Chapter 4

Empirical Result

Result of Ordinary Least Squares Analysis

Table 1-5 presented the relationship between Japan demand for ASEAN members' export values, Japanese permanent income, and ASEAN members' relative export prices.

Table 1: LS // Dependent Variable is LEXIJ

Date: 05/14/98 Time: 16:56

Sample(adjusted): 1973 1995

Included observations: 19

Excluded observations: 4 after adjusting endpoints

Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.251299	1.381796	-4.524039	0.0005
LYPJE	0.646210	0.066754	9.680463	0.0000
LPXIJ	0.980315	0.105585	9.284598	0.0000
AR(1)	0.248139	0.290173	0.855140	0.4069
AR(5)	-0.024898	0.144301	-0.172542	0.8655

R-squared	0.972156	Mean dependent var	8.966966
Adjusted R-squared	0.964201	S.D. dependent var	0.533023
S.E. of regression	0.100852	Akaike info criterion	-4.367271
Sum squared resid	0.142395	Schwarz criterion	-4.118734
Log likelihood	19.52924	F-statistic	122.2006
Durbin-Watson stat	1.572966	Prob(F-statistic)	0.000000

Inverted AR Roots	.45+.27i	.45 -.27i	-.10 -.45i	-.10+.45i
	-.44			

Table 2: LS // Dependent Variable is LEXMJ

Date: 05/14/98 Time: 17:31

Sample(adjusted): 1969 1991

Included observations: 23 after adjusting endpoints

Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.147907	3.303875	-2.768841	0.0122
LYPJE	1.032271	0.115933	8.904016	0.0000
LPXMJ	0.791097	0.327325	2.416857	0.0259
AR(1)	0.586076	0.188681	3.106181	0.0058

R-squared	0.962952	Mean dependent var	7.516582
Adjusted R-squared	0.957102	S.D. dependent var	0.987696
S.E. of regression	0.204570	Akaike info criterion	-3.016924
Sum squared resid	0.795125	Schwarz criterion	-2.819447
Log likelihood	6.059038	F-statistic	164.6156
Durbin-Watson stat	1.601491	Prob(F-statistic)	0.000000

Inverted AR Roots .59

Table 3: LS // Dependent Variable is LEXPJ

Date: 05/14/98 Time: 18:01

Sample(adjusted): 1970 1991

Included observations: 22 after adjusting endpoints

Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.676660	0.858166	5.449595	0.0000
LYPJE	0.647846	0.068556	9.449838	0.0000
LPXPJ	-0.399791	0.155827	-2.565611	0.0195
AR(2)	-0.421761	0.213028	-1.979837	0.0632

R-squared	0.854890	Mean dependent var	7.100286
Adjusted R-squared	0.830705	S.D. dependent var	0.468103
S.E. of regression	0.192603	Akaike info criterion	-3.131280
Sum squared resid	0.667729	Schwarz criterion	-2.932908
Log likelihood	7.227428	F-statistic	35.34797
Durbin-Watson stat	1.172693	Prob(F-statistic)	0.000000

Table 4: LS // Dependent Variable is LEXSJ

Date: 05/14/98 Time: 20:35

Sample(adjusted): 1980 1996

Included observations: 17 after adjusting endpoints

Convergence achieved after 16 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.78062	9.356423	-1.472851	0.1646
LYPJE	1.331792	0.369125	3.607969	0.0032
LPXSJ	0.904600	0.675265	1.339621	0.2033
AR(1)	0.614679	0.279635	2.198151	0.0467

R-squared	0.922904	Mean dependent var	7.879992
Adjusted R-squared	0.905113	S.D. dependent var	0.516411
S.E. of regression	0.159074	Akaike info criterion	-3.474446
Sum squared resid	0.328959	Schwarz criterion	-3.278396
Log likelihood	9.410836	F-statistic	51.87368
Durbin-Watson stat	1.736788	Prob(F-statistic)	0.000000

Inverted AR Roots .61

Table 5: LS // Dependent Variable is LEXTJ

Date: 05/14/98 Time: 22:15

Sample(adjusted): 1969 1994

Included observations: 26 after adjusting endpoints

Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.008556	1.141271	-4.388577	0.0002
LYPJE	1.046731	0.094211	11.11046	0.0000
LPXTJ	0.283013	0.110857	2.552948	0.0181
AR(1)	0.718237	0.162624	4.416542	0.0002

R-squared	0.988361	Mean dependent var	7.063134
Adjusted R-squared	0.986774	S.D. dependent var	1.090223
S.E. of regression	0.125382	Akaike info criterion	-4.012136
Sum squared resid	0.345856	Schwarz criterion	-3.818583
Log likelihood	19.26537	F-statistic	622.7185
Durbin-Watson stat	1.838245	Prob(F-statistic)	0.000000

Inverted AR Roots .72

Indonesia (from table 1)

$$\log(exij)_t = \underset{(4.524)}{-6.251} + \underset{(9.680)}{0.646}\log(ypje^*)_t + \underset{(9.284)}{0.980}\log(pxi/pj^*)_t$$

by exij = Japanese demand for Indonesian exports

ypje* = Japanese permanent income

pxi = Indonesian export unit value

pj* = Japanese consumer prices

pxi/pj* = Indonesian relative exports prices

Malaysia (from table 2)

$$\log(exmj)_t = \underset{(2.768)}{-9.147} + \underset{(8.904)}{1.032}\log(ypje^*)_t + \underset{(2.416)}{0.791}\log(pxm/pj^*)_t$$

by exmj = Japanese demand for Malaysian exports

ypje* = Japanese permanent income

pxm = Malaysian export unit value

pj* = Japanese consumer prices

pxm/pj* = Malaysian relative exports prices

Philippines (from table 3)

$$\log(expj)_t = \underset{(5.449)}{4.676} + \underset{(9.449)}{0.647}\log(ypje^*)_t - \underset{(2.565)}{0.399}\log(pxp/pj^*)_t$$

by expj = Japanese demand for Philippine exports

ypje* = Japanese permanent income

pxp = Philippine export unit value

pj* = Japanese consumer prices

pxp/pj* = Philippine relative exports prices

Singapore (from table 4)

$$\log(exsj)_t = -13.780 + 1.331 \log(ypje^*)_t + 0.904 \log(pxs/pj^*)_t$$
$$(1.472) \quad (3.607) \quad (1.339)$$

by exsj = Japanese demand for Singaporean exports

ypje* = Japanese permanent income

pxs = Singaporean export unit value

pj* = Japanese consumer prices

pxs/pj* = Singaporean relative exports prices

Thailand (from table 5)

$$\log(extj)_t = -5.008 + 1.046 \log(ypje^*)_t + 0.283 \log(pxt/pj^*)_t$$
$$(4.388) \quad (11.110) \quad (2.552)$$

by extj = Japanese demand for Thai exports

ypje* = Japanese permanent income

pxt = Thai export unit value

pj* = Japanese consumer prices

pxt/pj* = Thai relative exports prices

Japan demand for ASEAN members' exports have been explained by Japanese permanent income and ASEAN member's relative export prices. In each country have the explanatory significant level at 97 percents in Indonesia, at 96 percents in Malaysia, at 85 percents in Philippines, at 92 percents in Singapore, and at 98 percents in Thailand.

If Japanese permanent income and ASEAN member's relative export prices have been unchanged, Indonesian export values would decrease 6.251

percents at 100 percents significant level. Secondly, Malaysian export values would decrease 9.147 percents at 99 percents significant level. Thirdly, Philippine export values would increase 4.676 percents at 100 percents significant level. Fourthly, Singaporean export values would decrease 13.780 percents at 90 percents significant level. Lastly, Thai export values would decrease 5.008 percents at 100 percents significant level.

If Japanese permanent income increased 1 percent, Japan would spend increasingly 0.646 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 1.032 percents on Malaysian exports at 100 percents significant level. Thirdly, they would spend increasingly 0.647 percents on Philippine exports at 100 percents significant level. Fourthly, they would spend increasingly 1.331 percents on Singaporean exports at 99.5 percents significant level. Finally, they would spend increasingly 1.046 percents on Thailand exports at 100 percents significant level.

If ASEAN member's relative export prices increased 1 percent, Japan would spend increasingly 0.980 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 0.791 percents on Malaysian exports at 97.5 percents significant level. Thirdly, they would spend decreasingly 0.647 percents on Philippine exports at 99 percents significant level. Fourthly, they would spend increasingly 0.904 percents on Singaporean exports at 75 percents significant level. Finally, they would spend increasingly 0.283 percents on Thailand exports at 100 percents significant level.

