hausman Test			51.53***		
No observation	1568	1568	1568	1568	1568
F-test	361.70***	148.16***	2394.24***	50.79***	99.59***
R^2	0.6076	0.6348	0.6038	0.4080	0.6169
Second stage R^2				0.0281	

Table 2 represents the augmented gravity model of which the FEM with triple way effects is estimated with the inclusion of a dummy for intra regional trade with the CLMV and the original ASEAN members. Results in column (1) shows that the estimated coefficient dummy for intra import within the CLMV shows imports have been decreasing among themselves. However, the intra import from the CLMV to the ASEAN5 increased by more than 82%. In column (2) the dummy for the ASEAN9 is added into the regression aim to

find the effects of the ASEAN membership on intra imports after the formation of the AFTA, the result has a positive sign but it was insignificant.

In column (3), the dummy for intra imports during the AFTA has split into two; intra imports within the CLMV and intra import between the CLMV and the ASEAN5. The results revealed that during the AFTA period, the intra imports within the CLMV were decreasing; on the other hand, the intra imports from the CLMV to the original ASEAN5 were increasing. Closer examination by the inclusion of a dummy from each CLMV shows the intra imports were increasing from all members except Myanmar. However, Myanmar increased her imports more from the original ASEAN than among the other ASEAN transition. Conversely, Vietnam imports more from the ASEAN Transition Economies than the original ASEAN.

Table 2: The effects of bilateral imports in the ASEAN Transition Economies - augmented gravity model

Dependent Variable: Bilateral Imports

	(1)		**(2)**		**(3)**		**(4)**	
		s.e		s.e.		s.e		s.e
GDP importers	.192**	(.092)	.180**	(.085)	.192**	(.084)	.207***	(.082)
GDP exporters	1.55***	(.332)	1.47***	(.333)	1.76***	(.337)	1.15***	(.325)
POP importers	-7.30***	(1.36)	-7.31***	(1.35)	-7.40***	(1.35)	-8.12***	(1.31)
POP exporters	.395	(1.01)	.312	(1.18)	-.359	(1.19)	.546	(.969)
ENDOW	.005	(.033)	-.007	(.033)	.010	(.033)	.162***	(.042)
lDIST	-1.68***	(.215)	-1.53***	(.210)	-1.62***	(.210)	-.982***	(.290)
BOR	1.45***	(.164)	1.49***	(.164)	1.48***	(.163)	.837***	(.186)
CLMV_IT	-1.22***	(.422)						
CLMV_A5	.600*	(.345)						
CLMV_A9 _AFTA			.055	(.147)				
CLMV_IT _AFTA					-.577***	(.204)		
CLMV_A5 _AFTA					.417***	(.167)		
CAM_INTRA							2.41***	(.348)
CAM_ASEAN5							.263	(.397)
LAO_INTRA							2.31***	(.416)
LAO_ASEAN5							-.005	(.359)
MYM_INTRA							dropped	
MYM_ASEAN5							.690**	(.371)
VNM_INTRA							1.71***	(.342)
VNM_ASEAN5							-.999***	(.349)
Time effects	4.99***		5.12***		5.03***		6.53***	
Bilateral effects							16.85***	
Importer effects	12.80***		13.81***		14.04***		18.24***	
Exporter effects	23.14***		24.07***		23.61***		17.41***	
No observation	1598		1598		1598		1598	
R^2	0.6203		0.6170		0.6218		0.6442	
F-test	93.40***		95.71***		94.04***		87.08***	

Table 3: The effects of bilateral exports in ASEAN Transition Economies - a basic gravity model

Dependent Variable: Bilateral Exports

	1-OLS	2-OLS	3-REM	4-FEM	5-FEM
GDP exporters	.2220*** (.0142)	.1728*** (.0153)	.2073 *** (.0130)	.1829 *** (.0627)	.1666 ** (.0791)
GDP importers	.5510*** (.0281)	.5028*** (.0268)	.5207 *** (0561)	.1721 (.2554)	.3503 (.3100)
POP exporters	1.133*** (.0304)	1.137*** (.0298)	1.125 *** (.0272)	-11.10 *** (1.011)	-10.69 *** (1.264)
POP exporters	-.0361 (.0299)	.0051 (.0283)	-.079 (.0753)	-4.440*** (.7384)	-4.380 *** (.9341)
ENDOW	.0512* (.0285)	.1321*** (.0286)	-.0441 (.0304)	.1049 *** (.0439)	-.0068 (.0312)
lDIST	-.7242*** (.0492)	-.7024*** (.0489)	-.4471*** (.1221)	-.1262 (.4343)	-.3471 * (.1956)
BOR	1.170*** (.1274)	1.214*** (.1279)	2.003 *** (.1471)	-2.668 ** (1.389)	2.167 *** (.1529)
constant	-29.38*** (.8670)	-29.05*** (.8175)	-30.19 *** (1.521)	255.08 *** (20.65)	238.89 *** (24.90)
Time effects		F(15, 1575) = 9.81***		21.41	F(15, 1546) = 13.43***
Bilateral effects				F(103, 1474) = 21.51***	
Importer effects					F(26, 1546) = 23.58***
Exporter effects					F(3, 1546) = 37.71***
Hausman Test			215.54***		
No observation	1598	1598	1598	1598	1598
Wald/F-test	376.92***	156.79***	3125.54***	57.84***	142.27***
R^2	0.6267	0.6619	0.6688	0.4397	0.6970
Second stage R^2				0.0039	

Table 3 reports the effects of bilateral exports between the CLMV and their trade partners. The OLS estimation shown in column (1) revealed that both the exporters and importers GDP were positive and highly significant. However, only the coefficient for exporter population is positive and significant. The coefficient for relative endowment is positive and statistically significant. Meanwhile, the coefficient for common border is positive and significant; conversely, the coefficient for distance is negative and significant as expected prior to the estimation. Column (2) represents the OLS with the inclusion of time effects. Meanwhile, REM estimation reports in column (3). The Hausman test strongly rejects the null hypothesis that the REM is efficient and consistent. The two way effects which include bilateral and time effects

revealed that the coefficient for border is negative and significant meanwhile the distance's coefficient is insignificant.

