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THE EFFECTS OF IMPORT LIBERALIZATION OF AGRICULTURAL MARKETS AND FUTURE DIRECTIONS OF AGRICULTURAL TRADE POLICIES IN KOREA

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I. Introduction

Three years have passed since the WTO was established after the conclusion of the Uruguay Round. At the final stage of the Uruguay Round negotiations, Korean farmers strongly opposed the opening of domestic agricultural markets. It was expected that the adverse effects of import liberalization of agricultural markets would be enormous since the domestic prices of agricultural products were substantially higher than international prices. It was also believed that the Korean government would lose lots of flexibilities in setting up and implementing structural adjustment programs because the internal support policies were brought under the WTO disciplines and market distortive supports to farmers should be reduced in most cases.

It is time to evaluate accurately the economic effects of the import liberalization of agricultural markets led by the Uruguay Round Agreement and to tune up relevant agricultural policies to minimize the adverse effects of import liberalization. The evaluation of the Uruguay Round Agreement is also important for the preparation of the next negotiation on agriculture which is scheduled to start at the end of 1999.

In this context, this paper will concentrate on the expost

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economic evaluation of import liberalization of agricultural markets in Korea during the period of 1995~1996. In addition, trade policies adopted by the Korean government will be scrutinized for the establishment of countermeasuring policy tools.

II. The Economic Effects of Import Liberalization Imposed by Uruguay Round Agreement

1. Changes in Macro Economics Indicators of Agricultural Sector After Import Liberalization in Korea

Prior to commodity-wise evaluation of the effects of import liberalization, it is necessary to analyze the trends of macro economics indicators to understand the overall changes in the situation surrounding agriculture (Table 1).

First of all, the growth rate of the value of agricultural production still remained high in 1995 and 1996 showing decreasing trend after 1994. Average farm scale had increased marginally despite the government programs for the enlargement of farming scales after the import liberalization. However, Korean agriculture became capital intensive industry as capital intensity increased continuously during the period. In the case of rice and grains, farmers' prices increased rapidly in 1995 and 1996. In the meantime, farmers' price index for fruits decreased while those of vegetables and livestock products increased slightly.

Agricultural imports increased markedly in 1995, however, the increasing rate decreased in 1996. Agricultural exports showed similar trend and the growth rate of exports decreased sharply in 1996. Accordingly, the increase in the net imports was believed to be a factor to press down the prices of agricultural products in 1996.

Total acreage decreased continuously, although the dcereasing rate attenuated after 1995. In particular, rice acreage decreased only marginally in 1996. However, the acreage of barley and vegetables increased, while the increasing rate of fruit acreage declined recently.

In conclusion, the rapid increases in the value of agricultural production was caused by the increases in the prices of agricultural products rather than by the increases in the quantities of agricultural production. The prices of agricultural products increased substantially

TABLE 1 Changes in the Macro Economic Indicators of Agricultural Sector in Korea

	1993	1994	1995	1996
Value of Agricultural Production(billion won)	21,545	24,266 (12.6)	26,736 (10.2)	29,052 (8.7)
Average Farm Scale(ha)	1.34	1.35	1.35	1.37
Capital Intensity (1,000won/man hour)	1,305	1,423 (9.0)	1,574 (10.6)	1,881 (19.5)
Farmers' Price Index	100.0	108.2	118.0	123.9
Rice	100.0	102.7	112.2	130.3
Other Grains	100.0	113.5	165.1	177.7
Vegetables	100.0	111.3	125.2	130.1
Fruits	100.0	140.9	150.7	129.8
Livestock Products	100.0	102.9	113.1	113.0
Farmers' Purchasing Price Index	100.0	103.9	110.0	115.2
Agricultural Trade (million dollars)				
Imports	7,269	7,988 (9.9)	9,677 (21.1)	10,940 (13.1)
Exports	1,262	1,462 (15.8)	1,746 (19.4)	1,829 (4.8)
Total Acreage(1,000ha)	1,845	1,776 (-3.7)	1,749 (-1.5)	1,713 (-1.0)
Rice	1,136	1,103 (-2.9)	1,056 (-4.3)	1,050 (-0.6)
Barley	117	85	90	95
Vegetables	378	373	403	389
Fruits	154	161	172	173

Source : *Statistical Yearbook of Agriculture and Forestry*, Ministry of Agriculture and Forestry, Republic of Korea, various issues.
Note : Data in the parenthesis indicate increasing rates from previous years.

because of the excess demand despite the increases in imports. In case of rice, price increased due to the government policy to introduce the market-oriented system and to allow seasonal fluctuation of rice price. At the same time, Korean agriculture was moving toward concentrating on the capital intensive products, such as vegetables and fruits after import liberalization.