Furthermore, rejection the hypothesis that Japanese permanent income and ASEAN member's relative export prices significantly affect to Japan demand for ASEAN member's exports in perfect substitute model.

Table 6-10 presented the relationship between the United States demand for ASEAN member's export, the United States' permanent income, and ASEAN member's relative export prices.

Table 6: LS // Dependent Variable is LEXIU

Date: 05/14/98 Time: 16:58

Sample(adjusted): 1970 1996

Included observations: 22

Excluded observations: 5 after adjusting endpoints

Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-18.07553	2.482663	-7.280702	0.0000
LYPUE	1.310135	0.164388	7.969758	0.0000
LPXIU	1.334222	0.189024	7.058490	0.0000
AR(1)	0.613697	0.255068	2.406009	0.0278
AR(2)	-0.111547	0.244451	-0.456315	0.6539

R-squared	0.968907	Mean dependent var	7.844898
Adjusted R-squared	0.961591	S.D. dependent var	1.116971
S.E. of regression	0.218906	Akaike info criterion	-2.841511
Sum squared resid	0.814636	Schwarz criterion	-2.593547
Log likelihood	5.039976	F-statistic	132.4374
Durbin-Watson stat	1.627042	Prob(F-statistic)	0.000000
Inverted AR Roots	.31 -.13i	.31+.13i	

Table 7: LS // Dependent Variable is LEXMU

Date: 05/14/98 Time: 17:32

Sample(adjusted): 1969 1991

Included observations: 23 after adjusting endpoints

Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-17.44764	2.772724	-6.292599	0.0000
LYPUE	1.711123	0.135749	12.60505	0.0000
LPXMU	0.791690	0.207222	3.820491	0.0012
AR(1)	0.617174	0.213229	2.894415	0.0093

R-squared	0.982906	Mean dependent var	7.316695
Adjusted R-squared	0.980207	S.D. dependent var	0.973364
S.E. of regression	0.136940	Akaike info criterion	-3.819652
Sum squared resid	0.356300	Schwarz criterion	-3.622174
Log likelihood	15.29041	F-statistic	364.1682
Durbin-Watson stat	1.637780	Prob(F-statistic)	0.000000
Inverted AR Roots	.62		

Table 8: LS // Dependent Variable is LEXPU

Date: 05/14/98 Time: 18:03

Sample(adjusted): 1972 1991

Included observations: 20 after adjusting endpoints

Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.526084	1.446547	-3.820189	0.0019
LYPUE	0.722958	0.154073	4.692306	0.0003
LPXPU	0.634404	0.151442	4.189098	0.0009
AR(1)	0.778273	0.252702	3.079812	0.0082
AR(2)	0.072064	0.279292	0.258024	0.8001
AR(4)	-0.303449	0.183517	-1.653518	0.1205

R-squared	0.962645	Mean dependent var	7.466980
Adjusted R-squared	0.949304	S.D. dependent var	0.551767
S.E. of regression	0.124234	Akaike info criterion	-3.927848
Sum squared resid	0.216078	Schwarz criterion	-3.629128
Log likelihood	16.89971	F-statistic	72.15703
Durbin-Watson stat	1.954376	Prob(F-statistic)	0.000000

Inverted AR Roots	.78+.40i	.78 -.40i	-.40 -.48i	-.40+.48i

Table 9: LS // Dependent Variable is LEXSU

Date: 05/14/98 Time: 20:50

Sample(adjusted): 1979 1996

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.967313	7.324274	-1.360860	0.1937
LYPUE	1.998219	0.368718	5.419369	0.0001
LPXSU	-0.282799	0.364787	-0.775244	0.4502

R-squared	0.989630	Mean dependent var	8.732520
Adjusted R-squared	0.988248	S.D. dependent var	0.819733
S.E. of regression	0.088865	Akaike info criterion	-4.690256
Sum squared resid	0.118456	Schwarz criterion	-4.541861
Log likelihood	19.67141	F-statistic	715.7679
Durbin-Watson stat	1.329774	Prob(F-statistic)	0.000000

Table 10: LS // Dependent Variable is LEXTU

Date: 05/14/98 Time: 22:16

Sample(adjusted): 1972 1994

Included observations: 23 after adjusting endpoints

Convergence achieved after 13 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-23.48501	2.320595	-10.12025	0.0000
LYPUE	2.648538	0.230402	11.49529	0.0000
LPXTU	0.354766	0.056621	6.265678	0.0000
AR(1)	0.271722	0.222123	1.223299	0.2379
AR(2)	0.406341	0.209294	1.941480	0.0690
AR(4)	-0.036532	0.202042	-0.180813	0.8587

R-squared	0.997962	Mean dependent var	7.114460
Adjusted R-squared	0.997362	S.D. dependent var	1.370959
S.E. of regression	0.070409	Akaike info criterion	-5.087407
Sum squared resid	0.084277	Schwarz criterion	-4.791191
Log likelihood	31.86959	F-statistic	1664.784
Durbin-Watson stat	1.895625	Prob(F-statistic)	0.000000

Inverted AR Roots .73 .30 -.38+.13i -.38 -.13i

Indonesia (from table 6)

$$\log(exiu)_t = -18.075 + 1.310 \log(ypue^*)_t + 1.334 \log(pxi/pu^*)_t$$
$$(7.280) \quad (7.969) \quad (7.058)$$

by exiu = the United States' demand for Indonesian exports

ypue* = the United States' permanent income

pxi = Indonesian export unit value

pu* = the United States' consumer prices

pxi/pu* = Indonesian relative export prices

Malaysia (from table 7)

$$\log exmu_t = -17.447 + 1.711 \log ypue_t^* + 0.791 \log(pxm/pu^*)_t$$
$$(6.292) \quad (13.605) \quad (3.820)$$

by exmu = the United States' demand for Malaysian exports

ypue* = the United States' permanent income

pxi = Indonesian export unit value

pu* = the United States' consumer prices

pxm/pu* = Malaysian relative export prices

Philippines (from table 8)

$$\log(expu)_t = -5.529 + 0.722 \log(ypue^*)_t + 0.634 \log(pxp/pu^*)_t$$
$$(3.820) \quad (4.692) \quad (4.189)$$

by expu = the United States' demand for Philippine exports

ypue* = the United States' permanent income

pxp = Philippine export unit value

pu* = the United States' consumer prices

pxp/pu* = Philippine relative export prices

Singapore (from table 9)

$$\log(exsu)_t = \underset{(1.360)}{-9.967} + \underset{(5.419)}{1.998}\log(ypue^*)_t - \underset{(0.775)}{0.282}\log(pxs/pu^*)_t$$

by exsu = the United States' demand for Singaporean exports

ypue* = the United States' permanent income

pxs = Singaporean export unit value

pu* = the United States' consumer prices

pxs/pu* = Singapore relative export prices

Thailand (from table 10)

$$\log(extu)_t = \underset{(10.120)}{-32.297} + \underset{(11.495)}{2.64}\log(ypue^*)_t + \underset{(6.265)}{0.354}\log(pxt/pu^*)_t$$

by extu = the United States' demand for Thai exports

ypue* = the United States' permanent income

pxt = Thai export unit value

pu* = the United States' consumer prices

pxt/pu* = Thai relative export prices

The United States demand for ASEAN member's exports have been explained by the United States' permanent income and ASEAN member's relative export prices. In each country have the explanatory significant level at 96 percents in Indonesia, at 98 percents in Malaysia, at 96 percents in Philippines, at 98 percents in Singapore, and at 99 percents in Thailand.

If the United States' permanent income and ASEAN member's relative export prices have been unchanged, Indonesian export values would decrease

18.075 percents at 100 percents significant level. Secondly, Malaysian export values would decrease 17.447 percents at 100 percents significant level. Thirdly, Philippine export values would decrease 5.526 percents at 100 percents significant level. Fourthly, Singaporean export values would decrease 9.967 percents at 90 percents significant level. Lastly, Thai export values would decrease 23.485 percents at 100 percents significant level.

If the United States' permanent income increased 1 percent, the United States would spend increasingly 1.310 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 1.711 percents on Malaysian exports at 100 percents significant level. Thirdly, they would spend increasingly 0.722 percents on Philippine exports at 100 percents significant level. Fourthly, they would spend increasingly 1.998 percents on Singaporean exports at 100 percents significant level. Finally, they would spend increasingly 2.648 percents on Thailand exports at 100 percents significant level.

