The Japanese White Wheat Marketing System

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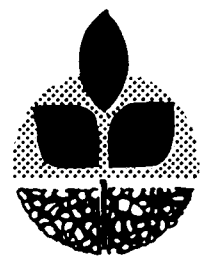

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ABSTRACT

Approximately 20 percent of the white wheat produced in the Pacific Northwest is consumed in Japan. The Japanese Food Agency, working in conjunction with eleven major Japanese trading companies, controls all wheat imports into Japan through establishment of import quotas, resale prices, and granting import licenses.

The Food Agency considers retail prices of rice, costs of living, the balance in the Food Agency's account, the desires of Japanese millers, and political factors when determining resale prices. Wheat stocks, expected demand, trade agreements, domestic production, rice stocks, the balance of payments, the balance in the Food Agency's account, and Japan's storage capacity are considered when import quotas are set.

Japanese millers use white wheat from the Pacific Northwest to produce medium and soft flours, which are used mostly in the production of noodles, cakes, and biscuits. From one bushel of western white wheat, about 44 pounds of flour and 18 pounds of low-grade flour and mill feeds can be produced.

Flour is marketed through noodle factories, bakeries, restaurants, retail stores, and other outlets, such as the school lunch program. Approximately 21 kilograms of dried udon noodles can be made from one bushel of western white wheat.

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THE JAPANESE WHITE WHEAT MARKETING SYSTEM

Terry Townsend

Japan is an extremely important Pacific Northwest (PNW) white wheat customer. In fact, about one-fifth of each annual white wheat crop is eventually consumed by the Japanese [10]. However, the factors which influence Japanese decisions to purchase wheat are not well understood, and the whole marketing process seems mysterious to many wheat producers. Yet, it is axiomatic to say that an understanding of the marketing system is necessary for developing long-term marketing strategies, and for developing intelligent reactions to changing market conditions. Such an understanding is also helpful to a person wishing to wisely influence public policy.

The purpose of this report is to describe the white wheat marketing system in Japan. The role of the Japanese government in the marketing channel, and the factors considered in setting resale prices will be extensively discussed.

