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# **Agricultural Policy Reform and Structural Adjustment in Korea and Japan**

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## **Agricultural Policy Reform and Structural Adjustment in Korea and Japan**

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Despite many common features in agricultural sector, Korea and Japan have passed through quite different paths of structural adjustment. An important consequence of the different structural adjustment paths is full-time vs. part-time based farming system. As far as policy reforms are concerned, full-time based Korean agriculture has much more barriers to smooth policy reform mainly due to the income-related problems. With high level of off-farm income, farm household income problem is not a great concern to Japan. In addition to the income problem, other barriers to smooth policy reform in Korea are pointed out and discussed.

KEY WORDS: direct payment, full-time farming system, market price support(MPS), part-time farming system, policy reform, producer support estimate(PSE), rice-monoculture, structural adjustment

## INTRODUCTION

Korea and Japan are among the countries that have experienced rapid agricultural structural adjustments in the process of economic development and world trade liberalization. Especially, Korean agriculture went through the most rapid structural adjustment in the world, as can be identified by historical data on the international comparison of time periods taken for the changes in the agricultural shares of GDP and employment. Agricultural structure and its adjustment paths that they have taken are quite different from those of the advanced countries in Western Europe and North America, which frequently leads to the conflicts among them in the world agricultural policy reform and trade negotiations.

Since Korea and Japan have common features in many aspects like geographical environment, natural resource endowment, and weather condition, it seems to be rather natural that they have taken similar pattern of agricultural structural adjustment and policy changes as well. However, some differences are also found in agricultural structure and policies, most parts of which differences come from the gap of economic development stage between the two countries.

The purpose of this paper is to investigate the characteristics of agricultural structure and policies in the two countries, and to derive some useful implications for the future policy reform. For this purpose, this paper first examines how the agricultural structures and policies have evolved, followed by comparison of the characteristics of them between the two countries. Finally, it provides future policy directions along with some implications for the agricultural policy reform.

## EVOLUTIONS OF AGRICULTURAL POLICIES IN KOREA AND JAPAN

### **Agricultural Policies in Korea**

*Agricultural Policies at the Early Stage of Economic Development (1950s - 1960s).* Since Korean economy had suffered from serious inflation problems caused mainly by Korean War, inflation control was the key policy goal at this time. Agricultural policy had to be in line with this national policy objective so that its main goal was to supply enough food at low and stable prices in order to effectively meet the national food demand and to facilitate economic growth as well. Government attempted to keep the agricultural prices, particularly rice price, as low as possible.

The purchase price for rice, according to the Grain Management Law enacted in 1950, used to be set very low, sometimes even lower than production cost in the early 1960s. Low rice price was believed to contribute to improving competitiveness in the economy by lowering wage rate.

With the low grain price policy combined with poor agricultural infrastructure, food had always been in short supply. Various programs to increase domestic production through productivity growth were carried out from the long-run perspective. In addition, foreign aid of USA-PL 480 program had greatly contributed not only to relieving food shortage but to inflation control. Another important agricultural policy in this period is the land reform implemented to establish modern land ownership system by abolishing long-lasting tenant system through Land Reform Act in 1949. However, the land reform brought about efficiency problem because it had led to the small scale farming structure in Korean agriculture by restricting land rent or lease.

***Protective Agricultural Policies (1970s - 1980s).*** The disincentive policy had been seriously challenged since late 1960s as the income gaps between agriculture and manufacturing sectors continuously expanded due to the rapid industrialization and urbanization, and large migration from rural areas entailed. The goals of agricultural policy in this period were, therefore, to support producer income, to achieve self-sufficiency in food, and to maintain balanced development between rural and urban areas including the improvement of rural living environment.

In 1968, Korea abandoned the low rice price policy, and instead the government introduced the two-tier price scheme in 1970 so as to protect both producers and consumers. To supply adequate food for large population with small and poor conditioned farmland, productivity-enhancing policies were actively implemented focusing on agricultural infrastructure improvement. Also, rearrangement and exchange of plots between neighboring farmers had been strongly encouraged to consolidate scattered land for production efficiency.

