ASEAN ECONOMIC INTEGRATION: TRADE CREATION OR TRADE DIVERSION FOR IMPORT OF INDONESIA MANUFACTURES?

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Abstract

This research investigates the trade creation and trade diversion of Indonesia manufactures import from extra and intra ASEAN countries after ASEAN economic integration. Using regression analysis, the study suggests that Indonesia manufactures import has been diverted from extra ASEAN countries both in short run and long run. In the short run, the ASEAN economic integration does not result in trade creation for Indonesia manufactures import from intra-ASEAN countries. This might stems from the insignificant difference Common Effective Preferential Tariff (CEPT) and Most Favoured Nation (MFN) tariffs and the existence of non-tariff barriers.

Keywords: Economic integration, trade creation, trade diversion, Indonesia manufactures
JEL classification numbers: F15, O14

INTRODUCTION

In the last two decades the economic policies and studies associated with regional and global international trade policy were growing rapidly. It is characterized by bilateral cooperation among countries to improve the quantity and quality of international trade. The increasing awareness of the benefits as well as the costs of international trade and economic globalization has encouraged a number of neighbouring countries or within a region to form regional economic cooperation such as the ASEAN Free Trade Area (AFTA) and the Asia-Pacific Economic Cooperation (APEC). Through economic integration it is expected to reduce or even eliminate the trade barriers, both tariff and non-tariff barriers (NTBs), which may exist between member countries. Thus, the mobility of goods and services as well as trade and investment between countries within a certain region becomes more increasingly and borderless.

Globalization opens new nuances in economic relations across countries in the world. This condition widens the possibility for an economy to expand its market without being limited by geographical boundaries or territories. A European company reaching Asian, Africa and Latin America markets or establishing production unit in its market area has raised the multinational company. To some extent it boosts the world economy as well as domestic economy even though the benefits are largely still enjoyed by the country of origins of the multinational company.

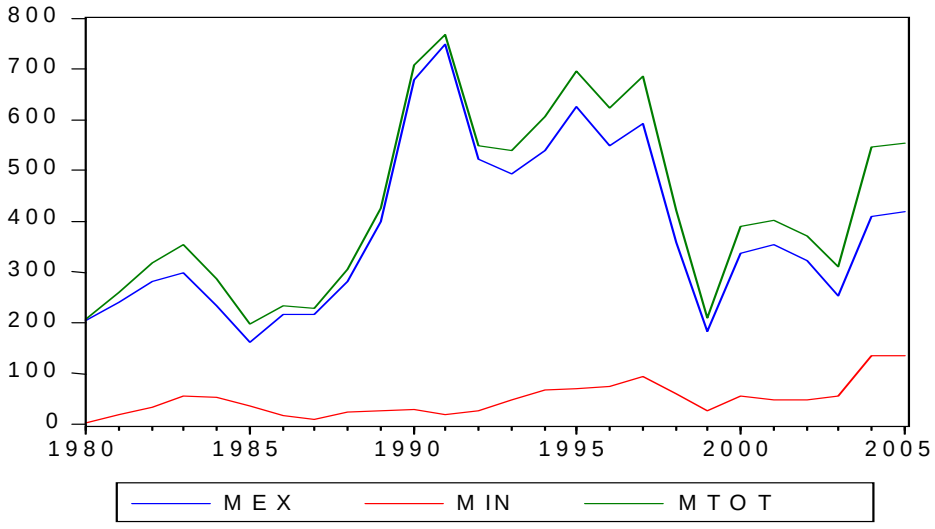
Along globalization era, the economic integration has become a trend followed by many countries in the world. This is no exception to the countries of the third world. Encouraged by the globalization, free trade areas and rapid growth of China and India the countries in Southeast Asia incorporated in the ASEAN then started to anticipate the negative impact and at the

same time to capture the opportunities of these developments.

An open economy is inseparable from import activities. The gap of domestic consumption and investment could be met by importing foreign goods and services. In Indonesia the import is one of the most important components in economic development especially in accelerating industrialization based-economic growth. This industrialization strategy was initially set to import substitution industries which its development cannot be separated from the windfall profits earned by the government due to the oil boom in the 1980s. In fact, however, the import substitution strategy had created high import dependence. Through the development of ASEAN economic integration, Indonesia import is automatically affected by this development. The elasticity of import will change with respect to the various variables that influence import.

Based on those facts it is necessary to further study how the integration of ASEAN's influence is on the elasticity of the factors that affect ASEAN trade and investment. The economic integration will allow for the trade creation or trade diversion towards ASEAN countries. If there is an increase in the proportion of the trade from outside the region to the ASEAN countries then it is called as trade creation. In contrast, when there is diversion of trade from its original trade partner countries towards outside the area then it is a trade diversion. This research will identify how the influence the ASEAN economic integration towards the import elasticity of influencing variables. In addition it will also be able to ascertain whether there is trade creation or trade diversion in Indonesia's manufacturing imports along ASEAN economic integration.

Import is a demand (consumption, investment and government spending) of domestic for foreign goods and services. The domestic demand is strongly influenced by its level of income. In a macro context, the level of income is known as the Gross Domestic Product (GDP), thus it directly affects the import. This can be seen clearly when the crisis hit Indonesia in 1997-1998. Indonesia's import had decreased drastically due to a decrease in real GDP of Indonesia (Figure 1).



