

ANALYSIS OF JAPANESE EXPORTS AND IMPORTS OF RICE

Toshio Shiraiwa

Problem in Lieu of Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

May 2003

APPROVED:

Terry L. Clower, Major Professor and  
Graduate Advisor

Bernard L. Weinstein, Department Chair  
David Hartman, Dean of the School of  
Community Service

C. Neal Tate, Dean of the Robert B.  
Toulouse School of Graduate Studies

Shiraiwa, Toshio, Analysis of Japanese Exports and Imports of Rice. Master of Science (Applied Economics), May 2003, 35 pp., 4 tables, 5 illustrations, reference, 12 titles.

This research shows that the Japanese rice policy has affected the volume of exported and imported rice; moreover, multilateral and bilateral agreements have also affected Japanese rice policy. Japan's institution of subsidies and trade barriers has made its rice products too expensive for foreign trade and its domestic consumers. Since the WTO agreement has forced Japan to open its market gradually over six years, Japan may be unable to compete internationally because of its limited land, high labor costs, and the field utility fees.

## ACKNOWLEDGMENTS

Attending graduate school in America has been a life long dream of mine. It has been a very challenging and rewarding experience. I would like to thank my advisor, Dr. Terry Clowers for his assistance and conceptual leadership with the thesis. In addition, the faculty of the University of North Texas has been outstanding in providing me with top rate education.

I also appreciate the assistance of my friends and family. They strongly supported me through my graduate school career.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS .....	iii
LIST OF TABLES .....	iv
LIST OF ILLUSTRATIONS .....	v
Chapter	
1. INTRODUCTION .....	1
The Subject of the Research	
World Rice Market Basics	
2. LITERATURE REVIEW .....	6
3. METHODOLOGY .....	9
Definition of Terms	
Method of Analysis	
Discussion	
4. ANALYSIS OF JAPANESE EXPORTS AND IMPORTS OF RICE .....	14
Japanese Exports of Rice	
Japanese Imports of Rice	
Disputes over Imported Rice in Japan	
5. CONCLUSION .....	25
APPENDIX .....	29
REFERENCE LIST .....	34

## LIST OF TABLES

Table	Page
1. Japan Domestic Production.....	30
2. Japan Domestic Utilities .....	31
3. South Korea Domestic Production.....	32
4. South Korea Domestic Utilities .....	33

## LIST OF ILLUSTRATIONS

Figure	Page
1. Percent of Production Traded .....	2
2. The Global Rice Export Market.....	3
3. The Global Rice Import Market.....	4
4. Japanese Exports of Rice .....	15
5. Japanese Imports of Rice and Total Balance .....	20

## CHAPTER 1

### INTRODUCTION

#### The Subject of the Research

This thesis investigates and analyzes Japanese exports and imports of rice from 1978 to 1999. Specifically, the research focuses on Japan's crop subsidization and trade barriers and their roles in governing Japan's trade policy, its economy, and international relations.

The following research attempts to explain the changes in Japanese rice export behavior and whether this behavior has had negative effects on other countries such as the United States. In addition, the impact of rice trade restrictions on prices and the Japanese economy will be examined. Recently, the World Trade Organization (WTO) has achieved success in promoting liberalized trade agreements in many parts of the world. However, Japan has shown little interest in opening its rice markets. This leads to questions about how Japan's trade policies will influence other countries' rice commodity trading. The findings of this analysis should be helpful in evaluating current and future trade policies.

This research is meaningful for three reasons. First, this research illuminates the reasons that caused Japan to start and then stop importing and exporting rice, and the likelihood of a gradual increase in Japanese exports and imports of rice in the future. Second, this research demonstrates that Japan's current rice policies affect the quantity of imports and exports of rice and impact negatively both Japan's and other countries'

economies. Third, this research addresses the solutions to Japan's current rice policy based on historical facts and the likelihood of Japan's imports and exports of rice.

### World Rice Market Basics

#### The International Rice Market

The world rice market is relatively small as compared with other traded crops. Only about 6 % of the total production of rice in 1999 was traded. Other crops such as wheat, soybeans, and corn were traded more heavily. 18% of the total production of wheat, 25% of the total production of soybeans, and 13% of the total production of corn were traded (Sumner, D. A. & Lee, H., 2000). Although the small volume of rice traded internationally is often attributed to trade barriers, the major drawback is that rice prices vary so widely in those countries that they consume their own rice production rather than engaging in either rice importing or exporting.

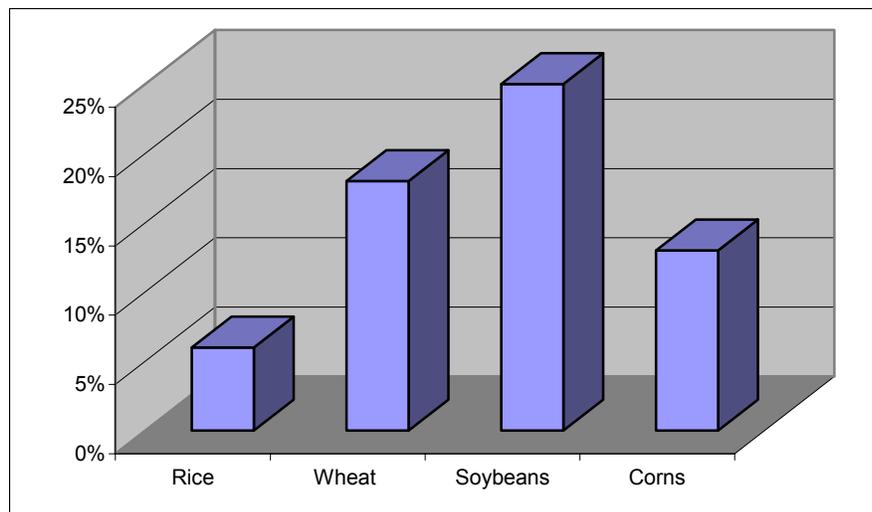


Figure 1.1. Percent of Production Traded Internationally

Sources: Sumner, D. A. & Lee, and H., 2000

The global rice export market is highly concentrated in a very few countries. The largest exporters of rice by volume percentage of all rice exports are Thailand (30%), Vietnam (18%), Pakistan (10%), China (8%), India (4%), and the U.S. (12%) (Figure 1.2). The remaining 18% are attributed to a number of countries (Pggi, M. S., & Yamazaki, F., 2001).