Early in the 1970s, high yielding rice variety named 'Toing-il Rice' was developed. The introduction and nationwide spread of this variety played a significant role in increasing domestic rice production, and hence achieving self-sufficiency in staple food. This technological innovation in Korea, however, had some limitation in that its innovation and adoption were initiated by government rather than induced from farmers for the purpose of achieving rice self-sufficiency. This is why the attempts for further innovation of HYV were not actively made once the goal of rice self-sufficiency was achieved in 1991.

***Toward Market- Oriented Agricultural Policies (Since late 1980s).*** Although Korea continued to

pursue import liberalization since the end of 1970s, Korean agricultural markets still remained highly protective. Having faced strong pressure internationally to lower import barriers along with the launch of Uruguay Round negotiations, Korea had no choice but to change the fundamentals of agricultural policies toward being more market-oriented. The primary policy goal was to enhance the competitiveness by improving agricultural production efficiency.

Government purchase program as a price support is now under consideration to be replaced with more market-oriented and less trade-distorting measure. At the same time, various direct payment programs have been developed. Among the direct payment programs newly introduced so far are payment for producer retirement, payment for environment, and payment for preserving rice paddy field, some of which are of the nature of Green Box policy, others not. Korean agricultural policy is now transforming from market intervention policy into direct payment and government service which are permitted under the WTO regime.

### **Agricultural Policies in Japan**

***Production Oriented Agricultural Policies (Meiji Revolution:1860s - 1950s).*** As is often the case, agriculture in Japan also played an important role in economic growth at the early stage of development. Agriculture not only supplied food and labor forces to the industrial sector but also yielded sufficient surplus due to rapid growth of agricultural productivity, which was capitalized into the industrial sector through land tax and rent.

After the World War II, Japanese government carried out the land reform program by the Land Reform Law in order to reallocate farm land to the tenants. As a result, the ratio of tenant farming land area sharply reduced to 9% in 1955 from 45% ten years earlier in 1945. This land reform made significant contribution not only to increasing agricultural production but to income redistribution among farm households, and stabilizing rural society.

Various policies for production enhancement were also pursued in this period. Especially, as demand for food rose after the Korean war broke, Japan made efforts to further increase food production through supporting rice price and increasing infrastructure investment. The method on which the determination of rice price was based had changed from price parity (1946) to income parity (1952).

***Protective Agricultural Policies (1960s).*** As the national economy grew rapidly, especially in industrial sector, income disparity between rural and urban areas continued to widen. The main policy objective was, therefore, to protect the agricultural sector to solve this income gap problem.

To do this, Japan enacted the Agricultural Basic Law in 1961, and introduced programs such as agricultural price supports, production expansion of some selected promising products, enhancement of agricultural structural adjustment.

Income parity again changed into cost/income compensation method. As a result, rice price increased significantly with the domestic rice price reaching the double the world price in 1968. The introduction of such price support programs made substantial contributions to narrowing the big income difference.

It was during this time that the land reform policy changed in the direction of emphasizing land consolidation and expansion of farming size so as to improve overall agricultural productivity. The land ownership limit of up to 3ha was completely abolished by 1970. Nevertheless, this land reform program toward size expansion and consolidation was not so successful as was expected because of farmers' tendency to stick to their own land. Rather, farmers chose to get other lucrative non-agricultural jobs to compensate for their income deficiency with keeping their small scale farm size.

***Agricultural Adjustment Policies (1970s).*** Protective agricultural policies in 1960s had resulted in excess supply in agricultural products and budget deficit. Rice had been in excess supply since 1967, and its continuing excess supply served as a momentum that the protective policies changed, focusing on structural adjustment in 1970s.

The production adjustment (cutback) program for rice was introduced in 1970. As a result, 29 percent of the total cultivated area for rice was converted into producing other crops such as vegetables, fruits, soybean, wheat, and feed grain for twenty years (1970-89). Land policy was reexamined not only from agricultural production aspect but for the efficient utilization of national land and environmental protection, encouraging the lease, rather than ownership transaction, to enhance land mobility. Further, Japan designated the so-called agriculture promotion area to prevent arable land from being used for other purposes.

