Chapter III

Macroeconomic Impacts under FTA Configuration In the APEC Region

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Abstract

Comparing with Uemura (2000), this paper provides a more broken down APEC Link model. In the previous paper, seven sub-group (SG) models have been constructed in a demand-oriented manner. This paper tries to decompose the Asian NIES 3 SG model into each member economy model, i.e., South Korea, Hong Kong and Taiwan. NAFTA (NF), Oceania (OC) and Latin America (LA) models remain to be decomposed in the future. Totaling ten SG models are linked to one another through the trade block in the model. A couple of simulations will be held thereafter.

Introduction

Member economies of the APEC region vary in their phase of economic development. The APEC region can be categorized into several sub-groups, tied by economic treaties and/or geographical proximity. Uemura (2000) separates this region into seven sub-groups and analyzes how some initial impacts in certain sub-groups affect on other members through their trade behavior.

This paper decomposes the Asian NIES 3 SG model in the previous paper into three individual models, i.e., South Korea, Hong Kong and Taiwan models.

In line with the change in the number of SG models, change in the trade block was also performed. Simulation analysis which evaluates effects of price change impact into the whole region will be enabled further. Another trial, making domestic (or intra-sub-group) demand endogenous, was failed, since the whole model became unstable with endogenous domestic demands.

The data integration procedure is discussed in Uemura (2000). Trade data will be

compiled and shown based on the discussion in section 1. The compiled data will be used in our simulations which measure the total region-wide effect caused by the primary economic impact. Section 2 provides an overview of trade structures in the APEC region. In section 3, our model is explained. In sections 4 and 5, exogenous conditions which will be given to the Link model, and simulation results are shown. Specifically, the section deals with the case of Japan-Korea FTA and its expansion into the case of ASEAN+3 tariff abolition. Section 6 contains concluding remarks.
The details of the sub-group models and trade link system are shown in the appendix.

1 . APEC Link Model: 21st Century Version

1.1. Model Improvement

Comparing to the model used in Uemura (2000), this version of the total link model includes price dummies which can be used for simulation putting an initial shock in certain price variables. In this sense, our link model has been improved since one year earlier.

Dummy variables themselves have just a series of unity in every single year. A price dummy variable, for example, is incorporated in the model as shown in a typical import function below.

$$XXMZZ = f[XXYD*ZZYD, (XXPM*XXPMP)/XXPY] \quad (1)$$

where

XXMZZ:	Sub group XX's import from sub group ZZ.
XXYD, ZZYD:	XX and ZZ's GDP denominated in US$
XXPM:	XX's import price
XXPMP:	Price Dummy
XXPY:	GDP deflator of XX

When we wish to estimate the effect of tariff reduction, for example, we can set JPPMP (price dummy for Japan) for some years to be a figure less than 1. In this version of trade link model, we have more than one price dummies so that we can alternate the price effects by trade partners.

1.2. Sub-Groups

Sub-grouping of economies are as follows (abbreviation of the name of each sub-group is shown in the parentheses). ASEAN 7 (A7) consists of Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. NAFTA contains Canada, Mexico and United States. Oceania (OC) sub-group has three economies, Australia, New Zealand and Papua New Guinea. Latin America (LA) consists of Chile and Peru. Japan (JP), China (CN), Korea (KR), Hong Kong (HK), Taiwan (TW) and Russia (RU) are single country sub-groups. The rest of the world (RW) is also considered as a sub-group although it is purely exogenous. World total (WL) is a subset of sub-groups though it contains everything.

Brunei and Vietnam in ASEAN 7 as well as Papua New Guinea in Oceania have very poor dataset for their national account related series. Those economies, therefore, cannot be included in compiling the "Group GDP."

As mentioned in Uemura (2000), it is impossible to compile a "reliable" dataset for Latin America (LA). The paper treats LA sub-group as exogenous, i.e., no functions are estimated. In this paper, however, several import functions are estimated to embody a Latin American SG model.

Table 1. Member of Sub-Groups

Sub-Group Name	Abbr.	
ASEAN 7	(A7)	Brunei, Indonesia, Malaysia, Philippines Singapore, Thailand, Vietnam
NAFTA	(NF)	Canada, Mexico, United States
Oceania	(OC)	Australia, New Zealand, Papua New Guinea
Latin America	(LA)	Chile, Peru
Japan	(JP)	Japan
China	(CN)	China
Korea	(KR)	South Korea
Hong Kong	(HK)	China, Hong Kong
Taiwan	(TW)	Taiwan
Russia	(RU)	Russia
Rest of the World	(RW)	
World Total	(WL)	

1.3. Data Compilation

For constructing sub-group models, it is critical to integrate the data series of member economies into the SG data set. SG models for Japan, China, Korea, Hong Kong, Taiwan and Russia are identical with each country model. For other four groups, namely, ASEAN 7, NAFTA, Oceania and Latin America, newly compiled datasets will be required to construct SG models.

Trade data picked up from *Direction of Trade (DOT)* for every single pair of the APEC economies were used in order to compile group-by-group (such as ASEAN 7 to/from Japan and so on) export/import figures. For each sub-group model, we need to estimate the 1995 constant price trade data series. We have adopted the export/import deflators in the national account base or export/import unit value for this purpose. Real trade values are first calculated by country and the sub-group figures are then calculated summing up the country-wise figures.

The "GDP" series for each sub-group, on the other hand, is the sum of US dollar based real GDP (1995 price) of the member economies[1]. Nominal GDP will be calculated in same manner. The GDP deflator is their proportion, i.e. [Nominal GDP]/[Real GDP].

2. Tariff Structure in Asia

The following table shows the average rate of import duties of East and Southeast Asian economies to be mentioned later. In the simulation analysis, our assumptions on import price decline are based on these figures.

[1] As mentioned above, several members are omitted from the total GDP because of the poor quality of available data.

Table 2. Average Rate of Import Duties

	Import Duties	Imports	Priority rate of duty	(year)
	mil.$	mil.$		
Japan	6488	291512	2.2%	1997
Korea	3943	116778	3.4%	1999
China	3854	142189	2.7%	1997
Singapore	448	132412	0.3%	1997
Malaysia	1242	15351	8.1%	1999
Indonesia	234	27337	0.9%	1998
Philippines	3217	38676	8.3%	1997
Thailand	1597	42895	3.7%	1998
ASEAN	6738	256671	2.6%	---

Source: *International Financial Statistics*,, IMF.
Government Financial Statistics,, IMF.

3. The Sub-Group Model and Trade Link

3.1. Structure of Models and Variables

Each one of the sub-group models follows Uemura (2000). No major changes in the model have been caused.

Model variables, however, progress a bit. 21st century version of APEC link model can treat price changes, especially those of import prices. When we investigate the effect of a fall in import prices due to tariff abolition, this version of the model will serve us a set of fruitful outputs.

3.2. Linking Equations

Import functions are basically specified in the form of (1) shown above. The Link block (D13 in Appendix D) contains identical equations to sum up world imports from each sub-group. For example, world import from ASEAN 7 is defined as shown below.

$$WLMA7 = \Sigma SG_i MA7, \quad i = 1, \ldots, 11 \qquad (2)$$

where: SG_i represents the i^{th} sub-group and the 11^{th} represents Rest of the World (RW), which is given in the equation exogenously.

This variable is connected with the ASEAN7 total exports (A7XD). The comparison of WLMA7 and A7XD serves as the iteration benchmark for the ASEAN7 model. Equation linkage is similarly done in other sub-group models.

4. Exogenous Conditions ---Japan-Korea FTA and Its Expansion into ASEAN+3

Three kinds of simulation analysis will be performed. We will see the effect of income and trade expansion associated with sub-regional trade liberalizing arrangements such as Japan and South Korea FTA and AFTA on the one hand. On the other hand, we will see the effects of fall in the import price derived from tariff reduction between or among the concerned economies.

The effect of the Japan and South Korea FTA on these two countries will be measured firstly. Then some “expanded” cases when the FTA is blown up to East Asia including China, and furthermore, to Southeast Asia, i.e., ASEAN, will be considered later.

In case 1, in order to see the amount increase of trade between Japan and South Korea as what reaction appear within a model, the case where the South Korean export for Japan increases by 2 billion dollars is seen. This corresponds to the case of “preparatory measures” of Japan-Korea FTA. Yamazawa (2000) points out that Korea’s huge bilateral trade deficit with Japan is somewhat making Korean skeptical toward forming the FTA.

As the next step, in case 2-1, Japan and South Korea’s GDP growth rates will be exogenously pushed up. Conserving the difference in the GDP sizes, the margin is set 1 percentage point for Korea, and 0.1 percentage point for Japan. This is translated as a productivity effect of FTA. Furthermore, in case 2-2, we measure, also taking a fall of the import prices by the tariff rate reduction between Japan and South Korea into consideration. About tariff rate reduction, the amount of average rate of import duties shown in **Table 2** is assumed to be removed from import prices.

In case 3, our assumption spreads further, the tariff rate reduction (abolition) within

Japan and Korea is expanded to China and ASEAN to make a large economic block tied by a steady trade relationship (ASEAN+3). Firstly, imports between East Asia (Japan, Korea and China) and AFTA members are assumed to increase independently (Case 3-1). And then, in Case 3-2, we assume the tariff reduction analogous to Case 2-2.

These assumptions are adopted cumulative. i.e., assumption in the case 1 will be effective in cases 2 and 3. Impacts are given in the year 1995, the base year of the trade matrix. Simulated figures will be compared with those from the base case simulation, where no impacts are given.

Chart 1: Exogenous Conditions Given in the System

Case 1	JPMKR	<--	JPMKR	+	2000
Case 2-1	(Case 1) +				
	JPDDEX	<--	JPDDEX	+	5086
	KRDDEX	<--	KRDDEX	+	4796
Case 2-2	(Case 2-1) +				
	JPPMP2	<--	JPPMP2	*	0.978
	KRPMP2	<--	KRPMP2	*	0.967
Case 3-1	(Case 2-2) +				
	DAMC	<--	DAMC	+	493
	DAMJ	<--	DAMJ	+	4707
	DAMK	<--	DAMK	+	712
	DCMA	<--	DCMA	+	528
	DJMA	<--	DJMA	+	2762
	DKMA	<--	DKMA	+	574
Case 3-2	(Case 3-1) +				
	A7PMP3	<--	A7PMP3	*	0.974
	CNPMP3	<--	CNPMP3	*	0.973
	JPPMP3	<--	JPPMP3	*	0.978
	KRPMP3	<--	KRPMP3	*	0.967

*) Unit: US$ million for cases 1, 2-1 and 3-1.

