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The Effect of Japan-Korea Free Trade Area

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Introduction Growing interest in free trade area between Japan and Korea

In a last few years since Asian economic crisis in 1997 attacked Korean economy heavily, interests in bilateral free trade area between Japan and Korea are growing.

Japanese export to the world amounts US$479,284 millions, of which the export to Korea is US$30,699 millions in 1999.[1] The share of Japanese export to Korea is 6.4 percent.

Japanese import from the world amounts US$ 379,718 millions, of which the import from Korea is US$20,452 millions. The share of Japanese import from Korea is 5.4 percent.

Contrary to this, Korean export to the world amounts US$143,686 millions, of which the export to Japan is US$ 12,238 millions in 1998. The share of Korean export to Japan is 8.5 percent.

Korean import from the world amounts US$119,752 millions, of which the import from Japan is US$16,840 millions. The share of Korean import from Japan is 14.1 percent.

This paper analyses the effects of free trade area between Japan and Korea on trade, output, employment and so on in Japanese side in terms of the input-output analytical methods built for Japanese economy. Japanese domestic economy is calculated in JIDEA model[2] which we have built in a last few years. This model is linked to BTM in INFORUM to get the import price ("pim" in our JIDEA model) and the export demand.

1. Discriminatory trade with Korea to remove import tariff

The price of imported foreign products is a weighted average of the price of Korean products and the price of the ROW (the rest of the world)'s products. The relative price, then, is defined as the ratio of the foreign price to the domestic price. Before the formation of Japan-Korea Free Trade Area, the relative price R is a real exchange rate described as follows;

$R = P_m^* \quad e / P_d$

where P_m^* *is the price of imported foreign products in dollar terms inclusive of import tariff, e the nominal exchange rate in terms of Japanese Yen, and* P_d *is the price of domestic products. Such relative price is assumed to change at the year 2000 as the result of supposed Japan-Korea Free Trade Area to remove mutual import tariffs.*

The value of Japanese total import consists of two parts of imports from Korea and the rest of the world.

$P_m^* \quad Q_m = P_{mk}^* \quad Q_{mk}^* + P_{mROW}^* \quad Q_{mROW}^*$

The price of imported foreign products is a weighted average of the prices of import from Korea and the rest of the world. The asterisk-attached variables denote for the variables before FTA inclusive of import tariff.

$P_m^* = P_{mk}^* \quad Q_{mk} / Q_m + P_{mROW}^* \quad Q_{mROW} / Q_m = P_{mk}^* \quad _k + P_{mROW}^* \quad _{ROW}$

$P_{mk}^* = \quad _j (1+t_j) P_{mkj} \quad _j$, *where* P_{mkj} *is the price of the j-th imported-goods from Korea,* $j = 1, 2, \quad , 63$, *tradable goods.*

The price of imported-products from Korea after the removal of tariff in Japan-Korea Free Trade Area for the individual imported-product is calculated in the following expression,

$P_{mkj} = P_{mkj}^* / (1+t_j)$.

The removal of import tariff works in a same way to decrease the relative price competitiveness as the appreciation of exchange rate.[3] Such tariff removal causes the inside shift of aggregate demand curve similar to the appreciation of exchange rate, to lead the decrease of Gross National Products.

The effect of free trade area was analyzed first by J.Viner.[4] Viner introduced the concepts of trade creation and trade diversion in his analysis. The effects of trade creation and trade diversion are the case of price change to be paraphrased in Slutsky's decomposition of Income and Substitution Effects. In our framework, these effects may be rewritten as follows;

Trade creation effect $= (P_{mk}^* \quad Q_{mk} + P_{mROW}^* \quad Q_{mROW}) / (P_{mk}^* \quad Q_{mk}^* + P_{mROW}^* \quad Q_{mROW}^*) > 1.$

Total trade change $= \{(P_{mk} \quad Q_{mk} + P_{mROW} \quad Q_{mROW}) - (P_{mk}^* \quad Q_{mk}^* + P_{mROW}^* \quad Q_{mROW}^*)\} / (P_{mk}^* \quad Q_{mk}^* +$