Structural adjustment programs were carried out for the agricultural labor markets to enhance mobility of workers between sectors, aiming mainly at reducing labor forces in agricultural sector. Pension program was introduced for the aged farmers who retired early from farming on the condition that they would transfer their land to other more productive farm managers.

***Market-Oriented Agricultural Policies (1980s - )***. As the Uruguay Round negotiations launched together with the world trade liberalization in 1980s, new paradigm for agricultural policies was needed in Japan. The Food, Agriculture, and Rural Community Act enacted in 2000 was the reflection of the paradigm shift. The main policy goals prescribed in this law were ensuring stable supply of food, enhancing multifunctionality of agriculture, sustainable development of agriculture, and promotion of rural community. The characteristics of this new policy can be summarized as the market-orientation, although not explicitly specified as a policy goal therein, and restructuring the entire agricultural system and policy framework. The policy object has also been expanded, covering the overall rural community issues as well as agricultural and food problems.

Market-oriented agricultural policy reform has been implemented in many ways since 1980s including the introduction of public stockholding program for rice instead of government purchasing scheme, conversion of rice import quota into tariff, i.e. tariffication, and rice production adjustment via producers' own decisions. Income losses incurring in carrying out these programs are compensated for by direct payments and farm management stabilization programs in less or minimally market-distorted ways. To ensure stable income for producers, government introduced income safety net programs for rice, barley, soybean, milk, etc. where the loss resulting from price falls is paid. Direct payment to preserve terrace paddy field on the hillsides has been introduced to strengthen the multifunctionality of agriculture since 2000. Food safety issue has been increasingly becoming important. Recently, risk management programs including traceability system were newly introduced by enacting the Food Safety Law in 2003.

Despite the various market-oriented policies, food security still remains high policy priority in Japan as is provided in the Food, Agriculture and Rural Community Act. According to this law, food self-sufficiency ratio has been set at 45 percent on a calorie basis as a policy goal to be achieved by 2010. They plan to reach this target through domestic production as a primary tool along with import and stock management. Although the domestic production necessary to achieve the food security objective assumes the productivity growth through structural adjustment, this policy seems to serve as limitations in pursuing market-oriented agricultural policies in Japan as a net food importing country.

### **Comparison of Korean and Japanese Agricultural Policies**

As has been discussed so far, the evolutions of agricultural policies both in Korea and Japan have taken similar paths with some time gap due to the difference in economic development

stage between the two countries. Similarities in the conditions of geography, endowed natural resources, and weather lie behind these patterns of agricultural policy changes, including long-lasting strong protectionism and food security with the small scaled farming system.

Despite the past policy similarities from the long-run perspective, some differences are also found between the two countries' agricultural policies, although they basically result from development stage difference. The disincentive agricultural policy such as low grain prices in Korea had last until 1960s much longer than in Japan where they gave up such policy in the late 1940s. For the protective policies having followed the disincentive policies, Korea began to adopt protective policies such as price support program from the early 1970s while at this time Japan already entered the stage of gradual adjustment of agricultural structure, moving toward market-oriented agricultural policies. Japan introduced the rice cutback program to solve the surplus problem in 1970, twenty-five years earlier than the WTO regime began to prevail. More importantly, this agricultural adjustment was initiated without being forced by external reform factors such as the Uruguay Round.

Unlike in Japan, protective policy stage had last for a long time in Korea even until recently. Korea moved directly to market opening and internationalization stage without having experienced spontaneous production adjustment or agricultural reform for further market-oriented policies. This implies that Korea is in serious difficulty by encountering both stages of structural adjustment and internalization of agricultural markets simultaneously. In other words, Korea has not been well prepared for current trade liberalization by jumping directly up to the market opening stage.

One important reason for this difference stems from the structural difference of farm household income having existed between the two countries. Farm household income in Korea consists mainly of farm income whereas off-farm income is the main source in Japan. This characteristic of income structure enabled Japanese government to carry out structural adjustment so early without farmers' protests while in Korea it was almost impossible. Structural differences featuring both countries' agricultures will be discussed later in more detail.

