WHAT ARE THE GAIN AND LOSS OF COMPARATIVE ADVANTAGE AMONG ASEAN-6?

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Abstrak : Tujuan diadakannya perdagangan ASEAN adalah untuk mengurangi hambatan tarif dan nontarif barang-barang yang diproduksi oleh negara-negara anggota. Oleh karena itu, penting untuk menentukan apakah anggota Asean untung atau rugi dalam transaksi perdagangan mereka. Makalah ini membahas keuntungan dan kerugian dari keunggulan komparatif (*comparative advantage*) antara Asean-6. Penulis menggunakan data sekunder dari keunggulan komparatif terungkap (*Revealed Comparative Advantage*) untuk Asean-6. Temuan menunjukkan bahwa semua Asean-6 negara memperoleh keuntungan dari perdagangan mereka.

Abstract **:** *The aim of ASEAN trade is to reduce tariff and nontariff barriers to goods produced in member countries. Therefore, it is significant to determine whether Asean members gain or loss from their trade. This paper examines the gain and loss of comparative advantage among Asean-6. We employ secondary data of revealed comparative advantage (RCA) for Asean-6. The results obviously indicate that all Asean-6 countries gain from their trade.*

Keyword: *Comparative Advantage, Revealed Comparative Advantage (RCA), Gain ang Loss from Trade, ASEAN-6, OLS, Augmented Dickey Fuller test (ADF).*

Introduction

The ASEAN preferential trading arrangements, established in 1977, sought to expand intra-ASEAN trade by reducing tariff and nontariff barriers to goods produced in member countries. Only negligible increases in trade within the region were achieved, however, because of persistent, though generally declining, reliance on nontariff barriers in many ASEAN countries and, more fundamentally, because of the opposition of many of the same vested interests that have prevented the success of the coordinated ASEAN investment programs. In January 1992, the ASEAN heads of state, concerned about the increasing bilateralism of the major industrial countries, agreed to establish the ASEAN Free Trade Area. Beginning in 1995, each ASEAN country will reduce the level of its tariffs on imports of manufactures and highly protected categories of agricultural and other natural resource--based commodities from within the region to a range of 0 to 5 percent by year 2003. The AFTA agreement also calls for simultaneous elimination of nontariff barriers to trade within ASEAN.

Steven (1997-2003) mentions that the theory of comparative advantage is perhaps the most important concept in international trade theory. Supported by Li (2002), the theory of comparative advantage predicts that trade specialization could maximize welfare and prosperity.

To determine whether the ASEAN-6, namely Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam are at a comparative advantage, we use traditional revealed comparative advantage (RCA) to make a comparison among the Asian countries (Balassa, 1965, 1977, 1979 and 1986). This study will try to give a clearer picture on their gain and loss from trade. We will employ the concept of substitution and complementary as applied in explicative model (Li, 2002).

Statement Of The Problem

The comparative advantage is important when there is trade between or among the countries. However, it is not obvious enough to point out whether a country gains or losses from trade. This study will try to highlight and elucidate any ambiguities in relation to the comparative advantage theory.

Objective

3.1. To have better understanding about the concept of revealed comparative advantage (RCA).

3.2. To determine gain and loss based on the comparative advantage concept among Asian countries.

Organization Of The Study

In the next section, firstly, we shall discuss the theoretical framework of comparative advantage. Secondly, we will review the literature on comparative advantage focusing on revealed comparative advantage (RCA). Thirdly, we shall discuss the data and methodology to be used in this study. This section begins with introduction of data followed by the methodology which can be divided into four main parts. First, we will test the stochastic properties of the series by using the unit root tests. Second, we will investigate cointegration relation among the variables. Third, we will investigate Granger causality by using Johansen's full information maximum likelihood procedure. Forth, we will use OLS (Ordinary Least Squares) to estimate gain and loss from trade. The final section will summarize and conclude the whole study.

Theoretical Framework

In economics, the theory of comparative advantage explains why it can be beneficial for two countries to trade even though one of them may be able to produce every kind of item more cheaply than the other. What matters is not the absolute cost of production, but rather the ratio how easily the two countries can produce different kind of things.

There are many articles that cover the comparative advantage theory. This theory can be viewed from various aspects. First, the theory is described by Robert Torrens in a1815 essay on corn trade. He concludes that it is England's advantage to trade various goods with Poland in return for corn, even though it might be possible to produce that corn more cheaply in England than Poland. However, a clearer explanation usually attributed to David Ricardo 1817 book, *The Principles of Political Economy and Taxation* which uses England and Portugal as a case study. In Portugal it is possible to produce both wine and cloth with less work than it takes in England. However, the relative costs of producing those two goods are different in the two countries. In England it is very hard to produce wine, and only moderately difficult to produce cloth. In Portugal both are easy to produce. Therefore, while it is cheaper to produce cloth in Portugal than England, it is cheaper still for Portugal to produce excess wine, and trade that for England cloth. And conversely England benefits from this trade because its cost for producing cloth has not change but it can now get wine at closer to the cost of cloth (Wikipedia, 2004).