2. The Economic Effects of Import Liberalization

In most of the previous studies(Huh 1989, Hayami 1979, Lee 1993),

the effects of import liberalization was estimated based on the assumption that domestically produced and imported products are homogeneous in quality. If the domestic market of a product is open, the law of one price is applied to domestic market and domestic and imported products command a same price. The quantity gap between decreased supply and increased demand caused by the decreasing price after liberalization is completely replaced by same amount of imports. However, in this paper, it is assumed that imported agricultural products are quite different in quality from domestic products and consumers do not completely substitute one for another when the price of one product changes. It is expected that the changes in the quantity of domestic production influence the domestic price level of relevant products more than the same changes in the quantity of imports do. Depending on the relative quality of a domestic agricultural product, the product commands different prices.

2.1. The Estimation Model

Changes in Prices

$$\text{Production} : Q_{St} = a_0 + a_1 P_{t-1} + a_2 P'_{t-1} + a_3 Q_{St-1} + a_4 T \quad (2.1)$$

$$\text{Demand} : Q_{Dt} = b_0 + b_1 P_t + b_2 Y_t + b_3 I_t \quad (2.2)$$

$$\text{Price} : P_t = c_0 + c_1 P_{t-1} + c_2 P'_{t-1} + c_3 Q_{St-1} + c_4 Y_t + c_5 T + c_6 I_t \quad (2.3)$$

$$\text{or} \quad P_t = d_0 + d_1 Q_{St-1} + d_2 Y_t + d_3 T + d_4 I_t \quad (2.4)$$

where Q_{St} ; domestic production at period t,
Q_{Dt} ; demand for domestic product at period t,
P_t ; price of domestic product at period t,
P'_t ; price of competing product at period t,
T ; trend or technology,
I_t ; imports,
Y_t ; income.

The price of a domestic product can be derived by equating production and demand. The price of a domestic product is determined by predetermined endogenous variables and exogenous variables. If domestic product and imported product are different in quality and substitution is not complete, the coefficient b3 in the equation (2.2) is expected to be less than 1. In addition, d1 is expected to be larger than

d4 if the quality of domestic product is superior to imported products in the equation (2.4). The coefficient of d1 is the inverse of the coefficient of b1 in the demand equation (2.2).

Changes in Acreage and Production

$$\text{Acreage} : A_t = e_0 + e_1 P_{t-1} + e_2 P'_{t-1} + e_3 A_{t-1} + e_4 T \quad (2.5)$$

$$\text{Production} : Q_{St} = A_t^* \, YD_t \quad (2.6)$$

where A_t ; acreage, YD_t ; yield.

Relations between Monthly Prices and Imports

$$\text{Type of Lag Effects} : \beta_j = \beta_0 \lambda^j \; (0 < \lambda < 1) \quad (2.7)$$

$$\text{Monthly Prices} : MP_t = \beta_0 MI_t + \beta_1 MI_{t-1} + \beta_2 MI_{t-2} + \ldots + e_t \quad (2.8)$$

$$\text{or} \quad MP_t = \lambda MP_{t-1} + \beta_0 MI_t + e_t^* \quad (2.9)$$

$$(e_t^* = e_t + \lambda e_{t-1})$$

where MI_t ; quantity of import at month t.