## **CHARACTERISTICS OF AGRICULTURAL STRUCTURES AND POLICIES IN KOREA AND JAPAN**

### Characteristics of Agricultural Structures

**Small Farm Management and Large Agricultural Importing Structures.** Korea and Japan are geographically hilly and mountainous with limited arable land, and are consequently classified as countries of high population density. As in TABLE 1, the two countries have extremely small arable land per farmer in comparison to some western countries. In order to support large population with the limited arable land, the two countries have followed the agricultural development paths of enhancing land productivity mainly through biochemical technology progress which is quite different development paths of enhancing labor productivity followed by USA and some western countries through mechanical technology progress.

With this small farm management structure, Korea and Japan are in the position of net food importing countries. They are concerned about the low level of food self-sufficiency and their concerns are reflected in the protective position maintained in the WTO multilateral trade negotiations. In this line, enhancing the self-sufficiency ratio of staple food grains, in particular rice, has been the long-lasting agricultural policy goals in the two countries.

TABLE 1 Population, Arable Land, and Agricultural Employment

Countries	Total population (thousand) (2002)	Total arable land (thousand) (2001)	Agricultural employment (thousand) (2001)	Arable land per farmer (ha) (2001)
Korea	47,430	1,696	2,271	0.75
Japan	127,478	4,445	2,608	1.70
UK	59,287	5,652	515	10.97
Netherlands	16,067	905	241	3.76
USA	291,038	175,209	2,964	59.11
Germany	82,414	11,813	967	12.22
Denmark	5,351	2,292	106	21.62
France	59,850	18,447	858	21.50

Source: OECD

TABLE 2 Agricultural Trade and Food Grain Self-Sufficiency Ratio

	Korea			Japan		
	1990	2000	2002	1990	2000	2002
Ag. Exports (100mil. US\$)	7.9	12.8	14.7	12.1	16.4	
(Share of total exports, %)	1.2	0.7	0.9	0.4	0.3	
Ag. Imports (100mil. US\$)	37.5	67.8	76.5	322.3	480.5	
(Share of total imports, %)	5.4	4.2	5.0	12.4	12.7	
Food grain self-sufficiency ratio	43	30	30	30	30	28

Source: Ministry of Agriculture and Forestry(MAF), Korea

**Paddy Rice Dominant Farming System.** In Korea, rice takes dominant positions in agricultural

production. Almost 60% of total cultivated land area is allocated to rice farming. According to 2000 agricultural census, 787,451 (57%) out of 1,383,468 farm households are cultivating paddy rice of which 512,158 households are producing rice on full-time base. Consequently, rice, as a single commodity, accounts for 33 percent of total agricultural production values, and 47 percent of average farm income per farm household.

Although it has been slightly mitigated since 1980s, rice is also the most important product in Japan. About 35% of total arable land is allocated in rice farming and almost 30% of farming revenue is derived from only rice. The rice dominant agricultural production patterns in Korea and Japan have been formulated from ancient times mainly due to the climate factor resulting from the geographical location in the Asian monsoon climate zone.

TABLE 3 Rice Farming in Korea and Japan, 2002

		Korea	Japan	Share (%)	
				Korea	Japan
Areas (thous. ha)	Cultivated area(a)	1,862	4,762	-	-
	Paddy field(b)	1,138	2,607	b/a = 61.1	54.7
	Rice production area(c)	1,053	1,683	c/b = 92.5	64.6
Revenue (thous. JPY)	Revenue from farming(d)	19,951	3,474	-	-
	Revenue from rice farming(e)	7,471	971	e/d = 37.4	27.9
Income (thous. KRW)	Farm household income (f)	24,475	NA	-	NA
	Income from farming (g)	11,274	NA	h/g = 46.9	NA
	Income from rice farming (h)	5,289	NA	h/f = 21.6	NA

Sources: MAF, Korea.

**Full vs. Part-time Farm Households.** Structural changes due to the economic development through industrialization call for labor shifts from rural to urban sector. Different pattern of labor shifts is observed in the two countries. Korean agricultural labors have left rural areas in search of new jobs while in Japan farm workers have chosen to remain and find new employment opportunities in rural areas.

