

Emerging Asian Food Markets and Japan's Strategy

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1. Introduction

The growing population and increasing income in Asia definitely create more demand for food in this region. In order to satisfy such increasing demand for food, it will be required to enhance domestic production and expand food procurement activities through international trades. Asian countries have limited arable land and have accelerated reduction of scope of protective measures such as imposition of tariffs through negotiations in the World Trade Organization (WTO) and the Free Trade Agreement (FTA), which supports expansion of their trade.

How should Japan face such dynamic changes in food economy driven by Asian countries? Japanese agricultural industry has directed their efforts only to satisfying the domestic demand, however, from now on, these growing Asian markets provide a great opportunity to Japanese to improve their agriculture, and enable them to export their differentiated products, such as rice, and develop a new strategy: importing materials and processing them into highly valued products with Japan's technologies and then exporting those products. This is exactly what the Japanese manufacturers adopted as a growth strategy after the World War II. It is rephrased as a strategy in the aim of being a nation with robust economy through "processing trade". The agricultural industry is finally seeing the buds begin emerging 50 years later than the manufacturing industry in Japan.

This paper analyzes food trends in Asia and explores the possibilities of trades of Japan's processed agricultural products, in particular, of its processed livestock products. The expansion of trades of processed livestock products means the growth of materials trades, mainly feed grains, which will also result in an increase of grain imports from the United States. Therefore, the focus of this paper is not limited to the trade between Japan and Asia but also given to the reorganization of international agricultural trade.

2. Population, Income and Food Consumption

The Asian region includes China and India that are economically fast growing and have vast land and abundant natural resources, and it is not too much to say that now this region leads the world economy. A rapid economic growth causes the demand for food to change. The total food demand in a country is the product of population and per capita food demand. The latter is significantly affected by per capita income. Therefore, a change in food demand depends on the population growth rate, the per capita income growth rate and the income elasticity of demand for food that indicates how much food demand responds to

changes in consumer's income.¹ In other words, total food demand is correlated with changes in population and, therefore, sharply increases when income dramatically increases in line with economic development. Although the population growth rate in China declines to the level of 0.5% and that in India is less than 1.5%, their growth rates of per capita income reach as much as 8 to 10%. The income elasticity of direct grain consumption is about 0.5 in developing countries², from which the direct grain consumption in China and India is estimated to grow at an annual rate of 5 to 6%.³

However, the grain demand is comprised of not only the demand from industries related to food products that are consumed directly but also the demand from feed industries that comes from the consumption of livestock products. The production of 1kg of chicken meat requires 3 to 4 kg of grains. Pork and beef require 5 to 6 kg and as much as 8 to 10 kg, respectively. The income elasticity of demand for livestock is high and, consequently, the demand for grains to be used as feeds are to sharply increase in line with the economic growth. If this demand for feed grains is included, the income elasticity of demand for grains is estimated to be 1.0, from which the annual growth rate of the grain consumption is calculated to be 9 to 10% for the Asian region including China and India. This level of growth will put pressure on the international grain market.

In this regard, the recent world average population growth rate is about 1.2%, and the per capita GDP growth rate is about 2.8%. Assuming the income elasticity of demand for grains is 0.3% or so, the annual growth rate of the world demand for grains remains around 2% p.a.

Actually, against the backdrop of growing income in emerging countries including China and India, the prices of soybeans and corn increased 2.3 times and those of wheat 3 times in the three years from 2006 to 2008 during which grain prices rose. An increased demand is followed by increased food prices, which expands to prices of grains, dairy products, meats and fish.

Among other grains, the demand for wheat particularly increases. India and China have sharply increased wheat imports. India, a wheat exporter in the early 2000s, turned into an importer during recent years and its import volume of wheat has an upward trend. This change has resulted partly from the agricultural policies implemented in India. More importantly, the ongoing dietary westernization mainly among the middle class consumers whose income has greatly increased shift their staple food from rice to bread, which caused the demand for wheat to expand, as in the case with China.