5. Simulation Results

Simulation 1: *Trade Creation effects between Japan and Korea.*
In order to see what reaction of the total link model appears, we put a 2 billion export acceleration from Korea to Japan as an initial shock. The variable JPMKR stands for "Japan's import from Korea" which is translated to be "Korea's export to Japan" in the model. In this case, JPMKR is exogenously increased by 2 billion dollars calculating the effect of Japan-Korea FTA. Our initial shock, 2 billion dollars, however, will not appear in the final output table as exact 2 billion dollars since the variable, JPMKR, is endogenously determined in the total model.

Table 3. Trade Creation Effects--Japan and Korea (Case 1)

(US$, million)

	Exports	Imports				GDP
	Total	Total	from Japan	Korea	ASEAN 7	
Japan	43 (0.01)	2309 (0.57)	---	2026 (13.14)	-3 (-0.01)	-2266 (-0.04)
Korea	2628 (1.96)	434 (0.29)	72 (0.23)	---	3 (0.03)	2194 (0.46)

(*) Figures in the parentheses indicate the percentage points from the base case.

Thus, Japan's total imports increase by 2.3 billion dollars in line with the imports from Korea finally increase by 2.03 billion dollars while our initial impact is 2 billion.
On the contrary, Korean imports from Japan increase just 72 million dollars. As a result, Japanese GDP, compared to base case simulation, declines 2.27 billion dollars and Korean GDP increases almost same amount, 2.19 billion dollars.

Simulation 2-1: *Productivity Improvement (income accelerate) in Japan and Korea.*
In addition to the exogenous condition put in the model in case 1, case 2 incorporates two additional conditions. One measured in simulation 2-1 productivity improvement effect in Japan and South Korea grasping the Japan-Korea FTA. The relative impact

of the productivity effect is considered to differ in the two countries: Korea, the smaller economy, is thought to benefit more intensively than Japan. Such productivity effect can be translated into independent increase in GDP. Here, Korea's GDP is pushed up by 1 percentage point, and Japan's GDP by 0.1 percentage point. In the APEC link model, an exogenous increase in GDP is translated into the corresponding increase in the domestic demand. Since GDP itself is an endogenous variable, final (solved) figure of GDP is not identical to the assumed values of 1 and 0.1 percentage points, respectively.

Table 4. Income Accelerate Effects on Japan and Korea (Case 2-1)

(US$, million)

	Exports Total	Imports Total	from Japan	from Korea	from ASEAN 7	from China	GDP
Japan	564 (0.13)	2712 (0.67)	---	2093 (13.57)	31 (0.07)	136 (0.31)	2938 (0.06)
Korea	2826 (2.11)	1287 (0.85)	240 (0.77)	---	7 (0.07)	112 (1.73)	6336 (1.32)

(*) Figures in the parentheses indicate the percentage points from the base case.

In this case, compared with a base case, South Korean exports accelerate 2.11 percent, which push up the country's GDP by 1.32 points, exceeding one point given to the system exogenously as the initial shock.

In Japan's side, on the other hand, although exports increase by 0.13 points, imports increase by 0.67 points. The effect of the import increase described in Case 1 remains dominant. However, the effect on GDP now turns positive by a small margin, 0.06 percentage points.

Simulation 2-2: *Tariff rate reduction between Japan and Korea.*

Furthermore, the effect of the tariff rate reduction (abolition) between Japan and South Korea is measured. Tariff reduction is introduced into the model by subtracting the average rate of import duties from import prices.

Table 5. Tariff Rate Reduction between Japan and Korea (Case 2-2)

(US$, million)

	Exports Total	Imports Total	from Japan	Korea	ASEAN 7	China	GDP
Japan	696 (0.16)	2976 (0.73)	---	2323 (15.06)	31 (0.07)	135 (0.31)	2806 (0.06)
Korea	3121 (2.33)	1436 (0.95)	341 (1.09)	---	7 (0.08)	114 (1.77)	6482 (1.35)

(*) Figures in the parentheses indicate the percentage points from the base case.

Again, Korea benefits more from the tariff rate reduction. Compared with the case 2-1, Japan's exports expand by 0.03 percentage point to 0.16 percent. Korean exports, on the other hand, expand 0.22 more points by tariff rate reduction., and enjoy 2.33 percent increase from the base case. In line with this development, Korean GDP after tariff rate reduction measures 1.35 percentage point expansion as opposed to Japan see only 0.06 percentage point increase, just a same rate in case 2-1.

Simulation 3-1: *Trade Creation (imports accelerate) in East and Southeast Asia.*
In addition to the case 2-2, the case 3-1 expands the coverage of the FTA throughout East and Southeast Asia. That is, China and ASEAN are additionally taken into. Case 3-1 computes the effect of the trade expansion between East Asian country group (Japan, Korea and China) and Southeast Asian countries, i.e., ASEAN countries. Exogenous condition here is to accelerate imports of three East Asian countries from ASEAN sub-group by 6%. At the same time, ASEAN's imports from these three economies are inflated by 6% of the base case.

Table 6. Imports Increase Effects in East and Southeast Asia (Case 3-1)

(US$, million)

	Exports Total	Imports Total	from Japan	Korea	ASEAN 7	China	GDP
Japan	7033 (1.63)	6153 (1.51)	---	2330 (15.11)	2696 (5.86)	133 (0.30)	5966 (0.12)
Korea	4129 (3.09)	2208 (1.47)	359 (1.15)	---	579 (6.05)	113 (1.74)	6718 (1.40)
China	192 (0.13)	632 (0.46)	25 (0.09)	45 (0.44)	509 (5.78)	---	-440 (-0.06)
ASEAN 7	2691 (0.85)	5496 (1.51)	4518 (5.76)	584 (4.92)	-189 (-0.29)	420 (5.11)	-2805 (-0.47)
APEC	---	---	---	---	---	---	10220 (0.06)

(*) Figures in the parentheses indicate the percentage points from the base case.

Consequently, Japan's total imports increase by 1.5% while total exports increase 1.6%. However, Korea will see a completely different sight, enjoying a 3.1% increase of the total exports while the total imports expand by 1.5%. This alteration brings about a viewable output to the two economies. While Japan will have just a small amount of GDP drift, 0.1%, Korea will enjoy a sizable 1.4% GDP growth acceleration.

It turns out that the influence of the positive effect of the expansion in the free trade area given to South Korea is much larger than that given to Japan.

Moreover, in China and ASEAN, although increase of the total export is seen, it remains within a small margin. Conversely, imports expand a larger margin, and as a result, GDP reduces by 0.06% and 0.47%, respectively.

Finally as for the income in APEC whole region, a rise of 10.2 billion dollars is seen.

Simulation 3-2: *Tariff rate reduction in East and Southeast Asia.*
Furthermore, case 3-2 calculates the effect of mutual tariff rate reduction. Similar to the case 2-2, we subtract a part for a average rate of import duties from bilateral import prices.

Table 7. Tariff Rate Reduction Effects in East and Southeast Asia (Case 3-2)

(US$, million)

	Exports Total	Imports Total	from Japan	Korea	ASEAN 7	China	GDP
Japan	10313 (2.39)	6381 (1.57)	---	2362 (15.31)	2802 (6.09)	135 (0.31)	9017 (0.18)
Korea	7573 (5.66)	3491 (2.32)	448 (1.43)	---	1245 (13.02)	146 (2.26)	8879 (1.85)
China	167 (0.11)	1013 (0.73)	26 (0.09)	59 (0.56)	844 (9.6)	---	-846 (-0.12)
ASEAN 7	2246 (0.71)	9727 (2.67)	6728 (8.58)	3167 (26.7)	-499 (-0.78)	307 (3.74)	-7481 (-1.25)
APEC	---	---	---	---	---	---	11307 (0.07)

(*) Figures in the parentheses indicate the percentage points from the base case.

The positive effects in Japan and Korea expand further. Korean GDP, especially, expands by 1.85%. It mainly originates in the increase in Korean total exports, by 2.5%, compared with the case 3-1, without tariff rate reduction.
Moreover, ASEAN's imports from Japan and South Korea are measured to the further expand by 2.8 and 21.8 percentage points, to 8.6 and 26.7 percentage points, respectively. However, ASEAN's imports from China are calculated to decline by 1.3

percentage points from the case 3-1, to 3.7 percentage points. This indicates that the import price reduction brought about a trade diversion (import substitution) to other sub-groups.
ASEAN's total exports decelerated by 0.1 point despite the total imports accelerate by 1.1 point compared with the case 3-1. ASEAN's GDP will see a 0.8 less point from the case without tariff reduction.
Whole APEC region will appreciate a more GDP expansion, 11.3 billion dollars, 0.01 percentage point higher income compared with the outcome in case 3-1.

6. Summary and Conclusion

Economic impact of the Japan-South Korea FTA and more larger market liberalization in East and Southeast Asian region is measured by simulating the APEC Trade Link Model, 21st century version. The link model originally was provided in Uemura (2000) to simulate a rough scenario analysis one year earlier. This version of the model collects a more broken down set of behavioral equations and data sets.
The APEC link model includes models for NAFTA, Oceania (Australia and New Zealand), Latin America (Chile and Peru) as well as those for ASEAN and East Asian economies. The APEC Link Model measures the effects of the economic impacts through worldwide repercussions.
In the first simulation, case 1 in the paper, just calculates to evaluate the total model reaction. When we put a 2 $ billion initial shock on Japanese imports from South Korea, the shock amount is scattered to the world market through the import share matrix to provide a slightly larger outcome on the very variable.
Next two simulations compare results from direct exogenous condition (income expansion) and those from combined effect of income and price conditions. In this simulation, we assume a 1 percentage point GDP acceleration in the two countries for the first case (case 2-1) and import price decline for the second case (case 2-2). In both cases, South Korea collects a larger harvest from the exogenous condition we set.
The last two simulations also compare results from direct condition (import expansion) and outcomes from compounded effect of increase in import and decrease in import prices between the East and Southeast Asian economies reflecting the tariff rate reduction. We assume 6 percentage point import acceleration between East Asian economy group, Japan, Korea and China, and Southeast Asian economy group, ASEAN 7 for the first simulation (case 3-1) and additional import price decline for the

second case (case 3-2). Similar to the cases in the latter two simulations, South Korea is the most benefit-receiving economy in the members mentioned. In case 3-1, South Korean GDP in the simulation year accelerates by 1.4 percentage points while Japan gains only 0.12 points. China and ASEAN in case 3-1 lose their GDP by 0.06 points and 0.47 points, respectively. Even tariff reduction is imposed in the simulation (case 3-2), ASEAN cannot collect any positive pay-offs to the GDP (negative 1.25 points). China under this condition loses more, 0.12 point decline in GDP is measured. Japan sees a slightly better positive effect, 0.18 point GDP acceleration compared with 0.06 points in case 3-1. Only South Korea attains stronger GDP growth rate, 1.85 percentage point GDP spur.