Historically, Japan has pursued political and economic decentralization while Korea has maintained centralism. The political and economic decentralization inevitably has required self-sufficient regional economic system and hence activated rural industrialization, which in turn has given new employment opportunities to farm labors. Moreover, the industrialization and economic development had been accompanied with the increase in land price, and land became important means of increasing farmer's asset values. This land price soar combined with the Farm Land Law enacted in 1953, has also contributed to farmers' staying at rural areas in Japan. The

Japanese Farm Land Law was legislated on the basis of fostering owner farm system, which put high restrictions on land renting or lease. The farmers, expecting the rise of asset values through land price increase and facing the restrictions imposed by Farm Land Law, could not easily move out to urban areas and instead remain in farming as part-time worker.

On the other hand, Korea, having pursued economic centralism, could not provide farmers with enough side job opportunities in rural areas. Korean farmers who wanted non-farm job opportunity had to completely abandon farming. As a result, part-time farming dominates Japanese farming system while full-time farming dominates in Korea. Currently, part-time farm takes over 80 per cent of total farm households in Japan while full-time farm over two-thirds in Korea.

TABLE 4 Distribution of Farm Households by Full and Part-time Basis (thous. households, %)

Year	Korea			Japan		
	Full-time	Part-time		Full-time	Part-time	
		Class I	Class II		Class I	Class II
1990	1,052 (59.6)	389 (22.0)	326 (18.4)	473.4(15.9)	520.6(17.5)	1,976.6(66.5)
1995	849 (56.6)	277 (18.4)	375 (25.0)	427.6(16.1)	498.4(18.8)	1,725.4(65.1)
2000	902 (65.2)	225 (16.2)	257 (18.6)	426.4(18.2)	349.7(15.0)	1,560.9(66.8)
2002	862 (67.3)	139 (10.9)	279 (21.8)	439.3(19.5)	300.2(13.3)	1,509.3(67.1)

a. Part-time household in 'Class I' derives more than 50 percent of annual household income from farming.

b. Part-time household in 'Class II' derives less than 50 percent of annual household income from farming.

Source: MAF, Korea and Ministry of Agriculture, Forestry, and Fisheries (MAFF), Japan

**Overflow of Aged Farm Labors.** We should note that, regardless of staying at or leaving rural area, young and high-qualified labors tend to have non-farm jobs on part or full time basis. This has given rise to the overflow of aged farm labor in both countries. Currently, over 50% of total farm managers are 60 years old and over<sup>2</sup>.

TABLE 5 Age Distribution of Farm Managers, %

	Total(number of farm households in 1000)	39 years old under	40 – 49	50 – 59	60years old over
Korea	100 (1,383)	6.6	17.2	25.2	51.0
Japan	100 (2,337)	3.4	17.8	25.4	53.3

Source: Agriculture Census 2000, Korea and Japan

**Farm Household Income.** TABLE 6 gives us two clear points. First, especially in Korea, farm household income situation has been continuously deteriorating. Second, the level of farm household income is higher than that of urban household in Japan while the opposite is true in Korea. In this context, farm household income is not a matter of policy concerns in Japan.

However, in Korea, farm household income is one of the most serious problems in agricultural sector.

TABLE 6 Farm Household Income Relative to Urban Household Income

Year	Korea (thous. KRW)			Japan (10 thous. JPY)		
	Farm household (A)	Urban household (B)	Ratio (A/B)	Farm household (C)	Urban household (D)	Ratio (C/D)
1990	11026	11319	0.97	839.9	626.1	1.34
1995	21803	22933	0.95	891.7	685.0	1.30
2000	23072	28643	0.81	828.0	675.3	1.23
2002	24475	33509	0.73	802.2	647.9	1.24

Source: MAF, Korea and MAFF, Japan

As a natural consequence of the part-time based farming system, Japanese farm household income is highly dependent on off-farm income<sup>3</sup>. Currently, nearly 90% of the farm household income is derived from non-farm income sources. However, Korean farm household income heavily depends on farming in comparison to other Asian countries with similar agricultural structure.