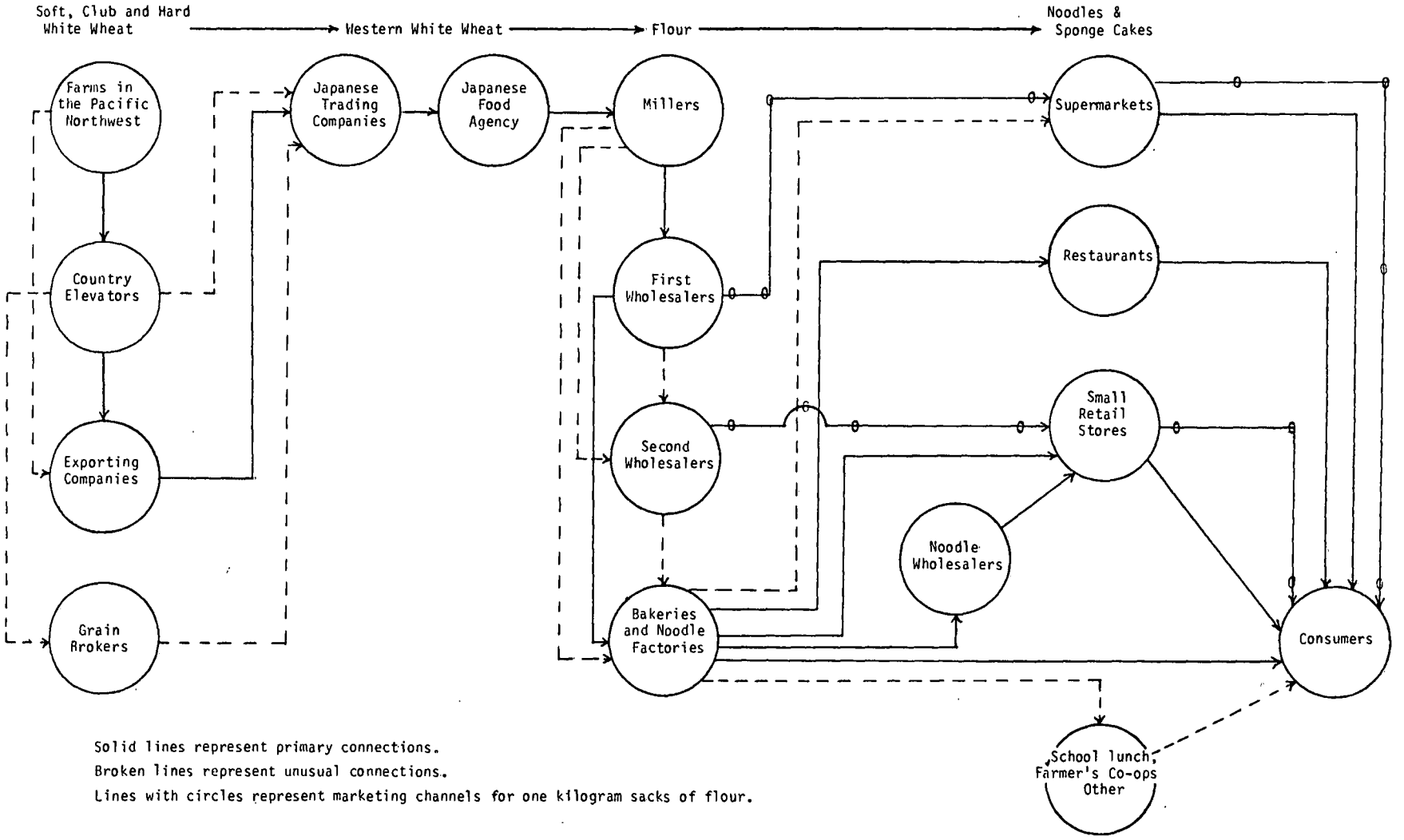
OVERVIEW

Pacific Northwest white wheat goes through three major transformations during the marketing process. Starting out as soft, club, or hard white wheat in separate subclasses, the wheat is blended into western white, milled into flour, and then used to make noodles or cakes. Chart 1 is a flow chart representing the major stages in the process of marketing white wheat from the Pacific Northwest to Japanese consumers. A description of the marketing channel begins with the first movement of the wheat from farms in the Pacific Northwest. The wheat is transported by truck to country elevators where blending of each subclass begins. From the country elevators, it is shipped to terminal elevators for export. The terminal elevators, operated by the major grain trading companies, finish blending the white wheats to produce western white, and then load the new subclass of wheat onto oceangoing vessels for shipment to Japan.

Japanese trading firms buy western white wheat, arrange for ocean transportation, and sell the wheat to the Japanese Food Agency. The

Chart 1. White Wheat Marketing Channel to Japan

Transformations:



Solid lines represent primary connections.
Broken lines represent unusual connections.
Lines with circles represent marketing channels for one kilogram sacks of flour.

wheat is moved from the vessel into warehouses in Japan where Japanese millers buy it from the Food Agency. Millers produce flours of precise quality characteristics by carefully blending various types of wheat and milling them. The flour, packaged in 25-kilogram sacks, is transported to warehouses owned by wholesalers. From the warehouses, one-kilogram sacks of flour are sold to supermarkets and small retail stores; 25 kilogram sacks of flour are sold to bakeries and noodle factories.

The milled flour is combined with other ingredients in bakeries and factories to finally produce biscuits, sponge cakes, and a special kind of Japanese noodle called udon noodles. These products are then marketed to consumers through restaurants, small grocery stores, noodle wholesalers, large supermarkets, and school lunch programs. The entire marketing process takes an average of seven months from the time the wheat leaves the Pacific Northwest farm. By understanding each process performed in the Japanese marketing channel, an interesting perspective of the wheat industry can be gained.

JAPANESE MARKETING SYSTEM

Wheat can be imported into Japan only by Japanese trading companies licensed by their own government [4]. Exporting firms in the United States sell most wheat to Japanese trading companies f.o.b. vessel, loading weight, and grade final.[1/] The subclass of white wheat sold to the Japanese is almost exclusively western white wheat, number two or better.[2/]

Trading Companies

Once loaded aboard the ocean vessel, the wheat becomes the property of the Japanese trading firm, and the United States exporting firm is paid in full. There are 35 companies licensed by the Japanese Food Agency to import grain into Japan. Eleven of those companies operate

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[1/] f.o.b. is a shipping term meaning the quoted price does not include shipping and insurance charges to the destination.

[2/] Official United States standards for determining wheat grades are determined by the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture.

offices in Portland, Oregon, and through them, all Pacific Northwest wheat exports to Japan are arranged [11]. The eleven trading companies receive quotas each April from the Food Agency, and each must import, in the ensuing fiscal year, the quantity of wheat which has been specified, plus or minus 10 percent of its quota. Each company is alloted a proportion of the import market, based on the business it conducted with the Food Agency the previous year. The quotas do not specify the quantities of each particular class, or the origins of the wheat to be imported. These factors are determined when the trading firms are allowed to bid on specific import contracts with the Food Agency.

According to Food Agency records, 2,975,901 metric tons of wheat of all classes were imported by Japan from Pacific Northwest and Gulf Coast ports in 1979 [11]. Table 1 shows the proportion of that total handled by each of the trading companies with offices in Portland. About 7 percent of the imports were consigned to 13 smaller trading companies which submitted bids on the import contracts, but which worked through the Portland offices of the eleven major trading companies when actually buying the wheat. The figures show the five largest trading companies import more than 50 percent of the United States wheat destined for Japan. It should also be noted that the Japanese trading companies operate worldwide, buying and selling grain with all trading nations.