¹ This can be expressed by a formula: $G(D)=G(N)+\eta \cdot G(y)$, where G is the change rate of the variable in the following parentheses. D, N, y and η are total food demand, population and per capita income and income elasticity of food demand, respectively.

² For the food demand in developing countries, refer to Chapter 1 of "*Nogyo Keizairon – Shinban* (Agricultural Economics – New Version)," Yujiro Hayami and Yoshihisa Godo (2002), Iwanami Shoten.

³ For the changes in food demand structure influenced by the difference in economic development, refer to "*Asia Keizai to Shokuryo Mondai* (Asian Economy and Food Problems)," Masayoshi Honma, and Chapter 6 of "*Asia Keizai: Risuku eno Chosen* (Asian Economy: Challenge to Risk)," Shujiro Urata, and Toshihiko Kinoshita (written and edited) (October 2000), Keiso Shobo.

The surge of corn prices was significantly attributable to the increasing demand from biofuel production, the expansion of the demand for livestock products in emerging countries and other developing countries also played an important role in the upsurge. Similarly, the soybean demand from oil production combined with the demand for soybean meal as a feed ingredient pushed up the international prices of corn. The consumption of vegetable oil has sharply increased in China that now has turned into the world's largest soybean importer.

3. Outlook of Supply and Demand for Grains and Meat in Asia

As the trend of food supply and demand is closely related to economic development and economic growth, it is important to estimate the future food supply and demand in Asia. The Ministry of Agriculture, Forestry and Fisheries estimated regional supply and demand throughout the world, using a food supply and demand projection model. This section discusses the outlook of food supply and demand in Asia based on the results of the ministry's latest projections that target the year 2021.

Table 1 shows the estimated per capita consumption of grains and meat in Asia as a whole, China and India in 2021. The total grain consumption in Asia is expected to increase by 10%, from 245 kg in 2009 to 269 kg. China is expected to increase by 7%, from 300 kg to 322kg, and India by 14%, from 176kg to 200kg. Since the grain consumption in this estimation includes food grains only and does not include feed grains, the growth rate of food grain figure of China is lower than that of Asia as a whole. This denotes that increased income does not particularly pushes up grain consumption, and leads to declining income elasticity of demand for grains in China.

The per capita meat consumption in Asia as a whole, however, is expected to increase by 29%, from 28kg in 2009 to 35kg, whereas that China's figure is estimated to jump by 37%, from 53kg to 73 kg, a considerably higher growth rate than that of Asia. Although India's growth rate is expected to be as high as 57%, its per capita meat consumption is 4Kg in 2009 and estimated to be 7kg in 2021, which is less than one tenth of China's figure. Table 1 clearly demonstrates that the use of grains is shifting from food industries to meat production industries in China.

Table 1 Estimated Grain and Meat Consumption in Asia, China and India

		Grain consumption		Meat consumption	
		Value (kg)	Index	Value (kg)	Index
Asia	2009	245	100	28	100
	2021	269	110	35	129
China	2009	300	100	53	100
	2021	322	107	73	137
India	2009	176	100	4	100
	2021	200	114	7	152

Source: "World Food Supply and Demand Projections for 2021" released by Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries in 2012

Table 2 shows the estimated supply and demand for 2021 for meats, i.e. beef, pork and chicken of Asia as a whole and China. Let's take a look at the supply and demand for beef first. In Asia as a whole, the consumption growth will outpace the production growth, and imports are expected to increase from 1.4 million tons in 2009 to 3.7 million tons in 2021. China domestically produced enough beef to meet 5.8 million tons of consumption in 2009, it is expected that the country will have to import 0.9 million tons of beef in 2021 because its consumption will expand to 8.8 million tons.