If ASEAN member's relative export prices increased 1 percent, the United States would spend increasingly 1.334 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 0.791 percents on Malaysian exports at 100 percents significant level. Thirdly, they would spend increasingly 0.634 percents on Philippine exports at 100 percents significant level. Fourthly, they would spend decreasingly 0.282 percents on Singaporean exports at 75 percents significant level. Finally, they would spend increasingly 0.354 percents on Thailand exports at 100 percents significant level.

Furthermore, rejection the hypothesis that the United States' permanent income and ASEAN member's relative export prices significantly affect to the United States demand for ASEAN member's exports in perfect substitute model.

Table 11-15 presented the relationship between ASEAN member import values from Japan, ASEAN member's permanent income, and ASEAN member' relative import prices.

Table 11: LS // Dependent Variable is LIMJI

Date: 05/14/98 Time: 16:59

Sample(adjusted): 1971 1996

Included observations: 26 after adjusting endpoints

Convergence achieved after 18 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.401152	1.783723	-1.906771	0.0703
LYPIE	1.066079	0.123501	8.632126	0.0000
LPMII	0.474658	0.128663	3.689161	0.0014
AR(1)	0.895765	0.137322	6.523110	0.0000
AR(3)	-0.247783	0.121858	-2.033375	0.0548

R-squared	0.976192	Mean dependent var	7.957023
Adjusted R-squared	0.971657	S.D. dependent var	0.762928
S.E. of regression	0.128442	Akaike info criterion	-3.933519
Sum squared resid	0.346443	Schwarz criterion	-3.691578
Log likelihood	19.24335	F-statistic	215.2636
Durbin-Watson stat	1.707468	Prob(F-statistic)	0.000000
Inverted AR Roots	.66 -.36i	.66+.36i	-.43

Table 12: LS // Dependent Variable is LIMJM

Date: 05/14/98 Time: 17:35

Sample(adjusted): 1970 1987

Included observations: 18 after adjusting endpoints

Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.516138	3.938505	-1.654470	0.1220
LYPME	1.139144	0.081659	13.95005	0.0000
LPMMM	0.837623	0.445628	1.879644	0.0828
AR(1)	0.884005	0.238587	3.705173	0.0026
AR(2)	-0.568769	0.218432	-2.603868	0.0218

R-squared	0.982504	Mean dependent var	6.844582
Adjusted R-squared	0.977120	S.D. dependent var	0.912301
S.E. of regression	0.137995	Akaike info criterion	-3.730949
Sum squared resid	0.247552	Schwarz criterion	-3.483623
Log likelihood	13.03765	F-statistic	182.5053
Durbin-Watson stat	1.621102	Prob(F-statistic)	0.000000
Inverted AR Roots	.44+.61i	.44 -.61i	

Table 13: LS // Dependent Variable is LIMJP

Date: 05/14/98 Time: 18:23

Sample(adjusted): 1969 1991

Included observations: 23 after adjusting endpoints

Convergence achieved after 16 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.243249	3.156351	1.344353	0.1947
LYPPE	0.879018	0.234664	3.745854	0.0014
LPMPP	-0.194991	0.287944	-0.677183	0.5065
AR(1)	0.761123	0.156758	4.855397	0.0001

R-squared	0.930058	Mean dependent var	7.064932
Adjusted R-squared	0.919015	S.D. dependent var	0.557741
S.E. of regression	0.158721	Akaike info criterion	-3.524438
Sum squared resid	0.478658	Schwarz criterion	-3.326961
Log likelihood	11.89545	F-statistic	84.21793
Durbin-Watson stat	1.391772	Prob(F-statistic)	0.000000
Inverted AR Roots	.76		

Table 14: LS // Dependent Variable is LIMJS

Date: 05/14/98 Time: 20:36

Sample(adjusted): 1975 1996

Included observations: 22 after adjusting endpoints

Convergence achieved after 5 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.486897	5.452423	-1.006323	0.3276
LYPSE	1.129033	0.129880	8.692879	0.0000
LPMSS	0.886433	0.523081	1.694640	0.1074
AR(1)	0.569092	0.182380	3.120356	0.0059

R-squared	0.983403	Mean dependent var	8.680856
Adjusted R-squared	0.980637	S.D. dependent var	0.849066
S.E. of regression	0.118148	Akaike info criterion	-4.108675
Sum squared resid	0.251259	Schwarz criterion	-3.910304
Log likelihood	17.97888	F-statistic	355.5187
Durbin-Watson stat	1.590053	Prob(F-statistic)	0.000000
Inverted AR Roots	.57		

Table 15: LS // Dependent Variable is LIMJT

Date: 05/14/98 Time: 22:19

Sample(adjusted): 1969 1995

Included observations: 27 after adjusting endpoints

Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.973115	4.921351	0.197733	0.8450
LYPTE	1.135516	0.207764	5.465411	0.0000
LPMTT	0.048524	0.545908	0.088887	0.9299
AR(1)	0.846645	0.121937	6.943316	0.0000

R-squared	0.980551	Mean dependent var	7.752597
Adjusted R-squared	0.978014	S.D. dependent var	1.133059
S.E. of regression	0.168006	Akaike info criterion	-3.431562
Sum squared resid	0.649195	Schwarz criterion	-3.239586
Log likelihood	12.01475	F-statistic	386.5270
Durbin-Watson stat	1.429393	Prob(F-statistic)	0.000000
Inverted AR Roots	.85		

Indonesia (from table 11)

$\log(imji)_t = -3.401 + 1.066 \log(ypie)_t + 0.474 \log(pmi/pi)_t$
$(1.906) \quad (8.632) \quad (3.689)$

by imji = Indonesian import demand from Japan

ypie = Indonesian permanent income

pmi = Indonesian import unit value

pi = Indonesian consumer price

pmi/pi = Indonesian relative import prices

Malaysia (from table 12)

$logimjm_t = -6.516 + 1.139 logypme_t + 0.837 \log(pmm/pm)_t$
$(1.654) \quad (13.950) \quad (1.879)$

by imjm = Malaysian import demand from Japan

ypme = Malaysian permanent income

pmm = Malaysian import unit value

pm = Malaysian consumer prices

pmm/pm = Malaysian relative import prices

Philippines (from table 13)

$\log(imjp)_t = 4.243 + 0.879 \log(yppe)_t - 0.194 \log(pmp/pp)_t$
$(1.344) \quad (3.745) \quad (0.677)$

by imjp = Philippine import demand from Japan

yppe = Philippine permanent income

pmp = Philippine import unit value

pp = Philippine consumer prices

pmp/pp = Philippine relative import prices

Singapore (from table 14)

$$\log(imjs)_t = -5.486 + 1.129\log(ypse)_t + 0.886\log(pms/ps)_t$$
$$(1.006) \quad (8.692) \quad (1.694)$$

by imjs = Singaporean import demand from Japan

ypse = Singaporean permanent income

pms = Singaporean import unit value

ps = Singaporean consumer prices

pms/ps = Singaporean relative import prices

Thailand (from table 15)

$$\log(imjt)_t = 0.973 + 1.135\log(ypte)_t + 0.048\log(pmt/pt)_t$$
$$(0.197) \quad (5.465) \quad (0.088)$$

by imjt = Thai import demand from Japan

ypte = Thai permanent income

pmt = Thai import unit value

pt = Thai consumer prices

pmt/pt = Thai relative import prices

ASEAN member's import demand from Japan have been explained by ASEAN member's permanent income and ASEAN member's relative import prices. In each country have the explanatory significant level at 97 percents in Indonesia, at 98 percents in Malaysia, at 93 percents in Philippines, at 98 percents in Singapore, and at 98 percents in Thailand.

If ASEAN member's permanent income and ASEAN member's relative import prices have been unchanged, Indonesian import values would decrease

3.401 percents at 95 percents significant level. Secondly, Malaysian import values would decrease 6.516 percents at 90 percents significant level. Thirdly, Philippine import values would increase 4.243 percents at 90 percents significant level. Fourthly, Singaporean import values would decrease 5.486 percents at 75 percents significant level. Lastly, Thai import values would increase 0.973 percents at less than 75 percents significant level.

If ASEAN member's permanent income increased 1 percent, Indonesia would import increasingly 1.066 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 1.139 percents at 100 percents significant level. Thirdly, Philippines would import increasingly 0.879 percents at 100 percents significant level. Fourthly, Singapore would import increasingly 1.129 percents at 100 percents significant level. Finally, Thailand would import increasingly 1.135 percents at 100 percents significant level.