Table 1. Proportions of Japanese Imports of U.S. Wheat Handled by Each Japanese Trading Firm in 1979

Company	Proportion (percent)	Company	Proportion (percent)
Mitsui.....	12.0	Nissho.....	8.0
Mitsubishi.....	11.9	Toshoku.....	7.9
Kanematsu.....	11.3	Sumitomo.....	5.4
Nichimen.....	11.2	Yuasa.....	3.8
Itochu.....	9.5	Tomen.....	3.3
Marubeni.....	8.4	13 other companies.....	7.3

Source: Japanese Food Agency representative, Portland, Oregon.

The services provided by the trading companies include purchasing grain from U.S. suppliers, selling grain to the Food Agency and other customers, sending information about U.S. wheat markets to Japan, and

the arrangement of ocean freight. As stated earlier, the trading companies buy wheat f.o.b. vessel in the Pacific Northwest. They sell wheat to the Food Agency c.i.f. Japan, in yen.[3/] Some of the Japanese firms have tried to buy wheat in the interior, but they are not yet considered very good at it. Consequently, U.S. export firms usually still handle the wheat as far as the coast.

The major risks incurred by the trading companies include potential changes of the f.o.b. price, changes in ocean freight rates, and fluctuations in dollars versus yen exchange rates. Trading companies offer bids on each Food Agency contract on the basis of their estimates of f.o.b. prices and the costs of handling and transporting the grain to Japan. Each contract is offered approximately two months before the Food Agency expects the cargo to leave the United States.

For instance, wheat to arrive in April is contracted in February. The U.S. exporting firm would be expected to have the wheat ready for loading onto the vessel in April. It takes about 15 days to make the ocean voyage between the Pacific Northwest and Japan, and the average time in port required to load and discharge cargo is 10 to 12 days [1]. If the vessel left the United States during the first week of April, it would arrive in Japan during the third week of that month. However, the wheat could arrive during the second week in May, if the ship did not leave until the end of April. The Japanese trading company is paid 70 percent of the c.i.f. value of the wheat upon presentation of a receipt from the shipping company to the Food Agency, proving the wheat is on its way to Japan. The final risk experienced by the trading companies is the possibility of weight or grade changes enroute to Japan. This risk is usually small with western white wheat, however, disagreements do occur over sampling procedures and the interpretation of test results in Japan.

Food Agency

The Food Agency designates the port of entry for imported wheat. There are approximately 16 major ports to which western white wheat is destined. Of these, Yokohama is the most important, since about 45

[3/] c.i.f. is a shipping term which means the price quoted to the buyer includes the f.o.b. price plus insurance and freight to the destination.

percent of all Japanese grain imports go through that port [11]. Warehouses and grain silos are located in the major ports, and wheat is discharged directly into storage from the vessels (Figure 1).

The Food Agency now maintains about a 2.6 months' supply of wheat in storage, even though the Japanese government actually desires to maintain only a 2.3 months' supply [11]. The 2.6 months' supply was built up during 1977, when the Japanese government tried to decrease its balance of payments surplus with the United States. As of September 1979, the Food Agency had 1,822,800 tons of wheat and barley in storage. About 90 percent of the stored wheat was in silos, and the remaining 10 percent was stored in sacks in warehouses. The Food Agency pays for this storage in private facilities, and less than half of the storage capacity in Japan is owned by milling companies [11].

Once off-loading from the vessel into storage is finished, the trading company's job is completed, and the balance owed to it is paid after the weight and grade are validated. The c.i.f. price, paid by the Japanese Food Agency to the Japanese trading company, is thought to be the last price in the white wheat marketing chain which is directly related by market forces to the farm price of soft and club white wheat.

During World War II, the Japanese government rationed available food supplies, and the practice continued after the war. In 1952, the Food Control Law was passed. This law established the Japanese Food Agency, which has since regulated the flow of imported wheat into Japan with the goals of stabilizing domestic food prices and protecting Japanese agriculture, while providing enough food for the Japanese people [4]. The regulation of grain imports is accomplished by imposing import quotas, import licensing procedures, and variable import levies. The specific rationale for continuing to regulate importation of wheat is that imported wheat competes with domestically grown rice and wheat in Japan. The Japanese government fears the possibility of interruptions in trade, and so promotes the concept of food independence. The revenue gained by imposing a variable levy on wheat imports is used to support domestic rice and wheat farm prices so as to encourage domestic production.