TABLE 7 Share of Off-Farm Income in Farm Household Income

Year	Korea		Japan		Taiwan	
	A	B	A	B	A	B
1985	5,736	2,037(35.5)	6,916	5,850(84.6)	310.6	233.7(78.2)
1990	11,026	4,762(43.2)	8,399	7,235(86.2)	503.8	402.9(79.9)
1995	21,803	11,334(52.0)	8,917	7,474(83.8)	871.1	699.0(80.2)
2000	23,072	12,175(52.8)	8,280	7,176(86.9)	917.6	756.5(82.4)
2001	23,907	12,640(52.9)	8,022	6,988(87.1)	881.3	718.1(81.5)

a. A=farm household income, B=off-farm income(transfer income included)

b. Numbers in ( ) are the ratio of B to A (%)

c. Sources: MAF, Major Statistics on Agriculture』, 2002

### Characteristics of Agricultural Policies

Korean and Japanese agricultures rely on strong government supports. Although the percentage producer support estimates(%PSE) in Korea and Japan fell from 70 and 61% in 1986-1988 to 66 and 59% in 2002 respectively, they are still almost double the OECD average (Table 8). The PSE consists mainly of market price support(MPS) through domestic and trade policy measures. The current share of MPS is about 90 per cent of total PSE in both countries. The remaining 10 per cent is accounted for by the support through budgetary payments.

Next, two countries have maintained such policies as highly concentrated on rice. The importance of rice for the two countries would be seen from the fact that rice was exempted from ‘tariffication’ commitment in the Uruguay Round negotiations. Although Japanese rice was transferred to ‘tariffication’ in 1999, Korean rice is still subject to import quota, Minimum Market Access(MMA)<sup>4</sup>. Rice has taken the central position in government policies for a long time in both countries. More than one third of Korea and Japan's total PSE are attributable to rice (Table 9).

TABLE 8 Structure of Producer Support Estimate(PSE) (unit: bn KRW and bn JPY)

Country	Year	PSE		Market price support	Payments based on output	Payments based on area planted/animal numbers	Payments based on input use	Payments based on input constraints	Payments based on overall farming income
		Total PSE	% PSE						
Korea	1986	9,675	70	9,578(99.0)	0	0	69(0.7)	0	28(0.3)
	2002	22,655	66	20,649(91.1)	0	445(2.0)	793(3.5)	21(0.1)	747(3.3)
Japan	1986	7,143	61	6,396(89.5)	221(3.1)	0	298(4.2)	228(3.2)	0
	2002	5,502	59	4,971(90.3)	165(3.0)	0	250(4.5)	117(2.1)	0

a. Numbers in ( ) are the share of market price support or each payment in total PSE.

b. Data in year 1986 is the average during 1986 to 1988

Source: OECD PSE/CSE database, 2003.

TABLE 9 Producer Support Estimates for the Top-four Products in Korea and Japan

Year	Korea, bn. KRW(%)		Japan, bn. JPY(%)	
	1986-88	2002	1986-88	2002
Total PSE	9,675(100)	22,655(100)	7,143(100)	5,502(100)
Rice	4,541(46.9)	8,268(36.5)	2,939(41.1)	1,849(33.6)
Beef and veal	508(5.3)	1,378(6.1)	377(5.3)	174(3.2)
Milk	328(3.4)	1,134(5.0)	631(8.8)	550(10)
Pig meat	311(3.2)	924(4.1)	294(4.1)	264(4.8)

Source: OECD PSE data base.

## DIRECTIONS AND IMPLICATIONS FOR AGRICULTURAL POLICY REFORM

### Directions for Policy Reform under Consideration

In both Korea and Japan, MPS has been the key policy instrument which is subject to reform in the ongoing WTO multilateral trade negotiation. Directions for future policy reform have been continuously discussed in the two governments as summarized in TABLE 10.