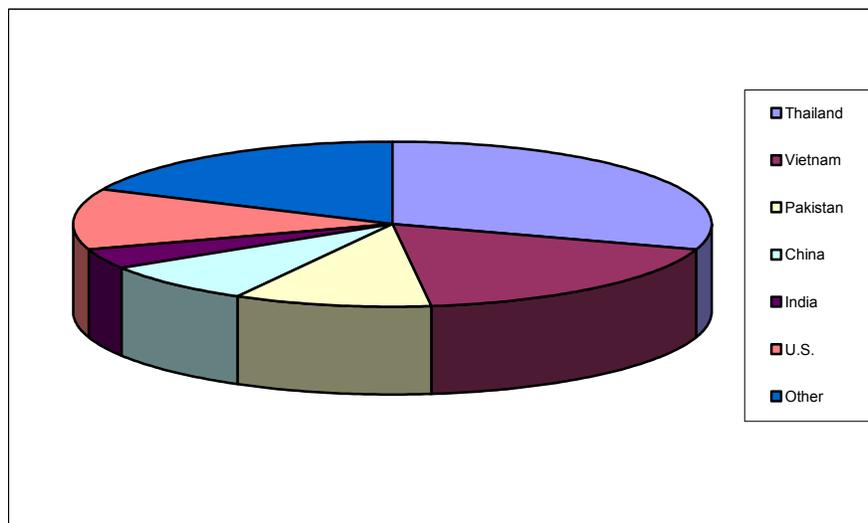


Figure 1.2 The Global Rice Export Market

Source: Pggi, M. S., & Yamazaki, F., 2001

The major rice importing countries by percentage of total imported rice volume are Indonesia, accounting for 37%; the Philippines, with 13%; Brazil, with 9%; Nigeria, importing 6%; the EU, with 5%; Saudi Arabia, accounting for 5%; Iraq, with 4%; Senegal, with 4%; and Malaysia, importing 4% (Figure 1.3). Other minor consumers constitute the final 13% of the world rice imports market (Pggi, M. S., & Yamazaki, F., 2001).

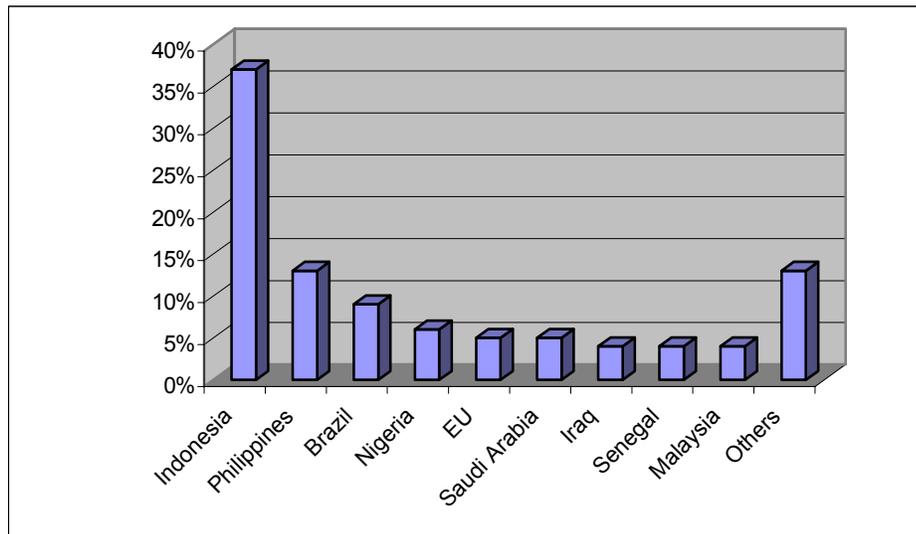


Figure 1.3 Global Rice Import Market

Source: Pggi, M. S., & Yamazaki, F., 2001

### Segmentation of the Rice Market by the Quality of Rice

Rice industry analysts generally segment the market by the quality of the rice produced. The different classifications are Indicia, Japonica, Aromatic, and Glutinous. Indicia rice accounts for 75% of the total market; Japonica rice amounts to 10% of the market; Aromatic rice accounts for 10% of the rice market; and Glutinous rice makes up the final 5% of the market (Pggi, M. S., & Yamazaki, F., 2001). However, Indicia rice and Japonica rice are the primary varieties traded internationally, with 85% or more being Indicia and 7.5% being Japonica (Sumner, D. A. & Lee, H., 2000).

This research focuses on Japonica, the high-quality, medium grain rice, which is very popular in South Korea, Taiwan, Turkey, Canada, and other countries. Japonica is used almost exclusively in Japan. Although 23 million metric tons of rice was traded

internationally in 1999, only about 1.5 million metric tons of Japonica rice was included in that amount. The major producers of Japonica are Northern China, Egypt, Australia, Italy, and the United States. California is the major producer of Japonica rice in the U.S. although Arkansas, Louisiana, and Texas also produce modest quantities of Japonica rice (Sumner, D. A. & Lee, H., 2000).

## CHAPTER 2

### LITERATURE REVIEW

The problems of Japanese trade barriers and exports of heavily subsidized rice to commercial markets such as South Korea and Indonesia in the 1980s are discussed in several books and articles. Other recent articles reveal that the WTO agreement on rice impacted the imports of rice in Japan and South Korea. Pggi and Yamozaki in 2001 address the world rice market, including the global rice import market, the global rice export market, the segment of rice market by quality, and the quantity of minimum market access (MA) that was imposed by the WTO in 1995 on Japan and South Korea.

In addition to Pggi and Yamozaki, Gramer, Hansen, and Wails in 1999 state that the Uruguay Round provided special minimum market access (MA) rules with the goal of eventually removing Japanese tariffs and thereby opening Japan and South Korean rice markets. The grace period for the removal of tariff barriers was set at six years for Japan (1995 to 2000) and ten years for South Korea (1995 to 2004). South Korea received the additional time for tariff removal and a lower MA requirement because it negotiated for and received developing-country status. Various studies have shown that the volume of additional imports from large countries under the MA rules have effects on world rice prices, especially for the high quality, medium-grain Japonica varieties preferred by Japan and South Korea. Gramer, Hansen, and Wails (1999) also argued that higher prices

have stimulated additional production, especially in Australia and the United States. Under the Uruguay Round Agreement, Japan agreed to apply tariffs on all commodities except rice. For imports of rice, Japan agreed to the MA requirement established in 1995 at 4% of base-period consumption (1986-1999) and increasing by 0.8% per year until reaching 8% of base-period consumption by 2000. South Korea agreed to MA import requirements of 1% of base-period domestic rice consumption in 1995, with an increase in equal annual increments of 0.2% until reaching 2% of base-year consumption by 2000, and followed by an annual increment of 0.5% until reaching 4% of base-period consumption in 2004.