Then, let's see the figures of pork. In Asia as a whole, the consumption growth will exceed the production throughout the region, and its imports are expected to increase from 2.5 million tons in 2009 to 5.7 million tons in 2021. China represents more than 80% of the total pork production and consumption in Asia and is expected to increase its pork consumption to 66.6 million tons in 2021, and, since no production growth is expected, its imports estimated to increase from 0.2 million tons in 2009 to 2.7 million tons.

Both production and consumption of chicken will expand in Asia as a whole. The imports are expected to increase from 1.6 million tons in 2009 to 6.4 million tons in 2021 to meet the demand for 39 million tons of chicken meat. China's production and consumption represent about a half of chicken produced and consumed in Asia, and, in 2021, it is expected that its production will not increase enough to keep up with its consumption growth, which will expand its chicken imports from 0.1 million tons in 2009 to 2.1 million tons in 2021.

Table 2 Estimated Production, Consumption and Net Exports of Beef, Pork and Chicken in Asia and China

	Production		Consumption		Net exports	
	2009	2021	2009	2021	2009	2021
Beef						
Asia	13.3	17.4	14.6	21.1	-1.4	-3.7
China	5.8	8.0	5.8	8.8	0.0	-0.9
Pork						
Asia	56.7	73.7	59.1	79.4	-2.5	-5.7
China	48.7	63.9	48.9	66.6	-0.2	-2.7
Chicken						
Asia	22.9	32.5	24.5	39.0	-1.6	-6.4
China	12.2	17.8	12.2	19.8	-0.1	-2.1

Source: "World Food Supply and Demand Projection for 2021" released by Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries in 2012

4. Economic Development and Food Economy in China

What is clarified through Tables 1 and 2 is the fact that China is the key player in emerging food markets in Asia. The movement of China has a great influence on the food supply and demand not only in Asia but also all over the world. The food demand in China is seemed to be determined by its demographic trend and per capita income growth.

First, let's take a look at Table 3 that summarizes the per capita food consumption expenditure and the breakdown by income groups of urban residents in China. As understood from the comparison of total consumption expenditure and food consumption expenditure between 1994 and 2007, the expenditures increased in all income groups. The average total consumption expenditure and food consumption expenditure increased by 3.5 times and 2.6 times, respectively. The gaps in consumption expenditure also increased between income groups. The gaps in total consumption expenditure and food consumption expenditure between the highest income group and the lowest income group increased from 2.9 times and 1.9 times in 1994 to 5.8 times and 3.4 times in 2007, respectively.

Table 3 shows the breakdown of food consumption. As demonstrated by the figures of individual items in the table, the percentage of food grain expenditure in the total food consumption expenditure decreased as the income level rose during the relevant period. The higher the income level, the lower the percentage of food consumption expenditure is. The items characterized by this trend were only food grain and egg in 1994 but meat was added to those items in 2007. This indicates that, during an economic development, the higher the income group, the smaller the percentage of meat expenditure is in the total food consumption expenditure. During the analysis period, the percentage of the expenditure for milk and dairy products sharply increased. This reflects the situation where the protein sources for urban residents in China have shifted to more expensive raw milk and dairy

products. This table also shows that, the higher the income level, the larger the percentages of the consumption expenditures for fish, seafood and “others.” The percentage of milk and dairy products also had an upward trend in 1994, but that of the upper middle and higher income groups turned downward in 2007. “Others” used in China Statistical Yearbook issued by the National Bureau of Statistics of China include vegetables, fruits, food of restaurants and other food services. This paper uses the data that include the item “others” that account for about 50% of the total consumption expenditure. Careful attention should be given to the fact that the analyzed items in this data are limited to demands for basic food products.