Notes: (1) Figures are in USD100 million, 2000 Constant Prices. (2) *MEX* is Extra ASEAN Imports, and *MIN* is Intra ASEAN Import.
Source: UN Comtrade.

Figure 1: Intra and Extra ASEAN Import

The demand for foreign goods is also affected by the real exchange rate of the countries that conduct international trade activities. If the real exchange rate (IDR against USD) decreases or depreciates then the Indonesia's import value will drop substantially.

In a closed economy system in which no association with the foreign sector, domestic expenditure is only met by consuming domestic goods and services. Therefore, private consumption (*C*), investment (*I*), as well as government spending (*G*) must be fulfilled by goods and services produced domestically. Consequently an excess domestic production or lack of domestic production will happen. In other words, there would be no goods and services from overseas or imports and there would be no domestic goods and services sent to abroad or exports.

In contrast to closed economy, when a country adopt an open economy system there will be changes in its macro economy. Demand for goods and services consist of domestic demand and foreign demand (*X*). In addition, absorption by domestic residents is not only for domestic goods and services but it also against the goods and services obtained from abroad (*M*).

In an open macroeconomics there are two concepts of consumption, namely aggregate demand (denoted *Z*) and domestic absorption (denoted *A*). Aggregate demand comes from domestic and foreign demand for domestic goods and services ($Z = Yd + X$). Meanwhile the domestic absorption is the total demand of domestic goods and services from domestic and foreign goods and services ($A=Yd+M$) (De Grauwe, 1985). It is influenced by the amount of income (*Y*). The greater is the income, the greater is the demand for goods and services that directly affect the amount of import. Thus there is a positive relationship between level of income and the amount of imports.

In addition to income, real exchange rate (ε) of a country also affects the amount of export and import. In the current international trade, foreign exchange is not only functioning as a medium of exchange but it is also treated as a tradeable commodity. As a result, there is flexibility on the price of foreign currency. This price flexibility is indicated by the fluctuation in nominal exchange rate (*e*).

The fluctuation of exchange rate directly does not affect on trade. However it depends on the price of domestic goods and foreign goods. When the exchange rate increases, the import does not automatically increase if the price of imported goods and services is increasing (foreign price index increases) or if the price of domestic goods and services is decreasing (domestic price index decreases). Thus, imports are more influenced by real exchange rate of the domestic currency against foreign currency rather than by the nominal exchange rate. In the real exchange rate already includes the nominal exchange rate and relative prices of domestic and foreign goods and services.

Real exchange rate (ε) is formulated by multiplying the nominal exchange rate (*e* in USD/IDR) with the ratio between the domestic price index (*Pd*) and the foreign price index (*Pf*) (Dornbusch and Fischer, 1994:160).

$$\varepsilon = e.\frac{Pd}{Pf} \quad (1)$$

or in terms of IDR/USD the real exchange rate is

$$\varepsilon = e.\frac{Pf}{Pd} \quad (2)$$

When the real USD IDR increases, the price of foreign goods becomes cheaper, encouraging domestic residents to consume more foreign goods. On the contrary when the real exchange rate (in

USD/IDR) decreases the price of foreign goods are more expensive thereby encouraging domestic residents to reduce consumption of foreign goods or increase consumption of domestically produced goods (Dornbusch and Fischer, 1994, pp. 160). But when the exchange rate is in IDR/USD then the relation will be reversed or negatively related against imports. When the IDR/USD increases it indicates that IDR is depreciated so that it will reduce consumption of foreign goods.

In general, when some countries create regional economic integration it will create two effects namely trade diversion and trade creation. Trade diversion arises when the trade of the member countries divert to the third parties. In contrast, trade creation will affect economic activity in the area and boost the creation of income (SESRTCIC, 2000, pp. 71). The trade diversion will cause negative impacts for countries outside the region. In contrast the trade creation will lead to benefits for the members of the trade agreement.

An economic integration will promote free trade area (FTA). The FTA in a region then allows for the diversion of trade from outside into the area. As revealed by Susastro (2004), an FTA could bring trade diversion. Because the application of preferential tariffs, the price of a good of member countries will be cheaper than the price of goods coming from outside FTA, even though their actual production costs are cheaper. So the FTA could lead to trade diversion. The theory says that trade diversion is a negative impact because of lower world economic welfare. Meanwhile, the benefit of FTA is because of trade creation. That is the FTA increase the trade both among the members and non members because of efficiency increase. Further Susastro suggests that when the FTA policy was for granting special treatment rather than increasing efficiency and competitiveness, then the FTA only gives a negative impact. The impact is a diversion of trade to the previous trading partners.

Trade diversion from the original partners who produce goods efficiently to trading partners of the FTA member that are inefficient will happen when the prices of goods and services in the region are cheaper. This occurs when the difference between internal and external tariff are large enough. However, trade diversion can not easily happen, especially for economic integration of AFTA because the differences between AFTA preferential tariff and the MFN are not too large (Cosbey et al., 2004, pp. 31).