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[1] *The data for Japanese and Korean foreign trade were taken from White Paper 2001, METI, May 2001.*

[2] *Current version of Japanese Interindustry Dynamic Econometric Analysis, JIDEA is version 4.3 built by Institute for International Trade and Investment and Chuo University jointly.*

[3] *Rudiger Dornbusch, Open Economy Macroeconomics, Basic Books Inc., New York, 1982, Chapter 4.*

[4] *Jacob Viner, The Customs Union Issue, New York, 1950.*

P_{mROW}^{*} Q_{mROW}^{*}) ,

Trade diversion effect = Total trade change – Trade creation

$= \{(P_{mk}\ Q_{mk} + P_{mROW}\ Q_{mROW}) - (P_{mk}^{*}\ Q_{mk}^{*} + P_{mROW}^{*}\ Q_{mROW}^{*}) - (P_{mk}^{*}\ Q_{mk} + P_{mROW}^{*}\ Q_{mROW}) \} / (P_{mk}^{*}\ Q_{mk}^{*} + P_{mROW}^{*}\ Q_{mROW}^{*})$.

Therefore, the effect of trade creation corresponds to the Paasche index of quantity.[5]

Type of Import function by sector

There are 63 sectors in tradable industrial sectors in 102 sectors of JIDEA model to be regressed, of which sector 8, 10, 14, 42, 43 are the very small import from Korea and were also hard to estimate in the following equation types, so that these four sectors were omitted from our estimations of import function. Other 39 sectors are non-tradable sectors.

The Real import in the sector concerned from Korea is calculated as a product of the Japanese total real import in the sector concerned and the import share from Korea in the sector concerned. The following expression is a standard regression type to regress the real import in the 53rd sector (kimpr53) by the real domestic output in the sector concerned (ddtotr53) and the relative price for the sector concerned (relpri53) from 1988 to 1997. If these explanatory variables do not have a meaningful statistical values such as theoretical coefficient signs(positive ddtotr and negative relpri), proper t-values, and proper value of RSQ, the other type(type b and type e) of regressions were adopted. Nevertheless, we adopted the soft-constraints to depict the reasonable import function for each sector[6]*. There are 33 sectors which fit in type a regression.*

Import function by type a

```
f   kimpr53=impr53*kis53
f   relpri53 = pim53/pdd53
r   kimpr53 = ddtotr53, relpri53
ipch trf 53 a gr*
f pim53 = pim53
f impr53 = impr53
f trate53 = tfi53/imp53  #tariff rate in the sector concerned = tariff revenue
/ import
f tctariff53 = trate53{1995}
f predkimpr53 = depvar   #depvar is dependent variable
f kimpshare53 = predkimpr53/impr53
f tcpim53 = pim53/(1 + tctariff53)   #tcpim is the price of removed import
tariff in the sector concerned
f tcrelpri53 = tcpim53/pdd53
f tcpredkimp53 = rcoef{1981}+rcoef{1982}*ddtotr53+rcoef{1983}*tcrelpri53
f tckimpshare53 = tcpredkimp53/impr53
f tcrowimpshare53 = 1 - tckimpshare53
f tcpim53= (tckimpshare53*tcpim53 +
tcrowimpshare53*pim53)/(tckimpshare53{1990}*tcpim53{1990} +
tcrowimpshare53{1990}*pim53{1990})
:              53 Japanese Import Share from Korea; Communication equipment
  SEE   =       3.67 RSQ   = 0.8825 RHO =  -0.16 Obser  =   10 from 1988.000
  SEE+1 =       3.47 RBSQ  = 0.8489 DW  =   2.31 DoFree =    7 to   1997.000
  MAPE  =       6.72
    Variable name          Reg-Coef  Mexval t-value  Elas   NorRes     Mean
  0 kimpr53              - - - - - - - - - - - - - - - - - - - - - -     39.09
  1 intercept              39.76170    28.9   2.152   1.02    8.51      1.00
  2 ddtotr53                0.00286    92.9   4.364   0.77    1.73  10504.53
  3 relpri53              -36.92569    31.5  -2.261  -0.79    1.00      0.83
```