Moreover, in 2000, Sumner and Lee confirmed the same conclusions yielded by Pggi and Yamazaki relative to the world rice market, including both the global rice import and export market, the segmentation of the rice market by quality, and the reasons causing the concentration characteristics of the global import rice market and global export rice market. They further declared that the World Trade Organization (WTO) agreement had forced Japan and South Korea to open their rice market by reducing their tariffs.

On the other hand, many government documents (Committee on Agriculture House of Representatives, 1982) cite why and how Japan created a ban on importing foreign rice into Japan as well as the reasons that Japan could export its heavily subsidized rice to commercial markets such as Indonesia and South Korean.

Committee on Agriculture, Nutrition, and Forestry United States Senate (1986) reveal that the import barriers created by Japan on foreign rice, especially U.S. rice into Japan,

had a serious economic impact on Japan. Committee on Agriculture House of Representatives (1981) state that Japan started exporting its surplus rice, especially its old surpluses, to the Indonesian and South Korean commercial rice markets that had previously been served by U.S. producers. This book also reveals that Under Secretary of Agriculture Dale E. Hathaway and Foreign Agriculture Service Administrator Tom Hughes, with others, went to Tokyo in 1980 and reached an agreement with Japan limiting Japanese rice exports to 1.4 million tons over a 4-year period starting in 1980. Moreover, Committee on Agriculture House of Representatives (1982) cite an exemption to the agreement made in 1980 in Tokyo allowing Japan to export more subsidized rice to South Korea.

The U.S. government documents enumerated above also explain why Japan could export its surplus rice before 1984 but stopped exporting rice after 1985. Japan's export of extremely low priced rice had a negative economic impact on other rice exporting countries such as U.S. As a result, rice millers in the U.S. complained about the Japanese "dumping" excess production onto world markets. The U.N. agreed and deemed Japan violated anti-dumping rules. Furthermore, these documents explain that Japan created barriers against the import of foreign rice into Japan, and both Pggi and Yamozaiki (2001) and Gramer, Hansen, and Wails (1999) reveal that Japan relaxed its ban on imported rice because of the WTO agreement.

## CHAPTER 3

### METHODOLOGY

This research focuses on the analysis of the variance in the quantity of Japanese imports and exports of rice from 1978 to 1999. Japanese rice producers practiced what is called “dumping” of rice; that is, rice was sold to South Korea at below priced production costs. Because of the shortage of rice supply from 1980 to 1982 in South Korea, South Korea increased its quantity of imported rice. The quantity of exports and imports of rice is represented by milled rice.

Using data describing Japanese domestic supply and domestic utilization from the food balance sheet from the Food and Agriculture Organization (FAO) website, domestic supply has four components: production, imports, exports, and stock changes. Domestic utilization, too, has four components: food, feed, processing, and waste.

#### The Definition of Terms

Production refers to the supplies from domestic farmers and rice growers. Imports refer to the amount of rice that is produced overseas and shipped into the domestic market. The amount of imported rice adds to the domestic total balance. Exports refer to the amount of rice that is produced domestically and shipped to other countries. Exports are deducted from the domestic total balance. Stock changes refer to the changes of inventory rice, which affects the market by creating an excess or a deficiency. Rice stocks

are treated on a first- in, first -out basis, whereby any new inventory that arrives replaces the oldest existing inventory of rice. The stock change is based on the theory that with more production of rice, more rice is stored. However, whenever there is a shortage in supply, inventories are released into the market as a supply source. A negative sign in the stock change signals the storage of rice in warehouses, and a positive sign signals the release of stored rice from warehouses to the domestic market. Rice is usually stored at low temperatures in warehouses and is generally distributed to domestic markets. Stored rice can also be used as an emergency food supply.

#### Method of Analysis

Current books and articles will be reviewed to ascertain the change in the quantity of rice exports and the reason for that change. The web sites of the Food & Agriculture Organization will be studied to obtain specific figures on Japanese rice production, imports and exports, stock change, and other variables. These figures will be analyzed to arrive at the reasons for Japan's changes in its rice policies.

#### Discussion

There are two special reasons for the Japanese government to store many tons of milled rice. The first is historical: Japan experienced a terrible shortage of rice at the end of World War II. At that time, there were many homeless children whose parents had been killed in the war, especially in Hiroshima and Nagasaki provinces where atomic bombs were exploded. Further, Japan did not have sufficient rice stored in governmental warehouses because of the war. Since rice was the main staple of the food market, this

shortage adversely affected the hungry in Japan. People were starving, and many homeless children died because of starvation.

The second reason for storing rice is that weather affects the volume of harvest. Japan is an island country and undergoes many typhoons that pass through during harvest season. Other unexpected weather events can also negatively affect harvest volumes. Therefore, storing certain amounts of rice is necessary so that the government can maintain sufficient rice inventories to prevent disruption to the supply of rice for domestic consumption.

The total balance of rice inventory refers to the sum of the production, imports, less exports, and stock changes. The balance indicates the volume of rice that can be employed in the consumption market.

On the domestic utilization side, the biggest component is food for the direct consumption by human beings. Humans consume 91% of the total rice supply. Processed rice, that rice used to make beer, rice flour, alcohol, and chemical products, is the second biggest component on the domestic utilization side. The most extensive usage of rice processes is the conversion and fermentation of rice for beer and Sake in Japan. The final component of rice for domestic utilization includes animal feed and seed. Such rice is not milled and stored in order to use in the next spring for future crops. Waste is the part of rice that cannot be used for any purpose because of wastage and spoilage. Waste accounts for roughly 2% to 7% of production (Food Balance Sheet, 2002).