To the whole APEC region, the last two simulations give positive conclusions. Case 3-1 shows 10.2 billion dollar (0.06 percentage points) GDP picking up and case 3-2, 11.3 billion (0.07 points). Comparing the results shown above, 65.7% and 78.5% of total APEC (net) GDP harvest in case 3-1 and case 3-2, respectively, are captured by Korea.

Since trade liberalization will constitute the mainstream of the future international economic environment, it will be more and more important to study the possible impacts of major shift or revolution *ex ante*, and to grasp those quantitative impacts of further liberalization.

Appendix A. Macro Performance of the Model

For each SG model and the total link model, macro-performance are measured by Root Mean Squared Percent Error (RMSPE). We adopt the years 1996 and 1997 for the simulation period since the import share matrix used in the trade block consists of 1996 figures. RMPSE measures the accuracy of the individual variables in a *simulation context*. A desirable model would lead us to expect the results of a historical simulation to match the behavior of the real world rather closely. RMSPE is a measure of how closely each endogenous variable tracks the historical data and is defined as

$$RMSPE = \{ (1/T) \ \Sigma [(Y_t^s - Y_t^a)/ Y_t^a]^2 \}^{1/2} * 100 \ (\%) \qquad (A1)$$

where:

Y_t^s	:	Simulated value of Y_t
Y_t^a	:	Actual value
T	:	Number of periods in the simulation

A.1. Each SG Model Performance (RMSPE)

Variable Name	ASEAN 7	China	Japan	Hong Kong	Korea
MA7	3.994	6.179	1.164	2.092	10.967
MCN	7.959	---	15.275	---	6.065
MJP	4.731	5.421	---	2.428	5.486
MHK	4.981	---	---	---	13.912
MKR	31.403	2.1	3.257	5.204	---
MTW	4.96	---	4.031	5.465	11.964
MNF	0.826	---	1.976	---	5.816
MOC	5.113	4.097	0.593	4.091	12.802
MLA	4.311	18.674	9.659	---	---
XD	5.347	10.798	5.41	4.058	5.901
MD	0.487	1.901	0.796	0.199	1.669
PX	2.253	3.215	---	---	4.077
YD	3.638	2.528	0.47	6.317	2.027
PY	1.778	1.456	1.878	3.397	2.839

A.1 (cont'd)

Variable Name	Taiwan	NAFTA	Oceania	LatinAm.	Russia
MA7	0.505	14.825	4.307	3.064	---
MCN	20.721	3.581	---	---	12.173
MJP	7.892	6.228	2.957	---	10.032
MHK	---	---	1.905	69.825	---
MKR	10.681	6.868	---	---	---
MTW	---	8.695	0.623	3.274	---
MNF	---	1.752	5.068	1.484	---
MOC	9.838	7.926	---	---	---
MLA	16.097	5.455	5.153	---	---
XD	8.494	1.452	3.172	0.682	0.554
MD	7.806	0.337	1.441	0.521	8.615
PX	1.144	0.864	5.107	---	---
YD	0.99	0.171	1.054	0.255	1.643
PY	---	2.447	0.243	---	---

A.2. APEC Link Model Performance (RMSPE)

Variable Name	ASEAN 7	China	Japan	Hong Kong	Korea	Taiwan
MA7	4.206	17.106	3.906	10.578	11.228	5.699
MCN	15.582	---	16.138	---	10.285	30.026
MJP	6.657	15.529	---	1.708	5.651	9.899
MHK	4.905	---	---	---	16.085	---
MKR	23.528	7.631	8.123	8.586	---	14.234
MTW	6.122	---	9.632	3.460	9.286	---
MNF	1.889	---	4.821	---	7.889	---
MOC	6.151	21.101	1.947	7.836	13.581	9.638
MLA	6.267	21.439	2.928	---	---	13.877
MRU	---	---	---	---	---	---
MWL	4.095	5.887	2.004	1.387	4.874	4.941
XD	8.270	6.473	11.009	1.861	11.893	6.591
MD	3.411	7.348	2.600	1.207	5.013	6.107
YD	2.748	0.446	0.901	0.933	2.083	0.896
PX	1.882	11.604	---	---	7.699	4.003
PY	---	2.382	2.756	0.772	2.239	---
PM	1.386	21.075	3.289	2.459	6.721	9.698

A.2 (cont'd)

Variable Name	NAFTA 3	Oceania	LatinAm.	Russia	World	APEC
MA7	5.782	6.527	7.680	---	4.342	---
MCN	4.747	---	---	---	1.335	---
MJP	1.024	1.200	---	---	2.467	---
MHK	---	10.833	7.343	---	0.715	---
MKR	7.338	---	---	---	7.652	---
MTW	0.317	3.887	4.578	---	2.283	---
MNF	2.938	4.650	2.957	---	0.287	---
MOC	5.504	---	---	---	3.434	---
MLA	4.896	8.289	---	---	1.859	---
MRU	---	---	---	---	---	---
MWL	0.948	1.820	1.459	---	---	1.320
XD	0.277	6.637	3.501	---	---	---
MD	1.247	1.246	1.247	---	---	---
YD	0.217	1.258	0.831	---	---	0.577
PX	1.986	3.248	---	---	---	---
PY	3.351	0.968	---	---	---	1.674
PM	2.406	5.556	3.180	28.437	---	2.278

Appendix B. Import Share Matrix Used in Trade Block

Import Share Matrix

(%)

Import of	from A7	CN	JP	HK	KR	TW
ASEAN 7	18.23	2.95	24.29	2.49	4.61	4.49
China	7.37	---	21.95	6.51	7.78	0.30
Japan	14.37	10.69	---	0.81	5.16	4.19
Hong Kong	9.96	36.18	14.84	---	4.91	14.49
Korea	7.06	5.47	24.12	0.61	---	2.04
Taiwan	10.13	2.99	29.23	1.78	4.18	---
NAFTA 3	6.86	5.20	13.87	1.18	2.80	3.00
Oceania	8.36	4.64	15.04	1.28	2.63	2.97
Latin Am.	1.52	2.41	6.08	0.69	3.07	1.58
Russia	1.01	1.86	1.64	0.20	1.08	0.40
World	5.96	4.56	9.37	1.11	2.32	2.35

(%)

Import of	from NF	OC	LA	RU	RW
ASEAN 7	14.92	2.69	0.31	0.18	24.84
China	14.38	2.28	0.52	2.87	36.04
Japan	26.27	5.29	1.12	1.41	30.69
Hong Kong	8.46	1.18	0.07	0.25	9.65
Korea	24.64	4.39	0.76	1.41	29.49
Taiwan	21.85	2.93	1.18	1.57	24.16
NAFTA 3	37.67	0.65	0.41	0.46	27.89
Oceania	23.03	10.05	0.16	0.04	31.79
Latin Am.	30.77	1.00	3.12	0.13	49.62
Russia	6.25	0.53	0.20	---	86.82
World	18.03	1.42	0.44	1.56	52.89

Appendix C. Variable List

All of the variable names included in the model are separated into two parts. The first part consists of a two character variable name describing the sub-groups while the remaining part consists of descriptive variables.

Sub-Group Abbreviation (First two characters)

Code	Sub-Group Name
A7	ASEAN 7
KR	South Korea
HK	Hong Kong
TW	Taiwan
NF	NAFTA
OC	Oceania
LA	Latin America
JP	Japan
CN	China
RU	Russia
AP	APEC Total
RW	Rest of the World
WL	World Total

Variable Description (From the third character to the tail)

Variable Name	Description	Unit
MA7	Imports from ASEAN 7	US$ million
MKR	Imports from South Korea	US$ million
MHK	Imports from Hong Kong	US$ million
MTW	Imports from Taiwan	US$ million
MNF	Imports from NAFTA	US$ million
MOC	Imports from Oceania	US$ million
MLA	Imports from Latin America	US$ million
MJP	Imports from Japan	US$ million
MCN	Imports from China	US$ million
MRU	Imports from Russia	US$ million
MRW	Imports from Rest of the World	US$ million
MWL	Imports from World	US$ million
MRU	Imports from Russia (Nominal)	US$ million
MWL	Imports from World (Nominal)	US$ million
YD	Gross Domestic Product	US$ million
DDD	Domestic Demand	US$ million
XD	Exports	US$ million
MD	Imports	US$ million
YDV	Gross Domestic Product (Nominal)	US$ million
DDDV	Domestic Demand (Nominal)	US$ million
PY	GDP Deflator	index 1995=100
PX	Export Deflator	index 1995=100
PM	Import Deflator	index 1995=100