Import function by type b

The following expressions are to regress the real import in the 12th sector (kimpr12) by the time trend (timet) and the relative price for the sector concerned (relpri12) from 1988 to 1997. There are 5 sectors which fit in type b regression.

```
f   kimpr12=impr12*kis12
f   relpri12 = pim12/pdd12
r   kimpr12 = timet, relpri12
f trate12 = tfi12/imp12 #tariff rate in the sector concerned = tariff revenue /
import
```

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[5] *Jack Hirshleifer, Price Theory and Applications, 3rd ed., Prentice-Hall, Inc., 1984, p.164.*

[6] *Refer to Clopper Almon, The craft of Economic Modeling, Part I, Fourth Edition, August 1999, Chapter 5.*

```
f tctariff12 = trate12{1995}
f predkimpr12 = depvar   #depvar is dependent variable
f kimpshare12 = predkimpr12/impr12
f tcpim12 = pim12/(1 + tctariff12) #tcpim is the price of removed import tariff
in the sector concerned
f tcrelpri12 = tcpim12/pdd12
f tcpredkimp12 = rcoef{1981}+rcoef{1982}*timet+rcoef{1983}*tcrelpri12
f tckimpshare12 = tcpredkimp12/impr12
f tcrowimpshare12 = 1 - tckimpshare12
f tcpim12 = (tckimpshare12*tcpim12 +
tcrowimpshare12*pim12)/(tckimpshare12{1990}*tcpim12{1990} +
tcrowimpshare12{1990}*pim12{1990})
:              12 Japanese Import Share from Korea; Beverages
  SEE   =       3.53 RSQ   = 0.7029 RHO =   0.64 Obser  =   10 from 1988.000
  SEE+1 =       2.95 RBSQ  = 0.6180 DW  =   0.73 DoFree =    7 to   1997.000
  MAPE  =      37.34
    Variable name           Reg-Coef  Mexval t-value  Elas   NorRes     Mean
  0 kimpr12               - - - - - - - - - - - - - - - - - - - - -      8.42
  1 intercept              -70.60440    14.7  -1.486  -8.39    3.37      1.00
  2 timet                    1.06760    30.1   2.204  11.73    2.00     92.50
  3 relpri12               -23.43055    41.5  -2.650  -2.34    1.00      0.84
```

Import function by type e

The following expressions are to regress the real import in the 9th sector (kimpr9) by the real domestic output in the sector concerned (ddtotr9) only from 1988 to 1997. There is only one sector which fit in type e regression.

```
f   kimpr9=impr9*kis9
f   relpri9 = pim9/pdd9
r   kimpr9 = ddtotr9
f trate9 = tfi9/imp9  #tariff rate in the sector concerned = tariff revenue /
import
f tctariff9 = trate9{1995}
f predkimpr9 = depvar  #depvar is dependent variable
f kimpshare9 = predkimpr9/impr9
f tcpim9 = pim9/(1 + tctariff9) #tcpim is the price of removed import tariff in
the sector concerned
f tcrelpri9 = tcpim9/pdd9
f tcpredkimp9 = rcoef{1981}+rcoef{1982}*ddtotr9
f tckimpshare9 = tcpredkimp9/impr9
f tcrowimpshare9 = 1 - tckimpshare9
f             tcpim9             =             (tckimpshare9*tcpim9            +
tcrowimpshare9*pim9)/(tckimpshare9{1990}*tcpim9{1990}                           +
tcrowimpshare9{1990}*pim9{1990})

:              9 Japanese Import Share from Korea; Petroleum
  SEE   =       3.17 RSQ   = 0.4203 RHO =   0.60 Obser  =   10 from 1988.000
  SEE+1 =       2.67 RBSQ  = 0.3478 DW  =   0.81 DoFree =    8 to   1997.000
  MAPE  =      41.10
    Variable name           Reg-Coef  Mexval t-value  Elas   NorRes     Mean
  0 kimpr9                - - - - - - - - - - - - - - - - - - - - -      7.25
  1 intercept              -13.01716    13.7  -1.533  -1.80    1.73      1.00
  2 ddtotr9                  0.00351    31.3   2.408   2.80    1.00   5782.65
```