If ASEAN member's relative import prices increased 1 percent, Indonesia would import increasingly 0.474 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 0.837 percents at 95 percents significant level. Thirdly, Philippines would import decreasingly 0.194 percents at less than 75 percents significant level. Fourthly, Singapore would import increasingly 0.886 percents at 90 percents significant level. Finally, Thailand would import increasingly 0.048 percents at insignificant level.

Furthermore, rejection the hypothesis that ASEAN member's permanent income and ASEAN member's relative import prices significantly affect to ASEAN member's import demand from Japan in perfect substitute model.

Table 16-20 presented the relationship between ASEAN member import values from the United States, ASEAN member's permanent income, and ASEAN member's relative import prices

Table 16: LS // Dependent Variable is LIMUI

Date: 05/14/98 Time: 17:01

Sample(adjusted): 1973 1996

Included observations: 24 after adjusting endpoints

Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.286259	2.007277	-2.633547	0.0169
LYPIE	1.020017	0.123145	8.283043	0.0000
LPMII	0.607360	0.154134	3.940455	0.0010
AR(1)	0.628956	0.210566	2.986980	0.0079
AR(2)	0.306432	0.228105	1.343380	0.1958
AR(5)	-0.435973	0.199308	-2.187430	0.0422

R-squared	0.926196	Mean dependent var	7.186258
Adjusted R-squared	0.905695	S.D. dependent var	0.582722
S.E. of regression	0.178948	Akaike info criterion	-3.228997
Sum squared resid	0.576406	Schwarz criterion	-2.934484
Log likelihood	10.69344	F-statistic	45.17809
Durbin-Watson stat	1.899577	Prob(F-statistic)	0.000000

Inverted AR Roots	.90+.37i	.90 -.37i	-.19+.73i	-.19 -.73i
-.80				

Table 17: LS // Dependent Variable is LIMUM

Date: 05/14/98 Time: 17:36

Sample(adjusted): 1968 1987

Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.90445	2.983363	-4.995857	0.0001
LYPME	1.387937	0.057826	24.00175	0.0000
LPMMM	1.561431	0.338921	4.607060	0.0003

R-squared	0.985947	Mean dependent var	6.178149
Adjusted R-squared	0.984294	S.D. dependent var	1.324202
S.E. of regression	0.165953	Akaike info criterion	-3.454624
Sum squared resid	0.468185	Schwarz criterion	-3.305264
Log likelihood	9.167468	F-statistic	596.3723
Durbin-Watson stat	1.300595	Prob(F-statistic)	0.000000

Table 18: LS // Dependent Variable is LIMUP

Date: 05/14/98 Time: 18:23

Sample(adjusted): 1969 1991

Included observations: 23 after adjusting endpoints

Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.624232	1.903109	-0.853462	0.4040
LYPPE	1.060585	0.085897	12.34719	0.0000
LPMPP	0.319177	0.205538	1.552887	0.1369
AR(1)	0.541742	0.182830	2.963091	0.0080

R-squared	0.974952	Mean dependent var	7.004357
Adjusted R-squared	0.970997	S.D. dependent var	0.659827
S.E. of regression	0.112370	Akaike info criterion	-4.215140
Sum squared resid	0.239915	Schwarz criterion	-4.017663
Log likelihood	19.83852	F-statistic	246.5137
Durbin-Watson stat	1.257900	Prob(F-statistic)	0.000000

Inverted AR Roots .54

Table 19: LS // Dependent Variable is LIMUS

Date: 05/14/98 Time: 20:33

Sample(adjusted): 1975 1996

Included observations: 22 after adjusting endpoints

Convergence achieved after 4 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.55776	4.301535	-2.919368	0.0092
LYPSE	1.279560	0.097876	13.07322	0.0000
LPMSS	1.529660	0.414495	3.690420	0.0017
AR(1)	0.476143	0.157080	3.031214	0.0072

R-squared	0.988258	Mean dependent var	8.364131
Adjusted R-squared	0.986301	S.D. dependent var	0.864414
S.E. of regression	0.101172	Akaike info criterion	-4.418902
Sum squared resid	0.184244	Schwarz criterion	-4.220531
Log likelihood	21.39128	F-statistic	505.0009
Durbin-Watson stat	1.494351	Prob(F-statistic)	0.000000

Inverted AR Roots .48

Table 20: LS // Dependent Variable is LIMUT

Date: 05/14/98 Time: 22:20

Sample(adjusted): 1969 1995

Included observations: 27 after adjusting endpoints

Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.302019	4.853836	-0.886313	0.3846
LYPTE	1.147056	0.119276	9.616829	0.0000
LPMTT	0.511075	0.575229	0.888472	0.3835
AR(1)	0.582130	0.154577	3.765949	0.0010

R-squared	0.974565	Mean dependent var	6.818233
Adjusted R-squared	0.971248	S.D. dependent var	1.136049
S.E. of regression	0.192634	Akaike info criterion	-3.157974
Sum squared resid	0.853480	Schwarz criterion	-2.965998
Log likelihood	8.321312	F-statistic	293.7594
Durbin-Watson stat	1.440767	Prob(F-statistic)	0.000000
Inverted AR Roots	.58		

Indonesia (from table 16)

$$\log(imui)_t = -5.286 + 1.020\log(ypie)_t + 0.607\log(pmi/pi)_t$$
$$(2.633) \quad (8.283) \quad (3.940)$$

by imui = Indonesian import demand from the United States

ypie = Indonesian permanent income

pmi = Indonesian import unit value

pi = Indonesian consumer prices

pmi/pi = Indonesian relative import prices

Malaysia (from table 17)

$$\log(imum)_t = -14.904 + 1.387\log(ypme)_t + 1.561\log(pmm/pm)_t$$
$$(4.995) \quad (24.001) \quad (4.607)$$

by imum = Malaysian import demand from the United States

ypme = Malaysian permanent income

pmm = Malaysian import unit value

pm = Malaysian consumer prices

pmm/pm = Malaysian relative import prices

Philippines (from table 18)

$$\log(imup)_t = -1.624 + 1.060\log(yppe)_t + 0.319\log(pmp/pp)_t$$
$$(0.853) \quad (12.347) \quad (1.552)$$

by imup = Philippine import demand from the United states

yppe = Philippine permanent income

pmp = Philippine import unit value

pp = Philippine consumer prices

pmp/pp = Philippine relative import prices

Singapore (from table 19)

$$\log(imus)_t = \underset{(2.919)}{-12.557} + \underset{(13.073)}{1.279}\log(ypse)_t + \underset{(3.690)}{1.529}\log(pms/ps)_t$$

by imus = Singaporean import demand from the United States

ypse = Singaporean permanent income

pms = Singaporean import unit value

ps = Singaporean consumer prices

pms/ps = Singaporean relative import prices

Thailand (from table 20)

$$\log(imut)_t = \underset{(0.886)}{-4.302} + \underset{(9.616)}{1.147}\log(ypte)_t + \underset{(0.888)}{0.511}\log(pms/ps)_t$$

by imut = Thai import demand from the United States

ypte = Thai permanent income

pmt = Thai import unit value

pt = Thai consumer prices

pmt/pt = Thai relative import prices

ASEAN member's import demand from the United States have been explained by ASEAN member's permanent income and ASEAN member's relative import prices. In each country have the explanatory significant level at 92 percents in Indonesia, at 98 percents in Malaysia, at 97 percents in Philippines, at 98 percents in Singapore, and at 97 percents in Thailand.

If ASEAN member's permanent income and ASEAN member's relative import prices have been unchanged, Indonesian import values would decrease

5.286 percents at 99 percents significant level. Secondly, Malaysian import values would decrease 14.904 percents at 100 percents significant level. Thirdly, Philippine import values would increase 1.624 percents at 75 percents significant level. Fourthly, Singaporean import values would decrease 12.557 percents at 99.5 percents significant level. Lastly, Thai import values would decrease 4.302 percents at 75 percents significant level.

If ASEAN member's permanent income increased 1 percent, Indonesia would import increasingly 1.020 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 1.387 percents at 100 percents significant level. Thirdly, Philippines would import increasingly 1.060 percents at 100 percents significant level. Fourthly, Singapore would import increasingly 1.279 percents at 100 percents significant level. Finally, Thailand would import increasingly 1.147 percents at 100 percents significant level.