2.2. Results of Estimation

2.2.1. The Elasticities of Prices with Respect to the Changes in Domestic Production and Imports and the Elasticities of Acreage(Production) with Respect to the Changes in Prices

As expected, the elasticities of prices with respect to the changes in domestic production appear to be larger than the elasticities of prices with respect to the changes in imports. The larger elasticities of prices with respect to the changes in domestic production account for the distinctive quality differences between domestic and imported products. In the cases of green peas, red bean, rape seeds, sweet potato, white potato, red pepper, garlic, onion, and pork, the elasticities of prices with respect to the changes in domestic production are much higher(Table 2).

In the cases of soybean, corn, malting barley, green peas, rape seeds, sweet potato, garlic, ginger, orange, grape, sesamum seeds, and beef, the price elasticities with respect to the changes in imports are much larger in the estimation period of 1980/96 than 1980/94. For these products, it is believed that consumers perception regarding the

quality differences between domestic and imported products became meager recently and a large proportion of imported products were disguised as domestic products in the markets. In the cases of malting barley, red pepper, garlic, perilla seed, and poultry, the price elasticities with respect to the changes in imports have positive signs

TABLE 2 The Elasticities of Prices with Respect to the Changes in Domestic Production and Imports and the Elasticities of Acreage(Production) with Respect to the Changes in Prices

Product	Elasticities of Prices with respect to the Changes in Imports		Elasticities of Prices with respect to the Changes in Production		Elasticities of Acreage with respect to the Changes in Prices	
	1980/94	1980/96	1980/94	1980/96	1980/94	1980/96
Rice	-0.0028	-0.0018	-0.0043	-0.0052	0.1153	0.1203
Barley	na	-0.0052	na	-0.2096	0.8145	0.5516
Soybean	-0.2292	-0.3426	-0.7138	-0.7809	0.1426	0.0634
Corn	-0.1321	-0.1705	-0.3226	-0.2654	0.0730	0.0735
Malting Barley	0.0379	0.0469	-0.0639	-0.0234	1.0896	0.9127
Green Pea	0.0219	-0.0545	-0.4558	-0.3476	0.2275	0.2033
Red Bean	-0.0064	-0.0061	-0.1119	-0.1263	0.5532	na
Peanut	-0.0055	-0.0011	-0.0898	-0.0873	0.7127	1.0161
Rape Seed	-0.0030	-0.0432	0.0808	0.0492	1.1345	na
Sweet Potato	-0.0203	-0.0300	-0.3943	-0.0564	0.0843	0.1274
White Potato	-0.0066	-0.0065	-0.0632	-0.0631	0.3924	0.4332
Red Pepper	0.1608	0.1438	-0.2214	-0.3279	0.5161	0.5406
Garlic	-0.0010	0.0175	-1.6222	-1.4407	0.3462	0.3591
Onion	-0.0520	-0.0388	-1.5885	-1.2389	0.6138	0.4187
Ginger	-0.0023	-0.0176	-1.2539	-1.2695	0.2963	0.2533
Apple	-0.5464	-0.0345	-0.6235	-0.0616	0.1720	-0.0175
Orange	-0.0330	-0.0474	-0.3969	-0.6708	0.1387	0.1097
Grape	-0.0128	-0.0262	1.8913	0.2980	0.4945	0.2751
Sesamum Seed	-0.0269	-0.0412	-0.1587	-0.1787	0.1521	0.2827
Perilla Seed	-0.0085	0.0011	-0.0310	-0.0465	0.0715	0.1123
Beef	-0.1096	-0.1396	0.0292	-0.5358	0.9683	0.9754
Pork	0.0012	-0.0006	-1.4722	-1.4323	0.2501	0.2208
Poultry	na	0.0029	na	-0.4093	na	0.4838
Natural Honey	-0.0113	-0.0112	-0.0747	-0.1085	-0.3377	-0.3184

Note : 1. 1980/94, 1980/96 represent the estimation periods.
2. In the cases of barley and poultry, since there had been no import during the estimation periods, the elasticities could not be estimated.

and are statistically insignificant. In general, these products were imported to stabilize domestic markets at the time of high prices. Accordingly, the price levels at domestic market determined the quantities of imports of related products rather than the quantities of imports influencing domestic prices.