Appendix D. APEC Link Model, 21st Century Version

D.1. ASEAN 7 (A7) SG Model

D.1.1. Import Functions

```
A7-1. &LOG A7MA7  [1989-1998]
  &LOG A7MA7  = 3.0018   +.6131 *(&LOG A7YD )
              (2.2025)  (5.9579)
             -3.2084*(1 &LAG &LOG (A7PM*A7PMP3)/A7PY )
              (-25.7290)

  SE=.0335  DW=.9420  R-SQ(ADJ)=.9931  F-STAT=652.0333

A7-2. &LOG A7MCND  [1990-1998]
  &LOG A7MCND  =-34.8912   +1.6405 *(&LOG A7YD * CNYD ) +.4336 *(D98 )
               (-2.4065)  (3.0231)                   (1.7252)

  SE=.2370  DW=1.7702  R-SQ(ADJ)=.5602  F-STAT=6.0953

A7-3. A7MCN [1989-1998]
    A7MCN = A7MCND + DAMC

A7-4. &LOG A7MJPD  [1989-1998]
  &LOG A7MJPD  =-6.8950   +.6331 *(&LOG A7YD * JPYD )
               (-1.6373)  (4.3015)
              -1.2326*(&LOG (A7PM*A7PMP3)/A7PY )
               (-2.8218)

  SE=.0484  DW=1.8213  R-SQ(ADJ)=.9722  F-STAT=158.4180

A7-5. A7MJP [1989-1998]
    A7MJP = A7MJPD + DAMJ
```

```
A7-6. &LOG A7MKRD  [1989-1998]
  &LOG A7MKRD  = 39.5744  -1.1376 *(&LOG A7YD * KRYD )
              (3.8260)  (-2.8950)
             -7.4032 *(&LOG (A7PM*A7PMP3)/A7PY )
              (-6.0851)

  SE=.1623  DW=2.2937  R-SQ(ADJ)=.8739  F-STAT=32.1931

A7-7. A7MKR [1989-1998]
    A7MKR = A7MKRD + DAMK

A7-8. &LOG A7MHK  [1989-1998]
  &LOG A7MHK  =-18.8037    +1.1071 *(&LOG A7YD * HKYD ) -.1561
*(D92+D93 )
             (-19.8909)  (29.1790)                (-5.8840)

  SE=.0335  DW=2.0752  R-SQ(ADJ)=.9900  F-STAT=448.4271

A7-9. &LOG A7MTW  [1989-1998]
  &LOG A7MTW  =-7.3083   +.6578 *(&LOG A7YD * TWYD ) -1.1927*(&LOG
A7PM/A7PY )
             (-.8753)  (2.0276)               (-1.3433)
            -.1174 *(D92+D93 )
             (-1.7885)

  SE=.0812  DW=1.6383  R-SQ(ADJ)=.9214  F-STAT=36.1749

A7-10. &LOG A7MNF  [1990-1998]
  &LOG A7MNF  =-18.4389   +.8129 *(&LOG A7YD * NFYD )
             (-6.1838)  (7.1635)
            +.5121 *(1 &LAG &LOG A7MNF ) +.0574 *(D95 )
             (9.9322)                 (1.4374)

  SE=.0347  H-STAT=-.7998  R-SQ(ADJ)=.9828  F-STAT=153.2184
```

```
A7-11. &LOG A7MOC  [1990-1998]
  &LOG A7MOC  =-1.5279   +.3231 *(&LOG A7YD * OCYD )
              (-.4177)  (2.5239)
             +.2398 *(1 &LAG &LOG A7MOC ) -1.3060*(&LOG A7PM/A7PY )
              (4.2681)                   (-4.0684)

  SE=.0239  H-STAT=.5390  R-SQ(ADJ)=.9866  F-STAT=196.6030

A7-12. &LOG A7MLA  [1992-1998]
  &LOG A7MLA  =-37.6384   +1.7821 *(&LOG A7YD * LAYD )
              (-2.6866)  (3.1774)
             -1.0558 *(&LOG A7PM/A7PY )
              (-.8322)

  SE=.0880  DW=1.0797  R-SQ(ADJ)=.9467  F-STAT=54.2894

A7-13. A7MWL [1989-1998]
    A7MWL = A7MA7+A7MCN+A7MJP+A7MLA+A7MNF+A7MKR+A7MHK
       +A7MTW +A7MOC+A7MRU+A7MRW

A7-14. A7MVWL [1989-1998]
    A7MVWL = A7MWL*A7PM/100
```

D.1.2. National Accounts

```
A7-15. &LOG A7MD  [1989-1998]
  &LOG A7MD  =-.0755    +1.0122*(&LOG A7MWL ) -.0147 *(D98 )
             (-.6712)  (112.0505)          (-1.8825)

  SE=.0074  DW=1.9431  R-SQ(ADJ)=.9993  F-STAT=6369.1138
```

```
A7-16. &LOG A7XD  [1989-1998]
  &LOG A7XD  = 1.8241   +.8619 *(&LOG WLMA7 ) -.3254 *(D98 )
             (3.4257)  (19.9697)           (-6.3989)

  SE=.0437  DW=2.0628  R-SQ(ADJ)=.9781  F-STAT=201.9926

A7-17. A7DDD [1980-1998]
    A7DDD = A7DD + A7DDEX

A7-18. A7YD [1980-1998]
    A7YD = A7DDD + A7XD - A7MD

A7-19. A7YDV [1980-1998]
    A7YDV = A7YD*A7PY/100
```

D.1.3. Prices

```
A7-20. &LOG A7PX  [1980-1998]
  &LOG A7PX  =(( .9379* 1 &LAG &LOG A7PX )+ .7183- .6736)
              (  .8972)
             +(( .8311*&LOG A7PY )-( .7795* 1 &LAG &LOG A7PY ))
              ( 4.4387)
             +(( .0499*D83+D84 )-( .0468* 1 &LAG D83+D84 ))
              ( 1.1732)
             +(( .1955*D98 )-( .1834* 1 &LAG D98 ))
              ( 3.2265)

  RHO = .9379  T-VALUE(RHO) = 15.6055  DW = .4840
  SE = .0433  R-SQ(ADJ) = .9993  F-STAT = 21695.9377
```

```
A7-21. &LOG A7PY  [1982-1998]
  &LOG A7PY  =-.3976     +.2076*(&LOG A7PM ) +.8918*(1 &LAG &LOG
A7PY )
             (-4.5425)  (4.0897)          (22.1244)
            -.0413*(D85 ) -.1902*(D98 )
             (-2.4977)    (-10.7735)

  SE=.0154  H-STAT=1.1084  R-SQ(ADJ)=.9976  F-STAT=1629.7886
```

D.2. China (CN) SG Model

D.2.1. Import Functions

```
CN-1. &LOG CNMA7D  [1989-1998]
  &LOG CNMA7D  =-2.0516   +.4173 *(&LOG CNYD * A7YD )
               (-.3117)  (1.6963)
              -1.5009*(&LOG (CNPM*CNPMP3)/CNPY )
               (-16.6279)

  SE=.0769  DW=2.4461  R-SQ(ADJ)=.9860  F-STAT=318.0811

CN-2. CNMA7 [1989-1998]
    CNMA7 = CNMA7D + DCMA

CN-3. &LOG CNMJP  [1989-1998]
  &LOG CNMJP  =-36.3664    +1.6145 *(&LOG CNYD * JPYD )
              (-10.4657)  (13.3768)
             -.9589 *(&LOG CNPM/CNPY ) +.3082 *(D94 )
              (-19.0865)             (6.8575)

  SE=.0421  DW=1.5920  R-SQ(ADJ)=.9953  F-STAT=642.1078

CN-4. &LOG CNMKR  [1991-1998]
  &LOG CNMKR  =-4.6452    +.3284 *(&LOG CNYD * KRYD )
              (-1.3570)  (2.5356)
             +.5829 *(1 &LAG &LOG CNMKR ) -.4339 *(&LOG CNPM/CNPY )
              (15.9450)                 (-2.9853)

  SE=.0508  H-STAT=-1.3228  R-SQ(ADJ)=.9977  F-STAT=998.1000
```

```
CN-5. &LOG CNMOC  [1990-1998]
  &LOG CNMOC  = 1.1802  +.3882 *(&LOG CNYD * OCYD )
              (.1520)  (1.2549)
             -.4286 *(1 &LAG &LOG CNMOC ) -1.4946*(&LOG CNPM/CNPY )
              (-2.1968)                  (-7.2996)

  SE=.0714  H-STAT=-.7300  R-SQ(ADJ)=.9746  F-STAT=103.5224

CN-6. &LOG CNMLA  [1992-1998]
  &LOG CNMLA  =-17.7076  +.9671 *(&LOG CNYD * LAYD ) -.5323 *(&LOG
CNPM/CNPY )
              (-.8199)  (1.1288)                (-1.3398)

  SE=.2319  DW=2.2309  R-SQ(ADJ)=.6104  F-STAT=5.6996

CN-7. CNMWL [1989-1998]
    CNMWL = CNMA7+CNMJP+CNMLA+CNMNF+CNMKR+CNMHK
       +CNMTW +CNMOC+CNMRU+CNMRW

CN-8. CNMVWL [1989-1998]
    CNMVWL = CNMWL*CNPM/100
```

D.2.2. National Accounts

```
CN-9. &LOG CNMD  [1989-1998]
  &LOG CNMD  =-2.4655    +1.0315*(&LOG CNMWL )
             (-13.2857)  (20.6011)
             +.1850 *(1 &LAG &LOG CNMD )
             (4.3061)

  SE=.0220  H-STAT=.4429  R-SQ(ADJ)=.9986  F-STAT=3320.7924
```

```
CN-10. &LOG CNXD  [1989-1998]
  &LOG CNXD  =-1.7233    +.4424 *(&LOG WLMCN )
              (-2.5519)  (2.8473)
              +.6985 *(1 &LAG &LOG CNXD )
              (5.2140)

  SE=.0754  H-STAT=-.6675  R-SQ(ADJ)=.9839  F-STAT=276.0058

CN-11. CNDDD [1980-1998]
    CNDDD = CNDD + CNDDEX

CN-12. CNYD [1980-1998]
    CNYD = CNDDD + CNXD - CNMD

CN-13. CNYDV [1980-1998]
    CNYDV = CNYD*CNPY/100
```

D.2.3. Prices

```
CN-14. &LOG CNPX  [1981-1998]
  &LOG CNPX  = .1942   +.4735*(&LOG CNPM ) +.4811*(1 &LAG &LOG CNPX )
              (.6370)  (6.8972)           (5.5349)

  SE=.0334  H-STAT=-.2682  R-SQ(ADJ)=.9252  F-STAT=106.1381

CN-15. &LOG CNPY  [1981-1998]
  &LOG CNPY  =-1.0014 +.2440 *(&LOG CNPM ) +.9945 *(1 &LAG &LOG CNPY )
             (-3.5433) (3.6878)           (40.4413)

  SE=.0399  H-STAT=1.6043  R-SQ(ADJ)=.9911  F-STAT=947.7829
```