As explained earlier, the Food Agency purchases all wheat imports from licensed Japanese trading companies on a c.i.f. Japan basis, with

1. Kitami
2. Otaru
3. Hakodate
4. Sendai
5. Yokahama
6. Tokyo
7. Chida
8. Mito
9. Takasaki
10. Utsunomiya
11. Tatehayashi
12. Shimizu
13. Nagoya
14. Yokkaichi
15. Osaka
16. Kobe
17. Mizushima
18. Hiroshima
19. Kanmon
20. Moji
21 Matsuyama
22. Sakaide
23. Hakata
24. Tosu
25. Chikuyo
26. Kurume

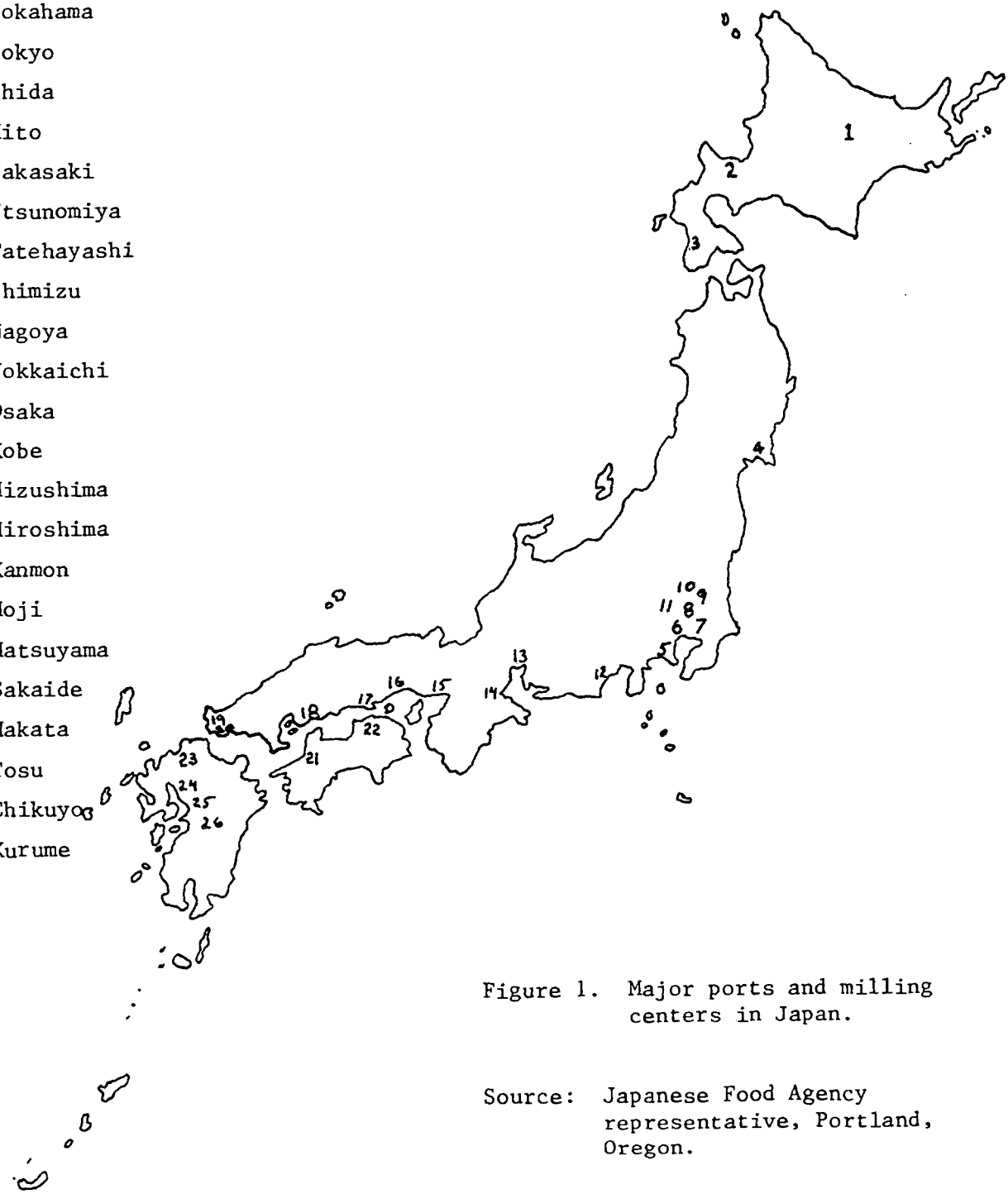

Figure 1. Major ports and milling centers in Japan.

Source: Japanese Food Agency representative, Portland, Oregon.

the Food Agency designating the port of delivery, month of delivery, class, and grade of wheat in each contract. The c.i.f. price is said to be determined by bids received from the trading companies. The Food Agency then sells the wheat to Japanese millers at "resale prices," which are fixed annually.