TABLE 10 Future Policy Directions under Consideration

Korea	Japan
<input type="checkbox"/> For agriculture → Industrial policy - market orientation and competitiveness - management stabilization <input type="checkbox"/> For rural areas → Community development policy - rural community as an amenable living space - expansion of welfare infrastructure - enhancement of social safety net <input type="checkbox"/> For farmers → Income policy - expansion of direct payment - increase in off-farm income - enhancement of income safety net	<input type="checkbox"/> For agriculture → Targeting full-time farmers - market orientation and competitiveness - management stabilization <input type="checkbox"/> For rural areas → Maintenance of rural vitality - multi-functionality - maintenance of regional resources - direct payment for hilly-mountainous area

In Korea, policy reform covers broad areas including agriculture, farm income, and rural area. Among them income is at the center of the reform because farm income deterioration could be the most serious obstacle to successful policy reform. On the contrary, farm income problem is not of great concern in Japan. Japan can concentrate its efforts on relatively limited areas focusing on enhancement of agricultural production efficiency targeted to a small number of full-time farmers and on restoration of rural vitality for the remote hilly and mountainous areas. In this context, Korean agriculture seems to have much more serious constraints in undertaking policy reform in the directions suggested.

### Implications for Agricultural Policy Reforms

TABLE 11 International Comparison of Time Required for Structural Changes

Countries	Agricultural Share of GDP			Agricultural Share of Employment		
	Year of 40%	Year of 7%	Years required	Year of 40%	Year of 16%	Years required
Korea	1965	1991	26	1977	1991	14
Japan	1896	1969	73	1940	1971	31
UK	1788	1901	113	1800	1868	68
Netherlands	1800	1965	165	1855	1957	102
USA	1854	1950	96	1897	1950	53
Germany	1866	1958	92	1900	1942	42
Denmark	1850	1969	119	1920	1962	42
France	1878	1972	94	1921	1965	44

Source: Lee(1997)

In comparison with Japan, some structural aspects faced by Korean agriculture impose some restrictions on agricultural policy reforms. First, Korea still has a very large size of farm employment compared to other western countries and Japan as in TABLE 1. Second, Korean agricultural sector is now seriously fatigued with the rapid structural changes. As is shown in

TABLE 11, the high speed at which Korea has passed seems to be unprecedented. Even Japan is no match for Korea in the speed<sup>5</sup>. Third, Korean agriculture has the full-time based farming system while Japanese the part-time due to the different structural adjustment courses.

***Large Farm Employments and Policy Reform.*** This is related with policy effectiveness. The Korean share of agricultural employment in total civilian employment is still near 10% which is much higher than the OECD average and is more than double the average of the advanced developed countries including Japan. It means that, despite the rapid structural changes, structural adjustment is still underway in Korean agricultural sector. The number of Korean farmers is almost the same as the total number of German, French, and UK farmers combined together (TABLE 1). This large size of farmers make it very difficult to convert MPS to direct payments because any kind of direct payments based on budget payments would have limited effects. In this context, reducing the number of farmers is in general regarded as the most urgent prerequisite for successful policy reform in Korea.

***Too Rapid Structural Changes and Policy Reform.*** The unprecedented rapid structural change Korean economy has experienced so far has left a serious aftermath in the form of the overflow of old farmers in agricultural sector. Although Japan also has the aging problem, it does not seem to be as serious as Korea considering the agricultural share of total employment or farm household income. The overflow of old farmers besides the large size of farm employment gives rise to several problems impeding smooth policy reform.

First, it is difficult to reduce the number of farmers under the overflow of old farmers. Currently the ‘natural exits’ by death or retirement has replaced the out-migration as the decisive cause for decrease in farm labors in Korea (Lee 1997). The rates of ‘natural exits’ are independent of the changes in agricultural share of total economy, and in general very stable. These stable exit rates may cause farm labors to decrease at a steady pace which is disproportionate with the rapid shrink of agricultural share in Korea as indicated in TABLE 11, which in turn raise a barrier to new entrants, in particular young labors. In this context, the aging process in Korean agriculture is not expected to cease in near future.

Second, land mobility is highly restricted by the overflow of old farmers. Old farmers with very limited mobility between agriculture and other sectors have no other choices except farming, which results in very low land mobility. The rigid land mobility is partly responsible for high land price. Almost half the rice production cost is attributable to rent in Korea. Thus, the high land price is regarded as the most restrictive factor in achieving price competitiveness of rice

industry. With this rigid land mobility, it is very difficult to improve the structure of small scale farming system and hence to improve competitiveness, which becomes a reason for continuously demanding current support policy system.