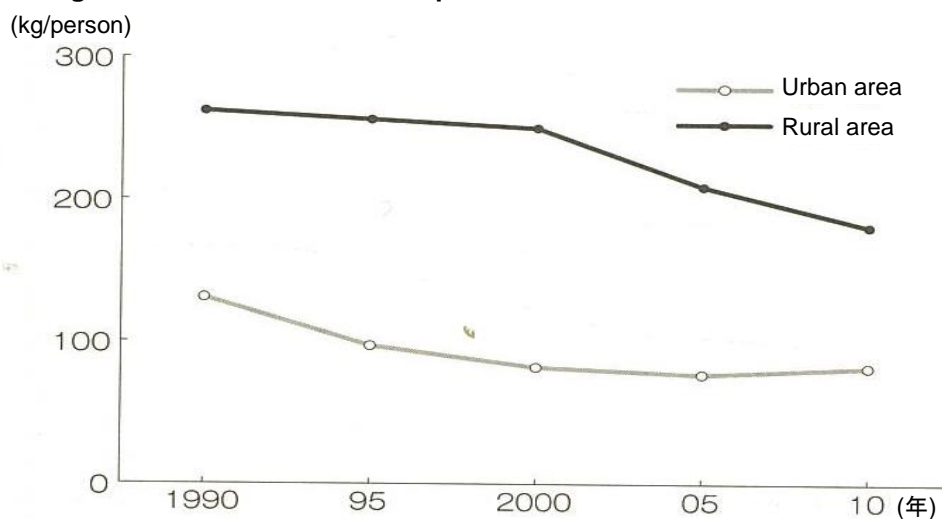
Table 3 Per Capita Food Consumption Expenditure and Items by Income Group of Urban Residents in China

Income group	Average	Lowest income	Low income	Lower middle	Middle	Upper middle	High income	Highest income
1994	-	0%—10%	10%—20%	20%—40%	40%—60%	60%—80%	80%—90%	90%—100%
Total consumption expenditure (yuan)	2,851	1,645	2,029	2,352	2,798	3,253	3,881	4,800
Food consumption expenditure (yuan)	1,422	1,006	1,169	1,305	1,431	1,564	1,728	1,922
Food grain (%)	14.20	18.46	16.46	15.35	13.94	13.22	12.47	11.52
Meat (%)	23.56	23.15	23.55	23.77	23.77	23.72	23.51	23.07
Egg (%)	4.07	4.34	4.31	4.27	4.10	3.97	3.83	3.77
Fish and seafood (%)	6.73	6.27	6.46	6.61	6.64	6.98	10.92	7.00
Milk and dairy products (%)	1.84	1.39	1.49	1.72	1.83	1.95	2.13	2.12
Others (%)	49.60	46.38	47.71	48.29	49.72	50.17	47.14	52.51
2007	-	0%—10%	10%—20%	20%—40%	40%—60%	60%—80%	80%—90%	90%—100%
Total consumption expenditure (yuan)	9,997	4,036	5,634	7,124	9,097	11,570	15,298	23,337
Food consumption expenditure (yuan)	3,628	1,904	2,451	2,943	3,538	4,230	5,062	6,440
Food grain (%)	19.56	22.24	21.11	20.16	19.60	19.37	18.48	16.96
Meat (%)	19.38	22.99	22.55	21.66	20.27	19.07	17.44	14.88
Egg (%)	2.31	3.07	2.87	2.67	2.49	2.24	1.93	1.54
Fish and seafood (%)	6.72	5.13	5.61	6.11	6.49	7.16	7.44	7.62
Milk and dairy products (%)	4.43	3.99	4.44	4.44	4.67	4.54	4.46	4.10
Others (%)	47.59	42.58	43.42	44.95	46.47	47.62	50.25	54.90

Source: “China Statistical Yearbook” issued by the National Bureau of Statistics of China

The above is the analysis of the figures of urban residents in China. It is known that there is a wide gap between urban areas and rural areas in China. Fig. 1 shows the changes in annual per capita grain consumption in urban areas and rural areas separately. The grain consumption in urban areas declined to a little less than 100kg, and seems to have bottomed out. On the other hand, rural residents consume grains more than twice as much as urban residents, but the consumption volume has sharply decreased recently to below the level of 200kg. It is highly likely that the consumption of food grains will further decrease also in rural areas.