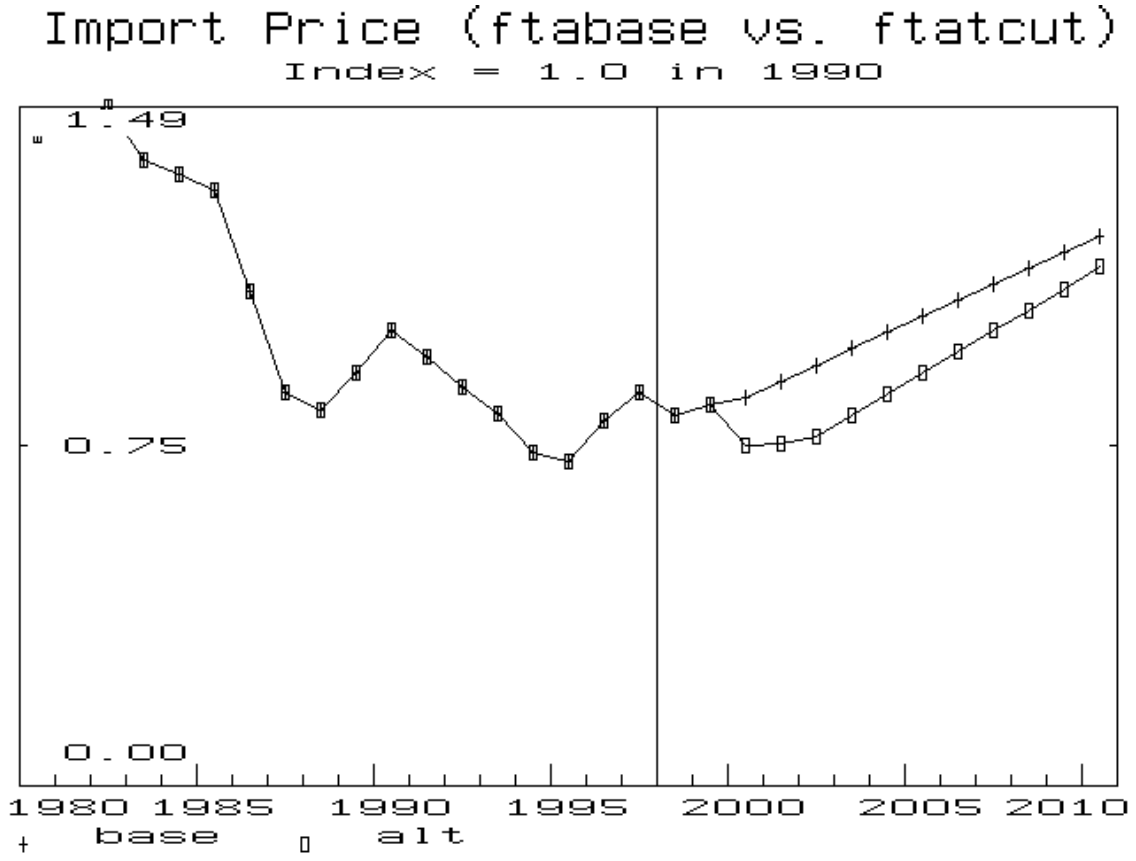
Import function by type e: type a with soft-constraint