D.3. Japan (JP) SG Model

D.3.1. Import Functions

```
JP-1. &LOG JPMA7D  [1990-1998]
  &LOG JPMA7D  =-7.4594    +.4603 *(&LOG JPYD * A7YD )
               (-3.2916)  (6.3586)
              +.4693 *(1 &LAG &LOG JPMA7 )
               (8.8127)
              -.2548 *(&LOG (JPPM*JPPMP3)/JPPY )
              (-1.3050)
              -.0720 *(D92 )
               (-2.2026)

  SE=.0297  DW=2.5760  R-SQ(ADJ)=.9888  F-STAT=177.2312

JP-2. JPMA7 [1989-1998]
    JPMA7 = JPMA7D + DJMA

JP-3. &LOG JPMCN  [1989-1998]
  &LOG JPMCN  =-23.5043   +1.1803 *(&LOG JPYD * CNYD )
              (-1.0399)  (1.5073)
             -2.9802 *(&LOG JPPM/JPPY ) -.4953 *(D93 )
              (-3.3585)               (-2.1874)

  SE=.1945  DW=1.6268  R-SQ(ADJ)=.8932  F-STAT=26.0850

JP-4. &LOG JPMKRD  [1989-1998]
  &LOG JPMKRD  =-1.8038   +.4008 *(&LOG JPYD * KRYD )
               (-.3958)  (2.4913)
              -.6571 *(&LOG (JPPM*JPPMP2)/JPPY )
               (-1.9369)

  SE=.0983  DW=1.1599  R-SQ(ADJ)=.7877  F-STAT=17.6980

JP-5. JPMKR [1989-1998]
    JPMKR = JPMKRD + DJMK
```

```
JP-6. &LOG JPMTW  [1990-1998]
  &LOG JPMTW  =-13.4682   +.7307 *(&LOG JPYD * TWYD )
              (-3.8008)  (4.7277)
             +.2720 *(1 &LAG &LOG JPMTW )
              (1.7866)

  SE=.0877  H-STAT=.6281  R-SQ(ADJ)=.8804  F-STAT=30.4391

JP-7. &LOG JPMNF  [1990-1998]
  &LOG JPMNF  =-16.8471   +.7337 *(&LOG JPYD * NFYD )
              (-6.5798)  (7.6257)
             +.4610 *(1 &LAG &LOG JPMNF )
              (6.6996)

  SE=.0374  H-STAT=.7481  R-SQ(ADJ)=.9738  F-STAT=149.9531

JP-8. &LOG JPMOC  [1989-1998]
  &LOG JPMOC  =-2.7352    +.4395 *(&LOG JPYD * OCYD )
              (-1.0597)  (4.8172)
              -.7053 *(&LOG JPPM/JPPY )
              (-5.7382)

  SE=.0287  DW=1.5139  R-SQ(ADJ)=.9733  F-STAT=164.8825

JP-9. &LOG JPMLA  [1992-1998]
  &LOG JPMLA  =-30.6889   +1.4318 *(&LOG JPYD * LAYD )
              (-4.1428)  (5.2037)

  SE=.1045  DW=.6719  R-SQ(ADJ)=.8130  F-STAT=27.0786

JP-10. JPMWL [1989-1998]
    JPMWL = JPMA7+JPMCN+JPMLA+JPMNF+JPMKR+JPMHK
              +JPMTW+JPMOC+JPMRU+JPMRW

JP-11. JPMVWL [1989-1998]
    JPMVWL = JPMWL*JPPM/100
```

D.3.2. National Accounts

```
JP-12. &LOG JPMD  [1989-1998]
  &LOG JPMD  = .7470    +.9569*(&LOG JPMWL )
             (5.0145)  (79.4518)

  SE=.0092  DW=2.1371  R-SQ(ADJ)=.9986  F-STAT=6312.5829

JP-13. &LOG JPXD  [1989-1998]
  &LOG JPXD  =-6.4837    +1.4906*(&LOG WLMJP )
             (-3.6902)  (10.9698)

  SE=.0627  DW=1.0435  R-SQ(ADJ)=.9299  F-STAT=120.3372

JP-14. JPDDD [1980-1998]
    JPDDD = JPDD + JPDDEX

JP-15. JPYD [1980-1998]
    JPYD = JPDDD + JPXD - JPMD

JP-16. JPYDV [1980-1998]
    JPYDV = JPYD*JPPY/100
```

D.3.3. Prices

```
JP-17. &LOG JPPY  [1982-1998]
  &LOG JPPY  =-8.4454    +.4223 *(&LOG JPPM ) +.7265 *(&LOG JPDDD )
             (-3.3564)  (2.8340)           (6.0178)
            -.0866 *(D94+D95 ) +.1029 *(D97+D98 )
             (-2.4881)         (3.4379)

  SE=.0375  DW=1.5167  R-SQ(ADJ)=.9438  F-STAT=68.2200
```

D.4. Hong Kong (HK) SG Model

D.4.1. Import Functions

```
HK-1. &LOG HKMA7  [1989-1998]
  &LOG HKMA7  =-11.3194   +.8370 *(&LOG HKYD * A7YD )
               (-2.8390)  (5.2417)
              -2.1479 *(&LOG HKPM/HKPY )
               (-5.1737)

  SE=.0700  DW=1.7734  R-SQ(ADJ)=.9786  F-STAT=206.3862

HK-2. &LOG HKMJP  [1989-1998]
  &LOG HKMJP  =-9.7512    +.7343 *(&LOG HKYD * JPYD )
               (-2.6370)  (5.3608)
               -.4281 *(&LOG HKPM/HKPY )
               (-1.0947)

  SE=.0676  DW=1.6363  R-SQ(ADJ)=.9445  F-STAT=77.5410

HK-3. &LOG HKMKR  [1989-1998]
  &LOG HKMKR  =-3.2297   +.4913 *(&LOG HKYD * KRYD )
               (-.8506)  (3.1949)
              -2.2740*(&LOG HKPM/HKPY )
              (-5.8894)

  SE=.0874  DW=2.2667  R-SQ(ADJ)=.9476  F-STAT=82.4276

HK-4. &LOG HKMTW  [1989-1998]
  &LOG HKMTW  =(( -.7565* 1 &LAG &LOG HKMTW )+ -23.2895- 17.6191)
               ( -30.9566)
              +(( 1.3780*&LOG HKYD * TWYD )
               (  44.1207)
               -( -1.0425* 1 &LAG &LOG HKYD * TWYD ))

  RHO = -.7565  T-VALUE(RHO) = -3.3781  DW = 1.9163
  SE = .0191  R-SQ(ADJ) = 1.0000  F-STAT = 1869696.0388
```

```
HK-5. &LOG HKMOC  [1989-1998]
  &LOG HKMOC  =-15.5908   +.9361 *(&LOG HKYD * OCYD )
              (-2.9394)  (4.3616)
             -1.6790 *(&LOG HKPM/HKPY )
              (-4.0232)

  SE=.0550  DW=2.5531  R-SQ(ADJ)=.9803  F-STAT=225.2701

HK-6. HKMWL [1989-1998]
    HKMWL = HKMA7+HKMCN+HKMJP+HKMLA+HKMNF+HKMKR+HKMHK
             +HKMTW+HKMOC+HKMRU+HKMRW

HK-7. HKMVWL [1989-1998]
    HKMVWL = HKMWL*HKPM/100
```

D.4.2. National Accounts

```
HK-8. &LOG HKMD  [1989-1998]
  &LOG HKMD  = .3990    +.9761*(&LOG HKMWL ) +.0108*(D98 )
              (9.9307)  (288.1423)          (2.8371)

  SE=.0034  DW=2.0822  R-SQ(ADJ)=.9999  F-STAT=46380.9973

HK-9. &LOG HKXD  [1989-1998]
  &LOG HKXD  =-3.4030    +.4188 *(&LOG WLMHK )
              (-1.6532)  (2.1094)
              +.9094 *(1 &LAG &LOG HKXD ) -.1687 *(D98 )
             (25.2757)                    (-3.8847)

  SE=.0314  H-STAT=1.4837  R-SQ(ADJ)=.9898  F-STAT=292.4229

HK-10. HKDDD [1980-1998]
    HKDDD = HKDD + HKDDEX
```

```
HK-11. HKYD [1980-1998]
    HKYD = HKDDD + HKXD - HKMD

HK-12. HKYDV [1980-1998]
    HKYDV = HKYD*HKPY/100
```

D.4.3. Prices

```
HK-13. &LOG HKPY  [1981-1998]
  &LOG HKPY  =-.4937    +.3105*(&LOG HKPM )
              (-1.4289)  (2.3785)
              +.8039*(1 &LAG &LOG HKPY )
              (12.5652)

  SE=.0325  H-STAT=.5204  R-SQ(ADJ)=.9884  F-STAT=725.8996
```