The acreage responses to the changes in market prices are higher in the cases of barley, malting barley, peanut, white potato, red pepper, garlic, onion, and livestock products including beef, pork, and poultry. For the same changes in domestic prices, the adverse effects on these products will be larger than the other cases of low acreage responses. If the prices of these products destabilize due to certain impacts, the destabilization could be magnified according to the cob-web theory.

For most products, acreage responses to the changes in market prices are lower in the estimation period of 1980/96 than 1980/94. The lower acreage responses after import liberalization can be explained by the fact that Korean agriculture became more capital intensive industry specialized by advanced farmers who do not adjust their acreage to the temporary changes in the market prices.

2.2.2. The Effects of Market Liberalization on the Value of Agricultural Production

The commodity-wise effects of import liberalization on the value of production are summarized in (Table 3). The products, whose price elasticities with respect to the changes in imports show positive signs and whose increasing rate of import are negative, are excluded from the calculation of the effects. Two percentages of changes in imports are applied here to derive the changes in domestic prices and, consequently, the changes in acreages and productions of each products. The first one is net increasing rate of imports calculated by deducting average increasing rate of imports during the period of 1980/94 from the increasing rate of imports during the period of 1993/94-1995/96. The second one is the simple increasing rate of imports during the period of 1993/94-1995/96.

The total negative effects of import liberalization on the value of agricultural production based on the net increasing rates of imports were 143.8 billion won and 101.9 billion won in 1995 and 1996

TABLE 3 The Effects of Market Liberalization on the Value of Agricultural Production

Unit : million won

Products	dR/R[1]		Value of production[2] (1995)	Value of production[2] (1996)	Decrease in the value of production[3] (1995)		Decrease in the value of production[3] (1996)	
Rice	-0.0011	(-0.0011)	6,759,779	8,613,159	7,444	(7,444)	9,485	(9,485)
Barley	-0.0103	(-0.0103)	44,952	41,345	468	(468)	430	(430)
Soybean	-0.0071	(-0.0353)	274,377	281,727	1,962	(10,040)	2,015	(10,309)
Corn	-0.0250	(-0.0392)	32,675	34,065	838	(1,331)	874	(1,390)
Green Peas	na	(-0.0143)	8,220	14,341	na	(112)	na	(195)
Red Bean	na	(-0.0012)	56,780	51,097	na	(68)	na	(61)
W. Potato	na	(-0.0062)	305,559	365,408	na	(1,906)	na	(2,280)
Onion	na	(-0.0027)	161,641	161,058	na	(438)	na	(436)
Ginger	-0.0097	(-0.0070)	79,497	68,749	779	(560)	739	(485)
Apple	-0.0762	(-0.0762)	896,175	628,007	73,921	(73,921)	51,801	(51,801)
Orange	na	(-0.0121)	709,316	544,759	na	(8,688)	na	(6,672)
Grape	-0.0802	(-0.0802)	608,499	374,399	53,056	(53,057)	32,645	(32,645)
Sesame	-0.0180	(na)	260,846	233,624	4,781	(na)	4,282	(na)
Perilla Seed	-0.0010	(na)	73,463	66,966	74	(na)	67	(na)
Beef	na	(-0.0332)	1,775,610	2,105,039	na	(60,975)	na	(72,287)
Pork	na	(-0.0005)	1,406,605	1,901,262	na	(704)	na	(951)
N. Honey	-0.0078	(-0.0119)	58,481	44,019	460	(704)	346	(530)
Total					143,783	(220,416)	101,945	(160,576)

Note : [1] dR/R is percentage change in the value of production of a product.
dR/R = dP/P + dA/A + dY/Y, and dP/P = ε(dI/I), dA/A = η(dP/P),where dP/P ; percentage change in domestic price, dI/I : percentage change in imports, dA/A ; percentage change in acreage, dY/Y ; percentage change in yield, ε: the price elasticity with respect to the changes in imports, η: acreage (or production)response to the changes in domestic price. Here, two percentage changes in imports are applied. The first one is net increasing rate of imports calculated by deducting average increasing rate of imports during the period of 1980/94 from the increasing rate of imports during the period of 1993/94 - 1995/96. The data inside the parenthesies indicate percentage changes in the value of production based on the simple increasing rate of imports and the other based on the net increasing rate of imports. Yields are assumed to be constant.