Markusen, et.al (1995) give the definition of comparative advantage i.e. a country has a comparative advantage in X if its opportunities cost of X in terms

of Y is less than in other country[1], where X and Y referred to goods. Furthermore, they cited Ricardo (1817) which notes that as long as some pattern of comparative advantage exists, there will be gain from trade, regardless of whether one country has an absolute advantage in all goods. The absolute advantage in this sense refers to a country which is produces goods X more than other country by using one unit of labor.

Daniel (2004) mentions that comparative advantage is defined in terms of relative autarky prices, which are generally not observable; the empirical comparative advantage literature has had to take the intermediate step of relating autarky prices to observable features such as factor supplies and measure of technological differences.

Alan (1998) explains the comparative advantage as low relative cost of a good compared to other countries. He further clarifies the concept of the positive law of comparative advantage which is if there is permission to trade; a country will export goods in which it has a comparative advantage. On the other hand, the normative law of comparative advantage means that, if permitted to trade, a country will gain or has benefits of trade which exceed costs.

Both of laws are illustrated using a numerical such as David Ricardo to explain comparative advantage. It has two countries and two goods, both of which are used only for consumption, only one factor of production (homogeneous labor), perfect competition, and perfectly free trade without even transport cost[2].

Review Of Literature

This section reviews the existing literature on three main points which are trade among Asean-6, comparative advantage, and RCA, in order to have a better understanding of gain and loss of comparative advantage among Asean-6.

Xiaming (2000) examines the change in China's comparative advantage in manufacturing from 1987 to 1995, in favor of high-tech industries. His study considers 28 major product groupings at three-digit industries classification level employing two measurements, namely revealed comparative advantage (RCA) and the net trade ration (NTR). The results indicate that while China still maintain its comparative advantage in low-tech and labor-intensive products, the country has been developing in comparative advantage in the range of medium-tech and more capital goods. At the same time, it has also gained or is in the process of gaining a revealed comparative advantage in the high-tech product grouping of

[1] Markusen, J.R., Melvin, J.R., Kaempfer, W.H., Maskus, K.E., "International Trade Theory and Evidence" Chapter 5. McGraw-Hill, Inc.1995.

[2] Alan, V.D, 1998. "Benefits and Costs of Flowing Comparative Advantage". The Sweetland Lnaugural Lecture, Presented at the 45th Annual Conference on the Economics Outlook, Ann Arbor, Michigan.

communications equipment and automatic data processing equipment. However, from his finding there is a failure of yet to achieve any comparative advantage in a number of other high-tech sectors. He further explains the test from RCA and NTR to affirm that the change in China's comparative advantage is not driven simply by shift in basic factor endowment.

Li (2002) studies the gain and loss in export advantage among world regions by using the UNIDO 1999 database. The objective of this study is to find out the revealed comparative advantage of manufacture export among seven world regions. Those are European Union (EU), North America (NA), Latin America (LA), South Asia (SA), Oceania (OC), East Asia (EA), and association of Southeast Asian Nations, consist of Indonesia, Malaysia, Philippines and Thailand. The result indicates that European and East Asian economics lose in export advantage, while the Southeast Asian and Latin America economics have gained. He further explains by using an explicative model[3] to identify the gainers and losers across the region. The result shows that the gain in the comparative advantage in one region is matched with the loss in the comparative advantage of the same sector in another region.

Nguyen (2002) stresses on the issues of comparative advantage and international trade regime of Vietnam. This study tries to examine whether Vietnamese firms are able to take an advantage of markets when the economy is completely open to the world. A part of this study use the revealed comparative advantage (RCA) to measure and reflect the underlying comparative advantage of Vietnam in particular commodities compared to 6 Asian countries, namely Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. The results show that in 1995-1998, Vietnam's comparative advantage mostly lies in primary commodities in stance a cereals, coffee, hides, oil seed, rubber, fish, coal, wood, and crude oil. Moreover, Vietnam is strong in some labor intensive manufactured goods including travel goods, textiles, clothing and furniture.