If ASEAN member's relative import prices increased 1 percent, Indonesia would import increasingly 0.607 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 1.561 percents at 100 percents significant level. Thirdly, Philippines would import increasingly 0.319 percents at 90 percents significant level. Fourthly, Singapore would import increasingly 1.529 percents at 100 percents significant level. Finally, Thailand would import increasingly 0.511 percents at 75 percents significant level.

Furthermore, rejection the hypothesis that ASEAN member's permanent income and ASEAN member's relative import prices significantly affect to ASEAN member's import demand from the United States in perfect substitute model.

Result of Johansen Cointegration Test Analysis

Table 21-25 presented the relationship between Japan demand for ASEAN member's export values, Japanese permanent income, and ASEAN member's relative export prices in comparison with Japan.

Table 21: Series: LEXIJ LYPJE LPXIJ

Date: 05/20/98 Time: 21:22

Sample: 1967 1996

Included observations: 20

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.769872	50.12337	29.68	35.65	None **
0.645421	20.74094	15.41	20.04	At most 1 **
0.000222	0.004433	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXIJ	LYPJE	LPXIJ
1.950035	-1.886001	-1.708617
1.802202	-0.974497	-1.889762
2.804725	-1.742480	-4.214363

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXIJ	LYPJE	LPXIJ	C
1.000000	-0.967163	-0.876198	8.176417
	(0.07759)	(0.11185)	
Log likelihood	79.69536		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXIJ	LYPJE	LPXIJ	C
1.000000	0.000000	-1.267173	3.172967
	(0.30461)		
0.000000	1.000000	-0.404249	-5.173328
	(0.35618)		
Log likelihood	90.06361		

Table 22: Series: LEXMJ LYPJE LPXMJ

Date: 05/20/98 Time: 21:30

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.687099	37.44039	29.68	35.65	None **
0.405545	11.87927	15.41	20.04	At most 1
0.019661	0.436854	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXMJ	LYPJE	LPXMJ
-0.432903	0.598593	1.390449
-0.959931	0.960688	-0.190464
-0.088793	-0.100189	1.038194

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXMJ	LYPJE	LPXMJ	C
1.000000	-1.382741	-3.211915	34.90692
	(0.14262)	(1.11641)	
Log likelihood	65.53636		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXMJ	LYPJE	LPXMJ	C
1.000000	0.000000	9.134132	-92.90241
	(3.58372)		
0.000000	1.000000	8.928676	-92.43185
	(3.07103)		
Log likelihood	71.25757		

Table 23: Series: LEXPJ LYPJE LPXPJ

Date: 05/20/98 Time: 21:35

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.836782	53.95123	29.68	35.65	None **
0.469480	14.07247	15.41	20.04	At most 1
0.005743	0.126721	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXPJ	LYPJE	LPXPJ
1.248819	-0.624246	0.258303
0.325536	-0.656531	0.966740
-0.472854	0.225991	0.517245

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXPJ	LYPJE	LPXPJ	C
1.000000	-0.499869	0.206838	-4.341452
	(0.03724)	(0.08215)	
Log likelihood	75.57560		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXPJ	LYPJE	LPXPJ	C
1.000000	0.000000	-0.703611	-1.010336
	(0.14926)		
0.000000	1.000000	-1.821376	6.663981
	(0.27521)		
Log likelihood	82.54847		

Table 24: Series: LEXSJ LYPJE LPXSJ

Date: 05/20/98 Time: 21:40

Sample: 1967 1996

Included observations: 15

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.837292	43.42416	29.68	35.65	None **
0.463358	16.18717	15.41	20.04	At most 1 *
0.366643	6.850818	3.76	6.65	At most 2 **

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXSJ	LYPJE	LPXSJ
3.820044	-0.664516	6.082832
-2.143489	1.280962	1.024545
-3.278356	7.572228	12.99338

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXSJ	LYPJE	LPXSJ	C
1.000000	-0.173955	1.592346	-20.85888
	(0.21037)	(0.55856)	
Log likelihood	95.38241		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXSJ	LYPJE	LPXSJ	C
1.000000	0.000000	2.442441	-30.46261
	(1.08541)		
0.000000	1.000000	4.886865	-55.20812
	(5.02474)		
Log likelihood	100.0506		

Table 25: Series: LEXTJ LYPJE LPXTJ

Date: 05/20/98 Time: 21:43

Sample: 1967 1996

Included observations: 23

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 3

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.611267	39.98656	29.68	35.65	None **
0.487241	18.25472	15.41	20.04	At most 1 *
0.118150	2.891877	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXTJ	LYPJE	LPXTJ
-2.002031	2.369233	1.335883
-2.075614	1.918582	1.067818
-0.488301	0.470260	1.133221

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXTJ	LYPJE	LPXTJ	C
1.000000	-1.183415	-0.667264	9.736403
	(0.04555)	(0.07205)	
Log likelihood	76.53912		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXTJ	LYPJE	LPXTJ	C
1.000000	0.000000	0.030737	-7.415710
	(0.48443)		
0.000000	1.000000	0.589819	-14.49375
	(0.44492)		
Log likelihood	84.22054		

Indonesia (from table 21)

$$\log(exij)_t = -8.176 + \underset{(12.558)}{0.967}\log(ypje^*)_t + \underset{(7.891)}{0.876}\log(pxi/pj^*)_t$$

by exij = Japanese demand for Indonesian exports

ypje* = Japanese permanent income

pxi = Indonesian export unit value

pj* = Japanese consumer prices

pxi/pj* = Indonesian relative exports prices

Malaysia (from table 22)

$$\log(exmj)_t = -34.906 + \underset{(9.732)}{1.382}\log(ypje^*)_t + \underset{(2.877)}{3.211}\log(pxm/pj^*)_t$$

by exmj = Japanese demand for Malaysian exports

ypje* = Japanese permanent income

pxm = Malaysian export unit value

pj* = Japanese consumer prices

pxm/pj* = Malaysian relative exports prices

Philippines (from table 23)

$$\log(expj)_t = 4.341 + \underset{(13.486)}{0.499}\log(ypje^*)_t - \underset{(2.512)}{0.206}\log(pxp/pj^*)_t$$

by expj = Japanese demand for Philippine exports

ypje* = Japanese permanent income

pxp = Philippine export unit value

pj* = Japanese consumer prices

pxp/pj* = Philippine relative exports prices

Singapore (from table 24)

$$\log(exsj)_t = 20.858 + \underset{(0.823)}{0.173}\log(ypje^*)_t + \underset{(2.853)}{1.592}\log(pxs/pj^*)_t$$

by exsj = Japanese demand for Singaporean exports

ypje* = Japanese permanent income

pxs = Singaporean export unit value

pj* = Japanese consumer prices

pxs/pj* = Singaporean relative exports prices

Thailand (from table 25)

$$\log(extj)_t = -9.736 + \underset{(26.288)}{1.183}\log(ypje^*)_t + \underset{(9.263)}{0.667}\log(pxt/pj^*)_t$$

by extj = Japanese demand for Thai exports

ypje* = Japanese permanent income

pxt = Thai export unit value

pj* = Japanese consumer prices

pxt/pj* = Thai relative exports prices

Japan demand for ASEAN member's exports, Japanese permanent income, and ASEAN member's relative export prices have been evidenced the Eigenvalue and Likelihood ratio test. In case of Indonesia indicated 2 cointegrating equations at 5 percents significance level. Secondly, in case of Malaysia indicated 1 cointegrating equations at 5 percents significance level. Thirdly, in case of Philippines indicated 1 cointegrating equations at 5 percents significance level. Fourthly, in case of Singapore indicated 3 cointegrating

equations at 5 percents significance level. Lastly, in case of Thailand indicated 2 cointegrating equations at 5 percents significance level.

In long run, if Japanese permanent income and ASEAN member's relative export prices have been unchanged, Indonesian export values would decrease 8.176 percents. Secondly, Malaysian export values would decrease 34.906 percents. Thirdly, Philippine export values would increase 4.341 percents. Fourthly, Singaporean export values would increase 20.858 percents. Lastly, Thai export values would decrease 9.736 percents.

In long run, if Japanese permanent income increased 1 percent, Japan would spend increasingly 0.967 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 1.382 percents on Malaysian exports at 100 percents significant level. Thirdly, they would spend increasingly 0.499 percents on Philippine exports at 100 percents significant level. Fourthly, they would spend increasingly 0.173 percents on Singaporean exports at 75 percents significant level. Finally, they would spend increasingly 1.183 percents on Thai exports at 100 percents significant level.