Importantly, each miller receives a quota of soft, semi-hard, and hard wheat, which it may purchase each quarter. The quotas are based on past sales, expected changes in demand, and desired changes in wheat stocks, and they represent a guarantee by the Food Agency that the quota of wheat will be available to each miller at the resale price. This practice has a stabilizing effect on the Japanese marketing system, as a major source of risk for millers is eliminated.

Factors Affecting Resale Prices

The Food Agency resale price is designed to stabilize consumer prices for wheat products at affordable levels while allowing the government to purchase wheat from domestic farmers at high prices [4]. Between 1952 and 1972, resale prices on imported wheats were gradually lowered, as world grain markets were stable and the Food Agency could afford to reduce consumer prices. However, in 1973, when world wheat prices rose dramtically, the government resale price fell below the c.i.f. import price. Huge deficits occurred in the food control account, and the Food Agency was forced to increase resale prices by an average 43.2 percent.[4/] Even then, the government still was subsidizing imports until 1976, as the resale price was still below the import price.

Resale prices were revised again in January and July, 1976, and February 1980. With each revision of resale prices, attempts are made to differentiate between different classes and grades of imported wheat. Consequently, there is a separate resale price for each type of wheat. U.S. trade organizations expend a lot of energy making sure U.S. wheats are priced "competitively" with Australian and Canadian wheats.

In actually determining resale prices, several factors are taken into consideration by the Japanese government [4]. Retail prices

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[4/] The Food control account is the Food Agency's budget for making support payments to Japanese farmers.

of rice, changes in costs of living for average families, deficits or surpluses in the food control account, and the desires of Japanese millers, among other things, affect the government's decisions (Table 2).

Table 2. Factors Affecting Resale Prices

1. Retail prices of rice
2. Changes in the cost of living for average families
3. The balance in the food control account
4. The desires of Japanese millers
5. Political factors

Japan is self-sufficient in rice production, and now has more than two million tons in storage. This quantity in storage is considered burdensome, as spoilage occurs, and the costs of maintaining the storage are high. The surpluses have developed partly as a result of government programs to encourage wheat consumption for nutritional reasons. Bread has been served in school lunch programs since the 1950s. Perhaps just as influential has been the steady reduction in the ratio of wheat flour prices to milled rice prices.

However, the competitive relationship between wheat and rice is not known exactly. Wheat consumption may be increasing due to changes in tastes and preferences, rather than from changes in prices. Processing costs of wheat are greater than rice, so even though the ratio of resale prices of wheat to rice may favor wheat, retail prices of wheat products and rice may not favor wheat. Wheat products now are established parts of Japanese diets, largely because of the success of promotional efforts such as demonstration kitchens and school lunches. Consequently, the Food Agency considers other factors, such as the balance in the food control account, more important than the ratio of wheat to rice prices in setting wheat resale prices. In the last few years, Japan has been trying to reduce the consumption of hard wheats because it fears people eventually will refuse to eat traditional breads made from Japanese soft wheats. The Food Agency has restricted imports, rather than setting higher resale prices, to reduce consumption [4].

The costs of living for Japanese families also affect the government's thinking on resale price revisions. One major purpose of the Food Agency is to maintain stable prices at levels people can afford.

The balance in the food control account is of critical importance in setting resale prices on wheat. Deficits in the account occur from either rising world prices for imported wheat or from increased support payments to Japanese farmers. It is not politically acceptable for the Food Agency to sustain huge deficits several years in a row. Consequently, when world prices rose in the 1970s, resale prices were revised, but deficits still occurred between 1973 and 1976. Since 1976, annual increases in prices the Food Agency pays to domestic farmers for rice and wheat have placed pressures on the food control account.

Farm prices in Japan are indexed and revised annually. In 1976, the price paid to Japanese farmers for one bushel of domestic soft wheat was about $10.36 per bushel, and farm prices have risen since then. Support for Japanese rice farmers is equally strong, and the food control account is pressured continually. Farm organizations in Japan are calling for a reduction in Japan's wheat imports of one million tons annually to force greater consumption of rice. The agency is actually criticized in Japan for subsidizing wheat imports because resale prices are lower than support prices paid to Japanese farmers. However, Japanese consumers and flour millers would object to a large decrease in wheat imports. Also, the Japanese balance of payments surplus with wheat exporting countries would increase if they reduced imports.

The desires of Japanese millers also are considered in setting the resale prices on wheat. Of course, millers want overall wheat prices to be low to stimulate wheat consumption. However, because of the stability of flour supplies and prices caused by the system of quotas allocated to each miller, it is difficult for millers, or others in the marketing channel, to pass on increased costs. The prices of other factors of production, such as labor and transportation, are not regulated in Japan, and they rise independently of wheat prices. However, the Japanese public is highly intolerant of price increases for wheat products when they know wheat resale prices are controlled. Consequently, millers favor an occassional bump-up in resale prices so general price adjustments can be justified through the marketing chain.