Fig. 1 Changes in Annual Grain Consumption in Urban Areas and Rural Areas in China

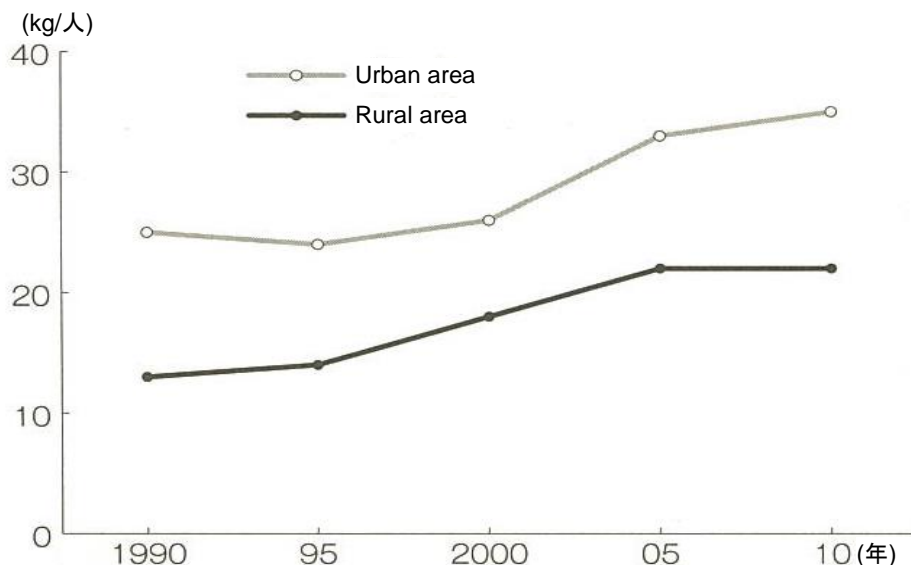


Source: China Statistical Yearbook

Reference: Hiroyuki Kawashima (2012), “*Data de Yomitoku Chugokukeizai* (Understanding of China’s Economy through Data)” Toyo Keizai Inc.

As demonstrated by the changes in annual per capita meat consumption in urban and rural areas in Fig. 2, the consumption steadily increases in both areas. The meat consumption in rural areas is about two-thirds of that in urban areas. Assuming that the income rises in rural areas, the meat demand is expected to further increase.

Fig. 2 Changes in Annual Meat Consumption in Urban Areas and Rural Areas in China



Source: China Statistical Yearbook

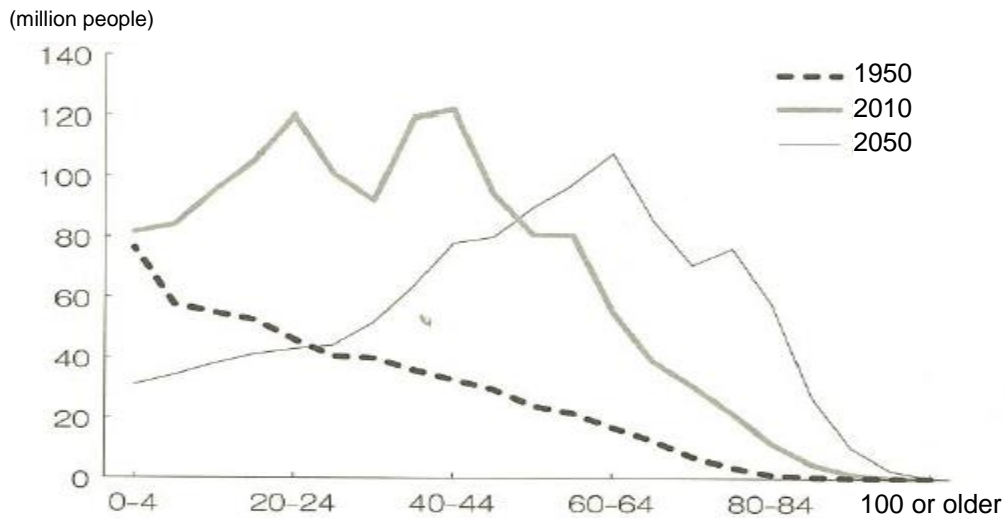
Reference: Hiroyuki Kawashima (2012), “*Data de Yomitoku Chugokukeizai* (Understanding of China’s Economy through Data)” Toyo Keizai Inc.