Third, the overflow of old farmers intensifies the tendency of rice-monoculture. The old farmers tend to stick to rice farming, which makes it difficult to convert rice farming to other products. The long lasting government policies concentrated on rice industry have induced the labor saving technology in favor of rice farming as in TABLE 12. With this technological condition at hand, the old farmers cannot help choosing rice farming with their infirm labor forces. The feature of rice monoculture is too heavy a burden to government in reforming policies especially in Korea.

TABLE 12 Labor Hours Required for the Cultivation of Major Products (hours / 10 acres)

	Rice	Chinese Cabbage	Red Pepper	Onion	Lettuce (protected farming)	Apple
1981	93(100%)	176(100%)	249(100%)	220(100%)	837(100%)	415(100%)
1995	35(37%)	140(80%)	243(98%)	193(87%)	724(87%)	334(81%)
2001	28(30%)	101(57%)	205(82%)	136(62%)	688(82%)	196(47%)

Source: Korea Rural Development Administration

***Rice Monoculture and Policy Reform.*** Although rice monoculture in terms of resource allocation and income source has been a common feature in Korean and Japanese agriculture, rice serves as predominant source of farm household income in Korea. Almost all Korean farmers have keen interests in rice. As a result, rice has become a kind of political good rather than a commercial good. Any trial of rice policy reform like government purchase price cut leads to serious protests from farmers. In the consideration of the allocation of resources leaning towards rice farming, successful rice policy reform is a precondition for the success of total agricultural policy reform in Korea.

***Farm Household Income and Policy Reform.*** The different structural adjustment paths between the two countries lead to full-time vs. part-time based farming system, which in turn have brought about different composition of farm household income. High dependency of farm household income on non-farm sources could allow more flexible policy options and relieve the burden of government in the process of agricultural policy reform.

As we saw earlier Korean farmers still derive their income largely from farming. Several government efforts to increase off-farm income since early 1980's have not been rewarded satisfactorily. Currently the circumstances to enhance off-farm income are increasingly getting

worse. The Korean rural areas do not have comparative advantages in terms of wage or land prices to attract outside firms which can serve as off-farm income sources compared with other neighboring countries such as China and ASEAN. Currently, many small or medium sized firms are moving their plant sites in foreign country rather than in rural area.

## **CONCLUSION**

Although Korea and Japan share many common features in agricultural sector, Korean agriculture is much more inflexible as far as policy reforms are concerned. Since farm income problem is not of great concern to Japan, they can concentrate their efforts on relatively limited issues focusing on enhancement of production efficiency targeted to a small number of full-time farmers and on restoration of rural vitality mainly in remote hilly and mountainous areas.

Korean agriculture seems to have much more difficulties in pursuing policy reform in the directions suggested by international standards. The most urgent precondition for Korea to reform current agricultural policy is to reduce the size of policy-targeting group, i.e. the number of farmers. If farm employment size could be lowered to the effectively manageable level, the difficulties resulting from political power of farmers and inflexibility in policy options will certainly be reduced while the effectiveness of policy will be increased.

Considering that most of the large farm employment consists of old farmers, of which the decreasing rate is very stable and the mobility to other sectors is limited, it seems to take some time for Korea to have a reasonable farm employment size so that some policies for structural adjustment can be effectively implemented. The most possible way to make it shorter is that government takes some policy initiatives like direct payments for early retirement and resource transfers to more productive farmers. However, such policies are not expected to have satisfactory effects in the short run because of too many farmers and budget constraint.

## NOTES

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<sup>2</sup>The Agricultural Census in 2000 reports that 50 per cent of total Korean farmers and 66 per cent of total Japanese farmers are 60 years old and over.

<sup>3</sup>Owing to the long history of decentralized industrialization path based on rural industrialization, as early as in 1920, a quarter of total farm household income was derived from non-farm job in Japan.

<sup>4</sup>The temporary exemption of Korean rice from ‘tariffication’ is to be expired by the end of 2004. By then whether the exemption will be extended or not will be determined through the currently ongoing negotiations with rice exporting countries concerned.

<sup>5</sup>Historically, Japan recorded the peak of agricultural employment in 1904 while Korea in 1975, which implies that as early as in 1905, agricultural employment started decreasing in Japan while it started almost 70 years later in Korea.

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