Daniel (2004) provides an empirical assessment of the comparative advantage gain from trade by using evidence from Japan's 19th centaury. He explains that although comparing an economy in a state of autarky relative to a state of free international trade would affect the wealth nation, however where

[3] However, since the gains and losses of revealed comparative advantage among the regions are related one to each other, we note that the "explicative" variables in each equation (and for each sector) are not truly independent from the "dependent" variable. Therefore, the estimated coefficients should be interpreted appropriately as partial correlations estimates among those variables. We consider those partial correlations estimates as special in the sense that they were obtained by the simultaneous equation procedure for precluding inconsistencies in the "complementary" or "substitution" relationship estimates between country groups.

market economy engages in foreign trade, the empirical trade literature has not been able to generate estimates of the gains from trade based on the autarky-free paradigm of the theoretical trade.

Methodology And Source Of Data

Data And Variables

In this study, we attempt to evaluate gain and loss of comparative advantage among Asean-6, namely Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

We use annual secondary data from the study that has been done by Nguyen (2002). The data provided in table 1 represents the revealed comparative advantages (RCAs) for 6 ASEAN countries during 1995-1998. This study will further employ explicative model in order to determine whether those countries gain or loss from trade, elaborated by using concepts of substitution and complementary which indicate the relationship that exists between the different countries.

Any number in excess of one may be taken as an indicator of the existence of a comparative advantage in that product. The index allows clearer comparisons between countries at any time, and allows changes in comparative advantage to be tracked over time. The measure reflects the underlying comparative advantage of the country in particular commodities as determined by technology and factor endowments, modified by government policies designed to draw resources into favored sectors.

Table 1 Revealed Comparative Advantage for ASEAN-6* (1995-1998 Average)

SITC	Description	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
00	Live Animals except Fish	0.2620	1.616	0.053	0.0423	0.166	0.003
01	Meat and Preparations	0.0600	0.043	0.003	0.025	1.237	0.236
02	Dairy Products and Eggs	0.0290	0.249	0.014	0.153	0.162	0.104
03	Fish and Preparations	3.8180	0.483	2.249	0.121	9.092	10.55
04	Cereals and Preparations	0.1500	0.264	0.163	0.154	6.24	5.89
05	Fruit and Vegetables	0.0426	0.187	1.932	0.212	1.97	0.642

06	Sugar and Pres Honey	0.3250	0.289	1.452	0.119	6.167	0.764
07	Coffee Tea Cocoa Spices	4.1590	0.663	0.192	0.859	0.423	10.27
08	Animal Feeding Stuff	0.7210	0.394	0.667	0.12	1.125	0.092
11	Beverages	0.0230	0.185	0.091	0.687	0.295	0.121
12	Tobacco and MFRS	0.9660	0.374	0.348	2.139	0.322	0.936
21	Hides, Skins, Furs Undrssd	0.0210	0.041	0.018	0.122	0.029	1.95
22	Oil seeds, Nuts, Kernels	0.0830	0.56	0.077	0.097	0.049	9.06
23	Rubber Crude, Synthetic	14.2800	6.885	0.472	1.717	16.64	9.217
24	Wood Lumber and Cork	0.8550	4.187	0.193	0.191	0.268	2.728
25	Pulp and Waste Paper	2.8740	0.017	0.424	0.168	0.31	0.004
26	Textile Fibres	0.5460	0.364	0.249	0.144	0.842	0.815
27	Crude Fertizer, Minris Nes	0.8100	0.244	0.329	0.195	1.468	0.237
28	Metalliferous Ores, Scrap	4.1890	0.186	1.315	0.257	0.223	1.459
29	Crude Animal, Veg Mat Nes	0.5960	0.225	1.909	0.686	1.011	2.611
33	Petroleum and Products	2.0560	0.777	0.144	1.2	0.216	2.636
41	Animal Oils and Fats	0.1110	0.085	0.006	0.006	0.061	0.004
42	Fixed Vegetables Oil, Fat	7.6520	13.86	7.898	7.898	0.149	0.786
43	Processed Anml Veg Oil, etc	7.1740	17.63	1.076	1.76	0.289	0.009
51	Chem Elements, Comounds	0.5860	0.379	0.098	0.098	0.314	0