As revealed by Cuyvers et al. (2005), the AFTA raises questions about its contribution to social welfare. Most authors and other researchers agree that AFTA provides more impact on political stability in the region. However, they have lack of agreement of a positive impact on the economy of the Southeast Asian region. Cuyvers et al. (2005) also state that the welfare gains are obtained more from natural trading partners rather than from the member of AFTA. Furthermore, if the diversion of trade far exceeds the creation of trade within the region it will cause decreasing economic welfare. The contribution of inter-regional trade in ASEAN's far exceeds the intra-ASEAN trade during the past three decades. Thus, theoretically the AFTA will likely lead to trade diversion effects of ASEAN countries.

Empirically, however, the AFTA lead to various impacts. Cuyvers et al. (2005) describe that there are several parties who claim that the AFTA cause net trade creation such as Elliot & Ikemoto (2004), Gosh & Yamarik (2002) and Cernat (2001). However Dee & Gali (2003) and Soloaga & Winters (2000) in Cuyvers et al. (2005) state that AFTA produces net trade diversion. Further Cuyvers revealed that when there is a change in share of trading at a certain time then it means only a static effect (both trade creation and trade diversion) of integration. While the dynamic ef-

fect will appear when the barriers are reduced due to substantially increase in the size of the market so that arises economies of scale, improved efficiency due to competition and increasing investment.

Basically, the AEC (ASEAN Economic Community) is same as a free trade area like other economic integration. With the globalization there will be freer mobility of economic factors. People often exaggerate losses from globalization instead they realize the benefits of globalization.

Most part of the world including many Asian countries is benefited from globalization, but not for Africa (Soesastro, 2004). In Indonesia it is real fact that there are still a lot of poverty which is not reached by globalization or even their economy are crushed by globalization. However this negative impact is what is always highlighted. This could occur because the positive impact of globalization is not concentrated but more spread. The cheaper air fare, easier enjoying the entertainment and news with the internet, easier obtaining scholarship, the proliferation of automobile workshops that would absorb a lot of labor, the emergence of brand motorcycle manufacturers of China so we have many choices are all about positive impact of globalization. In fact it was possible that the fall of Suharto was considered as direct or indirect result of globalization.

The rapid economic cooperation of developed countries in Europe (European Union) and North America (North American Free Trade Area or NAFTA) will result on difficulty for Indonesia because of various restrictions they apply for the outsiders of the region. Therefore, Indonesia, the Asia and Southeast Asia have the same interest to secure their domestic market in their region. It also should foster cohesiveness of ASEAN countries to unify vision so as to seize the dominance of China export and investment as well as improving economic competitiveness.

Economically, the AEC opens a new market for Indonesia. Indonesia's export markets in ASEAN countries are not more than 20 percent while the rest comes from outside the ASEAN region. Around 0-5 percent tariff scheme among ASEAN countries was in place since January 2002 and it was reduced to 0 percent for the six older ASEAN countries in 2010 and subsequently in 2015 for the four new members. This condition will be largely benefited to Indonesia considering the number of multinational companies like Unilever relocates its factory to Indonesia on the reason of cheaper labour costs. This multinational company can export goods to the ASEAN countries, thus it will increase the value of Indonesia’s exports.

A free trade area can not be separated from investment activities. As noted previously that the free area of the AEC is not only free trade in goods and services but it is also the mobility of factors of production. Capital is no exception. The investors have authority to put capital in any countries which yield higher return under the supportive local or domestic regulation. This opportunity is widely opened to ASEAN countries. Investors will not distinguish whether Indonesia is republics or Malaysia and Thailand that are monarchy. Investors just consider whether profitable or not if the capital is invested, in Indonesia, Malaysia, Thailand, Singapore, or even Myanmar. The key to investment is the efficiency and productivity.

To assess productivity and efficiency of investment can be seen from many indications. The indicators include how patterns of bureaucracy support the business; how infrastructure can lower production costs; how tax laws does not burden the business, and many other things including labor cost, natural resources availability, and political stability. Therefore, to enlarge the opportunities of new investors is how governments, communities, and businesses eliminate various barriers to domestic business in Indonesia.

Efficient bureaucracy, infrastructure, supportive of business taxes, cheaper and productivity of labour, abundant natural resources, and stable and conducive political conditions are positive indicators for the investment target. This country is thus called as having a competitive advantage which is the advantage owned by a manufacturer than the others because the goods produced have advantages over other similar products (Robertua, 1995).

To supply goods and services to Indonesia, then companies like Unilever (which in fact is a Dutch company) does not have to produce goods in the Netherlands but it could produce in Indonesia. Moreover to supply goods to Indonesia does not need to set up factories in Indonesia if it is found to be inefficient. It could be in Vietnam or Malaysia. If Indonesia is able to attract multinational companies to produce in Indonesia then Indonesia will benefit from this condition. Tax revenues will increase resulting employment in the industry and other related industries. These industries that have linkages with multinational companies are not only as raw materials supplier or backward linkage industries but also the business sectors that have forward linkage like the insurance industry, transportation, distribution, and so forth.

This is still questionable whether the merger of various countries in AFTA for the AEC will have little effect in improving economic welfare of the region. This happens due to too low difference between the tariff level in AFTA (0-5 per cent with the CEPT scheme) and the MFN tariff (Cosbey et al., 2004). This little difference in real terms can be eliminated even by non-tariff barriers. The barriers arise when the institution related to the implementation of AFTA (customs, port authorities) do not perform well. As a result, various levies and complicated customs procedures will generate its own costs which amount is same as or even more than the normal tariff (MFN).