The following expressions are to regress the real import in the 15th sector (kimpr15) by the real domestic output in the sector concerned (ddtotr15) and the relative price for the sector concerned (relpri15) with soft-constraints for the 2nd (ddtotr15) and 3rd (relpri15) variables from 1988 to 1997. There are 22 sectors which fit in type x regression to introduce the soft-constraints.

```
f   kimpr15=impr15*kis15
f   relpri15 = pim15/pdd15
con 100 -32.0 = a3  #soft-constraint for the 3rd variable
con 10000000 .02 = a2  #soft-constraint for the second variable
r   kimpr15 = ddtotr15, relpri15
f trate15 = tfi15/imp15  #tariff rate in the sector concerned = tariff revenue
/ import
f tctariff15 = trate15{1995}
f predkimpr15 = depvar
f kimpshare15 = predkimpr15/impr15
```

```
f tcpim15 = pim15/(1 + tctariff15) #tcpim is the price of removed import tariff
in the sector concerned
f tcrelpri15 = tcpim15/pdd15
f tcpredkimp15 = rcoef{1981}+rcoef{1982}*ddtotr15+rcoef{1983}*tcrelpri15
f tckimpshare15 = tcpredkimp15/impr15
f tcrowimpshare15 = 1 - tckimpshare15
f tcpim15 = (tckimpshare15*tcpim15 +
tcrowimpshare15*pim15)/(tckimpshare15{1990}*tcpim15{1990} +
tcrowimpshare15{1990}*pim15{1990})
:              15 Japanese Import Share from Korea; Textiles
  SEE   =      37.10 RSQ   = 0.4217 RHO =   0.50 Obser  =   10 from 1988.000
  SEE+1 =      36.49 RBSQ  = 0.2565 DW  =   0.99 DoFree =    7 to   1997.000
  MAPE  =      13.61
    Variable name          Reg-Coef  Mexval t-value  Elas   NorRes     Mean
  0 kimpr15              - - - - - - - - - - - - - - - - - - - -    243.37
  1 intercept             121.73775    69.9   3.670   0.50   77.44      1.00
  2 ddtotr15                0.02168   112.0   4.996   0.62   73.95   6921.58
  3 relpri15              -32.01014   759.9 -22.829  -0.12    1.00      0.89
```

Tariff removed import price which was created by the division of tariff revenue by import (tfi / imp) in the sector concerned is useful to get the change of import from Korea. The revised data of import price was introduced in JIDEA model to get the alternative case (after FTA) to compare the base line (before FTA). Following graphs and tables are the some results of simulation for Japan-Korea Free Trade Area. If the estimated import after FTA were exaggerated more than the import expansion which one may forecast, such exaggeration may occur due to the setting value in the soft-constraints. Generally to say, Free Trade Area between Japan and Korea leads to the contraction of Japanese economy, as far as we observe the gross national products and the investment, in spite of the import expansion.



2. Result of estimation

Set up the base line to depict how Japanese economy behaves by 2010, the exogenous shock of the removal of import tariff on Korean products exclusively causes the change in the economic behaviors different from the base line. Such behaviors were traced in two simulations.

To compare its simulated result with the base line, Case I in Table 1 and Table 2 are the results of tariff removal due to Japan-Korea FTA in the case that Japanese import change is caused by the relative price change in Japanese side only. To specify Japanese import functions from Korea by 63 sectors, we used the time series data from 1980 to 1998 in JIDEA model. The increase of import due to the import tariff removal is calculated as a trade diversion.

The corresponding bilateral tariff removal in Korea also leads to Korean import increase from Japan. Korean import from Japan equivalent to Japanese export increase to Korea. We call this import increase in Korea as trade creation due to Free Trade Area between Japan and Korea. Increase of Korean import from Japan was estimated in same method as Japanese side, using KIOSK, Korean model, in Korean Economic Research Institute. The resultant export increase is introduced into JIDEA as an exogenous value to simulate the two effects of trade diversion and trade creation simultaneously. This simulation is Case II in Table 1 and Table 2.

According to the simulated result in Case II, the Japan-Korea free trade area influences very small on Japanese economy, but contributes to the positive economic growth. That is to say, Table 2 shows us that GDP grows by 0.04 % in 2000 and by 0.03 % in 2010 under the formation of Japan-Korea Free Trade Area. Increase of employment would be about 21,000 in 2000.