[2] Data source : *Statistical Yearbook of Agriculture and Forestry*(1996, 1997), MAF

[3] (decrease in the value of production of a product) = R'*(dR/R) = [R/(1+dR/R)]*(dR/R), ∵ R'*(1+dR/R) = R, where R' ; the value of production which might be realized if there was no imports. The data inside the parentheses are calculated by using simple increasing rate of imports.

respectively. If simple increasing rate of imports during the period of 1993/94-1995/96 is applied, the negative effects on the value of agricultural production are 220.4 billion won and 160.6 billion won in 1995 and 1996, respectively.

The negative effects on the value of agricultural production of this paper is substantially small compared with the estimations of previous studies(e.g., decreases in the producers surpluses are 734.0 billion won and 813.3 billion won in 1995 and 1996, Lee, et.al., 1993). It is believed that there are several factors that cause the negative effects of market liberalization to be small. First, in most cases, Korea

TABLE 4 Market Accesses(Tariff Rate Quotas) and Actual Imports of Major Commodities in 1996

Unit : MT

Commodities	Tariff	Market Accesses in 1996 C/S (A)	Expansion of MA	Total	Actual Import of MA(B)	B/A (%)	Total Imports
Rice	5	128,268	-	128,268	120,934	94	120,934
Barley	20	15,198	34,802	50,000	-	-	43,542
Soybean	5	1,032,152	481,748	1,513,900	1,446,416	140	1,453,281
Corn	3	6,102,100	4,394,099	10,496,199	8,664,228	142	8,664,229
Malting Barl.	30	30,000	48,389	78,389	64,329	214	65,161
G.Pea/R. bean	30	10,323	5,667	16,000	16,003	155	24,778
Rape Seed	35.5	-	-	-	-	-	876
W. Potato	30	12,122	-	12,122	667	6	3,300
Red pepper	50	4,630	-	4,630	4,490	97	5,229
Garlic	50	9,323	-	9,323	7,600	82	6,554
Onion	50	13,288	38,000	51,289	40,514	305	41,580
Ginger	20	1,199	-	1,199	428	36	497
Apple	59.2	-	-	-	-	-	2,600
Orange	50	19,669	-	19,669	19,245	98	19,256
Grape	50	-	-	-	-	-	2,373
Perilla Seed	60	-	-	-	-	-	13,886
Beef	43.6	143,400	-	143,400	161,492	113	161,492
Pork	25	29,240	-	29,240	38,324	131	38,324
Poultry	20	10,350	-	10,350	9,792	95	9,822
Natural Honey	20	269a	-	269	264	98	264

Source : Country Schedule of the Republic of Korea, *Statistical Yearbook of Foreign Trade*, Korea Custom Service, ROK

imported agricultural products though the expansion of the market accesses(tariff quotas) and managed strictly the marketing of imported products in 1995 and 1996. Second, the imports which exceed market accesses were practically impossible because of high tariff equivalents. The products whose total imports exceed the actual imports under tariff rate quotas are only green pea, red bean, white potato, and red pepper(Table 4).

Third, despite the increases in the agricultural imports, the market liberalization effects on domestic prices were small due to the quality differences and incomplete substitution between domestic and imported products(Table 2). Lastly, many products were excluded from the estimation in the cases where the elasticities of domestic prices with respect to the changes in imports showed negative signs and actual imports decreased.

2.2.3. The Relationships between Monthly Imports and Monthly Prices

Since the imports of many products started in full scale after market liberalization according to the Uruguay Round Agreement, the price elasticities with respect to the changes in imports cannot be estimated with statistical consistency. Accordingly, the time series monthly prices were regressed by monthly domestic prices in 1995 and 1996. In Table 5, λ represents the decreasing effects of monthly imports at t-1 period on the current monthly prices relative to the effects of monthly imports at t period on the same monthly price. In the cases that products are storable with good storage facilities, λ would be larger than otherwise. For the products of rice, green pea, red pepper, garlic, and frozen pork, the value of λ's are large. However, in the cases of white potato, onion, sesamum seed, poultry, and natural honey, the value of λ's are small, which represents the rapid decreasing effects of current imports on the future monthly prices. For the products of corn, green pea, red bean, peanut, white potato, onion, ginger, and sesamum seed, the coefficients of monthly imports in the equation (2.8) are estimated to be positive. It is construed that these products were imported at the time of high domestic prices for price stabilization. The time lag between decision to import and actual imports is also responsible for the positive coefficients of monthly imports in the equation (2.8). The ordering of the long-term

elasticities of monthly prices with respect to the changes in monthly imports ($\beta_0/(1-\lambda)$) generally coincide with the ordering of elasticities estimated by using the annual data.