52	Coal, Petroleum etc Chems	0.3310	0.134	0.158	0.158	0.276	0
53	Dyes, Tanning, Color Prod	0.2390	0.34	0.071	0.071	0.608	0
54	Medicinal etc Products	0.0610	0.065	0.079	0.079	0.132	0.004
55	Perfume, Cleaning etc Prod	0.5540	0.378	0.242	0.242	0.425	0.297
56	Fertillisers Manufactured	1.6560	0.403	1.43	1.43	0.82	0.233
58	Plastic Materials etc	0.0860	0.119	0.078	0.078	0.346	0.117
59	Explosive, misc chemical etc	0.2060	0.795	0.213	0.213	0.693	0
61	Leather, Dressed Fur, etc	0.2360	0.207	0.082	0.082	1.834	0.377
62	Rubber Manufactures Nes	0.7060	0.703	0.184	0.184	1.23	1.431
63	Wood, Cork Manufactrs	14.8070	4.72	1.152	1.152	1.009	1.201
64	Paper, Paperboard and Mfr	1.1940	0.195	0.145	0.145	0.36	0.089
65	Textile Yarn, Fabric etc	1.7760	0.546	0.425	0.425	1.228	5.23
66	Nonmetal Mineral Mfs Nes	0.3490	0.403	0.266	0.266	1.514	0.511
67	Iron and Steel	0.3010	0.278	0.085	0.085	0.338	0.194
68	Non-ferrous Metals	0.7190	0.544	0.811	0.511	0.193	0.527
69	Metal Manufactures Nes	0.4330	0.516	0.273	0.273	0.745	0.1
71	Machinery, Non-Electric	0.1540	0.37	0.071	0.071	0.563	0.008

72	Electrical Machinery	0.0940	0.232	0.101	0.101	0.152	0.097
73	Transport Equipment	0.0200	0.192	0.249	0.249	0.284	0.103
75	Office Machines	0.3120	2.632	2.625	2.625	2.604	0.008
81	Plumbg, Heating, Lghtng Equ	0.2760	0.302	0.338	0.338	0.809	0.156
82	Furniture	1.5900	1.534	1.408	1.408	1.426	1.103
83	Travel Goods, Handbags	0.6560	0.177	2.89	2.89	2.815	3.781
84	Clothing	1.9390	0.935	2.675	2.675	2.288	2.965
85	Footware	4.4840	0.161	0.915	0.915	3.293	11.35
87	Medical Instruments Nes	0.0360	0.377	0.156	0.156	0.313	0.083
89	Misc Manufactrd Good Nes	0.8000	0.619	0.643	0.643	1.402	0.327

Empirical Framework

This study is concerned with identifying comparative advantage. Several measures of comparative advantage have been adopted in the literature. One is the "revealed comparative advantage (RCA) index developed by Balassa (1965). This index is calculated by dividing a country's share in the exports of a given commodity category by the share in the world exports of manufactured goods and is used to identify those products in which a country does or does not have a comparative advantage. If x_{ij} is the value of country i's exports of product j and X_{it} is the country i's total exports, its revealed comparative advantage index is:

$$RCA_{ij} = (x_{ij} / X_{it}) / (X_{wj} / X_{wt}) \quad (1)$$

Where the w subscript denotes world total. If the index takes a value greater than unity then the share of product j in country i's exports is larger than the corresponding world share. This means that country i has a revealed comparative advantage in product j. If the value is less than unity then the country has a revealed comparative disadvantage. This index has been widely used in identifying comparative advantage for a country or region. Examples include Petri (1988), Yeats (1989, 1992a, 1992b, 1998), World Bank (1994), Lee (1995), Hoekman and Djankov (1997) and Rodas-Martini (1998). The method is

sometimes criticised, however, for neglecting the import side of trade (Lundberg, 1988).

In order to avoid spurious regression, we need to detect the stationary of the series by using unit root test. We use Augmented Dickey Fuller test (ADF) and Phillips-Perron unit root tests (PP) to ensure the stationary of the variables. The ADF test consists of estimating the following regression.

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta Y_{t-i} + \varepsilon_t \qquad (2)$$

Where Y_t is our variable of interest (Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam), Δ is differencing operator, $\{\beta_1, \beta 2, \delta, \alpha_1 \ldots, \alpha_m\}$ is the set of parameter to be estimated, $\Delta Y_{t-1} = (\Delta Y_{t-1} - \Delta Y_{t-2})$, $\Delta Y_{t-2} = (\Delta Y_{t-2} - \Delta Y_{t-3})$, etc. ε_t is a pure white noise error term. The number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term in (1) is serially uncorrelated. In ADF, we test whether $\delta = 0$, therefore the null and alternative hypothesis in unit root tests can be written as following:

H_0: $\delta = 0$ (Y_t is nonstationary or there is unit root)

H_1: $\delta < 0$ (Y_t is stationary or non unit root)

The unit root hypothesis of the Augmented Dickey Fuller test (ADF) can be rejected if the t-test statistic is less than (lies to the left of) the critical value, meaning that the variable which to be estimated is stationary. If we cannot reject the null hypothesis as underlying premise is that time series have unit root or nonstationary in the levels, however it might be stationary in the first differences.

The Phillips-Peron (PP) unit root tests, on the other hand uses nonparametric statistic method to take care of the serial correlation in the error terms without adding lagged different terms. The asymptotic distribution of the PP test is the same as the ADF test statistic. To guarantee that the variables are stationary, we employ both Augmented Dickey Fuller test (ADF) and Phillips-Perron unit root tests (PP) in our study.