Table 1: CEPT Tariff

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Brunai D.	3.78	2.64	2.54	2.02	1.61	1.37	1.55	1.26	1.17	0.96	1.04
Indonesia	17.27	17.27	15.22	10.39	8.53	7.06	5.36	4.76	4.27	3.69	2.17
Malaysia	10.79	10	9.21	4.56	4.12	3.46	3.2	3.32	2.71	2.62	1.95
Philippine	12.45	11.37	10.45	9.55	9.22	7.22	7.34	5.18	4.48	4.13	3.82
Singapore	0.01	0.01	0.01	0.01	0	0	0	0	0	0	0
Thailand	19.85	19.84	18.16	14.21	12.91	10.24	9.58	6.12	5.67	4.97	4.63
ASEAN6	11.44	10.97	10	7.15	6.38	5.22	4.79	3.64	3.22	2.89	2.39
Cambodia								10.39	10.39	8.89	7.94
Lao PDR						5	7.54	7.07	7.08	6.72	5.86
Myanmar						2.39	4.45	4.43	4.57	4.72	4.61
Vietnam				0.92	4.59	3.95	7.11	7.25	6.75	6.92	6.43
ASEAN10				7.03	6.32	4.91	5.01	4.43	4.11	3.84	3.33

Source: Secretary of ASEAN, in Hapsari and Mangunsong, 2006.

Table 2: Comparison of MFN Tariff and CEPT Tariff in 2003 of 6 ASEAN Countries (%)

Country	MFN	CEPT
Brunei	3.1	1.04
Indonesia	7.3	2.17
Malaysia	9.2	1.95
Philippines	7.8	3.82
Singapore	0	0
Thailand	18.6	4.63

Source: Ravenhill, 2007.

Tables 1 and 2 show that the difference between MFN and CEPT tariff rates is very low. It is only Thailand which imposes large different rates (over 10 per cent) between MFN and CEPT. Some other weaknesses of the ASEAN free market are less consistency in implementing the agreement. Often there is a change the implementation of the free market that makes investors become disappointed and failed to plan their businesses. Until 2003, it was only Malaysia, Brunei, and Singapore that could reduce tariffs reaching 0 percent for 60 percent of the total products listed in the agreement, while Indonesia was able to reduce tariff by 54.6 percent of total and Thailand only reduced 4.3 percent of the total. Until the end of 2006 it was only 65 percent of the products listed in the Inclusion List (IL) reaching 0 percent.

The highest tariff rates set in the CEPT is 5 percent which is still above the tariff of average industrial countries (as agreed in the Uruguay Round of WTO Meetings). Because there was no uniformity in the rates determined by some ASEAN countries, then in reality the free market of ASEAN was not a single free market. It is a free market that can be up to 45 kinds of agreement resulting from the various bilateral agreements (Ravenhill, 2007).

Previously, Cosbey (2004) also revealed that there was no direct relationship between free trade areas and the country's success in improving their economy. The most important key is the stability of economic and institutional or good governance in that country. It is also the elaboration and implementation of the agreement itself. To anticipate the inefficiency of a free trade area then there are some signs that highly related to the ASEAN free trade: *First*, In real terms, the difference in tariffs between MFN and trade area is very small given the persistence of non-tariff barriers that cause the same effect with high tariffs in the MFN; *Second*, amongst non-tariff barriers are strict rules in the country of destination and large vested interest in certain traded goods; *Third*, there is large benefit from a cooperative relationship with remote trade areas such as ASEAN countries with the EC; *Fourth*, the agreement should be performed in a wide range rather than just focusing on specific area; *Fifth*, the certainty of the gains from free trade area; and *Sixth*, the method or rule used in the free area that is as simple, liberal, and transparent as possible.

The commitment to establish the AEC can be opportunity for Indonesia to become the economic leader in South East Asian region. In addition, the commitment of ASEAN economic cooperation can be used as a way to set up cooperative institutions like the IMF. In other words, this commitment could lead to the establishment of ASEAN IMF so that ASEAN countries can be more independent and not dictated by IMF.

Indonesia should be able to identify opportunities and challenges before joining AEC. Using SWOT analysis Indonesia can anticipate the obstacles and optimize the opportunities in order to survive from competition and open capital mobility. Here are some indicators of doing business that become part of a references to asses Indonesia SWOT. The data presented in Table 3 is from the data of Japanese companies doing business in several Asian countries which is at least explaining efficiency level of investment.

It can be seen from the table 3 that typical cost of doing business in Indonesia is relatively cheap in labour costs, manager salaries, salaries of engineers, industrial estate rental costs, and electricity tariff. So Indonesia could be an alternative choice because of cheaper investment costs. Conversely, it could be flight of human resources, both the unskilled and professionals, since there is a wide gap almost 39 percent for salaries of managers and 56 percent for engineer salaries between Indone-

sia and India. Managers and engineers in Thailand are paid 24 percent to 44 percent higher than that of in Indonesia. Meanwhile, the mobility of professionals will be easier with AEC so that is very possible for Indonesia to have shortage of professionals.