Political factors also affect decisions regarding changes in resale prices of wheat. This can be demonstrated by describing the process by which the Japanese government reviews its resale pricing policy. The process can occur anytime during the year, but is normally included with the rest of the government's budget preparations. The Food Agency will prepare a draft of its recommendations regarding changes in the resale prices. The draft is sent to the Ministry of Finance and the Economic Planning Agency for comment. After revisions deemed necessary are made, the draft is sent to the Rice Price Council for review. The Rice Price Council is a group of no more than 25 persons with expertise in grain marketing and management of the Japanese economy. Simultaneously, the government solicits comments from the political party in power and appropriate committees on the Japanese Diet.[5/] Final revisions are made to the draft, and then decisions are announced along with the rest of the government's budget for the coming fiscal year.

Factors Affecting Wheat Quotas

In addition to setting resale prices, the Food Agency affects the demand for western white wheat by controlling the quantities of wheat imported through quotas. The Food Agency's supply and demand program is planned six months before the start of each fiscal year. The level of stocks, expected demand, agreements between Japan and exporting countries, Japan's balance of payments with exporting countries, domestic production, Japan's rice surplus, and the balance in the food control account, affect the quantities of wheat the Food Agency decides to import each fiscal year (Table 3).

Table 3. Factors Affecting Wheat Quotas

1.	Stocks
2.	Expected demand
3.	Trade agreements between Japan and exporting countries
4.	Domestic production
5.	Japan's rice stocks
6.	The balance in the food control account
7.	Balance of payments with exporting countries
8.	Storage capacity

[5/] The Japanese Diet is the name of Japan's national legislature, similar to Parliament in England.

The Food Agency does not specify the country of origin or the classes of wheat to be imported. Instead, the total quantity of imports is determined and subtotals are specified for soft, semi-hard, and hard wheat. Flour millers are then given their quotas for each type of wheat -- soft, semi-hard, and hard.

Wheat purchases are managed by a monthly import plan. Millers may request particular types of wheat within their quotas, and these requests are incorporated into this plan. However, the millers' desires are only some of the many conditions, such as an acceptable balance of payments surplus with a particular country, which must be met.

Japan has a shortage of storage capacity, as evidenced by the fact that some wheat has to be stored in sacks in warehouses. Consequently, few different types of wheat can be imported. The monthly import plans are implemented through contracts offered weekly. At each meeting with trading company representatives, the government specifies the class of wheat and country of origin, and then the Japanese trading firms submit bids.

Wheat consumption in Japan has been increasing at an annual rate of 100,000 tons. This is caused by population growth mainly, as per capita wheat consumption has not increased much since 1965 [4]. These increases in consumption are translated into increased imports, since Japan's domestic production of wheat is actually declining, and Japan does not want to deplete its wheat stocks.

Millers

There are 232 flour milling companies in Japan [11]. Four of these companies operate 30 separate mills and produce two-thirds of the flour made in Japan. Those four companies are Nissin, Nippon, Showa, and Nitto. Of the four, Nissin is the largest, and alone produces one-third of the flour in Japan from 13 mills. The Japanese cities of Chida, Yokohama, Nagoya, and Kobe are the major milling centers (Table 4).

The millers buy wheat quarterly, according to the quotas allotted to them by the Food Agency, at the resale prices plus the cost of storage. The milling companies are charged 170 yen per metric ton per 10-day period for storage of the wheat. Since the average quantity of wheat in storage maintained by the Food Agency is 2.6 months, or 78 days, the millers

Table 4. Location of major Japanese Flour Mills

Location	Company			
	Nissin	Nippon	Showa	Nitto
Kitami	X			
Hakodate	X			
Utsunomiya	X			
Mito	X		X	
Tatebayashi	X			
Chida	X	X	X	
Yokohama	X	X	X	
Nagoya	X	X	X	X
Kobe	X	X	X	
Mizuskima	X			
Sakaide	X			
Chikugo	X			
Tosu	X			
Taru		X		
Takasaki		X		
Tokyo				X
Osaka		X		
Matsuyama		X		
Moji		X		
Kurume		X		

Source: Japanese Food Agency representative, Portland, Oregon.

have to pay an average storage fee of 1,360 yen per metric ton of wheat. At an exchange ratio of .44963 cents per yen, this works out to about 17 cents per bushel.

Millers also must pay the costs of transporting wheat from dockside warehouses to mills in the interior. Most of the large mills are on the coast next to grain storage silos so there are no transportation costs. However, several large mills are in the interior, especially in the southern and northern islands, and wheat must be transported to them, usually by rail.