If the data is not stationary at the level, we have to employ the concept of cointegration as it provides a formal framework for testing and estimating long-run (equilibrium) relationship among economics variables.

To perform cointegration test, we construct null hypothesis as there is non cointegration among variables. If Trace statistic exceeds the critical value then we will reject null hypothesis meaning that there is cointegration among the variables. Since the results from the cointegration tests may be sensitive to the lag structure chosen, then we determine the proper lag profile on the basis of the Akaike Information Criteria (AIC) procedure.

We employ Granger causality test to determine the direction of influence between variables. In other words, this test is to analyze which variable precedes or leads the other. The null hypothesis is that there is causality between the variables.

We utilize OLS (Ordinary Least Squares) to estimate gain and loss from trade. Based on the homogeneity of RCA suggests that a gain or loss of RCA in a given sector for a country or region must have occurred at the expenses of another county or region. The sectors' "substitution" or "complementary" relationships that existed between the different country groups can help to identify where in a particular country group and sector the gain of RCA has come from, or where the loss has gone to. This is done by employing, for each sector, the following "explicative" model as follows

$$R^{i}_{n,t} = \alpha_{i0} + \sum_{j=1}^{6} \alpha_j R^{j}_{n,t} + \beta_i R^{i}_{n,t-1} + \varepsilon_i \qquad (3)$$

R stands for RCA, *i* and *j* ranges from 1 to 6, with 1 = Indonesia, 2 = Malaysia, 3 = Philippines, 4 = Singapore, 5 = Thailand, and 6 = Vietnam, *t* is time and *n* = 1, 2, 3, …, 52 sectors. We set coefficient $\alpha_{jj} = 0$, when $i = j$. When $i \neq j$, a positive value of α_{ij} would mean a "complementary" relationship between the two regions, while a negative value suggests a "substitution" relationship (Li, 2002).

The gain and loss of respective RCA can be captured by the various "explicative" variables ($R^{j}_{n,t}$) in Equation (1). The inclusion of the lagged dependent variable ($R^{i}_{n,t-1}$) can capture a situation where for a given sector the region under consideration has experienced a tendency of gain (or loss) in RCA over time.

Data Analysis And Discussion The Results

Unit Root Test

The unit root test is the methodology of econometrics to test data whether the variables are stationary or not. This study involves the observation of stationary properties of the time series under consideration of Augmented Dickey Fuller (ADF), and supported by Phillips- Perrons (PP) test.

The null hypothesis of unit root test is that the series are non-stationary. If the absolute value of ADF excess t-statistic and probability (p-value) is less than the level of significance, we can reject the null hypothesis, otherwise not. The determination of the individual lag of the variable is based on the minimum of Akaike Information Criteria (AIC).

Table 1 shows the summarized results of unit root tests. We estimate both test with and without time trend. The results indicate that for ADF and PP test

at the level can reject the null hypothesis at 1% level of significance. Therefore, from results of our study we can conclude that all the variables stationary at the level.

As mentioned before that if the data is not stationary at the level, we have to employ the concept of cointegration as it provides a formal framework for testing and estimating long-run (equilibrium) relationship among economics variables. Since the data of our study is stationary at the level then we can move on to next step which is Granger causality.

Table 2 Unit root tests Summary Statistics

Variables	Lag length (SC)	ADF-t statistics (Level)		PP-t statistics (Level)	
		With time trend	Without time trend	With time trend	Without time trend
Indonesia	0	-7.095229***	-5.694272***	-7.172556***	-5.779499***
Malaysia	1	-5.119375***	-4.419651***	-4.294822***	-4.109876***
Philippines	0	-6.579460***	-5.129839***	-6.579527***	-5.333714***
Singapore	0	-6.224824***	-4.967975***	-6.224824***	-5.142541***
Thailand	0	-6.974840***	-5.416626***	-6.974840***	-5.615306***
Vietnam	0	-5.682521***	-4.469530***	-5.601654***	-4.448022***

Note: *, **, ***denote significance at 10%, 5%, and 1% respectively.

Granger Causality

We employ Granger causality test to determine the direction of influence between variables. In other words, this test is to analyze which variable precedes or leads the other.

We estimate the results by comparing p-value with level of significance. If p-value is less than level of significance it means that there is causation from one variable to another, otherwise not.

Table 2 presents the Granger Causality tests for Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. The results indicate that first; the revealed comparative advantage (RCA) index in Indonesia causes RCA in Malaysia and Thailand. Second, Malaysia RCA causes RCA in Indonesia and Singapore. Third, Philippines RCA causes RCA in Singapore. Forth, Singapore RCA causes RCA in Malaysia and Philippines. Fifth, Thailand RCA causes RCA in Indonesia and Vietnam. Sixth, Vietnam RCA causes RCA in Thailand.