Indonesia position is actually very dominant given the human and natural resources abundance. With this condition, of course, Indonesia has the great economic and political power and influence for the progress of ASEAN. This dominance of Indonesia's domestic economy is reflected in the share of Indonesia GDP of ASEAN which is approximately 30 percent. So the ASEAN's will be less developed without Indonesian economy (Plummer, 1996). Thus, the ASEAN economy depend a lot of on the progress of the Indonesian economy.

Table 3: Typical Costs of Japanese Companies

Countries /City	China Sanghai	China Taipei	Thailand Bangkok	Indonesia Jakarta	Vietnam HoChi Min	India New Delhi
Monthly worker salaty (USD)	153-261	749-1,308	163	108	101-134	138
Monthly middle manager salary (USD)	593-985	1,729-2,838	671	540	524-661	753
Monthly middle engineer salary (USD)	312-661	1,210-1,631	296	205	188-458	320
Rent for industrial estate (USD/m^2/month)	2.2	4.26	4.60	3.80-4.10	0.08	NA
Electricity Tariff for Industry (USD/kwh)	0.03-0.10	0.05	0.04	0.04	0.05-0.07	0.08
Container Cost to Los Angeles (USD/40 feet)	4,000	2,659	2,740	3,570	2,778	3,764

Source: Japan External, Trade Organization 2003.

Table 4: Macroeconomic Indicators, 2003 and 2006

Countries/Indicators	Nominal GDP (million USD)		GDP Growth rate (%) in 2003	GDP per capita (USD) in 2003
	2003	2006*		
India	600,658	906,268	8.2	508
ASEAN	685,981	n.a.	5	1,266
Brunei	4,715	6,400	3.2	12,971
Cambodia	4,215	7,193	5.0	310
Indonesia	208,625	364,459	4.1	973
Laos	2,043	3,404	5.9	362
Malaysia	103,737	148.940	5.3	4,198
Myanmar	9,605	n.a.	5.1	179
Philippines	79,270	116,931	4.7	973
Singapore	91,355	132,158	1.1	20,987
Thailand	143,303	206,247	6.8	2,291
Vietnam	39,021	60,884	7.2	481

Notes: * World Bank, September 14th, 2007.
Source: ASEAN Statistical Yearbook, 2005 in Karmakar (2005).

METHODS

This paper analysed annual data from 1980 to 2005. The variables are Indonesia manufactures import from four major ASEAN countries namely the Philippines, Singapore, Malaysia, and Thailand and from extra ASEAN, Indonesian GDP, and exchange rate of the relevant countries. Source of import data is from UN Comtrade, while the others are from International Financial Statistics.

The import model is a model as suggested by Dornbusch and Fischer (1994, pp. 161).

$$M = f(Y, R) \quad (3)$$

M, *Y*, and *R*, is respectively imports, national income represented by the GDP, the real exchange rate of IDR. Because the import is from outside ASEAN or extra-ASEAN imports and from ASEAN countries or intra-ASEAN imports, the model can be split into two models as follows.

$$MEX = f(GDP, EREX), \quad (4)$$

and

$$MIN = f(GDP, ERIN), \quad (5)$$

where *MEX*, *MIN*, *EREX*, and *ERIN* are the extra-ASEAN imports, intra-ASEAN imports, the exchange rate of IDR against the currencies of ASEAN trading partners, and the exchange rate of IDR against the currencies of intra-ASEAN trading partners, respectively. Thus the econometric models that will be estimated are

$$MEX_t = a_0 + a_1 GDP_t + a_2 EREX_t + e_t, \quad (6)$$

and

$$MIN_t = b_0 + b_1 GDP_t + b_2 ERIN_t + \varepsilon_t. \quad (7)$$

The method of estimation is the Ordinary Least Square. This method will result in the Best Linear Unbiased Estimator or BLUE (Gujarati, 1995, pp. 291). The models used in equations (6) and (7) are static equations in which both equations indicate long-term relationship. When cointegration conditions are not met then the regressions are conducted on the difference variable such as MIN_t becomes $DMIN_t = MIN_t - MIN_{t-1}$.

All variables in the model are cointegrated so that the ECM model will be used to show the relationship between short term and long term.

$$DMEX_t = \alpha_0 + \alpha_1 DGDP_t + \alpha_2 DEREX_t + \alpha_3 ECTMEX_t + \varepsilon_t. \quad (8)$$

$$DLMIN_t = \beta_0 + \beta_1 DGDP_t + \beta_2 DERIN_t + \beta_5 ECTMIN_t + \varepsilon_t. \quad (9)$$

The significant coefficient of difference variables (α_0, α_1, α_2, β_0, β_1, and β_2) shows a short term relationship. The coefficient α_3 and β_3 are significant indicating that the model is indeed occurred error correction mechanism that will achieve long run equilibrium. Meanwhile, long-term coefficients will be obtained from the static model.

Thus when the cointegration conditions are met then the model will be estimated through two phases: the first is to estimate the long-term model and the second is to estimate ECM model to obtain short-term model as well as to ensure the long-term equilibrium. *ECTMEX* and *ECTMIN* are the error correction terms that are the variable obtained from the first lag of long term residual or error (-1) from equations (6) and (7) (Gujarati, 1995, pp.728). The greater the a bsolute value of the coefficient of error correction term, the more quickly is the long-term equilibrium happened because this coefficient shows the speed of adjustment.