In long run, if ASEAN member's relative export prices increased 1 percent, Japan would spend increasingly 0.876 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 3.211 percents on Malaysian exports at 99.5 percents significant level. Thirdly, they would spend decreasingly 0.206 percents on Philippine exports at 97.5 percents significant level. Fourthly, they would spend decreasingly 1.592 percents on

Singaporean exports at 99 percents significant level. Finally, they would spend increasingly 0.667 percents on Thai exports at 100 percents significant level.

Table 26-30 presented the relationship between the United States demand for ASEAN member's export values, the United States' permanent income, and ASEAN member's relative export prices in comparison with the United States.

Table 26: Series: LEXIU LYPUE LPXIU

Date: 05/20/98 Time: 21:46

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.613823	35.56848	29.68	35.65	None *
0.395780	14.63637	15.41	20.04	At most 1
0.149111	3.552407	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXIU	LYPUE	LPXIU
-0.584520	1.102064	0.775212
0.353125	-0.541255	0.164325
0.757697	-0.670538	-1.309138

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXIU	LYPUE	LPXIU	C
1.000000	-1.885416	-1.326237	23.72690
	(0.22225)	(0.20310)	

Log likelihood 91.54332

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXIU	LYPUE	LPXIU	C
1.000000	0.000000	8.252051	-85.47155
	(17.3762)		
0.000000	1.000000	5.080199	-57.91743
	(9.42745)		
Log likelihood	97.08530		

Table 27: Series: LEXMU LYPUE LPXMU

Date: 05/20/98 Time: 21:51

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.700996	42.04041	29.68	35.65	None **
0.447876	15.47984	15.41	20.04	At most 1 *
0.103849	2.412222	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXMU	LYPUE	LPXMU
-0.240985	0.597007	-0.640657
0.090223	0.227945	0.939808
-1.883537	3.179416	1.972284

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXMU	LYPUE	LPXMU	C
1.000000	-2.477360	2.658492	-7.795090
	(0.89780)	(4.05309)	
Log likelihood	109.6702		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXMU	LYPUE	LPXMU	C
1.000000	0.000000	6.499449	-69.35156
	(12.3611)		
0.000000	1.000000	1.550423	-24.84761
	(4.98501)		
Log likelihood	116.2040		

Table 28: Series: LEXPU LYPUE LPXPU

Date: 05/20/98 Time: 21:54

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.549992	43.38812	29.68	35.65	None **
0.514566	25.82135	15.41	20.04	At most 1 **
0.363000	9.921701	3.76	6.65	At most 2 **

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXPU	LYPUE	LPXPU
2.068804	-2.601764	0.576815
0.038412	0.215433	0.233710
-0.868214	0.408513	0.993296

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXPU	LYPUE	LPXPU	C
1.000000	-1.257617	0.278816	2.918573
	(0.06828)	(0.11702)	
Log likelihood	102.3305		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXPU	LYPUE	LPXPU	C
1.000000	0.000000	1.342165	-19.00604
	(1.79569)		
0.000000	1.000000	0.845526	-17.43346
	(1.42384)		
Log likelihood	110.2803		

Table 29: Series: LEXSU LYPUE LPXSU

Date: 05/20/98 Time: 21:56

Sample: 1967 1996

Included observations: 16

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.806640	47.98207	29.68	35.65	None **
0.606483	21.69087	15.41	20.04	At most 1 **
0.344952	6.768760	3.76	6.65	At most 2 **

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXSU	LYPUE	LPXSU
-7.563631	24.36243	4.585444
-0.978302	7.996091	3.198816
-1.493983	-2.350836	-6.743586

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXSU	LYPUE	LPXSU	C
1.000000	-3.220997	-0.606249	31.36084
	(0.13994)	(0.13077)	
Log likelihood	125.5046		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXSU	LYPUE	LPXSU	C
1.000000	0.000000	1.126062	-19.27675
	(0.51835)		
0.000000	1.000000	0.537818	-15.72109
	(0.15830)		
Log likelihood	132.9656		

Table 30: Series: LEXTU LYPUE LPXTU

Date: 05/20/98 Time: 21:59

Sample: 1967 1996

Included observations: 25

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.799643	59.31684	29.68	35.65	None **
0.480899	19.12550	15.41	20.04	At most 1 *
0.103595	2.734064	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LEXTU	LYPUE	LPXTU
-1.508899	3.894136	0.732528
2.937623	-6.833168	-1.449942
-0.508377	1.060635	-0.382003

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LEXTU	LYPUE	LPXTU	C
1.000000	-2.580780	-0.485472	23.87080
	(0.05237)	(0.04175)	
Log likelihood	131.4489		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LEXTU	LYPUE	LPXTU	C
1.000000	0.000000	-0.567594	-1.573126
	(0.59768)		
0.000000	1.000000	-0.031820	-9.859007
	(0.24248)		
Log likelihood	139.6446		

Indonesia (from table 26)

$$\log(exiu)_t = -23.726 + \underset{(8.490)}{1.885}\log(ypue^*)_t + \underset{(6.532)}{1.326}\log(pxi/pu^*)_t$$

by exiu = the United States' demand for Indonesian exports

ypue* = the United States' permanent income

pxi = Indonesian export unit value

pu* = the United States' consumer prices

pxi/pu* = Indonesian relative export prices

Malaysia (from table 27)

$$\log exmu_t = 7.795 + \underset{(2.761)}{2.477}\log ypue_t^* - \underset{(0.655)}{2.658}\log(pxm/pu^*)_t$$

by exmu = the United States' demand for Malaysian exports

ypue* = the United States' permanent income

pxi = Indonesian export unit value

pu* = the United States' consumer prices

pxm/pu* = Malaysian relative export prices

Philippines (from table 28)

$$\log(expu)_t = -2.918 + \underset{(18.485)}{1.257}\log(ypue^*)_t - \underset{(2.376)}{0.278}\log(pxp/pu^*)_t$$

by expu = the United States' demand for Philippine exports

ypue* = the United States' permanent income

pxp = Philippine export unit value

pu* = the United States' consumer prices

pxp/pu* = Philippine relative export prices

Singapore (from table 29)

$$\log(exsu)_t = -31.360 + \underset{(23.165)}{3.220}\log(ypue^*)_t + \underset{(4.661)}{0.606}\log(pxs/pu^*)_t$$

by exsu = the United States' demand for Singaporean exports

ypue* = the United States' permanent income

pxs = Singaporean export unit value

pu* = the United States' consumer prices

pxs/pu* = Singaporean relative export prices

Thailand (from table 30)

$$\log(extu)_t = -23.870 + \underset{(49.615)}{2.580}\log(ypue^*)_t + \underset{(11.829)}{0.485}\log(pxt/pu^*)_t$$

by extu = the United States' demand for Thai exports

ypue* = the United States' permanent income

pxt = Thai export unit value

pu* = the United States' consumer prices

pxt/pu* = Thai relative export prices

The United States demand for ASEAN member's exports, the United States permanent income, and ASEAN member's relative export prices have been evidenced the Eigenvalue and Likelihood ratio test. In case of Indonesia indicated 1 cointegrating equations at 5 percents significance level. Secondly, in case of Malaysia indicated 2 cointegrating equations at 5 percents significance level. Thirdly, in case of Philippines indicated 3 cointegrating equations at 5 percents significance level. Fourthly, in case of Singapore indicated 3

cointegrating equations at 5 percents significance level. Lastly, in case of Thailand indicated 2 cointegrating equations at 5 percents significance level.

In long run, if the United States permanent income and ASEAN member's relative export prices have been unchanged, Indonesian export values would decrease 23.726 percents. Secondly, Malaysian export values would increase 7.795 percents. Thirdly, Philippine export values would decrease 2.918 percents. Fourthly, Singaporean export values would decrease 31.360 percents. Lastly, Thai export values would decrease 23.870 percents.

In long run, if the United States permanent income increased 1 percent, the United States would spend increasingly 1.885 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend increasingly 2.477 percents on Malaysian exports at 99 percents significant level. Thirdly, they would spend increasingly 1.257 percents on Philippine exports at 100 percents significant level. Fourthly, they would spend increasingly 3.220 percents on Singaporean exports at 100 percents significant level. Finally, they would spend increasingly 2.580 percents on Thailand exports at 100 percents significant level.