The results somewhat interestingly show that the causalities for all the countries have two directions in the senses that the countries will cause each

other. For example, Vietnam RCA causes RCA in Thailand, the result obviously indicate that Thailand RCA also cause RCA in Vietnam.

As mentioned, revealed comparative advantage (RCA) index developed by Balassa (1965) is calculated by dividing a country's share in the exports of a given commodity category by the share in the world exports of manufactured goods and is used to identify those products in which a country does or does not have a comparative advantage.

The Granger causality test only examines the causation from one variable to another. In order to have clearly picture of comparative advantage we employ the concept of explicative model (Li, 2002) by using OLS (Ordinary Least Squares) to estimate gain and loss from trade.

Table 3 Granger Causality Test

Dep. var	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Wald Statistics					
Indonesia	-	18.01305 (0.0001)	0.705518 (0.4055)	0.438108 (0.5115)	5.564498 (0.0228)	2.767145 (0.1033)
Malaysia	15.37607 (0.0003)	-	0.000462 (0.9830)	6.306866 (0.0158)	0.000404 (0.9841)	1.598326 (0.2128)
Philippines	0.978419 (0.3280)	0.020621 (0.8865)	-	92.97829 (0.0000)	1.085044 (0.3033)	0.008748 (0.9259)
Singapore	0.444554 (0.5084)	4.302705 (0.0439)	87.61385 (0.0000)	-	1.513942 (0.2251)	0.230193 (0.6338)
Thailand	5.820883 (0.0201)	0.123685 (0.7268)	1.194202 (0.2804)	1.381152 (0.2462)	-	9.378856 (0.0037)
Vietnam	2.623714 (0.1124)	2.333305 (0.1338)	0.002212 (0.9627)	0.129878 (0.7203)	7.654568 (0.0082)	-

Note: The values in parentheses are the probabilities.

OLS (Ordinary Least Squares)

We employ six variables; we have only 8 degree of freedom. The critical value for rejection of null hypothesis equals to 2.306 at 5% significant level. This value is quite high and we predict that for some sectors only few coefficient estimates could statistically be significant from zero.

First, we predict the estimate for the coefficients β_{ii} is positive, but a negative suggests a declining tendency in the sector's RCA. Secondly, we assume there is no inconsistency in the "complementary" and "substitute" relationships between the country groups. Namely, a gainer country group cannot be a loser at the same time. Thirdly, the gain in RCA can be due to endogenous improvement in that

particularly sector, resulting in a situation in which there is no corresponding loss of RCA in other region.

Table 3 represents the regression estimates for Asean-6. The columns represent the "explicative" variables. The estimate of the lagged variable, $_{ii}$, is shown in the diagonal entries. For example, in the Malaysia-by-Malaysia cell, the lagged estimate is 0.443.

We only report the results which are significant. Table 3 indicates that all Asean-6 have complementary relationships, there is no existence of substitution relationship. Instance in the first row of Table 3 tells us that the Indonesia has a "complementary" relationship with Malaysia and Thailand. We can summarize the "complementary" relationship in Table 3 for Asean-6 as follows:

Indonesia:	Malaysia, Thailand
Malaysia:	Indonesia
Philippines:	Singapore
Singapore:	Malaysia, Philippines
Thailand:	Vietnam
Vietnam:	Thailand

Li (2002) examines the gain and loss in export advantage among world regions by using the UNIDO 1999 database. He finds that the gain in the comparative advantage in one region is matched with the loss in the comparative advantage of the same sector in another region.

If we compare our results to the study of Li (2002), we can obviously detect that both studies show the gain from trade. This can be detected from the complementary relationship between two countries or regions. However, substitution relationship only appears in the study of Li, but not in our study. The reasons that make the results different is that first, according to Li (2002) explains that gain in RCA was due to its own endogenous factors, such as productivity; therefore the difference of the results in both studies might be caused by the difference in productivity. Second, due to intra-ASEAN trade effort to reduce tariff and nontariff barriers to goods produced in member countries. This would be beneficial for the Asean members in the sense that they can gain from trade and improve their welfare. This reason might have made our results different from the study of Li because his study attempts to compare the gain and loss from trade among world region, not only in the certain group of trade i.e. ASEAN.