The data set of Japanese domestic supply consists of the volume of production, imports, stock changes, exports, and total balance and is shown in Table 3.1 (all tables

are found in Appendix A). As stated in Table 3.1 Japan increased its exports of rice from 1978 to 1983 by 236%. The reason for this increase in rice exports was that South Korea was suffering from a shortage of rice at the time, and the Japanese government mandated the export of rice. The data set of Japanese domestic utilization that comprises the volume of food, feed, processing, waste, and other uses is shown in Table 3.2. The data set of South Korea's domestic supply and domestic utilization from 1978 to 1999 is shown in Tables 3.3 and Table 3.4.

This research points out the change in quantity of Japanese exports and imports of rice and suggests that Japan's political policies might affect the changes of Japanese exports and imports of rice. The data for South Korea, too, explain the changes of Japan's rice policies.

Producer Subsidy Equivalent (PSE) and the Consumer Subsidy Equivalent (CSE) measure the impact of policy and price distortions on agriculture. For a given good, the PSE and/or the CSE indicate the monetary benefit to producer (consumption) if these transfers did not occur (Appleyard & Field, 1997). Thus, if a farmer receives \$1,000 from his crop with no transfers, but actually received \$1,200 because of a price support program and subsidized input, then the farmer's PSE would be 20% ( $(\$1,200 - \$1,000)/\$1,000$ ). Analogously, consumers might pay \$100 for a good without government intervention; however, with price support programs and higher taxes to finance agricultural subsidies, they would pay \$125. The CSE would then be minus 25% ( $(\$100 - \$125)/\$100$ ). The CSE is negative in this case because it is defined as the

“benefit” from intervention, and the benefit is negative. The terminologies of PSE and CSE are employed to evaluate Japan’s rice policies.

## CHAPTER 4

### ANALYSIS OF JAPANESE EXPORTS AND IMPORTS OF RICE

#### Japanese Exports of Rice

The first finding is that Japan exported its largest volume of rice in the five-year period from 1979 to 1983. Japan exported 518,000 metric tons of rice, 5.5% of the total balance, in 1979; 601,000 metric tons of rice, 6.4% of the total balance, in 1980; 730,000 metric tons of rice, 7.9% of the total balance, in 1981; 293,000 metric tons of rice, 3.2% of the total balance, in 1982; and 296,000 metric tons of rice, 3.2% of the total balance, in 1983. In contrast, Japan exported only 94,000 metric tons of rice, 1.0% of the total balance, in 1984. During the following ten-year period, from 1985 to 1994, Japan stopped exporting any rice. Finally, in 1995, Japan once again exported a meager 11,000 metric tons of rice, 0.1 percent of the total balance. By 1997, Japan was again generally exporting rice (Food Balance Sheet, 2002).

These trends are explained by Japan's five-year disposal program. This program, initiated in April 1979, to reduce surplus rice stocks, utilized about 5 million metric tons of rice in animal feed and industrial uses as well as exports. Under this program, exports were projected to be limited to 200,000 metric tons a year (Committee on Agriculture House of Representatives, 1981). However, Japan exported a total of 840,000 metric tons of its surplus rice, including 350,000 metric tons to Indonesia in addition to the 250,000 metric tons to South Korea (Committee on Agriculture House of Representatives, 1981).

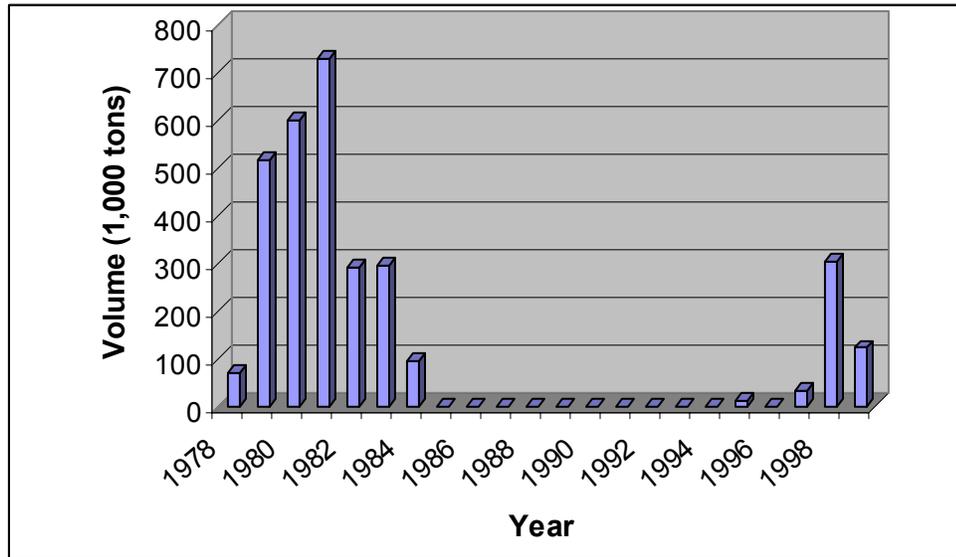


Figure 4.1 Japanese Exports of Rice

Source: Food Balance Sheet, 2002

Meanwhile, during the Japanese five-year disposal program in 1979, South Korea suffered a "small" shortfall in rice production in 1979. It produced only 5,257,000 metric tons of rice, representing about 400,000 metric tons less than production in 1978. South Korea had gone below its self-sufficient quantity level. Therefore, South Korea announced its intention to purchase 500,000 metric tons of U.S. rice to prevent further decline of its stocks. However, Korea canceled 55,000 metric tons of U.S. rice and purchased 250,000 metric tons of Japan rice (Committee on Agriculture House of Representatives, 1981). This cancellation of 55,000 metric tons of U.S. rice hurt the U.S. millers.

South Korea purchased Japanese rice rather than U.S. rice because Japan heavily subsidized its rice growers, as much as \$1,500 a ton, to produce rice and exported rice at prices ranging from \$228 to \$305 a ton. Moreover, Japan sold its subsidized rice for only

\$282 a ton and on concessional loan terms with a low 2-3 percent interest rate, less than the interest rate offered by the U.S. (Committee on Agriculture House of Representatives, 1982).

Japan's exporting its subsidized rice to South Korea and Indonesia shows that the Japanese rice policy could easily affect the volume of exported rice. This theory is supported by the data in Table 3.1, which shows the significant increase in the Japanese domestic supply of rice beginning in 1979. In 1978, Japan had exported only 69,000 metric tons of rice, whereas exports grew to 518,000 metric tons in 1979 and increased steadily until 1981 when a total of 730,000 metric tons of rice were exported.