In long run, if ASEAN member's relative export prices increased 1 percent, the United States would spend increasingly 1.326 percents on Indonesian exports at 100 percents significant level. Secondly, they would spend decreasingly 2.658 percents on Malaysian exports at less than 75 percents significant level. Thirdly, they would spend decreasingly 0.278 percents on

Philippine exports at 97.5 percents significant level. Fourthly, they would spend increasingly 0.606 percents on Singaporean exports at 99 percents significant level. Finally, they would spend increasingly 0.485 percents on Thai exports at 100 percents significant level.

Table 31-35 presented the relationship between ASEAN member import values from Japan, ASEAN member's permanent income, and ASEAN member' relative import prices.

Table 31: Series: LIMJI LYPIE LPMII

Date: 05/20/98 Time: 22:02

Sample: 1967 1996

Included observations: 27

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.488966	36.76263	29.68	35.65	None **
0.366879	18.63699	15.41	20.04	At most 1 *
0.207977	6.295453	3.76	6.65	At most 2 *

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMJI	LYPIE	LPMII
-1.476249	1.548077	-0.161603
0.159776	0.217112	0.378500
-0.698445	0.876493	0.614005

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMJI	LYPIE	LPMII	C
1.000000	-1.048656	0.109468	-2.317272
	(0.05474)	(0.10384)	

Log likelihood 78.62520

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMJI	LYPIE	LPMII	C
1.000000	0.000000	1.093643	-18.28887
	(0.38496)		
0.000000	1.000000	0.938511	-15.23054
	(0.36623)		
Log likelihood	84.79596		

Table 32: Series: LIMJM LYPME LPMMM

Date: 05/20/98 Time: 22:06

Sample: 1967 1996

Included observations: 16

Test assumption: Linear deterministic trend in the data

Lags interval: 2 to 3

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.794804	38.80608	29.68	35.65	None **
0.545574	13.46541	15.41	20.04	At most 1
0.051495	0.845892	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMJM	LYPME	LPMMM
1.657445	-2.182269	-4.847647
-0.867268	-0.098040	7.848842
1.434809	-2.070224	6.371488

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMJM	LYPME	LPMMM	C
1.000000	-1.316646	-2.924770	26.84765
	(0.09604)	(0.90650)	
Log likelihood	72.27762		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMJM	LYPME	LPMMM	C
1.000000	0.000000	-8.565754	72.98239
	(2.37318)		
0.000000	1.000000	-4.284358	35.03958
	(1.87678)		
Log likelihood	78.58738		

Table 33: Series: LIMJP LYPPE LPMPP

Date: 05/20/98 Time: 22:06

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.748293	39.80700	29.68	35.65	None **
0.236165	9.458221	15.41	20.04	At most 1
0.148295	3.531338	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMJP	LYPPE	LPMPP
1.977629	-1.786306	2.314788
1.891171	-1.825711	0.142177
-0.532327	0.016257	1.235611

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMJP	LYPPE	LPMPP	C
1.000000	-0.903256	1.170486	-13.08826
	(0.02996)	(0.17401)	
Log likelihood	86.81226		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMJP	LYPPE	LPMPP	C
1.000000	0.000000	17.09414	-165.5022
	(31.1861)		
0.000000	1.000000	17.62916	-168.7383
	(34.3149)		
Log likelihood	89.77571		

Table 34: Series: LIMJS LYPSE LPMSS

Date: 05/20/98 Time: 22:07

Sample: 1967 1996

Included observations: 21

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.662565	37.80360	29.68	35.65	None **
0.500746	14.98957	15.41	20.04	At most 1
0.018966	0.402117	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMJS	LYPSE	LPMSS
-1.239745	0.814096	-1.249936
-2.501975	2.887671	2.167199
-0.589646	0.662252	1.969837

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMJS	LYPSE	LPMSS	C
1.000000	-0.656664	1.008220	-14.59196
	(0.16013)	(0.67141)	
Log likelihood	95.38941		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMJS	LYPSE	LPMSS	C
1.000000	0.000000	3.482349	-40.98212
	(0.47868)		
0.000000	1.000000	3.767725	-40.18824
	(0.46947)		
Log likelihood	102.6831		

Table 35: Series: LIMJT LYPTE LPMTT

Date: 05/20/98 Time: 22:07

Sample: 1967 1996

Included observations: 25

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.666587	36.84571	29.68	35.65	None **
0.280421	9.386381	15.41	20.04	At most 1
0.045308	1.159152	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMJT	LYPTE	LPMTT
0.847921	-1.126580	1.586895
0.397614	-0.774387	0.215393
-0.267197	-0.144501	2.100380

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMJT	LYPTE	LPMTT	C
1.000000	-1.328638	1.871512	-17.24581
	(0.09289)	(0.44267)	
Log likelihood	102.7878		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMJT	LYPTE	LPMTT	C
1.000000	0.000000	4.726079	-50.65562
	(6.64023)		
0.000000	1.000000	2.148491	-25.14590
	(4.88381)		
Log likelihood	106.9014		

Indonesia (from table 31)

$$\log(imji)_t = 2.317 + \underset{(19.407)}{1.048}\log(ypie)_t - \underset{(1.058)}{0.109}\log(pmi/pi)_t$$

by imji = Indonesian import demand from Japan

ypie = Indonesian permanent income

pmi = Indonesian import unit value

pi = Indonesian consumer price

pmi/pi = Indonesian relative import prices

Malaysia (from table 32)

$$logimjm_t = -26.847 + \underset{(13.708)}{1.316}\,logypme_t + \underset{(3.227)}{2.924}\log(pmm/pm)_t$$

by imjm = Malaysian import demand from Japan

ypme = Malaysian permanent income

pmm = Malaysian import unit value

pm = Malaysian consumer prices

pmm/pm = Malaysian relative import prices

Philippines (from table 33)

$$\log(imjp)_t = 13.088 + \underset{(31.137)}{0.903}\log(yppe)_t - \underset{(6.724)}{1.170}\log(pmp/pp)_t$$

by imjp = Philippine import demand from Japan

yppe = Philippine permanent income

pmp = Philippine import unit value

pp = Philippine consumer prices

pmp/pp = Philippine relative import prices

Singapore (from table 34)

$$\log(imjs)_t = 14.591 + \underset{(4.100)}{0.656}\log(ypse)_t - \underset{(1.502)}{1.008}\log(pms/ps)_t$$

by imjs = Singaporean import demand from Japan

ypse = Singaporean permanent income

pms = Singaporean import unit value

ps = Singaporean consumer prices

pms/ps = Singaporean relative import prices

Thailand (from table 35)

$$\log(imjt)_t = 17.245 + \underset{(14.434)}{1.328}\log(ypte)_t - \underset{(4.233)}{1.871}\log(pmt/pt)_t$$

by imjt = Thai import demand from Japan

ypte = Thai permanent income

pmt = Thai import unit value

pt = Thai consumer prices

pmt/pt = Thai relative import prices

ASEAN member's import demand from Japan, ASEAN member's permanent income, and ASEAN member's relative import prices have been evidenced the Eigenvalue and Likelihood ratio test. In case of Indonesia indicated 3 cointegrating equations at 5 percents significance level. Secondly, in case of Malaysia indicated 1 cointegrating equations at 5 percents significance level. Thirdly, in case of Philippines indicated 1 cointegrating equations at 5 percents significance level. Fourthly, in case of Singapore indicated 1

cointegrating equations at 5 percents significance level. Lastly, in case of Thailand indicated 1 cointegrating equations at 5 percents significance level.

In long run, if ASEAN member's permanent income and ASEAN member's relative import prices have been unchanged, Indonesian import values would increase 2.317 percents. Secondly, Malaysian import values would decrease 26.847 percents. Thirdly, Philippine import values would increase 13.088 percents. Fourthly, Singaporean import values would increase 14.591 percents. Lastly, Thai import values would increase 17.245 percents.

In long run, if ASEAN member's permanent income increased 1 percent, Indonesia would import increasingly 1.048 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 1.316 percents at 100 percents significant level. Thirdly, Philippines would import increasingly 0.903 percents at 100 percents significant level. Fourthly, Singapore would import increasingly 0.656 percents at 100 percents significant level. Finally, Thailand would import increasingly 1.328 percents at 100 percents significant level.

In long run, if ASEAN member's relative import prices increased 1 percent, Indonesia would import decreasingly 0.109 percents at 75 percents significant level. Secondly, Malaysia would import increasingly 2.924 percents at 99.5 percents significant level. Thirdly, Philippines would import decreasingly 1.170 percents at 100 percents significant level. Fourthly, Singapore would import increasingly 1.008 percents at 90 percents significant level. Finally, Thailand would import decreasingly 1.871 percents at 100 percents significant level.