Table 4 Regression Results for Asean-6

Dep. var	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Indonesia	-0.100 (-0.942)	0.572* (4.244)	-0.430 (-0.839)	0.386 (0.662)	0.324* (2.358)	0.200 (1.663)
Malaysia	0.443* (3.921)	0.350* (4.072)	-0.009 (-0.021)	1.201* (2.511)	-0.002 (-0.020)	-0.134 (-1.264)
Philippines	-0.044 (-0.989)	0.007 (0.143)	-0.054 (-0.615)	0.920* (9.643)	0.043 (1.041)	0.003 (0.093)
Singapore	0.026 (0.667)	0.099* (2.074)	0.734* (9.360)	-0.054 (-0.636)	-0.046 (-1.230)	0.016 (0.480)
Thailand	0.357 (2.412)	-0.055* (-0.352)	0.578 (1.093)	-0.697 (-1.175)	-0.038 (-0.314)	0.374* (3.062)
Vietnam	0.286 (1.620)	-0.268 (-1.528)	-0.029 (-0.047)	0.252 (0.360)	0.470* (2.767)	0.061 (0.464)

Note: Figure in parentheses are t-statistics.
* significant at 5%

Policy Implication

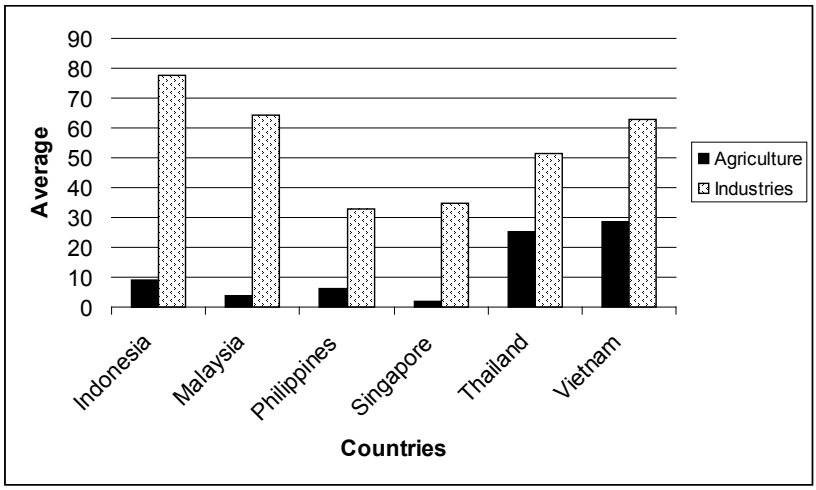
According to Ricardo (1817) affirms that as long as some pattern of comparative advantage exists, there will be gain from trade. This is supported by Markusen (1995) who stress that gain from specialization will always exists if the countries have different opportunity cost i.e. if there exists some pattern of comparative advantage.

In order to impose the policy, the government should support by giving the subsidies to the products which have comparative advantage because that will boost gain from trade.

Considering the revealed comparative advantage for ASEAN-6 from 1995-1998, we divide data into two sectors which are Agricultural and Industrial. The products in Agriculture sector such as Fruit and Vegetables, Meat and Preparations, and Dairy Products and Eggs, etc. The products in Industrial sector such as Animal Feeding Stuff, Fertillisers Manufactured, and Plastic Materials, etc.

We compare the revealed comparative advantage between Agricultural sector and Industrial sector. The result shown in figure1 indicates that all the ASEAN-6 countries dominate in Industrial sector.

Figure 1: Revealed Comparative Advantage for ASEAN-6* (1995-1998 Average)



Considering the revealed comparative advantage (RCA) index developed by Balassa (1965), this index is calculated by dividing a country's share in the exports of a given commodity category by the share in the world exports of manufactured goods and is used to identify those products in which a country does or does not have a comparative advantage. This implies that RCA indicate the export of commodity, i.e. higher RCA of goods X, higher export of goods X.

The results from our study show high RCA in Industrial sector, which implies that ASEAN-6 countries export more in Industrial commodity rather than Agricultural commodity. We summaries the higher RCA of commodity of each country that can be elaborated as:

Table 4

Countries	SITC	Commodities	RCA	Percentage of RCA in own country
Indonesia	63	Wood, Cork Manufacture	14.807	19%
Malaysia	43	Processed Anml Veg Oil	17.63	27%
Philippines	42	Fixed Vegatables Oil, Fat	7.898	24%
Singapore	42	Fixed Vegatables Oil, Fat	7.898	23%

Thailand	23	Rubber Crude, Synthetic	16.64	32%
Vietnam	85	Footware	11.35	18%

Therefore, the government of each country should support the producers who produce the commodities that give high RCA by giving the subsidies, reduce the tax, etc. Such as in Indonesia, the government should support the producers who produce Wood, Cork Manufacture, Indonesia would gain a large amount from trade because this commodity gives the highest RCA among ASEAN-6 countries.