Japan's export of its subsidized rice especially hurt U.S. rice makers. On April 4, 1980, the Rice Millers Association filed a Section 301 complaint under the Trade Act of 1974, charging the Japanese with violation of Article 16 of the General Agreement on Tariffs and Trade and the Tokyo round of multilateral trade negotiation, as well as the principles of surplus disposal of the U.N. Food and Agriculture Organization. The general principle violated was the concept that subsidies on agricultural exports that displace U.S. commercial sales are illegal. In April 1980, a delegation led by Under Secretary of Agriculture Dale E. Hathaway and Foreign Agricultural Service Administrator Tom Hughes was sent to Tokyo to attempt to negotiate an agreement. As a result, on April 12, 1980 a four-year agreement was reached with Japan during which Japan agreed to limit its exports of rice to 1.4 million tons of subsidized rice (Committee on Agriculture House of Representatives, 1981). This agreement can be found in Appendix B (Committee on Agriculture House of Representatives, 1982).

However, in August 1980, South Korea had an extreme shortfall in its rice production as a result of bad weather, producing only 3,543,000 metric tons of rice, a drop of 2,148,000 metric tons as compared to the production in 1979 and 1,607,000 metric tons less than annual consumption (Food Balance Sheet, 2002). Simultaneously, Japan also had a shortfall resulting from the cold weather and produced only 8,130,000 metric tons of rice, 1,840,000 metric tons of rice less than had been produced during the previous year, and 474,000 metric tons less than its consumption. However, Japan had stored millions of tons of rice in previous years and thus had ample supplies to offset production shortfalls at home. In total, Japan exported 601,000 metric tons of rice in 1980.

In 1981, however, because of the extremely short rice supply in South Korea, the South Korean Government asked the U.S. Government to grant an exception to the U.S.-Japan Bilateral Agreement of 1980 that would allow Japan to export up to one million tons of Japanese rice to South Korea (Committee on Agriculture House of Representatives, 1982). The U.S. realized that Japan was not able to export one million tons of rice, but Japan did manage to export 730,000 metric tons of subsidized rice in 1981, its peak volume during the years 1981 to 1999 (Food Balance Sheet, 2002).

#### Japanese Imports of Rice

During the five-year disposal program from 1979 to 1983, Japan exported a substantial amount of rice. However, Japan imported only 16,000 metric tons of rice, 0.17% of its total balance in 1979. In 1980, Japan imported 15,000 metric tons of rice, 0.16% of its total balance, even though Japanese rice production was 9% less than its

consumption that year and 18% less than the previous year's production. This implied that Japan had stored enough rice to adjust for less production.

Japan imported 72,000 metric tons of rice in 1981, 0.78% of its total balance, and 63,000 metric tons of rice in 1982, 0.69% of its total balance. The increases in volume were not significant as compared with the previous two years. The imports of rice in 1981 and 1982 were less than 1% of its rice total balance. In 1983, Japan imported only 15,000 metric tons of rice, same as the low volume of 1980.

In 1984, Japan imported 142,000 metric tons of rice, 1.56% of its rice total balance. This was a significant change compared to the previous five years. However, the data show that Japan stored 821,000 metric tons of rice in its stock warehouse this year, six times the imported amount. The cause of Japan's shortage in rice may have resulted from its high volume of exports in the previous several years. In 1985, Japan allowed imports of only 20,000 tons of rice, representing less than 0.24% of its rice total balance.

During the past 24 years, the negligible quantity of imports has been composed primarily of specialty rice used for liquor production, rice cakes, and other unique products rather than the staple of the Japanese diet (Committee on Agriculture, Nutrition, and Forestry United States Senate, 1986).

Moreover, the Japanese Government, since 1980, has amended its policy allowing Japanese sailors to bring home only 30 to 100 kilograms of California rice during each trans-Pacific voyage. Because of such restrictions, Japanese imports of rice amounted only to 18,000 to 21,000 metric tons from 1985 to 1992, representing only 0.2% to 0.23%

of its total rice balance. Japan maintained its ban on rice imports until 1992 (Committee on Agriculture, Nutrition, and Forestry United States Senate, 1986).

Since 1979, policies implemented by the government of Japan have barred imports of rice from overseas. Japan places quantitative limits on all rice imports and permits only its state trading enterprise, the Japan Food Agency (JFA), to buy rice (Committee on Agriculture, Nutrition, and Forestry United States Senate, 1986).

The JFA purchased the majority of its rice (similar to California rice) from Japanese producers at nearly ten times the world market price (U.S.-Japan Rice Trade, 1986). As a result, the Japanese consumers and taxpayers are spending nearly \$25 billion to financially support their native rice growers and to insulate them completely from the realities of the world marketplace (Akimoto, G., 1995).

In 1993, Japan produced only 6,532,000 metric tons of rice because of bad weather, which was 2,283,000 metric tons of rice less than in 1992, and 1,420,000 metric tons below its consumption. The Japanese government instituted an emergency policy to allow imports of rice to address this shortfall. Japan imported 102,000 metric tons of rice in 1993. The data indicate that Japan usually imports only 20,000 metric tons of rice every year, but in 1993 it imported about 82,000 metric tons of rice from the harvest in 1993 to the end of 1993, more than 4 times the amount of usual imports of rice in that short period. Moreover, Japan released 2,114,000 metric tons of rice from store warehouses, about 25% of the total balance.

In 1994, Japan continued importing 2,186,000 metric tons of rice and stored 3,809,000 metric tons of rice in its stock warehouse. The quantity of stock rice is much

greater than the quantity of imported rice. The same year, the Uruguay Round Agreement of the World Trade Organization (WTO) was reached, and Japan and South Korea agreed to open their rice market. Japan apparently followed this agreement.

In 1995, Japan banned rice imports again. The data show that Japan imported only 27,000 metric tons of rice, representing 0.29% of its total balance, an amount similar to its average import of rice and therefore ignoring the WTO agreement since the quality of minimum market access (MA) for Japan was 379,000 metric tons in 1995 and 758,000 metric tons in 2000.