The quota received by each miller is based mostly on past sales. Although quotas may fluctuate from one quarter to the next, depending on changes in stocks from the wholesale to the retail level [4], the Food Agency tries to manage sales to millers so there is a constant 1.2 months' supply of wheat and flour moving through the mills and warehouses

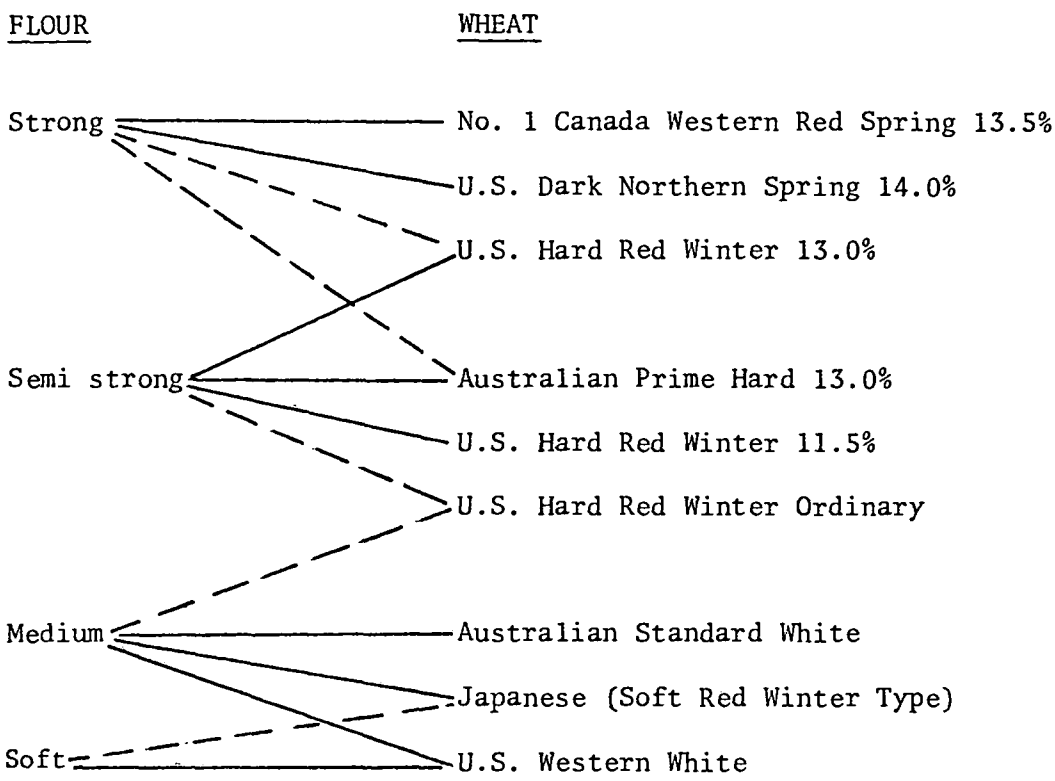
to the noodle and cake factories. However, the quantity sold by the government each quarter does not equal the quantities consumed in those quarters because some products have seasonal demands. For instance, dry noodles are made in noodle factories between November and February each year, and then put in storage for use during the entire year. During the summer, it is too humid to make dry noodles in Japan. So, noodle factory demand for dry noodle flour is seasonal, and Food Agency wheat sales to millers must be adjusted during the fall and winter quarters.

Flour millers produce as many as 200 kinds of flour in four categories, including hard, semi-hard, ordinary, and soft (Table 5) [5]. Hard flours, made from U.S. hard red winter (13 percent) and hard red spring, Canadian, western, and Australian prime hard are used mainly in making bread. Semi-hard flours are made from U.S. hard red winter (ordinary), U.S. hard red spring (semi-hard), South Australian hard (11.5), and Argentine Dulo, and are used mainly to make Chinese noodles. Australian soft, American western white, American soft red winter, and Japanese soft wheat are used to make pasta, crackers, and Japanese noodles from ordinary flours. Soft flour is made entirely from U.S. western white and is used in making biscuits, cookies, and cakes.

There are definite trends in Japanese demand for wheat products. Japanese tastes are leaning toward noodles made from harder flours. Consequently, millers use larger quotas of hard and semi-hard wheats relative to soft wheats. Between 1964 and 1978, production of hard flour increased from 772,000 metric tons to 1,451,000 metric tons, an increase of 88 percent [11]. During the same period, production of noodle flour increased from 1,022,000 metric tons to 1,328,000 metric tons, an increase of 14 percent, and production of cake flour climbed from 402,000 metric tons to 558,000 metric tons, an increase of 39 percent.

Millers buy wheat from the Food Agency and sell milled flour and mill feeds to their customers. The margin earned by a miller is equal to the price received for one bushel's worth of flour and mill-feeds minus the resale price. Therefore, the conversion ratio between one bushel of western white wheat and milled products must be determined to understand the marketing process.

Table 5. Classification of Flour Milled in Japan by Type of Wheat Used.