KERI (Korean Economic Research Institute) simulated same forecasting in same method. KERI and JIDEA group made this simulation jointly. The result simulated in Korean side shows the same positive effects on their GDP depicted in Table 3. The effect of Japan-Korea Free Trade Area on GDP in Korea is relatively higher than the change of GDP in Japan. The influenced degree of GDP change in Korea is amplified to compare with the change in Japan, i.e., 0.27 in Korea (in 2001 in Table 3) and 0.03 in Japan (in 2000 in Table 2). This gap would occur because that Korean import share from Japan is higher than Japanese import share from Korea.

3. Result of estimation: Influences by sectors

To divide these estimated results into the classified group, we can examine the influences by sectors in the national economy in Table 4. Although the domestic production for the income effect grows up initially as a consequence of the tariff removal on Korean products, growing import leads to the decrease of domestic production in due course. All Manufactured industries in Case I would not grow throughout 2010.

However, in Case II which includes the export increase to Korea for the trade creation effect, Japanese economy could keep the higher level in domestic production than Base Line throughout the estimated periods.

Although the groups in Non-durable consumer goods, Non-metal intermediate goods, and Metal intermediate goods behave in same direction as All manufactured industries, the groups which are relatively higher in the value-added, such like Electrics & Electronics, Industry machinery, and Transportation equipment do not behave in same direction.

As shown in Case I as a result of tariff removal on Korean products, the level of domestic production would keep higher than Base Line for a few years. Because Japanese tariff has already decreased close to zero level in these sector groups, the tariff removal on Korean products would not cause so much the direct influences as the spillover effect of the vitalization in the economic activity.

4. Method of estimation

Because the basic Japanese input-output table in JIDEA model has 102 industrial sectors, trade statistical data had to be re-compiled into 63 sectors consistent with tradable sectors in the model. Also, because the tariff revenue by sectors is reported in Japanese input-output table, the tariff rates are computable at the aggregated level in 64 sectors.

In the estimation, we introduced the updated input-output table calculated at the year 1995. The tariff rate calculated in this I-O table was fixed in simulation of Base Line. In order to estimate the above trade diversion effect, it is necessary to compute Japanese import share from Korea by sectors using OECD trade statistics during 1987 and 1998. these import share are to be regressed by Japanese domestic demand by sectors and the relative price by sectors. That is,

$$IS_i = a + b * D_i + g * \dot{P}_i / P_i$$

where

coefficient in regression (*parameter*)

IS_i *import share from Korea in the i-th industry*
D_i *real domestic demand in the i-th industry*
P_i *price of domestic demand*
$\dot{p}_i$ import price from Korea

Estimated the actual parameters in this regression, there were the positive sectors with negative sign in the relative price, or though the parameter of the domestic demand had to be positive, results there were sectors with negative signs, or there were the sectors which R-squares were too low (less than 0.6) , and parameters were insignificant.

In these sectors, we supposed that price change did not work normally, or that these sectors were not significant related to the import change of the price change, we decided to exclude these sectors in measuring the tariff removal effects. For example, in such the commodities imported from Korea that would be purchased for special needs, or that would be sold to only the selected users exclusively, etc., it is possible to occur that the presumed import change of the relative price change would not work theoretically.

In this connection, we made Table 5 to compare the sectors which were statistically significant and insignificant to the relative price change. Among 63 tradable sectors, there are 31 sectors which equations were statistically significant. On the contrary, there are 27 sectors which equations were not statistically significant, these sectors includes the sectors with no production in Korea, and zero import from Korea, and many sectors which were insignificant in the price change, R-squares were low, the specification of this regression were not effective.

In the sectors of Fishery, Textiles, Clothing, and IC which weight would be high in the import from Korea, the price function did not work, it is worth examining the causes in future.

Assumed the tariff cut in those sectors would cause the import prices in the sectors which parameters were in the above equation, we would re-calculate the Korean import share. Set total import in Japan as 1, 1 less Korean import share becomes the import share for the rest of the world.

For the sectors which equations were significant, multiplied Korean import share by the new import price calculated as the import price lowered equivalent to tariff removal, left the other imports form the rest of the world unchanged, the summed up imports from Korea and the rest of the world amount to the total nominal import after the tariff removal on Korean products.