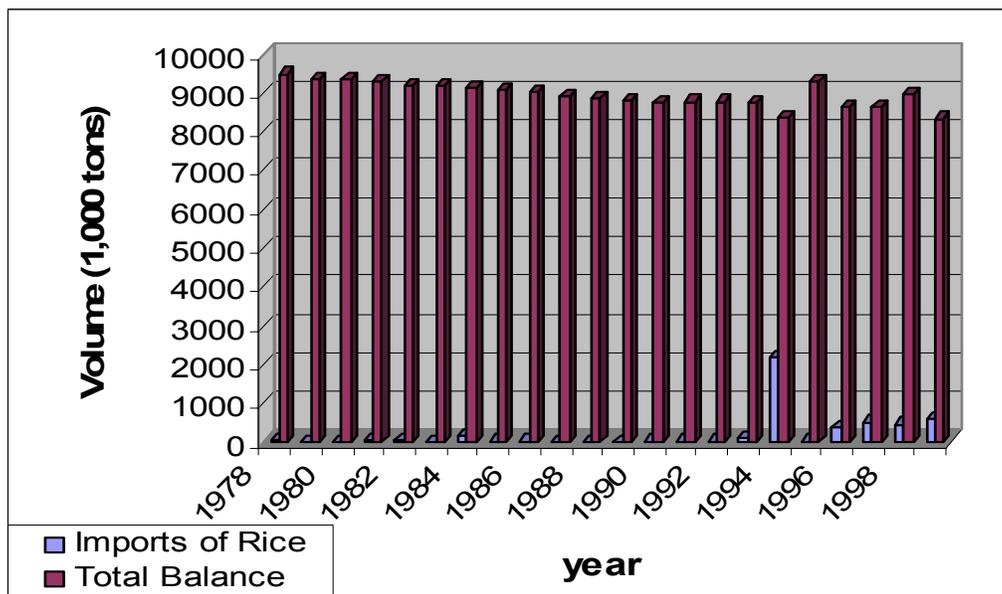


Figure 4.2 Japanese Imports of Rice and Total Balance

Source: Food Balance Sheet, 2002

## Disputes over Imported Rice in Japan

In 1993, Japan increased the amount of imported rice dramatically. Japanese consumers began to realize the advantages of imported rice: the low price and the various qualities of imported rice. Politicians, rice growers, and consumers experienced many different reactions, running the gamut between the two polar opinions: those favorable to and those hostile to imported rice.

### Opinions Favorable to Importing Rice

The terms Producer Subsidy Equivalent (PSE) and the Consumer Subsidy Equivalent (CSE) measure the impact of policy and price distortions in agriculture. The current PSE is 79%, and the current CSE is -50% in Japan. These figures mean that Japanese farmers can receive a subsidy of \$79, or \$179, from the government for \$100 worth of production. On the other hand, Japanese consumers must pay a premium of \$50, or \$150, for production that is actually worth \$100. For example, the Japanese government paid rice growers ten times the world price in 1986 when the world rice price was about \$220 (Committee on Agriculture, Nutrition, and Forestry United States Senate, 1986). The Japanese government subsidized 79% of the price at a total cost of \$1.7 billion in 1980 (Appleyard & Field, 1997).

Not only Japanese rice consumers but also the Japanese government and taxpayers would receive benefits from importing rice. Rice consumers would enjoy lower prices on rice, which is a staple in every meal they eat. Japanese consumers' real disposable income would increase, freeing additional expenditures for consumer goods. The price of rice could drop to half of its current price, and a Japanese family could save

\$30 every month on rice if Japan opens its rice market (Akimoto, 1995). Even though the saving is a small amount relative to the average household's monthly income, opening the rice market would definitely benefit consumers.

These figures show clearly that the Japanese government subsidizes rice growers in the amount of \$1.688 billion, and that money comes from taxpayers. If Japan opens the rice market, the government would be released from its heavy burden, as would the taxpayers.

World trade is not a zero-sum game. The imports of rice benefit the Japanese government; taxpayers, consumers, and U.S. rice producers. The data indicate that the U.S. has 140 times more paddy fields than does Japan; moreover, labor fees and field utility fees are six or seven times lower than those in Japan. For example, the cost of rice production per acre in California is 24% lower than in Japan (Committee on Agriculture House of Representatives, 1986). If Japan opens its rice market, the U.S. rice growers and rice millers could increase its production, thereby increasing employment opportunity. As a result, the volume of rice produced and the efficiency of production would increase, and the price of rice would go down. The U.S. producers would certainly enjoy the massive production.

#### Opinions Hostile to Imported Rice

Although the size of the economic pie in Japan will increase, the distribution of benefits will not be uniform. Certain segments of the Japanese economy—namely, Japanese rice growers—may come under some stress.

The one-third of Japanese rice growers who farm full-time and are dependent on subsidized prices will, of course, be worse off in the short term. However, the remaining two-thirds who are part-time farmers will see increased employment opportunities as the Japanese economy expands.

Finally, Japan would become increasingly dependent on foreign sources for the primary component of their rice supply. The problem of rice growers' unemployment and dependence on imported rice are political, social, and traditional issues rather than economic issues. Rice in Japan is, and has been, sacred and represents the nation's soul. Japanese have grown rice for more than a thousand years. The Japanese deeply believe that they can produce enough rice to be self-sufficient and that Japanese rice is of the best quality. They believe that high-quality Japonica rice served in school lunches must continue so that the children will preserve the traditional Japanese style, although this will make the lunches dearer than they should be. In this way, the government contends blandly, children will better understand the importance of rice in Japanese tradition.

Moreover, chemical additives in imported rice have become a problem in Japan. People worry about the tiny chemical particles used in the transportation and production process. Although the imported rice has very little chemicals, the Japanese fear that this might cause allergic chemical reactions in patients in the long term.

Finally, most people do not want to change an environment that has made rice for more than thousands of years. They do not wish massive rice imports that would compel them to reduce rice paddy fields and damage the existing environment. Opening the rice market has become a crisis. It has become a social problem.

On December 21, 1998, the Japanese government notified the WTO that it proposed to introduce a tariff system for rice imports for the 1999 and 2000 fiscal year. Without serious objection from other WTO members, Japan initiated this tariff on April 1, 1999. The import tariff announced by Japan is prohibitive, consistent with its policy to protect its domestic rice market because of the strong domestic, political, economic, and social sensitivity of rice.