As discussed above, the economic development in China changes the nature of the grain demand from direct consumption to indirect consumption due to meat demand, and this trend seems to continue. The growth of grain consumption supported by the population increase, however, does not last forever. It is predicted that the growth rate of China’s population has already become smaller and the population will peak in around 2025 when it will reach around 1,400 million, and then turn downward.

Furthermore, China will have a declining birth rate and aging population. The population distributions by age for 1950 and 2010 and the forecasted population distribution for 2050 are shown in Fig.3. In fact, this population distribution by age in China is quite similar to that of Japan about 20 years ago. In other words, China will be challenged by low birthrate and aging population in 20 years, just like what Japan is experiencing now. This is shown in the forecasted population distribution in 2050.

This means that the food demand in China will not grow in line with the population growth and rather shrink under the process of shifting to the aging population. The structure of food demand will change to meet the dietary needs of aging people who prefer quality to quantity of food. What will be needed most is to develop quality food or high-value added food of which safety must be ensured. A new supply system is also required to be established in anticipation of the coming needs.

Fig. 3 China's Population Distribution by Age



Note: Lower estimate for 2050.

Source: United Nations Population Division

Reference: Hiroyuki Kawashima (2012), “*Data de Yomitoku Chugokukeizai* (Understanding of China’s Economy through Data)” Toyo Keizai Inc.

5. Japan’s Strategy in Asian Food Market

The Japanese agricultural industry should develop its strategy that targets not only the stagnating domestic market but also overseas markets, especially Asian markets. And Among other Asian markets, China’s market is huge, and, therefore, a special focus should be placed on how to face China and how to promote Japanese agricultural products in its market.

Consumers throughout the world have already recognized the superiority of Japanese food products in terms of quality. The Japanese term such as *Wagyu* or *Kobe Beef* is well-known to people in the international society. At the same time, however, they know that the price of Japanese quality food is high. Although Japanese food products such as beef are popular as excellent gifts among the higher income earners, they just form a small niche market. So the export volumes of such products are limited and the market cannot be expected to expand any further.

Probably, true prospective customers of Japanese agricultural products are not limited-numbered rich people but middle class people who are in a process to increase their income. Middle class consumers who used to consume food as a basic need of life and have just escaped from poverty will enjoy gourmet food as their income increases. Needless to say, they will start with higher quality Chinese dishes and then gradually have an itch to try dishes from other countries. This is where Japanese food comes in.

It is not necessary to provide extremely high quality food materials. What is more

important is offering tasty food materials at reasonable prices. It is desirable to establish a so-called “middle-grade” brand and then expand the food market. For example, Aussie Beef is very familiar to Japanese, but we have more tasty Wagyu beef, which should be aggressively marketed to middle income consumers in China. To make this possible, we need to establish a production system in large scale feedlots in which cattle are raised under consistent raising and monitoring conditions, and thereby we should ensure to reduce production costs.

Meanwhile, Japan has increasing but still not enough number of domestic meat processing plants for export (certified) at present but it must increase the number and establish a new system where frozen meat is stored and exported. Japan also needs to enhance sales promotion to its domestic market for parts that are not exported to overseas. Furthermore, it needs to achieve better export conditions by requesting importers to reduce their high tariffs through WTO and the FTA.