Table 36-40 presented the relationship between ASEAN member import values from the United States, ASEAN member's permanent income, and ASEAN member's relative import prices.

Table 36: Series: LIMUI LYPIE LPMII

Date: 05/20/98 Time: 22:20

Sample: 1967 1996

Included observations: 25

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 3

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.680184	45.93025	29.68	35.65	None **
0.468464	17.43003	15.41	20.04	At most 1 *
0.063136	1.630438	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMUI	LYPIE	LPMII
-1.466839	1.375665	-0.083993
-0.857480	0.227013	-0.893921
1.354781	-1.178222	-0.554790

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMUI	LYPIE	LPMII	C
1.000000	-0.937843	0.057261	-1.635331
	(0.05465)	(0.09866)	
Log likelihood	88.58132		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMUI	LYPIE	LPMII	C
1.000000	0.000000	1.430012	-20.74514
	(0.26719)		
0.000000	1.000000	1.463732	-20.37633
	(0.30270)		
Log likelihood	96.48112		

Table 37: Series: LIMUM LYPME LPMMM

Date: 05/20/98 Time: 22:21

Sample: 1967 1996

Included observations: 16

Test assumption: Linear deterministic trend in the data

Lags interval: 2 to 3

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.885173	45.10952	29.68	35.65	None **
0.336485	10.48029	15.41	20.04	At most 1
0.217150	3.917035	3.76	6.65	At most 2 *

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMUM	LYPME	LPMMM
1.498192	-2.593714	2.450437
-0.191059	0.510112	3.450725
2.955716	-3.259686	-6.431673

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMUM	LYPME	LPMMM	C
1.000000	-1.731230	1.635597	-13.23611
	(0.11215)	(0.71387)	
Log likelihood	78.53039		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMUM	LYPME	LPMMM	C
1.000000	0.000000	37.96243	-360.5201
	(170.468)		
0.000000	1.000000	20.98325	-200.5996
	(98.3942)		
Log likelihood	81.81202		

Table 38: Series: LIMUP LYPPE LPMPP

Date: 05/20/98 Time: 22:21

Sample: 1967 1996

Included observations: 22

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.686560	44.62352	29.68	35.65	None **
0.528955	19.10024	15.41	20.04	At most 1 *
0.108983	2.538616	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMUP	LYPPE	LPMPP
-3.518244	3.758079	-0.020813
-0.254564	0.444753	0.943807
0.610331	-1.108829	1.594428

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMUP	LYPPE	LPMPP	C
1.000000	-1.068169	0.005916	-1.361168
	(0.02000)	(0.07577)	
Log likelihood	87.02960		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMUP	LYPPE	LPMPP	C
1.000000	0.000000	5.848206	-61.18847
	(5.10352)		
0.000000	1.000000	5.469444	-56.00922
	(4.76714)		
Log likelihood	95.31041		

Table 39: Series: LIMUS LYPSE LPMSS

Date: 05/20/98 Time: 22:22

Sample: 1967 1996

Included observations: 20

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 2

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.707587	35.92206	29.68	35.65	None **
0.401476	11.33028	15.41	20.04	At most 1
0.051834	1.064517	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMUS	LYPSE	LPMSS
-1.542932	0.799508	-1.991198
-3.861080	4.837005	5.278804
-0.593512	0.760083	2.636863

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMUS	LYPSE	LPMSS	C
1.000000	-0.518175	1.290529	-17.64684
	(0.26758)	(1.00720)	
Log likelihood	108.8435		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMUS	LYPSE	LPMSS	C
1.000000	0.000000	3.165274	-37.78227
	(0.29401)		
0.000000	1.000000	3.617979	-38.85839
	(0.28110)		
Log likelihood	113.9764		

Table 40: Series: LIMUT LYPTE LPMTT

Date: 05/20/98 Time: 22:23

Sample: 1967 1996

Included observations: 24

Test assumption: Linear deterministic trend in the data

Lags interval: 1 to 3

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.729875	41.39459	29.68	35.65	None **
0.335913	9.981719	15.41	20.04	At most 1
0.006542	0.157526	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

LIMUT	LYPTE	LPMTT
1.633136	-2.015895	1.855946
0.588515	-0.562192	-2.267065
-0.165102	0.897355	-2.044420

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

LIMUT	LYPTE	LPMTT	C
1.000000	-1.234371	1.136431	-10.19569
	(0.05420)	(0.26414)	
Log likelihood	109.1384		

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

LIMUT	LYPTE	LPMTT	C
1.000000	0.000000	-20.92670	183.4926
	(22.8980)		
0.000000	1.000000	-17.87399	156.9126
	(18.6393)		
Log likelihood	114.0505		

Indonesia (from table 36)

$$\log(imui)_t = 1.635 + \underset{(17.351)}{0.937}\log(ypie)_t - \underset{(0.581)}{0.057}\log(pmi/pi)_t$$

by imui = Indonesian import demand from the United States

ypie = Indonesian permanent income

pmi = Indonesian import unit value

pi = Indonesian consumer prices

pmi/pi = Indonesian relative import prices

Malaysia (from table 37)

$$\log(imum)_t = 13.236 + \underset{(15.455)}{1.731}\log(ypme)_t - \underset{(2.293)}{1.635}\log(pmm/pm)_t$$

by imum = Malaysian import demand from the United States

ypme = Malaysian permanent income

pmm = Malaysian import unit value

pm = Malaysian consumer prices

pmm/pm = Malaysian relative import prices

Philippines (from table 38)

$$\log(imup)_t = 1.361 + \underset{(53.400)}{1.068}\log(yppe)_t - \underset{(0.066)}{0.005}\log(pmp/pp)_t$$

by imup = Philippine import demand from the United states

yppe = Philippine permanent income

pmp = Philippine import unit value

pp = Philippine consumer prices

pmp/pp = Philippine relative import prices

Singapore (from table 39)

$$\log(imus)_t = 17.646 + \underset{(1.940)}{0.518}\log(ypse)_t - \underset{(1.281)}{1.290}\log(pms/ps)_t$$

by imus = Singaporean import demand from the United States

ypse = Singaporean permanent income

pms = Singaporean import unit value

ps = Singaporean consumer prices

pms/ps = Singaporean relative import prices

Thailand (from table 40)

$$\log(imut)_t = 10.195 + \underset{(22.851)}{1.234}\log(ypte)_t - \underset{(4.303)}{1.136}\log(pmt/pt)_t$$

by imut = Thai import demand from the United States

ypte = Thai permanent income

pmt = Thai import unit value

pt = Thai consumer prices

pmt/pt = Thai relative import prices

ASEAN member's import demand from the United States, ASEAN member's permanent income, and ASEAN member's relative import prices have been evidenced the Eigenvalue and Likelihood ratio test. In case of Indonesia indicated 2 cointegrating equations at 5 percents significance level. Secondly, in case of Malaysia indicated 1 cointegrating equations at 5 percents significance level. Thirdly, in case of Philippines indicated 2 cointegrating equations at 5 percents significance level. Fourthly, in case of Singapore indicated 1

cointegrating equations at 5 percents significance level. Lastly, in case of Thailand indicated 1 cointegrating equations at 5 percents significance level.

In long run, if ASEAN member's permanent income and ASEAN member's relative import prices have been unchanged, Indonesian import values would increase 1.635 percents. Secondly, Malaysian import values would increase 13.236 percents. Thirdly, Philippine import values would increase 1.361 percents. Fourthly, Singaporean import values would increase 17.646 percents. Lastly, Thai import values would increase 10.195 percents.

In long run, if ASEAN member's permanent income increased 1 percent, Indonesia would import increasingly 0.937 percents at 100 percents significant level. Secondly, Malaysia would import increasingly 1.731 percents at 100 percents significant level. Thirdly, Philippines would import increasingly 1.068 percents at 100 percents significant level. Fourthly, Singapore would import increasingly 0.518 percents at 95 percents significant level. Finally, Thailand would import increasingly 1.234 percents at 100 percents significant level.

In long run, if ASEAN member's relative import prices increased 1 percent, Indonesia would import decreasingly 0.057 percents at insignificant level. Secondly, Malaysia would import decreasingly 1.635 percents at 97.5 percents significant level. Thirdly, Philippines would import decreasingly 0.005 percents at less than 75 percents significant level. Fourthly, Singapore would import decreasingly 1.290 percents at insignificant level. Finally, Thailand would import decreasingly 1.136 percents at 100 percents significant level.