CONCLUSION

ASEAN-6 bring member gain from trade, this is supported with our finding which indicate that after the member join ASEAN-6 can improve their welfare according to the comparative advantage. The revealed comparative advantage that has been applied in this study shows the gain and loss from trade with respect to the complementary and substitution respectively. The results show significant on complementary which is gain from trade.

Due to the nation can create a comparative advantage trough temporary trade protection, subsidies, tax benefits and cooperative government-industry programs (Salvatore, 2001). Therefore, in order to impose the policy the government can use those strategies to maintain the comparative advantage of goods.

One important point that needs to be address is, even though ASEAN-6 countries are development countries but export industrial good instead of agriculture goods. There are two main reasons that can be address. First, according to Heckscher-Ohlin Theorem[4] given the assumption of the model, a country will export the commodity that intensively uses its relatively abundant factor. That insinuates that ASEAN-6 countries are labor intensive, we expect that ASEAN-6 countries will use labor to produce the commodities in Agricultural sector. However, the result of our study indicates that ASEAN-6 export more in Industrial sector. This can be explained by "The Leontief Paradox". This theorem was first examined by Wissaily Leontief by developing a technique of accounting for all the inputs required in the production of GNP. In the case study of United State, he calculates the capital and labor requirement in the production function of the representative bundle $ 1 million worth of both exports and import-competing goods in 1947. In that year the United State was unquestionably the

[4] Markusen, J.R., Melvin, J.R., Kaempfer, W.H., Maskus, K.E., "International Trade Theory and Evidence" Chapter 8. McGraw-Hill, Inc.1995

most capital-abundant nation in the world and was certainly capital-abundant and labor-scare relative to the rest of the world. Thus, the expectation was exports were capital-intensive. Nevertheless, Leontief discovered that the capital-labor ratio in U.S. imports exceeded that in U.S. exports by 23 percent (Markusen, et.al, 1995). Applied in our case, ASEAN-6 countries have labor-abundant and capital-scare relative to the rest of the world. Suppose ASEAN-6 countries will export in labor-intensive, Agricultural goods. However, the results show that ASEAN-6 countries export in Industrial goods since we know that RCA represents export of commodity category by the share in the world exports of manufactured goods. Second reason is that due to free trade area the developing countries come to invest in ASEAN-6 countries. Those developing countries will invest in Industrial sectors by using the labors which is abundant in ASEAN-6 countries to produce goods. This can reduce the cost of their production because costs of labors are cheap in developing countries. Therefore, consequently that would increase in Industrial goods.

A lack of our study can be address through a weakness of the RCA index is that it measures comparative advantage purely in terms of a country's share of exports in a particular product, thereby ignoring the import side (Grimwade and Mayes 2000). If a country exports some products in a particular commodity group substantially and also imports some others in that group considerably, it can not be concluded that the country enjoys an overall comparative advantage in the product category. This is why the ratio of exports to imports (X/M) can be used to identify sectors where a country is actually strong on both the export and import side.

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BISNIS MULTILEVEL MARKETING DALAM PERSPEKTIF ISLAM

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Abstract : *Multilevel marketing is a marketing strategy that utilized customers to promote a certain product using multiple levels. This Approach is popular due to the increasing of the accessibility of modern social networks. However, because of this popularity, this method used to deceived customer, by using MLM they cheat customers so its impact on people distrust. Multilevel marketing often received criticism from the community. This is due to most of the people who pursue MLM is not understand the characteristics of the MLM business as a whole, whether in business it contains elements that is forbidden or not, and whether the business marketing system in accordance with Islamic law. This study examines the foundation for the study of the legal status of the clarity of MLM business in the perspective of Islamic law.*

Keywords: *Multilevel marketing; Business; Islamic law*

Abstrak : Multilevel marketing merupakan strategi pemasaran yang memanfaatkan konsumen untuk menyalurkan suatu produk tertentu dengan menggunakan beberapa level. Strategi ini sangat populer karena adanya dukungan akses jaringan sosial modern. Namun demikian, dalam perkembangannya, muncul penipuan bisnis yang berkedok MLM sehingga membuat citra bisnis MLM ini menjadi buruk di mata masyarakat. Akibatnya, bisnis MLM ini sering menerima kritik dari masyarakat. Hal ini disebabkan sebagian besar orang yang berbisnis MLM tidak memahami karakteristik dari bisnis MLM secara keseluruhan, baik apakah dalam bisnis ini mengandung unsur yang dilarang atau tidak, dan apakah sistem pemasaran bisnis ini sesuai dengan hukum Islam. Makalah ini mengkaji tentang kejelasan status hukum bisnis MLM dalam perspektif hukum Islam.

Kata Kunci: *Multilevel marketing, Bisnis, Hukum Islam*