## CHAPTER 5

### CONCLUSION

The first conclusion of this research is that Japan is not able and will not be able to export great quantities of rice to commercial markets. However, Japan might dump its surplus of stock rice to the non-regular commercial markets by subsidizing the price or exporting to those countries that must receive food aid of some kind. It is not possible for Japan to produce rice on an efficient economic scale because of its limited land. In addition to limited land, the high labor cost and field utility fees make Japanese rice ten times higher than the world trade price. Japan is not able to export great quantities of rice to regular commercial markets because of its higher cost. Otherwise, Japan rice exports will violate Article 16 of the General Agreement on Tariffs and Trade and the Tokyo Round of multilateral trade negotiation as well as the principles of the U.N. Food and Agriculture Organization.

The second conclusion is that Japan will increase rice imports, but only meeting MA requirements in the near future. Moreover, Japan's domestic rice price will not drop dramatically because the MA requirements represent only a small portion of total supply.

In fact, the Japanese government is not willing to change current rice policy, other than modifying a tiny portion of rice imports to work with the WTO, based on three reasons. First is national security. The Japanese government is not willing to become

increasingly dependent on foreign sources for the primary component of their food supply; it is willing, however, to subsidize its rice growers so that they can produce enough rice to be self-sufficient. The Japanese government subsidizes rice growers 1.7 billion dollars every year. This amount is not a small number. However, it represents only 0.3% of Japanese nominal Gross Domestic Product (GDP) as compared to 1994. The second reason is political and social. If Japan opens its rice market, one-third of Japanese rice growers who farm full-time and are dependent on subsidized prices would, of course, be worse off in the short term. Since the rice growers are well organized and politically effective at influencing trade policy, they have the power to influence policy makers. On the other hand, Japanese rice consumers will suffer higher rice prices. They, however, are not organized and have not influenced policy makers. The final reason represents a traditional consideration. Japan is a country that strongly respects its traditions and has produced rice for more than one thousand years. Rice has been sacred and has represented the nation's soul. Most Japanese deeply believe that Japan is able to produce the quantity of rice to be self-sufficient and that Japanese rice is of the best quality. The Japanese people will probably not accept massive imports of rice.

Because of this opposition to increased imports, Japanese rice producers have been subsidized. Since the Japanese government subsidizes rice, a higher price has to be paid for the commodity. Japanese consumers, in turn, are affected by having to pay more for rice. The Japanese government has to subsidize 79% of the rice produced; and consumers have to bear the cost of subsidization of 50% of the rice production.

So this dilemma remains. Should the Japanese government release its tight control on rice imports? Alternatively, should it continue its tight policy of control of rice imports? What would be the logical solution to these multiple issues?

Any solution must be comprehensive and effective. The Japanese government should open its markets to the free trade of rice. Along with the free trade, open market system, the Japanese government should provide partial subsidies to domestic rice producers for a five-year short term. Generating tax revenue from imported rice would have a positive effect on the Japanese economy. In addition, offering subsidies to rice producers would give them time to change their plans. For example, the current PSE is around 79%. This means that for every \$100 worth of rice produced, the government subsidizes \$79. If the Japanese Government encourages rice growers to reduce rice production for a short term and continue the subsidies, the growers would have an opportunity to seek alternative commodities. At this point, it is questionable whether Japan can ever be competitive in a crop market.

On the topic of national security, such a policy would also help by allowing the Japanese government to store greater volumes of rice than currently stored should rice import embargos arise or should there be a national emergency such as a food shortage. This increased storage would increase costs to the Japanese government. However, the Japanese government could increase its tax revenue base by charging higher taxes on the lower-priced imported rice, a move that would still leave the price of imported rice lower than current prices. In addition, the additional revenue from the taxation of imported rice will fund the increased costs of rice storage.

Currently, the Japanese culture strongly believes in their ancient traditions. If domestic rice were placed into the market higher prices, Japanese consumers would likely be willing to pay higher prices to support their national pride and preserve its traditional high quality of rice for special-occasion dining. It seems, however, that many people could accept the lower-priced imported rice for routine consumption.

The data indicate that bilateral agreements between U.S.-Japan and the U.S. and South Korea, as well as the WTO agreement, have affected Japan's domestic rice policies. These policy changes are reflected in the volume of rice imports and exports. The Japanese government should open the rice market and increase rice inventory over the long term and continue subsidizing rice producers who are willing to produce alternative commodities in short term to allow them to seek other opportunities. In addition, the Japanese government should allow its consumers to decide how much they value their traditional culture.

APPENDIX

TABLES

## APPENDIX A: TABLES

Table 3.1 Japanese Domestic Supplies

Year	Production	Imports	Stock Change	Exports	Total
1978	10496	60	-999	69	9488
1979	9970	16	-105	518	9363
1980	8130	15	1810	601	9355
1981	8554	72	1389	730	9284
1982	8563	63	844	293	9176
1983	8643	15	803	296	9165
1984	9904	142	-821	94	9129
1985	9724	21	-684	0	9060
1986	9711	22	-714	0	9018
1987	8860	18	11	0	8889
1988	8283	18	537	0	8838
1989	8627	18	144	0	8789
1990	8754	19	-19	0	8754
1991	8007	19	751	0	8778
1992	8815	21	-66	0	8770
1993	6532	102	2114	0	8748
1994	9989	2186	-3809	0	8365
1995	8961	27	320	11	9298
1996	8624	396	-377	0	8644
1997	8385	523	-205	33	8643
1998	7470	460	1346	304	8973
1999	7650	603	209	122	8340

Source: Food Balance Sheet, 2002

Table 3.2 Japanese Domestic Utilization

Year	Feed	Seed	Process	Waste	Other Uses	Food	Imports ViaTotal	Product ViaFood
1978	13	77	571	177	0	8650	0.0063	1.21
1979	14	75	571	174	0	8528	0.0017	1.17
1980	11	73	593	173	0	8504	0.0016	0.96
1981	12	77	581	173	0	8442	0.0078	1.01
1982	16	80	560	170	0	8351	0.0069	1.03
1983	26	82	560	170	0	8327	0.0016	1.04
1984	25	83	521	170	0	8330	0.0156	1.19
1985	27	80	475	169	0	8308	0.0023	1.17
1986	28	75	524	168	0	8223	0.0024	1.18
1987	24	67	537	165	0	8097	0.0020	1.09
1988	24	65	564	163	1	8021	0.0020	1.03
1989	24	61	560	163	1	7982	0.0020	1.08
1990	22	60	542	163	0	7968	0.0022	1.10
1991	22	59	549	163	1	7983	0.0022	1.00
1992	18	59	537	163	2	7990	0.0024	1.10
1993	19	59	554	163	1	7952	0.0117	0.82
1994	18	60	502	156	0	7630	0.2613	1.31
1995	171	59	516	160	552	7837	0.0029	1.14
1996	51	55	482	159	103	7793	0.0458	1.11
1997	74	53	459	158	149	7749	0.0605	1.08
1998	61	47	466	155	658	7585	0.0513	0.98
1999	74	47	455	155	14	7596	0.0723	1.01