TABLE 5 The Relationship between Monthly Imports and Monthly Prices

Commodities	λ	β_0[1]	$\beta_0/(1-\lambda)$[2]
Rice	0.9776	-0.0014	-0.0063
Soybean	0.8911	-0.0046	-0.0422
Corn	0.8981	0.0189	0.1855
Green Pea	0.9487	0.0055	0.1072
Red Bean	0.7678	0.0160	0.0689
Peanut	0.8898	0.0015	0.0136
Sweet Potato	0.8510	-0.0016	-0.0108
White Potato	0.6718	0.0011	0.0034
Red Pepper	0.9980	-0.0004	-2.0000
Garlic	0.9494	-0.0016	-0.0316
Onion	0.8828	0.0105	0.0896
Ginger	0.7542	0.0163	0.0663
Apple	0.9082	-0.0007	-0.0763
Grape	0.8245	-0.0021	-0.0120
Orange	0.8738	-0.0059	-0.0468
Sesamum Seed	0.7072	0.0011	0.0038
Perilla Seed	0.8447	-0.0014	-0.0090
Beef	0.9298	-0.0375	-0.5342
Pork	0.9669	-0.0355	-1.0725
Poultry	0.5501	-0.0412	-0.0916
Natural Honey	0.5150	-0.0002	-0.0041

Note : [1] β_0 is coefficient of how current imports influence current monthly prices(equation (2.8)).

[2] $\beta_0/(1-\lambda)$ represents the total effects of current imports on the future series of monthly prices.

2.2.4. Changes in Price Stability After the Market Liberalization

It is generally agreed that the price stability in the world agricultural markets increase if the world markets are moving toward free trading system. However, if an agricultural product had been protected by trade barriers and domestic price stabilization scheme, the price stability might decrease after tariffication of non-tariff barriers since the instability in the world market is transmitted into the domestic markets. In the cases of rice, barley, corn, and white potato, the price stability decreases after market liberalization. In the mean time, the price stability increases for the products of grape, sesamum seed, perilla seed, and natural honey after market liberalization(Table 6).

TABLE 6 Changes in Price Stability After Market Liberalization

Commodities	1993-1994	1995-1996
Rice	1.0464	37.973
Barley	0.3307	0.6590
Soybean	10.9300	14.817
Corn	0.9202	2.1651
Green Pea	24.6740	531.04
Red bean	217.9600	48.306
Peanut	15.5600	21.812
Sweet Potato	60529	60594
White Potato	24459	93360
Red Pepper	71635	70481
Garlic	195.4	252.57
Onion	121.83	221.05
Ginger	73.983	122.45
Apple	8.7362	33.408
Grape	28.978	15.078
Orange	5.5521	11.136
Sesamum Seed	13.994	0.4043
Perilla Seed	0.5091	0.2225
Beef	15.587	42.781
Pork	5.7349	6.3416
Poultry	18.443	14.983
Natural Honey	11.549	3.8098

Note : Price stability is represented by the variances of monthly prices.

There are many factors that influence the price stability including price stabilization policies, production variations in the domestic and world markets, and trade barriers. Accordingly, it is difficult to derive net effects of market liberalization on the changes in price stability.