Meanwhile, to determine whether there is trade diversion (*TD*) or trade creation (*TC*), then it focus on the coefficient of *GDP* in both the short and long term. ASEAN economic integration leads to trade diversion if after integration it declines the coefficient of *GDP* in the model of extra-ASEAN imports

of manufactures (*MEX* model). While the trade creation happens is indicated by the increased coefficient of *GDP* in manufactures intra-ASEAN import models. In addition, to capture the structural changes will incorporate the intercept dummy and slope dummy on the model estimates.

RESULTS DISCUSSION

The MWD test on the estimation of extra-ASEAN import model shows that both Z_1 and Z_2 are significant. It means that both log and linear models are indifference. However, if it is seen from the significance the Z_1 is more significant than Z_2. Thus it can be concluded that a log linear model is more appropriate for estimation. While in the selection of functional form model of intra-ASEAN imports is obtained that Z_1 is significant while Z_2 is not significant. So it can be concluded that the log linear model is more appropriate to estimate the model (Gujarati, 1995).

From Table 5 it can be seen that all variables used in the model are not stationary with the exception of *LMIN* with 5% significance level. Therefore, these variables should be differentiated one degree to get these variables are integrated. After that all the variables become stationary.

Table 6 shows that both models of intra-ASEAN imports (denoted by *LMIN*) and extra-ASEAN import (denoted by *LMEX*) produce a stationary residual. This indicates that all variables used in both models are cointegrated even after using dummy variables produce a better level of stationarity. In the model *LMIN*, however, not all variables have the same degree of integration. In contrast, all variables of *LMEX* model have the same one. Thus the *LMEX* model can obtain long-term parameters (*LR*) and short-term parameters (*SR*) while on the *LMIN* model only get its *SR* parameters.

To obtain the long run parameter is by estimating the static *LMEX* model and further doing diagnostic testing. This test is to see whether the classical assumptions are not violated. If its assumptions are met then the results of the estimation could economically be interpreted. Conversely when the assumptions are not met then the results only have statistical meaning. The results of estimation and diagnostic test are as presented as follow, respectively.

$$\begin{aligned} LMEX = & -2.68 + 31.58DUM \\ & (-0.68)\ (5.11)^{***} \\ & - 2.88DUM^{*}LGDP + 2.68LGDP \\ & (-4.15)^{***} \qquad (4.59)^{***} \\ & + 0.85DUM^{*}LEREX \\ & (1.21) \\ & -1.57LEREX \\ & (-2.44)^{**} \end{aligned} \tag{10}$$

$R^2 = 0.71$, $n = 26$, $F_{stat} = 9.57$.

In equation (10), *, **, and *** indicate that the variables are statistically significant at 10%, 5%, and 1% level, respectively. Entries in parenthesis are the $t_{\text{statistic}}$. For the period of 1993-2005, *DUM*=1, and 0 otherwise.

Table 5: Unit Root Test and Non Stationerity Test

	No Difference or *I*(0)									
	LMEX	Lag	*LMIN*	Lag	*LGDP*	Lag	*LEREX*	Lag	*LERIN*	Lag
N	+	0	+	0	+	0	+	0	+	0
C	+	0	**	0	+	0	+	0	+	0
C+T	+	0	**	0	+	0	+	0	+	0
	Difference Degree 1 or *I*(1)									
	LMEX	Lag	*LMIN*	Lag	*LGDP*	Lag	*LEREX*	Lag	*LERIN*	Lag
N	***	0	***	0	***	0	***	0	***	0
C	***	0	***	0	***	1	***	0	***	0
C+T	**	0	***	0	***	1	***	0	***	0

Notes: (1) H_0 = unit root. (2) Entries in *, ** and *** indicate that H_0 is rejected at 10%, 5%, and 1% levels, respectively. Entries in (+) contain a unit root.

Table 6: Cointegration Test

Residual Unit Root Test No Difference or *I*(0)				
	LMEX	Lag	*LMIN*	Lag
N	**	0	***	0
Residual Unit Root Test With Dummy No Difference or I(0)				
	LMEX	Lag	*LMIN*	Lag
N	***	1	***	0

Table 7: Diagnostic Test for *LMEX* Model

Assumption	Test	H_0	Result	Indicator	Remark
Non Auto-correlation	Breusch-Godfrey Serial Correlation LM Test and DW	Non-autocorrela-tion	OK	Obs*R^2 =7.3306 Prob=0.0256	Non Autocor-relation at 10% level
Homosce-dasticity	White Heteroscedas-ticity Test	Homosce-dasticity	OK	Obs* R^2=9.865986 Prob=0.361443	
Non Multi-collinearity	Correlation of Inde-pendent Variable and R^2 of Independent Variable		OK	Correlation =0.80 and partial R^2 = 0,65	Non Multicol-linearity
Model Specifica-tion	Ramsey RESET Test	Good	OK	$F_{statistic}$=1.301845 Prob=0.296447	
Normality	*JB* test	Normal	Relatively OK	*JB*=6.4133 Prob=0.0405	