The preferred model in column (5) of FEM specification shows that the coefficient for GDP for importers (CLMV) is negative and weakly significant. Only the coefficient on exporters GDP is positive and statistically significant indicating that higher GDP increases trade. However, the coefficient for importers GDP even though it is positive, is not significant. The estimated coefficient for population in both exporters and importers are negative and statistically significant as found in many trade literatures (see Imalcuda and Felicitas, 2003). The estimated coefficient on the variable bilateral distance has the expected negative sign and it is statistically significant, suggesting that the shorter the distance, the less the cost of transportation and the more trade occurring with their trade partners. The coefficient of common border has a positive sign, implying that trade increases if the exporters and importers are sharing a common border. All importers, exporters and time effects are highly significant

Table 4 represents the effect of intra exports within the CLMV and the original ASEAN. However, only the dummy for intra export within the CLMV is significant, which has a negative sign, indicating that trade decreases between them. The estimation in Column (2) includes the intra exports between the CLMV and all the ASEAN members based on their membership during the AFTA period. However, the estimated coefficient is not significant. Refined estimation in column (3) shows that only the coefficient of the dummy for intra export within the CLMV, which has a negative sign and is statistically significant implying that during the AFTA period exports within the CLMV had been decreasing.

Closer examination which includes the intra exports to the CLMV and the ASEAN5 found mixed results. The result shows that the intra exports increased from Cambodia, Laos and Vietnam. However, only Vietnam had export increases with the ASEAN5. All estimated coefficients showed similar results as presented in Table (3) Column (5) except the coefficient for relative endowment, which is positive and significant implying that the trade between the CLMV and their trading partners occurred because of a difference in relative factor endowment. These results support Hecksher-Ohlin's Hypothesis that trade may occur between two countries that are dissimilar in terms of factor endowment.

Table 4: The effects of bilateral exports in the ASEAN Transition Economies - augmented gravity model

Dependent Variable: Bilateral Exports

		s.e		s.e.		s.e		s.e
GDP exporters	.171**	(.086)	.160**	(.079)	.165**	(.079)	.195***	(.076)
GDP importers	.397	(.311)	.331	(.310)	.443	(.315)	.010	(.301)
POP exporters	-10.71***	(1.27)	-10.64***	(1.26)	-10.67***	(1.26)	-11.49***	(1.21)
POP importers	-4.47***	(.949)	-3.56***	(1.10)	-3.83***	(1.11)	-4.54***	(.897)
ENDOW	-.0006	(.031)	-.002	(.031)	.004	(.031)	.164***	(.039)
lDIST	-.437***	(.201)	-.325*	(.196)	-.361*	(.196)	-1.36***	(.268)
BOR	2.140***	(.153)	2.17***	(.152)	2.16***	(.152)	1.59***	(.172)
CLMV_IT	-.664*	(.394)						
CLMV_A5	.356	(.322)						
CLMV_A9_AFTA			-.188	(.137)				
CLMV_IT_AFTA					-.437***	(.191)		
CLMV_A5_AFTA					-.045	(.157)		
CAM_INTRA							2.45***	(.322)
CAM_ASEAN5							-.273	(.368)
LAO_INTRA							1.37***	(.385)
LAO_ASEAN5							-.328	(.332)
MYM_INTRA							Dropped	
MYM_ASEAN5							.284	(.344)
VNM_INTRA							1.95***	(.317)
VNM_ASEAN5							1.13***	(.323)
Time effects	12.57***		13.27***		13.22***		16.56***	
Bilateral effects							19.92***	
Importer effects	22.70***		23.57***		22.96***		15.62***	
Exporter effects	37.17***		38.08***		38.25***		43.04***	
No observation	1598		1598		1598		1598	
R^2	0.6980		0.6974		0.6981		0.7222	
F-test	132.15***		136.95***		132.22***		125.03***	

5. Summary and Conclusion

This study examined the effect of intra imports as well as intra exports in the ASEAN Transition Economies (CLMV) for the period 1990 to 2005. By using the gravity model, the estimation is carried out in two separate regressions using two dependent variables; bilateral imports and bilateral exports from the CLMV with heir trading partners.

From a basic gravity equation, this study identified the GDP as a proxy for market sizes, population, relative endowment; distance and common border are the main determinants of bilateral trade in the ASEAN Transition Economies. The effect of the ASEAN membership as well as the Free Trade Agreement revealed that both intra-imports and exports within the CLMV were decreasing. However, the intra import from the CLMV to the ASEAN5 increased by more than 50%. Finally, this study also found that Cambodia, Laos and Vietnam traded more with the CLMV; meanwhile Myanmar imported more from the ASEAN5. This study also revealed that Vietnam increased her exports but decreased imports with the ASEAN5. This may reflect the idea that Vietnam is moving towards industrialization, importing cheaper raw materials from Cambodia, Myanmar and Laos to produce semi and finished products to export to other countries including the ASEAN5.

In future work, the sample should be enlarged to include for example other countries that are classified as Transition Economies such as in Eastern Europe, East Asia and South Asia so that some comparison can be made based upon the role of membership in free trade or custom union to enhance their trade.

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