III. Issues and Future Directions of Agricultural Trade Policies

1. Current Agricultural Trade Policies in Korea

The overall framework of agricultural trade policies was determined by the Uruguay Round Agreement on agriculture in 1994. Out of 220(HS 10 digits) agricultural products, of which imports were restricted until 1994, 190 items were liberalized through tariffication and ceiling binding tariffs, and the other 30 items were completely liberalized with normal tariffs. Among the newly liberalized 190 agricultural products, MMA's and CMA's are allowed for 104 items and 86 items, respectively. For 79 items, the Korean government is operating state trading systems to collect economic rents that might accrue to importers of products subject to tariff rate quotas and to return the rents to the agricultural sector. The details of state trading systems in Korea are summarized in (Table 7).

TABLE 7 State Trading of Major Products in Korea

Commodity	State Trading Agency	Remarks
Rice, Barley	Office of Supply	Government Institution
Onion, Garlic, Pepper, Soybean (Food), Sesame, Peanuts	Agricultural and Fishery Marketing Corporation	Corporation with exclusive privileges
Beef	Livestock Products Marketing Organization	Final demanders can also import, Simultaneous Buying and Selling (SBS) System is applied
Orange	Cheju Orange Growing Farmers Association	Association with exclusive privileges
Natural Honey	Livestock Cooperative Federation	Farmers Association, Final demanders can also import

Source: Ministry of Agriculture and Forestry, Republic of Korea.

The tariffs applied to agricultural products can be divided into four categories; 1) normal tariffs imposed on the products which had been already liberalized before the Uruguay Round, 2) tariff equivalents of tariffied products, 3) tariffs applied to MMA and

TABLE 8 Formats of Market Liberalization of Major Products

Commodity	Year	Tariff Equivalent (% or won/kg)	Market Access (MT)	Tariff on Quota(%)
Rice	1995	--	51,307	5
	2000	--	102,614	5
	2004	--	205,228	5
Barley	1995	333% or 410 won/kg	14,150	20
	2004	229.7% or 361 won/kg	23,582	20
Soybeans	1995	541% or 1,062 won/kg	1,032,152	5
	2004	487% or 956 won/kg	1,032,152	5
Corn(Feed)	1995	365%	6,102,100	3
	2004	328%	6.102,100	3
Potato	1995	338%	11,286	30
	2004	304%	18,810	30
Sweet Pot-	1995	428% or 375won/kg	11,121	20
ato	2004	385% or 338 won/kg	18,535	20
Oranges	1995	99%	15,000	50
	2004	50%	57,017	50
Beef	1995	44.5% and 70% mark-up	123,000	20
	2001	41.25% and 0% mark-up	225,000	20
Pork	1995	37%	21.930	25
	1997	33.4%	18,275	25
	2004	25%	--	--
Poultry	1995	35%	7.700	20
	1997	30.5%	6.500	20
	2004	20%	--	--
Pepper	1995	300% or 6.900 won/kg	4.311	50
	2004	270% or 6.210 won/kg	7,185	50
Garlic	1995	400% or 2.000 won/kg	8.680	50
	2004	360% or 1.800 won/kg	14.467	50
Onion	1995	150% or 200 won/kg	12,369	50
	2004	135% or 180 won/kg	20.645	50
Sesame	1995	700% or 7,400 won/kg	6.731	40
	2004	630% or 6,660 won/kg	6,731	40
Skimmed	1995	220%	621	20
Milk Pow.	2004	176%	1.034	20

Source: Country Schedule of the Republic of Korea.

CMA, and 4) additional tariffs based on Special Safeguard. There exists a substantial variety of tariff equivalents and tariffs applied to MMA and CMA among agricultural products(Table 8). A flexible tariff structure combinig ad valorem and specific tariffs to barley, soybean, red pepper, garlic and others to deter the import surges of cheap agricultural products.

2. Issues and Future Directions of Agricultural Trade Policies

The economic effects of market liberalization is smaller than it was expected before the Uruguay Round. Through the state trading systems, the imports of major agricultural products are closely managed for the minimization of the adverse impacts on domestic agriculture. High tariff equivalents are resposible for the restriction of imports beyond tariff rate quotas. Despite the negligible effects of markert liberalization, there are many issues to be resolved.

It was identified that quality differences between domestic and imported products are the main reason that make the effects of market liberalization small. However, large proportion of imported products was disguised as domestic products in the markets. Furthermore, consumers perception regarding the quality differences between domestic and imported products became meager recently. It is necessary to strengthen the policies of marking the origins and to increase consumers' abilities to distinguish domestic products, from the imported ones.