D.5. Korea (KR) SG Model

D.5.1. Import Functions

```
KR-1. &LOG KRMA7D  [1989-1998]
  &LOG KRMA7D  = 7.7914   +.0536 *(&LOG KRYD * A7YD )
                 (1.4385)  (.2602)
                -2.0117*(&LOG (KRPM*KRPMP3)/KRPY ) -.1893 *(D94 )
                 (-4.2177)                      (-1.9094)

  SE=.0902  DW=1.1507  R-SQ(ADJ)=.8904  F-STAT=25.3822

KR-2. KRMA7 [1989-1998]
    KRMA7 = KRMA7D + DKMA

KR-3. &LOG KRMCN  [1992-1998]
  &LOG KRMCN  =-28.7967   +1.3053 *(&LOG KRYD * CNYD )
                (-1.9149)  (2.2295)
               +.3375 *(1 &LAG &LOG KRMCN )
                (1.2371)

  SE=.2242  H-STAT=-.1418  R-SQ(ADJ)=.5245  F-STAT=4.3093

KR-4. &LOG KRMJP  [1989-1998]
  &LOG KRMJP  =-5.5449    +.5574 *(&LOG KRYD * JPYD )
                (-1.0563)  (3.0087)
               -.0901 *(&LOG (KRPM*KRPMP2)/KRPY ) -.1631 *(D93 )
                (-.2314)                       (-2.3679)
               -.4712 *(D98 )
                (-5.6500)

  SE=.0635  DW=2.4382  R-SQ(ADJ)=.9495  F-STAT=43.3031
```

```
KR-5. &LOG KRMHK  [1989-1998]
  &LOG KRMHK  =-11.8509   +1.4336 *(&LOG KRYD )
              (-1.3774)  (2.1682)
              -.0045 *(&LOG KRPM/KRPY )
             (-.0053)

  SE=.2121  DW=1.3152  R-SQ(ADJ)=.5107  F-STAT=5.6970

KR-6. &LOG KRMTW  [1990-1998]
  &LOG KRMTW  =-50.0767   +2.3110 *(&LOG KRYD * TWYD )
              (-2.3104)  (2.5772)
             -.1414 *(1 &LAG &LOG KRMTW ) +2.5447 *(&LOG KRPM/KRPY )
              (-.5679)                   (1.2995)

  SE=.1467  H-STAT=.0901  R-SQ(ADJ)=.7902  F-STAT=11.0452

KR-7. &LOG KRMNF  [1989-1998]
  &LOG KRMNF  =-24.6336   +1.2444 *(&LOG KRYD * NFYD )
              (-8.4306)  (12.6616)
             -.2385 *(&LOG KRPM )
             (-1.9302)
             -.1450 *(D93 )
              (-2.4352)

  SE=.0557  DW=2.0775  R-SQ(ADJ)=.9496  F-STAT=57.4744

KR-8. &LOG KRMOC  [1989-1998]
  &LOG KRMOC  =-4.2608   +.4964 *(&LOG KRYD * OCYD )
              (-.6977)  (2.1109)
             -1.1978*(&LOG KRPM/KRPY )
             (-2.9361)

  SE=.1083  DW=.4304  R-SQ(ADJ)=.8316  F-STAT=23.2300
```

```
KR-9. KRMWL [1989-1998]
    KRMWL = KRMA7+KRMCN+KRMJP+KRMLA+KRMNF+KRMHK
              +KRMTW+KRMOC+KRMRU+KRMRW

KR-10. KRMVWL [1989-1998]
    KRMVWL = KRMWL*KRPM/100
```

D.5.2. National Accounts

```
KR-11. &LOG KRMD  [1989-1998]
  &LOG KRMD  =-.9749    +1.0947*(&LOG KRMWL ) +.1160 *(D98 )
              (-2.4583)  (31.8719)           (3.8188)

  SE=.0249  DW=1.9611  R-SQ(ADJ)=.9927  F-STAT=609.2633

KR-12. &LOG KRXD  [1989-1998]
  &LOG KRXD  = .0296   +1.0163*(&LOG WLMKR ) -.4338 *(D98 )
              (.0351)  (13.7277)           (-6.2589)

  SE=.0564  DW=1.5824  R-SQ(ADJ)=.9542  F-STAT=94.6514

KR-13. KRDDD [1980-1998]
    KRDDD = KRDD + KRDDEX

KR-14. KRYD [1980-1998]
    KRYD = KRDDD + KRXD - KRMD

KR-15. KRYDV [1980-1998]
    KRYDV = KRYD*KRPY/100
```

D.5.3. Prices

```
KR-16. &LOG KRPX  [1980-1998]
  &LOG KRPX  =(( .8476* 1 &LAG &LOG KRPX )+ 2.3087- 1.9569)
              ( 8.3928)
             +(( .5049*&LOG KRPY )-( .4280* 1 &LAG &LOG KRPY ))
              ( 7.6220)
             +(( .2410*D98 )-( .2043* 1 &LAG D98 ))
              ( 7.2389)

  RHO = .8476  T-VALUE(RHO) = 7.7373  DW = 1.7542
  SE = .0207  R-SQ(ADJ) = .9998  F-STAT = 138087.1759

KR-17. &LOG KRPY  [1980-1998]
  &LOG KRPY  =(( .9835* 1 &LAG &LOG KRPY )+ -.2954- -.2905)
              (  -.2412)
             +(( .9885*&LOG KRPM )-( .9722* 1 &LAG &LOG KRPM ))
              (  3.7059)
             +(( -.0422*D85 )-( -.0415* 1 &LAG D85 ))
              (  -.9391)
             +(( -.1912*D98 )-( -.1880* 1 &LAG D98 ))
              ( -2.0941)

  RHO = .9835  T-VALUE(RHO) = 44.1233  DW = .5886
  SE = .0625  R-SQ(ADJ) = .9985  F-STAT = 9809.5300
```

D.6. Taiwan (TW) SG Model

D.6.1. Import Functions

```
TW-1. &LOG TWMA7  [1990-1998]
  &LOG TWMA7  =-3.1192    +.2449 *(&LOG TWYD * A7YD )
               (-1.1821)  (2.0752)
              +.6602 *(1 &LAG &LOG TWMA7 ) -.4276 *(&LOG TWPM/TWPY )
               (9.5407)                   (-1.1308)
              +.1657 *(D97 )
               (2.8523)

  SE=.0513  H-STAT=-1.6484  R-SQ(ADJ)=.9811  F-STAT=104.8260

TW-2. &LOG TWMCN  [1990-1998]
  &LOG TWMCN  =-88.2340   +3.6942 *(&LOG TWYD * CNYD )
               (-4.0205)  (4.3583)

  SE=.4818  DW=1.7059  R-SQ(ADJ)=.6922  F-STAT=18.9947

TW-3. &LOG TWMJP  [1989-1998]
  &LOG TWMJP  =-3.8438    +.5057 *(&LOG TWYD * JPYD )
               (-1.5691)  (5.6601)
              -1.0537*(&LOG TWPM/TWPY )
              (-2.7376)

  SE=.0627  DW=2.1235  R-SQ(ADJ)=.9054  F-STAT=44.0481

TW-4. &LOG TWMKR  [1990-1998]
  &LOG TWMKR  =-.8382    +.0858*(&LOG TWYD * KRYD )
               (-.1482)  (.3521)
              +.8469*(1 &LAG &LOG TWMKR )
                  (5.9216)
              -.7606*(&LOG TWPM/TWPY )
              (-.7491)

  SE=.1391  H-STAT=-1.2589  R-SQ(ADJ)=.9055  F-STAT=26.5485
```

```
TW-5. &LOG TWMOC  [1989-1998]
  &LOG TWMOC  =-10.5709   +.7307 *(&LOG TWYD * OCYD )
              (-2.2732)  (3.9605)
             -1.3090 *(&LOG TWPM/TWPY )
              (-2.7255)

  SE=.0829  DW=1.7038  R-SQ(ADJ)=.8322  F-STAT=23.3170

TW-6. &LOG TWMLA  [1989-1998]
  &LOG TWMLA  =-18.2112   +2.0211 *(&LOG TWYD )
              (-3.4898)  (4.7728)
             -.2437 *(&DIF &LOG TWPM ) -.3554 *(D98 )
            (-.2127)                   (-1.9411)

  SE=.1655  DW=2.4497  R-SQ(ADJ)=.7173  F-STAT=8.6109

TW-7. TWMWL [1989-1998]
    TWMWL = TWMA7+TWMCN+TWMJP+TWMLA+TWMNF+TWMKR+TWMHK
              +TWMOC+TWMRU+TWMRW

TW-8. TWMVWL [1989-1998]
    TWMVWL = TWMWL*TWPM/100
```

D.6.2. National Accounts

```
TW-9. &LOG TWMD  [1989-1998]
  &LOG TWMD  = 1.6964   +.8656 *(&LOG TWMWL ) +.0746 *(D98 )
              (2.1381)  (12.3886)           (1.3612)

  SE=.0495  DW=1.9989  R-SQ(ADJ)=.9525  F-STAT=91.1851
```

```
TW-10. &LOG TWXD  [1989-1998]
  &LOG TWXD  = 2.6589   +.7714 *(&LOG WLMTW )
             (2.2951)  (7.6920)

  SE=.0635  DW=1.4323  R-SQ(ADJ)=.8660  F-STAT=59.1669

TW-11. TWDDD [1986-1998]
    TWDDD = TWDD + TWDDEX

TW-12. TWYD [1986-1998]
    TWYD = TWDDD + TWXD - TWMD

TW-13. TWYDV [1986-1998]
    TWYDV = TWYD*TWPY/100
```

D.6.3. Prices

```
TW-14. &LOG TWPX  [1986-1998]
  &LOG TWPX  =(( .7885* 1 &LAG &LOG TWPX )+ 3.4987- 2.7587)
             ( 2.5682)
            +(( .2457*&LOG TWPY )-( .1937* 1 &LAG &LOG TWPY ))
             (  .8163)

  RHO = .7885  T-VALUE(RHO) = 4.7401  DW = 1.7244
  SE = .0243  R-SQ(ADJ) = .9998  F-STAT = 224832.3974
```