If the total real import unchanged, we can calculate the import price deflator to divide the nominal import by the real import.

Given this calculated import deflator into JIDEA model as the exogenous variables, we could get the estimation of the functions of household consumption in response to relative price change. The induce demand expansion through the mechanism in I-O tables, spreads to production, investment, and so on. These estimation was shown in Case I in Table 1 and Table 2.

The increased import in Korea from Japan, estimated by Korean team, regarded as the increase of Japanese export to Korea, was taken as the exogenous variables. This estimation was shown in Case II in Table 1 and 2. This expanded export also spread to production, investment, employment through the I-O table frameworks. Because the induced import increase would occur, it is more accurate to estimate the Korean domestic production to give the expanded Korean export to Japan equivalent to the increased import share in to Korean model, and so on, to converge to the repercussions. Because we regarded such repercussion effects as a small one, such influence was regarded as once for all.

Table 1 Effects of Japan-Korea FTA on Japanese Economy

GDP Components by Expenditure Category Trillions of 1990 Yen

	Base Line			Case I			Case II		
	2000	2005	2010	2000	2005	2010	2000	2005	2010
Gross Domestic Product	494.26	554.829	608.996	494.407	554.863	609.048	494.458	555.015	609.158
Total Consumption	350.291	392.229	425.584	350.468	392.334	425.707	350.4	392.269	425.622
Consumption of Business	19.829	20.57	21.721	19.822	20.567	21.716	19.823	20.567	21.718
Consumption of Households	280.565	315.117	340.927	280.748	315.226	341.055	280.679	315.161	340.969
Consumption of Government	49.898	56.541	62.936	49.898	56.541	62.936	49.898	56.541	62.936
Total Investment	148.247	165.611	184.531	148.247	165.618	184.545	148.247	165.672	184.583
Business Investment	96.404	105.377	114.55	96.404	105.385	114.564	96.404	105.439	114.602
Government Investment	51.843	60.233	69.981	51.843	60.233	69.981	51.843	60.233	69.981
Inventory Change	0.767	0.767	0.767	0.767	0.767	0.767	0.767	0.767	0.767
Exports	72.708	91.946	118.075	72.708	91.946	118.076	72.836	92.083	118.202
Imports	78.143	96.22	120.636	78.171	96.297	120.719	78.181	96.272	120.689

Note: Government investment and Inventory change were fixed exogenously.

Table 2 Effects of Japan-Korea FTA on Japanese Economy

GDP Components by Expenditure Base line = 1.00000

	Base Line			Case I			Case II		
	2000	2005	2010	2000	2005	2010	2000	2005	2010
Gross Domestic Product	1.00000	1.00000	1.00000	1.00030	1.00006	1.00009	1.00040	1.00034	1.00027
Total Consumption	1.00000	1.00000	1.00000	1.00051	1.00027	1.00029	1.00031	1.00010	1.00009
Consumption of Business	1.00000	1.00000	1.00000	0.99965	0.99985	0.99977	0.99970	0.99985	0.99986
Consumption of Households	1.00000	1.00000	1.00000	1.00065	1.00035	1.00038	1.00041	1.00014	1.00012
Consumption of Government	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Total Investment	1.00000	1.00000	1.00000	1.00000	1.00004	1.00008	1.00000	1.00037	1.00028
Business Investment	1.00000	1.00000	1.00000	1.00000	1.00008	1.00012	1.00000	1.00059	1.00045
Government Investment	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Inventory Change	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Exports	1.00000	1.00000	1.00000	1.00000	1.00000	1.00001	1.00176	1.00149	1.00108
Imports	1.00000	1.00000	1.00000	1.00036	1.00080	1.00069	1.00049	1.00054	1.00044

Employment

	Base Line			Case I			Case II		
	2000	2005	2010	2000	2005	2010	2000	2005	2010
Total Industry Employment	1.00000	1.00000	1.00000	1.00031	1.00013	1.00019	1.00032	1.00033	1.00028
Increased Employment(million)	0.000	0.000	0.000	0.020	0.009	0.013	0.021	0.022	0.019