For some agricultural products whose price elaticities are estimated to be positive, it is believed that the time of decision to import for price stabilization and the actual imports do not coincide. In some cases, needed amounts are not imported at the time of high domestic prices and imported products are released when the domestic market prices go down. Under these aspects, it is important to import appropriate amount and release at the right time.

After the market liberalization, domestic agricultural markets destabilized and prices fluctuated widely for some products. If the world production of a particular product increases noticeably and the price goes down to a lower level while the production in the related importing country is poorly harvested in that year due to weather condition, farmers' incomes in the importing country will be sharply

decreased and vice versa. This is a feature of tariffication that the price instability in the world market directly influence the prices and incomes in the importing countries. Taking into account that price stability is as important as price supports, how to stabilize agricultural products after the market liberalization is another task to be tackled.

Regarding the structure of tariffs and tariff equivalents, different levels of tariff protection do not reflect the importance of each product under the current structural adjustment policies. In particular, tariff equivalents are just the protection effects of non-trade barriers in the base years at the Uruguay Round negotiation. Accordingly, tariff and tariff equivalents should be adjusted in line with the directions of the agricultural development plans of the government.

There are several implementation issues related to tariffication. Since Korea guarantees the importation of market accesses quantities under the state trading system, losses from importing may occur when world prices are higher than domestic prices. In addition, because the quantities for market access were calculated based on the 1988-90 period and imports have increased since then, in many cases such as corn and soybeans there is a needs to expand market accesses beyond the tariff rate quotas to stabilize domestic agricultural prices. In 1996, current market access quantities for 19 products including barley, corn, soybean, malting barley, red bean, onion, and sesamum seed(Table 4). were increased. However, if the market access of a product is expanded excessively, it will result in liberalization effects that will surpass the effects of the reduction of the tariff equivalent. There are other problems as to how to efficiently allocate the quantity of market access among different tariff lines and different exporting countries since market accesses were determined comprehensively at a higher levels of aggregation. For the cases that farmers' associations are designated for state trading, trading partners are continuously raising the issues that farmers are inclined to restrict importation of quantities committed under market accesses. Lastly, tariffication results in a tendency to bias the import mix towards cheaper items within the fixed quantity of market access since it increases the relative prices of expensive items.

IV. Summary and Conclusions

At the time of the conclusion of the Uruguay Round, it was expected that the effects of market liberalization would be enormous and the government would lose lots of flexibilities in implementing structural adjustment programs. However, after three years of implementation of the Agreement, it seems that there are not as many problems in carrying out the commitment made at the Uruguay Round negotiation by the Korean government. The Uruguay Round Agreement seemed to have had only a great psychological impact on agricultural industries in Korea. Because of the Agreement, Korean people, including politicians and policy makers, had a good chance to reevaluate the roles of Korean agriculture not only in the national economy but also in world trade.

In this paper, the effects of market liberalization on the decreases in the value of agricultural production is estimated to be 143.8 billion won and 101.9 billion won in 1995 and 1996, respectively. These estimated effects are substantially small compared with the estimations of previous studies. Several factors can be suggested for the minimal effects of market liberalization. First, in most cases, Korea imported agricultural products by expanding the quantities of market accesses and strictly managed the marketing of imported products. Second, the imports which exceed market accesses were practically in possible because of high tariff equivalents. Third, despite the increases in the agricultural imports, the market liberalization effects were small due to the quality differences and incomplete substitution between domestic and imported products. Last, many products were excluded from the estimation in the cases where the elasticities of domestic prices with respect to the changes in imports showed negative and actual import decreased.

Despite the minimal effects of market liberalization, there remain many issues to be resolved. Specific issues regarding agricultural trade policies are; 1) to strengthen the policies of marks of origin, 2) to import appropriate amount at the time of high domestic price, 3) to stabilize domestic agricultural markets, 4) to adjust different tariffs and tariff equivalents among agricultural products in line with the directions of the agricultural development plans, and 5) how to expand tariff rate quotas and allocate them among tariff lines and exporting countries.

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