D.7. NAFTA 3 (NF) SG Model

D.7.1. Import Functions

```
NF-1. &LOG NFMA7  [1989-1998]
  &LOG NFMA7  =-56.1452    +2.2968 *(&LOG NFYD * A7YD )
               (-10.8438)  (12.9878)
              -4.4672 *(&LOG NFPM/NFPY ) +.4143 *(D98 )
               (-3.0848)                (3.0692)

  SE=.0689  DW=1.9904  R-SQ(ADJ)=.9688  F-STAT=94.1947

NF-2. &LOG NFMCN  [1990-1998]
  &LOG NFMCN  =-4.4176   +.1900 *(&LOG NFYD * CNYD )
               (-.9240)  (1.0896)
              +.9038 *(1 &LAG &LOG NFMCN ) -.4910 *(&LOG NFPM/NFPY )
               (19.0289)                   (-.8989)

  SE=.0464  H-STAT=-.4539  R-SQ(ADJ)=.9915  F-STAT=311.0341

NF-3. &LOG NFMJP  [1989-1998]
  &LOG NFMJP  =-3.1449    +.4770 *(&LOG NFYD * JPYD )
               (-2.9652)  (14.0269)
              -1.7673*(&LOG NFPM/NFPY )
              (-8.8050)

  SE=.0193  DW=2.0853  R-SQ(ADJ)=.9588  F-STAT=105.8172

NF-4. &LOG NFMKR  [1989-1998]
  &LOG NFMKR  =-8.4050    +.6368 *(&LOG NFYD * KRYD )
               (-1.0594)  (2.3271)
              -3.9751*(&LOG NFPM/NFPY )
              (-2.6544)

  SE=.0984  DW=1.6196  R-SQ(ADJ)=.3676  F-STAT=3.6153
```

```
NF-5. &LOG NFMTW  [1989-1998]
  &LOG NFMTW  = 4.1574   +.2158 *(&LOG NFYD * TWYD )
              (1.8513)  (2.7166)
             -1.6897*(&LOG NFPM/NFPY )
             (-3.5411)

  SE=.0493  DW=1.8599  R-SQ(ADJ)=.6437  F-STAT=9.1313

NF-6. &LOG NFMNF  [1990-1998]
  &LOG NFMNF  =-25.9347   +2.0424 *(&LOG NFYD )
              (-3.0552)  (3.0267)
             +.4891 *(1 &LAG &LOG NFMNF )
            (2.6062)

  SE=.0292  H-STAT=-.5751  R-SQ(ADJ)=.9775  F-STAT=174.5262

NF-7. &LOG NFMOC  [1989-1998]
  &LOG NFMOC  =-2.6786   +.3974 *(&LOG NFYD * OCYD )
              (-.3903)  (1.6722)
             -3.0844*(&LOG NFPM/NFPY )
             (-4.4850)

  SE=.0648  DW=1.6735  R-SQ(ADJ)=.6687  F-STAT=10.0848

NF-8. &LOG NFMLA  [1992-1998]
  &LOG NFMLA  =-37.9020    +1.6724 *(&LOG NFYD * LAYD )
              (-13.3383)  (16.2332)
             -2.7741 *(&LOG NFPM/NFPY )
              (-9.7982)

  SE=.0278  DW=3.1908  R-SQ(ADJ)=.9846  F-STAT=192.6246

NF-9. NFMWL [1989-1998]
    NFMWL = NFMA7+NFMCN+NFMJP+NFMLA+NFMNF+NFMKR+NFMHK
              +NFMTW+NFMOC+NFMRU+NFMRW
```

```
NF-10. NFMVWL [1989-1998]
    NFMVWL = NFMWL*NFPM/100
```

D.7.2. National Accounts

```
NF-11. &LOG NFMD  [1989-1998]
  &LOG NFMD  =(( .5107* 1 &LAG &LOG NFMD )+ 1.3350- .6817)
              (  3.7105)
             +(( .9161*&LOG NFMWL )-( .4679* 1 &LAG &LOG NFMWL ))
              ( 35.0474)

  RHO = .5107  T-VALUE(RHO) = 1.8054  DW = 1.4556
  SE = .0040  R-SQ(ADJ) = 1.0000  F-STAT = 73170170.0693

NF-12. &LOG NFXD  [1989-1998]
  &LOG NFXD  = 5.4053    +.6206 *(&LOG WLMNF )
              (15.4052)  (24.1003)

  SE=.0196  DW=1.9087  R-SQ(ADJ)=.9847  F-STAT=580.8249

NF-13. NFDDD [1988-1998]
    NFDDD = NFDD + NFDDEX

NF-14. NFYD [1988-1998]
    NFYD = NFDDD + NFXD - NFMD

NF-15. NFYDV [1988-1998]
    NFYDV = NFYD*NFPY/100
```

D.7.3. Prices

```
NF-16. &LOG NFPX  [1988-1998]
  &LOG NFPX  =(( -.0382* 1 &LAG &LOG NFPX )+ -1.3012- .0497)
              ( -2.9351)
             +(( 1.2755*&LOG NFPY )-( -.0487* 1 &LAG &LOG NFPY ))
              ( 13.0961)
             +(( -.0970*D98 )-( .0037* 1 &LAG D98 ))
              ( -3.3930)

  RHO = -.0382  T-VALUE(RHO) = -.1102  DW = 1.9546
  SE = .0096  R-SQ(ADJ) = 1.0000  F-STAT = 690669.7421

NF-17. &LOG NFPY  [1988-1998]
  &LOG NFPY  = .9179   +.8053*(&LOG NFPM ) +.0993*(D98 )
              (3.0021)  (11.8844)         (5.0093)

  SE=.0181  DW=2.0109  R-SQ(ADJ)=.9560  F-STAT=109.5976
```

D.8. Oceania (OC) SG Model

D.8.1. Import Functions

```
OC-1. &LOG OCMA7  [1990-1998]
  &LOG OCMA7  =-6.6580    +.3511 *(&LOG OCYD * A7YD )
               (-1.0208)  (1.6367)
              +.7144 *(1 &LAG &LOG OCMA7 ) -1.0989*(&LOG OCPM/OCPY )
               (2.8718)                   (-1.0098)

  SE=.0994  H-STAT=-.4206  R-SQ(ADJ)=.9084  F-STAT=27.4522

OC-2. &LOG OCMJP  [1990-1998]
  &LOG OCMJP  = 1.5655  +.1857 *(&LOG OCYD * JPYD )
               (.4885)  (1.9230)
              +.2632 *(1 &LAG &LOG OCMJP )
              (1.6170)
               -.6089 *(&DIF &LOG OCPM/OCPY )
              (-1.4862)

  SE=.0364  H-STAT=-.8277  R-SQ(ADJ)=.6808  F-STAT=6.6863

OC-3. &LOG OCMHK  [1989-1998]
  &LOG OCMHK  = 6.8910   +.3049 *(&LOG OCYD * HKYD )
               (2.0239)  (1.4928)
              -1.6832*(&LOG OCPM )
              (-2.2875)

  SE=.0907  DW=1.6013  R-SQ(ADJ)=.2697  F-STAT=2.6618

OC-4. &LOG OCMTW  [1990-1998]
  &LOG OCMTW  =-.1154    +.3058 *(&LOG OCYD * TWYD )
               (-.0883)  (5.9167)
              -1.0424*(&LOG OCPM/OCPY ) -.1543 *(D98 )
                  (-8.7968)             (-7.7752)

  SE=.0149  DW=2.7360  R-SQ(ADJ)=.9824  F-STAT=150.1419
```

```
OC-5. &LOG OCMNF  [1990-1998]
  &LOG OCMNF  =-29.3741   +1.2030 *(&LOG OCYD * NFYD )
              (-3.5377)  (3.8236)
             +.4480 *(1 &LAG &LOG OCMNF )
              (2.6313)

  SE=.0673  H-STAT=-.2908  R-SQ(ADJ)=.8459  F-STAT=22.9633

OC-6. &LOG OCMLA  [1992-1998]
  &LOG OCMLA  =-48.1228   +2.1381 *(&LOG OCYD * LAYD )
              (-8.1613)  (8.9308)
             -.1573 *(&DIF &LOG OCPM )
              (-.2043)

  SE=.0623  DW=2.1473  R-SQ(ADJ)=.9633  F-STAT=79.7216

OC-7. OCMWL [1989-1998]
    OCMWL = OCMA7+OCMCN+OCMJP+OCMLA+OCMNF+OCMKR+OCMHK
             +OCMTW+OCMOC+OCMRU+OCMRW

OC-8. OCMVWL [1989-1998]
    OCMVWL = OCMWL*OCPM/100
```

D.8.2. National Accounts

```
OC-9. &LOG OCMD  [1989-1998]
  &LOG OCMD  = .9401    +.9391*(&LOG OCMWL )
             (3.7723)  (41.7494)

  SE=.0112  DW=2.0647  R-SQ(ADJ)=.9949  F-STAT=1743.0109
```

```
OC-10. &LOG OCXD  [1990-1998]
  &LOG OCXD  =-2.2431    +1.2196*(&LOG WLMOC ) -.1824 *(D98 )
              (-2.0597)  (12.4596)           (-3.9146)

  SE=.0396  DW=2.2904  R-SQ(ADJ)=.9512  F-STAT=78.9830

OC-11. OCDDD [1981-1998]
    OCDDD = OCDD + OCDDEX

OC-12. OCYD [1981-1998]
    OCYD = OCDDD + OCXD - OCMD

OC-13. OCYDV [1981-1998]
    OCYDV = OCYD*OCPY/100
```

D.8.3. Prices

```
OC-14. &LOG OCPX  [1982-1998]
  &LOG OCPX  = .6760    +.1506*(&LOG OCPY ) +.7034*(1 &LAG &LOG OCPX )
              (2.5285)  (1.2883)           (5.6635)
             +.0784*(D88 )
              (1.9752)

  SE=.0383  H-STAT=-1.6094  R-SQ(ADJ)=.9264  F-STAT=68.1034

OC-15. &LOG OCPY  [1982-1998]
  &LOG OCPY  =-.2241    +.0677*(&LOG OCPM )
              (-3.2214)  (2.0396)
              +.9897*(1 &LAG &LOG OCPY )
             (29.2567)
             +.0380*(D84+D85 ) -.0306*(D91 )
              (4.8713)         (-3.2045)

  SE=.0092  H-STAT=-.9509  R-SQ(ADJ)=.9971  F-STAT=1386.3817
```

D.9. Latin America (LA) SG Model

D.9.1. Import Functions

```
LA-1. &LOG LAMA7  [1992-1998]
  &LOG LAMA7  =-12.9603   +.7494 *(&LOG LAYD * A7YD )
               (-3.0182)  (4.3486)
              -1.4173 *(&LOG LAPM/LAPY ) +.4527 *(D98 )
               (-3.7424)               (5.6721)

  SE=.0487  DW=3.7280  R-SQ(ADJ)=.8307  F-STAT=10.8105

LA-2. &LOG LAMHK  [1992-1998]
  &LOG LAMHK  =-42.6672   +2.0242 *(&LOG LAYD * HKYD )
               (-1.1154)  (1.2427)
              -1.4835 *(&LOG LAPM/LAPY )
               (-.3565)

  SE=.5079  DW=2.7702  R-SQ(ADJ)=.0166  F-STAT=1.0505

LA-3. &LOG LAMNF  [1992-1998]
  &LOG LAMNF  =-35.7423   +1.6133 *(&LOG LAYD * NFYD )
               (-4.8270)  (6.0097)
              +1.0080 *(&LOG LAPM/LAPY )
               (2.4038)

  SE=.0587  DW=1.9254  R-SQ(ADJ)=.9364  F-STAT=45.1360

LA-4. &LOG LAMTW  [1992-1998]
  &LOG LAMTW  =-2.0358   +.3258 *(&LOG LAYD * TWYD )
               (-.2794)  (1.0762)
              -.8798 *(&LOG LAPM/LAPY )
              (-1.5204)

  SE=.0802  DW=2.9050  R-SQ(ADJ)=.0557  F-STAT=1.1768
```

```
LA-5. LAMWL [1992-1998]
    LAMWL = LAMA7+LAMCN+LAMJP+LAMLA+LAMNF+LAMKR+LAMHK
              +LAMTW+LAMOC+LAMRU+LAMRW

LA-6. LAMVWL [1992-1998]
    LAMVWL = LAMWL*LAPM/100
```