Tabel 8: Diagnostic Test for ECM Model of LMEX

Assumption	Test	H_0	Result	Indicator
Non Autocorrela-tion	Breusch-Godfrey Serial Correlation LM Test and DW	Non-autocorrelation	OK	Obs* R^2=4.069071 Prob=0.130741
Homoscedasticity	White Heteroscedasticity Test	Homoscedasticity	OK	Obs* R^2=14.87601 Prob=0.188244
Non Multicollin-earity	Correlation of Independ-ent Variable and R^2 of Independent Variable		OK	Correlation =0.80 and Partial R^2=0,65
Model Specifica-tion	Ramsey RESET Test	Good	OK	$F_{statistic}$=1.291942 Prob=0.524153
Normality	*JB* test	Normal	OK	*JB*=0.557332 Prob=0.756792

Table 9: Coefficients of Extra-ASEAN Import Model

	SR		LR	
	Before Integration	After Integration	Before Integration	After Integration
C	0.0000	0.0000	0.0000	31.5822
LGDP	0.0000	-1.2670	2.6787	-0.2016
LEREX	0.0000	0.0000	-1.5657	-1.5657

To obtain the short run parameters so it estimates ECM models of *LMEX*.

$$D(LMEX) = -0.08 - 0.08DUM + 3.14D(LGDP) \quad (-0.68)\ (-0.55)\ (2.30)^{**} - 1.27DUM^{*}D(LGDP) \quad (-0.67) - 0.93D(LEREX) \quad (-1.22) + 0.95DUM^{*}D(LEREX) \quad (1.21) - 0.81RSTATDUMLMEX(-1). \quad (11) \quad (-3.56)^{***}$$

$R^2 = 0.67$ $N = 25$ $F_{stat} = 6.01$.

After model estimation, then it is performed diagnostic test. The diagnostic test results that model of extra-ASEAN imports meets the classical assumptions required thereby the coefficients can be inteIDRreted economically (Table 8).

Based on those two estimations above (equation 9 and 10), the expected short run and long run parameters for extra-ASEAN import models are shortened in Table 9. It can be seen from Table 9 that after the integration of ASEAN, the responsiveness of Indonesian manufactures imports from extra-ASEAN countries to the GDP has changed both in the short run and long run. In the long run, the responsiveness change is very large and even changes the effect of GDP that would lead to reduction in imports after the integration. Following the ASEAN integration the elasticity of Indonesian manufactures import from extra-ASEAN countries with respect to exchange rates does not change either in the short run or long run. From this result it can be inferred that there is trade diversion of Indonesia manufactures import from extra-ASEAN countries in the short run and long run.

Because the variables of *LMIN* model do not have the same degree of integration then it is only obtained the short run parameters.

$$D(LMIN) = -0.06 - 0.07DUM \quad (-0.23)\ (-0.21) + 5.79\mathrm{D}(LGDP) \quad (1.79)^{*} - 1.56DUM^{*}D(LGDP) \quad (-0.40) - 3.76D(LERIN) \quad (-1.90)^{*} + 3.74DUM^{*}D(LERIN). \quad (12) \quad (1.82)^{*}$$

$R^2 = 0.34$, $N = 25$, $F_{stat} = 1.95$.

Meanwhile the diagnosis results show that the model is less precisely specified indicated by model specification test (Table 10). Thus it is necessary to investigate the relevant variables for the exactly model specification.

Table 10: Diagnostic Test of SR *LMIN* Model

Assumption	Test	H_0	Result	Indicator
Non Autocorrelation	Breusch-Godfrey Serial Correlation LM Test and DW	No autocorrelation	OK	Obs*R^2=2.864639 Prob=0.238754
Homoscedasticity	White Heteroscedasticity Test	Homoscedasticity	OK	Obs* R^2=11.89768 Prob=0.219139
Non Multicollinearity	Correlation of Independent Variable and R^2 of Independent Variable		OK	Correlation=0.0245 and partial R^2=0,0006
Model Specification	Ramsey RESET Test	Good	Not OK	$F_{statistic}$=4.189568 Prob=0.033171
Normality	*JB* test	Normal	OK	*JB*=1.635729 Prob=0.441373

To fix the model it firstly analyzes the data from the *LMIN* model. It is identified that during 1980-2005 period there were important events concerning international trade in Indonesia i.e. the trade liberalization in 1986 and monetary crisis in 1997. Trade liberalization in the 1980s was begun with the October Package 1986 introducing tariff to remove restrictive non-tariff barriers or quotas (Hill, 1996). This policy was continued by another policy package in January and December 1987, November 1998, May 1990, and June 1991.