What is most lacking in the strategy of Japanese agricultural industry to increase the exports is marketing capability. Conventionally, Japanese agricultural products were protected by the price policy of the government. The agricultural industry did not need to watch the market. What they had to do was just lobbying politicians to maintain prices determined under the policy. Then, under the WTO’s Agriculture Agreement, all non-tariff barriers were converted into tariffs, and a tariff reduction process for agricultural products moved into full swing. Furthermore, the Japanese agricultural industry is now facing the challenge of the complete elimination of tariffs forced by, for example, the Trans-Pacific Partnership (TPP). The abolishment of these protection measures means that the price policy can no longer be used to protect the domestic agricultural industry. Although a protection by way of “direct payment” remains, producers must have good skills and knowledge of marketing in efforts to continue their operations to sell agricultural products.

Producers are not required to directly promote a marketing strategy themselves, but need to have skills to provide correct information on quality and characteristics of their products and establish collaboration or partnership with trading houses and/or trading companies that engage in marketing activities for their products. It is also important for producers not only to provide food materials but also to process those materials or develop new products by processing raw products and adding new services. Among others, meat and dairy products have great potential variations to be explored and leave much room for development.

Possible activities to be promoted in Asian markets are not limited to exporting agricultural products. Some Japanese agricultural business operators have started transferring their production bases to other Asian countries. These producers believe that various restrictions and higher labor costs in Japan stand in the way of the potential growth of Japanese agriculture and thus run agricultural operations overseas. Non-agricultural industries such as manufacturing industry have experienced the industrial hollowing-out, which may also take place in the agricultural industry. Excellent operators would seek more

efficient locations to achieve their business potentials all over the world. Actually, some pig farmers and dairy producers near urban areas in Japan suffer from claims related to pollution from livestock production such as odors, who are invited by foreign countries to establish their businesses.

On the contrary, other producers feel that they cannot make the most of their agricultural technology in overseas as well as they can in Japan, due to the differences in quality of labor force and agricultural machines. A dual approach may be effective even in that case. In a dual business model, highest-quality products are produced with the use of higher level of agricultural technology in Japan while medium-grade products are produced at lower costs with the use of Japanese technology and lower-waged labor force in Asian countries. Some producers actually have put this business model into practice to produce vegetables and fruits. It may be a good business model applicable to the livestock industry.

6. Conclusion

Apart from rice production, the Japanese agricultural industry does not have any comparative advantage in land-extensive agriculture. Products other than rice in which Japan can have a comparative advantage are garden and livestock products that can be differentiated by quality. Tariffs on fruits and garden plants such as flowers and ornamental plants were already eliminated or reduced to very low levels, and therefore operators in those industries have already acquired international competitiveness to some extent. The livestock industry is left behind those industries.

Beef was protected by the quantitative restriction on imports up until 1991 and still now is protected by a tariff of 38.5%. For pork, a differential tariff system is maintained to protect it. As long as these protective measures for domestic agricultural industries remain, no serious export strategy is developed. It seems to be also difficult to remove import restrictions imposed by importers such as tariffs through negotiations because no country can ask others to open their markets without opening its own market.

Therefore, first of all, Japan should establish free competition environment by eliminating its protection policies/measures, before it develops a strategy for exporting Japanese agricultural products. If this environment is realized, then the first choice among comparatively advantageous agriculture products to be developed would be livestock products that are processed for export. It is desirable to produce high quality livestock products based on Japanese technology, even if the production depends on imported feeds. What is important here is not promoting the conventional processing trades but expanding markets for highly differentiated and high quality products as well as newly developed products.

Furthermore, it may also become necessary to look at livestock processing operations run by Japanese farmers overseas. The internationalization of agriculture includes not only trades of agricultural products but also the transfer of capital, human resources and technology on a global level. As long as Japanese livestock technology for producing high

quality products is used all over the world, the demand for feeds to be input to production may not decrease but continue to increase.