Price

	Base Line			Case I			Case II		
	2000	2005	2010	2000	2005	2010	2000	2005	2010
Import Price Index	1.00000	1.00000	1.00000	0.99725	0.99760	0.99790	1.00000	1.00000	1.00000
Export Price Index	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
GDP Deflator	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Consumer Price Index	1.00000	1.00000	1.00000	0.99907	0.99908	0.99910	0.99907	0.99908	1.00000

Table 3 Effects of Japan-Korea FTA on Korean Economy

Change to Base Line

	2001	2002	2001-2005	2006-2010	2001-2010
GDP(%)	0.27	0.33	0.30	0.18	0.23
Private investment(%)	0.44	0.41	0.49	0.09	0.24

Employment(%)	0.10	0.10	0.07	0.04	0.06
Export(%)	1.10	1.09	0.93	0.67	0.78
Import(%)	0.47	0.46	0.43	0.28	0.37
Trade Balance	1.0	1.1	4.5	4.4	8.9
Export Price	0.75	0.80	0.68	0.24	0.42
Import Price	-0.67	-0.71	-0.71	-1.18	-1.00

KERI Korea-Japan FTA and Business Future, Sept. 9, 2000

Table 4 Domestic production change by sectoral group

	1999	2000	2005	2010
All Manufactured industries				
Base	1	1	1	1
Case I	1	1.000248	0.999907	0.999925
Case II	1	1.000703	1.000673	1.000539
Non-durable consumer goods				
Base	1	1	1	1
Case I	1	1.000679	0.999441	0.999324
Case II	1	1.000611	1.000355	1.000347
Non-metal intermediate goods				
Base	1	1	1	1
Case I	1	1.000283	0.999854	0.999911
Case II	1	1.000673	1.000534	1.000423
Metal intermediate goods				
Base	1	1	1	1
Case I	1	1.000077	0.999895	0.999935
Case II	1	1.000558	1.000645	1.000489
Electrics & Electronics				
Base	1	1	1	1
Case I	1	1.000161	1.000112	1.000125
Case II	1	1.000833	1.000857	1.000666
Industry Machinery				
Base	1	1	1	1
Case I	1	1.000034	1.000000	1.000049
Case II	1	1.000673	1.000828	1.000656
Transportation Equipment				
Base	1	1	1	1
Case I	1	1.000161	1.000085	1.000092
Case II	1	1.000945	1.000882	1.000691
Other manufactured industries				
Base	1	1	1	1
Case I	1	1.000145	1.000000	1.000000
Case II	1	1.000506	1.000548	1.000464

Table 5 Import sectors to be selected and not to be selected

Sectors which equations were statistically significant	
1 Agri crops	40 Steel
7 Nonmet ores	41 Steel Cast
11 Food prod	45 Metal const
12 Beverages	46 Metal other
18 Furniture	47 Machine gen
23 Chem basic	48 Machine spec
25 Chem organ	50 Mach office
26 Chem resin	51 Mach hous el
27 Chem fiber	52 Computer
28 Medicine	54 El measuring
29 Chem final	56 Heavy el
32 Plastic prod	57 Oth light el
33 Rubber prod	58 Motor vehicl
35 Glass	60 Vehic engine
37 Pottery	64 Mfg miscellaneous
38 Nonmetal	

Sectors which equations were not statistically significant	
2 "Agri Livestk	31 "Coal prod
4 "Forestry	34 "Leather
5 "Fishery	36 "Cement
6 "Metal ores	39 "Pig iron
9 "Petro	44 "Proce Nonfer
13 "Feeds&fert	49 "Machine oth
15 "Textiles	53 "Communic eqp
16 "Clothing	55 "IC
17 "Wooden prod	59 "Two wheel
19 "Pulp&paper	61 "Ships
20 "Paper prod	62 "Transp oth
21 "Printing	63 "Precision
22 "Chem fert	
24 "Chem petro	
30 "Petro prod	