D.9.2. National Accounts

```
LA-7. &LOG LAMD  [1992-1998]
  &LOG LAMD  = .3052   +.9910*(&LOG LAMWL ) +.0156*(D98 )
               (.6891)  (22.2660)          (1.1807)

  SE=.0122  DW=2.9965  R-SQ(ADJ)=.9882  F-STAT=251.5665

LA-8. &LOG LAXD  [1992-1998]
  &LOG LAXD  = 5.8190   +.4311 *(&LOG WLMLA )
               (7.0499)  (5.1838)

  SE=.0423  DW=2.3050  R-SQ(ADJ)=.8117  F-STAT=26.8722

LA-8. LADDD [1992-1998]
    LADDD = LADD + LADDEX

LA-9. LAYD [1992-1998]
    LAYD = LADDD + LAXD - LAMD


LA-10. LAYDV [1992-1998]
    LAYDV = LAYD*LAPY/100
```

D.10. Russia (RU) SG Model

D.10.1. Import Functions

```
RU-1. RUMWL [1992-1998]
    RUMWL = RUMA7+RUMCN+RUMJP+RUMLA+RUMNF+RUMKR+RUMHK
              +RUMTW+RUMOC+RUMRW

RU-2. RUMVWL [1993-1998]
    RUMVWL = RUMWL*RUPM/100
```

D.10.2. National Accounts

```
RU-3. RUYDV [1993-1998]
    RUYDV = RUYD*RUPY/100
```

D.11. APEC Region

```
AP-1. APMWL [1992-1998]
    APMWL = CNMWL + JPMWL + HKMWL + KRMWL + TWMWL + A7MWL
              + NFMWL + OCMWL + LAMWL + RUMWL

AP-2. APYD [1993-1998]
    APYD = CNYD + JPYD + HKYD + KRYD + TWYD + A7YD + NFYD
              + OCYD + LAYD + RUYD

AP-3. APMVWL [1989-1998]
    APMVWL = CNMVWL + JPMVWL + HKMVWL + KRMVWL + TWMVWL + A7MVWL
              + NFMVWL + OCMVWL + LAMVWL + RUMVWL

AP-4. APYDV [1993-1998]
    APYDV = CNYDV + JPYDV + HKYDV + KRYDV + TWYDV + A7YDV + NFYDV
              + OCYDV + LAYDV + RUYDV

AP-5. APPM [1992-1998]
    APPM = APMVWL/APMWL/100

AP-6. APPY [1993-1998]
    APPY = APYDV/APYD/100
```

D.12. World Total

```
WL-1. WLMVWL [1989-1998]
    WLMVWL = A7MVWL+CNMVWL+JPMVWL+HKMVWL+KRMVWL
              +TWMVWL+NFMVWL+OCMVWL+LAMVWL+RUMVWL+RWMVWL
```

D.13. Trade Model

D.13.1. World Import Definitions (Link Block)

```
TR-1. WLMA7 [1993-1998]
   WLMA7 = A7MA7 + CNMA7 + JPMA7 + HKMA7 + KRMA7 + TWMA7
            + NFMA7 + OCMA7 + LAMA7 + RUMA7 + RWMA7

TR-2. WLMCN [1993-1998]
   WLMCN = A7MCN + CNMCN + JPMCN + HKMCN + KRMCN + TWMCN
            + NFMCN + OCMCN + LAMCN + RUMCN + RWMCN

TR-3. WLMJP [1993-1998]
   WLMJP = A7MJP + CNMJP + JPMJP + HKMJP + KRMJP + TWMJP
            + NFMJP + OCMJP + LAMJP + RUMJP + RWMJP

TR-4. WLMHK [1993-1998]
   WLMHK = A7MHK + CNMHK + JPMHK + HKMHK + KRMHK + TWMHK
            + NFMHK + OCMHK + LAMHK + RUMHK + RWMHK

TR-4. WLMKR [1993-1998]
   WLMKR = A7MKR + CNMKR + JPMKR + HKMKR + KRMKR + TWMKR
            + NFMKR + OCMKR + LAMKR + RUMKR + RWMKR

TR-5. WLMTW [1993-1998]
   WLMTW = A7MTW + CNMTW + JPMTW + HKMTW + KRMTW + TWMTW
            + NFMTW + OCMTW + LAMTW + RUMTW + RWMTW

TR-6. WLMNF [1993-1998]
   WLMNF = A7MNF + CNMNF + JPMNF + HKMNF + KRMNF + TWMNF
            + NFMNF + OCMNF + LAMNF + RUMNF + RWMNF

TR-7. WLMOC [1993-1998]
   WLMOC = A7MOC + CNMOC + JPMOC + HKMOC + KRMOC + TWMOC
            + NFMOC + OCMOC + LAMOC + RUMOC + RWMOC
```

```
TR-8. WLMLA [1993-1998]
   WLMLA = A7MLA + CNMLA + JPMLA + HKMLA + KRMLA + TWMLA + NFMLA
           + OCMLA + LAMLA + RUMLA + RWMLA

TR-9. WLMRU [1993-1998]
   WLMRU = A7MRU + CNMRU + JPMRU + HKMRU + KRMRU + TWMRU + NFMRU
           + OCMRU + LAMRU + RUMRU + RWMRU
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D.13.2. Import Price Definitions

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TR-10. A7AP95 [1993-1998]
   A7AP95= ( (A7PX*0.1823)+(CNPX*0.0295)+(JPPX*0.2429)
           +(HKPX*0.0249)+(KRPX*0.0461)+(TWPX*0.0449)
           +(NFPX*0.1492)+(OCPX*0.0269)+(LAPX*0.0031)
           +(RUPX*0.0018 ))

TR-11. CNAP95 [1993-1998]
   CNAP95= ( (A7PX*0.0737)+(JPPX*0.2195)+(HKPX*0.0651)
           +(KRPX*0.0778)+(TWPX*0. 0030)+(NFPX*0.1438)
           +(OCPX*0.0228)+(LAPX*0.0052)+(RUPX*0.0287))

TR-12. JPAP95 [1993-1998]
   JPAP95= ( (A7PX*0.1437)+(CNPX*0.1069)+(HKPX*0.0081)
           +(KRPX*0.0516)+(TWPX*0.0419)+(NFPX*0.2627)
           +(OCPX*0.0529)+(LAPX*0.0112)+(RUPX*0.0141))

TR-13. HKAP95 [1993-1998]
   HKAP95= ( (A7PX*0.0996)+(CNPX*0.3618)+(JPPX*0.1484)
           +(KRPX*0.0491)+(TWPX*0.1449)+(NFPX*0.0846)
           +(OCPX*0.0118)+(LAPX*0.0007)+(RUPX*0.0025))

TR-14. KRAP95 [1993-1998]
   KRAP95= ( (A7PX*0.0706)+(CNPX*0.0547)+(JPPX*0.2412)
           +(HKPX*0.0061)+(TWPX*0.0204)+(NFPX*0.2464)
           +(OCPX*0.0439)+(LAPX*0.0076)+(RUPX*0.0141))
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TR-15. TWAP95 [1993-1998]
   TWAP95= ( (A7PX*0.1013)+(CNPX*0.0299) +(JPPX*0.2923)
            +(HKPX*0.0178)+(KRPX*0.0418)+(NFPX*0.2185)
            +(OCPX*0.0293)+(LAPX*0.0118) +(RUPX*0.0157))

TR-16. NFAP95 [1993-1998]
   NFAP95= ( (A7PX*0.0686)+(CNPX*0.0520)+(JPPX*0.1387)
            +(HKPX*0.0118)+(KRPX*0.0280)+(TWPX*0.0300)
            +(NFPX*0.3767)+(OCPX*0.0065)+(LAPX*0.0041)
            +(RUPX*0.0046 ))

TR-17. OCAP95 [1993-1998]
   OCAP95= ( (A7PX*0.0836)+(CNPX*0.0464)+(JPPX*0.1504)
            +(HKPX*0.0128)+(KRPX*0.0263)+(TWPX*0.0297)
            +(NFPX*0.2303)+(OCPX*0.1005)+(LAPX*0.0016)
            +(RUPX*0.0004 ))

TR-18. LAAP95 [1993-1998]
   LAAP95= ( (A7PX*0.0152)+(CNPX*0.0241)+(JPPX*0.0608)
            +(HKPX*0.0069)+(KRPX*0.0307)+(TWPX*0.0158)
            +(NFPX*0.3077)+(OCPX*0.0100)+(LAPX*0.0312)
            +(RUPX*0.0013 ))

TR-19. RUAP95 [1993-1998]
   RUAP95 =((A7PX*0.0101)+(CNPX*0.0186)+(JPPX*0.0164)
            +(HKPX*0.0020)+(KRPX*0.0108)+(TWPX*0.0040)
            +(NFPX*0.0625)+(OCPX*0.0053)+(LAPX*0.0020)
            +(RUPX*0.0000))

TR-20. A7PM [1993-1998]
   A7PM = A7AP95 * A7RW95

TR-21. CNPM [1993-1998]
   CNPM = CNAP95 * CNRW95
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TR-22. JPPM [1993-1998]
    JPPM = JPAP95 * JPRW95

TR-23. HKPM [1993-1998]
    HKPM = HKAP95 * HKRW95

TR-24. KRPM [1993-1998]
    KRPM = KRAP95 * KRRW95

TR-25. TWPM [1993-1998]
    TWPM = TWAP95 * TWRW95

TR-26. NFPM [1993-1998]
    NFPM = NFAP95 * NFRW95

TR-27. OCPM [1993-1998]
    OCPM = OCAP95 * OCRW95

TR-28. LAPM [1993-1998]
    LAPM = LAAP95 * LARW95

TR-29. RUPM [1993-1998]
    RUPM = RUAP95 * RURW95
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