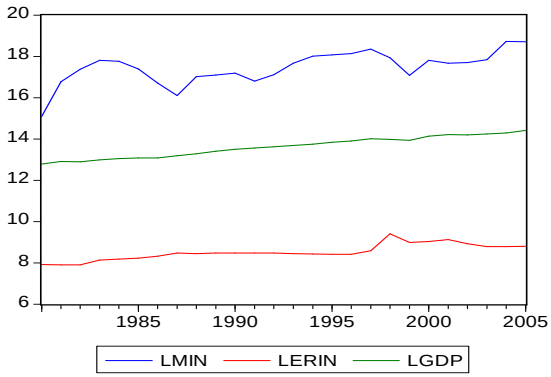


Figure 2: Structural Break of Intra ASEAN Import

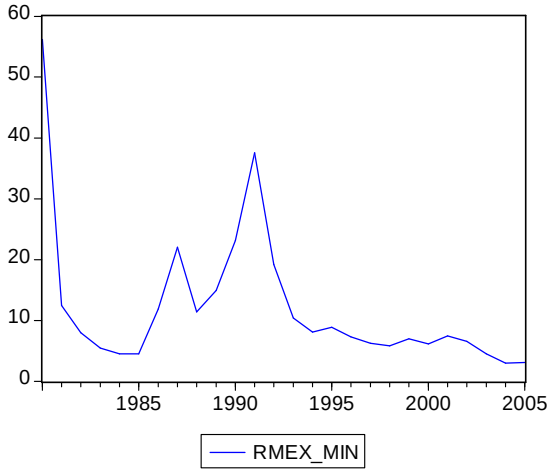


Figure 3: Ratio between Extra-ASEAN Import and Intra-ASEAN Import of Indonesia Manufactures

From the graphs of *LMIN*, *LERIN*, and *LGDP* show that there are 3 different *LMIN* trends in the interval 1980-1987, 1988-1997, and 1998-2005 (Figure 2). Thus, it exactly meets to the qualitative conditions which existed during that period. This conjecture is also supported by the graph of the ratio between *MEX* and *MIN* during the observation period, as depicted in Figure 3.

From the graphical analysis above it shows that the structural break of *LMIN* occurred approximately in 1987 and 1997. This is most likely because of economic liberalization (deregulation of the economy) in 1987 and the crisis in 1997. From the analysis shows that economic integration in 1993 has lagged response until in 1997. Thus, the model intra-ASEAN imports need dummy variables to distinguish the situation in 1980-1986, 1987-1996, and 1997-2005. Estimation result of Intra-ASEAN import model with structural break in 1986 and 1997 is:

$$
\begin{aligned}
D(LMIN) = \; & 0.02 - 0.03D_1 - 0.20D_2 \\
& (0.08) \quad (-0.04) \quad (-0.59) \\
& - 8.56D_1{*}D(LGDP) \\
& \qquad (-1.01) \\
& - 6.77D_2{*}D(LGDP) \\
& \qquad (-1.66) \\
& + 11.04D(LGDP) \\
& \qquad (3.09)^{***} \\
& - 1.38D_1{*}D(LERIN) \\
& \qquad (-0.37) \\
& + 4.59D_2{*}D(LERIN) \\
& \qquad (1.91)^{*} \\
& - 4.58D(LERIN). \qquad (13) \\
& \quad (-1.94)^{*}
\end{aligned}
$$

$R^2 = 0.57$, $N = 25$, $F_{stat} = 2.63$.

From the results of diagnostic tests it can be seen that the model of intra-ASEAN imports meets the classical assumptions required so that the coefficients can be interpreted (Table 11). The expected parameters resulted of Intra-ASEAN import estimation is presented in Table 12.

Table 11: Diagnostic Test of *LMIN* Model with Structural Breaks

Assumption	Test	H_0	Result	Indicator
Non Autocorrelation	Breusch-Godfrey Serial Correlation LM Test and DW	Non-autocorrelation	OK	Obs*R^2 =1.168227 Prob=0.5576
Homocedasticity	White Heteroscedasticity Test	Homoscedasticity	OK	Obs* R^2 =12.65507 Prob=0.553846
Non Multicollinearity	Correlation of Independent Variable and R^2 of Independent Variable		OK	Correlation=0.0245 partial R^2 = 0,0006
Model Specification	Ramsey RESET Test	Good	OK	$F_{statistic}$=1.291603 Prob=0.524242
Normality	*JB* test	Normal	OK	*JB*=1.522311 Prob=0.467126

Table 12: Coefficients of Short Run Intra-ASEAN Import Model

	1980-1986	1987-1996	1997-2005
C	0	0	0
LGDP	11.0366	11.0366	11.0366
LERIN	-4.5830	-4.5830	0.0105

From this result the responsiveness of Indonesian manufactures imports from ASEAN countries to GDP after ASEAN integration occurred only in a short-term. The magnitude does not change compare to before the integration of ASEAN. Meanwhile the responsiveness of Indonesian manufactures imports from ASEAN countries to exchange rate occurred only in a short-term and its magnitude changes in 4 years after the economic integration.

There is no trade creation of Indonesia manufacture import from ASEAN countries after the economic integration. It is because of three reasons. Firstly, the trade relations between Indonesia and the original/natural trade partners are too strong; secondly, the gap between CEPT and MFN tariffs are too small; and thirdly, the existence of non- tariff barriers amongst ASEAN countries.

CONCLUSION

Economic integration could have either trade creation or trade diversion. ASEAN economic integration does not have trade creation on Indonesia manufactures import from ASEAN countries. However, the economic integration has diverted the trade of Indonesia manufactures import from extra-ASEAN countries both in short run and long run. The challenge is then how to optimize the ASEAN economic integration for benefits of ASEAN members especially Indonesia. It should take a concrete steps for tariff reduction up to 5% or even 0%. Not only tariff reduction, but it also eliminates the non-tariff barriers so that the real inter-ASEAN tariffs will not exceed the MFN tariff. In addition, to minimize the negative impacts of ASEAN economic integration, Indonesia should have competitiveness favoured trade policies.

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