Source: Food Balance Sheet, 2002

Table 3.3 South Korea Domestic Supplies

Year	Production	Imports	Stock Change	Exports	Total
1978	5691	2	0	39	5654
1979	5257	202	0	0	5458
1980	3543	756	1249	0	5547
1981	4768	2187	-1853	0	5102
1982	4874	287	0	0	5161
1983	5074	185	0	0	5259
1984	5316	1	139	158	5298
1985	5239	0	-65	0	5175
1986	5250	0	-27	0	5224
1987	5066	1	168	0	5235
1988	5510	1	-371	1	5139
1989	5403	2	-464	1	4939
1990	5151	1	-360	0	4791
1991	4864	2	-101	2	4762
1992	4871	1	-152	0	4720
1993	4340	1	241	1	4581
1994	4590	1	-81	0	4510
1995	4260	1	277	0	4538
1996	4750	10	-248	0	4603
1997	4877	20	-382	0	4516
1998	4522	51	121	0	4694
1999	4849	130	-204	0	4776

Source: Food Balance Sheet, 2002

Table 3.4. South Korea Domestic Utilization

Year	Feed	Seed	Process	Waste	Other Uses	Food	Imports Via Total	Product Via Food
1978	0	33	221	170	0	5229	0.0004	1.09
1979	0	33	227	157	0	5041	0.037	1.04
1980	0	29	238	130	0	5150	0.1363	0.69
1981	0	29	223	149	0	4701	0.4287	1.01
1982	0	30	213	94	0	4825	0.0556	1.01
1983	0	30	144	127	0	4959	0.0352	1.02
1984	0	30	141	133	0	4993	0.0002	1.06
1985	0	30	139	161	0	4845	0	1.08
1986	0	30	142	133	0	4918	0	1.07
1987	0	33	139	140	0	4928	0.0002	1.03
1988	0	41	131	196	0	4771	0.0002	1.15
1989	0	41	113	224	0	4561	0.0004	1.18
1990	0	41	113	186	0	4451	0.0002	1.16
1991	0	40	103	247	0	4372	0.0004	1.11
1992	0	39	97	275	0	4209	0.0002	1.16
1993	0	27	55	191	0	4309	0.0002	1.01
1994	0	27	51	180	0	4253	0.0002	1.08
1995	0	35	43	172	0	4288	0.0002	0.99
1996	0	35	37	160	0	4371	0.0022	1.09
1997	0	35	33	121	0	4326	0.0044	1.13
1998	0	35	31	267	0	4360	0.0109	1.04
1999	0	35	29	340	0	4371	0.0272	1.11

Sources: Food Balance Sheet, 2002

## REFERENCES LIST

- Akimoto, G. (1995), Free rice market. Retrieved Jan. 26, 2002 from <http://www.gakugei-hs.setagaya.tokyo.jp/shakai/CHIRI/ReportF1.html>
- Appleyard, D. R., & Field, A. J. (1997). International economic: Trade theory and policy. New York, NY: McGraw Hill/Irwin Publishing Co.
- Cramer, G. L., Hansen, J. M. & Wails, E. J. (1999). Impact of rice tariffication on Japan and the world rice market. *American Journal of Agriculture Economics*, 81 (3), 1148
- Food Balance Sheet [0116415.csv]. Retrieved Feb. 9, 2002 from <http://apps.fao.lim500/wrap.pl...=FoodBalanceSheet&Language=English>
- Going against the grain in Japan, (1994): Rice—Export & import trade—Japan. *Economist*, 331 (7860), 34
- Pggi, M. S. & Yamazaki, F. (2001). The WTO and international trade prospects: rice. Retrieved April 02, 2002, from University of California, Executive Seminar on Agricultural Issues Web site: <http://aic.ucdavis.edu/oa/paggi.pdf/>
- Committee on Agriculture House of Representatives. (1986). Review of Japan's Policy Concerning the Importation of Rice, Including a Petition Filed by the U.S. Rice Millers' Association. Hearing before the Subcommittee on Cotton, Rice, and Sugar of the Committee on Agriculture House of Representatives, 99th Cong., 2nd (Serial No. 99-49). Washington, DC: U.S. Government Printing Office.
- Committee on Agriculture House of Representatives. (1983). Review of South Korea Commitment to Purchase U.S. Rice. Hearing before the Subcommittee on Cotton, Rice, and Sugar of the Committee on Agriculture House of Representatives, 98th Cong., 1st (Serial No. 97-10). Washington, DC: U.S. Government Printing Office.
- Committee on Agriculture House of Representatives. (1981). Review United States-Japan Rice Agreement. Hearing before the Subcommittee on Cotton, Rice, and Sugar of the Committee on Agriculture House of Representatives, 97th Cong., 1st (Serial No. 97-B). Washington, DC: U.S. Government Printing Office.
- Committee on Agriculture House of Representatives. (1982). South Korea Commitment to Buy U.S. Rice. Hearing before the Subcommittee on Cotton, Rice, and Sugar of the Committee on Agriculture House of Representatives, 97th Cong., 2nd (Serial No. 97-BBB). Washington, DC: U.S. Government Printing Office.

Committee on Agriculture, Nutrition, and Forestry United States Senate. (1987). U.S.-Japan Rice Trade. Hearing before the Committee on Agriculture, Nutrition, and Forestry United States Senate, 99th Cong., 2nd (Serial No. 97-1051). Washington, DC: U.S. Government Printing Office.

Sumner, D. A., & Hyunok, L. (2000). Assessing the effects of the agreement on rice markets: what can we learn from the first five years? *American Journal of Agriculture Economics*, 82 (3), 709.