Source: Seiichi Nagao, Manager of Quality Control and Assurance, and Manager of Cereal Science Research Laboratory, Nisshin Flour Milling Company, Ltd., Tokyo.

Straw and other non-wheat material (dockage) and damaged kernels account for about 1.4 percent of each 60-pound bushel of wheat from the Pacific Northwest, and, when cleaned out, an average of 59.2 pounds of wheat are actually available to the miller for processing [5]. The dockage and damaged material is blended with bran left after the wheat is milled, and fed to cattle.

Also contained in each bushel of white wheat is water. The average moisture content of western white is 9.5 percent of the cleaned wheat [6]. Millers "temper" this by soaking it in water for several hours until the moisture content is raised to about 14 percent, although some water is lost in the milling process since most of it remains in the bran [7]. Western white flour contains only 12.5 percent moisture, but the bran is about 13 percent moisture. In calculating the weight of tempered wheat available to the miller, the weight of the cleaned wheat is adjusted to account for an increase in moisture to 14 percent. On the average, one bushel of tempered western white weighs 62.3 pounds, and extraction rates are applied to this figure.

Assuming an average extraction rate of 72 percent (and adjusting for decreases in moisture content), 44.0 pounds of 12.5 percent moisture flour and 17.2 pounds of other material, at 13 percent moisture, are the actual results of the milling process. The .8 pounds of dockage and damaged material, when added to the 17.2 pounds of other material, result in 18 pounds of low grade flour and mill feeds which the miller can sell. Low grade flours make up about 5 pounds of this extra material and are used to make soy sauce, paste, fish food, and monosodium glutamate. The remaining 13 pounds is fed to animals.

From Mill to Retail

The most common route traveled by wheat flour in Japan is from the mill to a large wholesaler, to a baker or noodle maker, and on to a retailer. Flour is usually packaged in 25 kilogram sacks for distribution to factories through wholesalers. Small amounts of flour are moved directly to bakeries and factories in bulk shipments by trucks. Very small amounts of ordinary soft flours containing western white wheat are packaged in one kilogram sacks for sale to consumers who make noodles, cakes, and biscuits at home. There is also a role for "second" wholesalers in Japan who distribute small quantities of flour to small cake and noodle factories.

From one kilogram of ordinary flour, Japanese noodle makers can produce one kilogram of dried udon noodles, 1.34 kilograms of raw udon noodles, or 3.2 kilograms of boiled udon noodles [5]. The only ingredients in noodles besides flour are salt and water. Normally, .02 kilograms of salt are added to each kilogram of flour to produce noodles. The rest of the weight in udon noodles is water. From one kilogram of soft flour, 3.5 kilograms of sponge cake or 2.0 kilograms of biscuits can be made. These products require additional ingredients, including eggs, butter, milk, salt, and water [5].

Bakers distribute cakes and biscuits to supermarkets, restaurants, small retail stores, and school lunch programs. However, most Japanese consumers buy their confectionary products directly from bakeries. Udon noodles require more processing, so only about 5 percent of noodle factory sales are direct to consumers. Instead, two-thirds of dry udon noodle sales are marketed through noodle wholesalers to small stores and restaurants before reaching consumers. Raw udon noodles must be eaten within a week after they are made, so a smaller percentage is marketed through noodle wholesalers. From noodle factories, 27 percent of raw udon noodles are marketed through restaurants, another 27 percent are sold through small retail stores, 13 percent go through supermarkets, and only 18 percent go through noodle wholesalers to small retail stores [11].

There are approximately 1.02 kilograms of dried udon noodles made from each kilogram of noodle flour, and about 20.2 kilograms of noodle flour can be milled from one bushel of wheat. Therefore, about 20.6 kilograms of dried udon noodles can be made from one bushel of western white wheat. The final transformation of western white wheat occurs about seven months after the wheat leaves the farm, when the cake, biscuit, or noodle is actually served to a consumer.

CONCLUSION

The marketing of Pacific Northwest wheat to Japan is a complex process involving both free markets and government-regulated activities. Probably the most important points to be gleaned from this report are

the term, "Japanese demand," is synonomous with Food Agency purchasing decisions in the short run, and political factors have significant effects on those decisions.

Because the Japanese government uses wheat imports to reduce its balance of payments surplus with the United States, there is a link between U.S. imports of Japanese goods and Japanese imports of U.S. wheat. Because the Japanese government has established food self-sufficiency as a policy goal, Food Agency import quotas and resale prices will always be established at levels which insure the government can afford to pay high subsidies to Japanese farmers. Because the Japanese government is always apprehensive about possible future grain embargos by exporting countries, trade agreements will continue to influence Food Agency purchase decisions. As a final example, because Japanese farmers are a powerful interest group, the Food Agency will be pressured to prevent wheat imports from seriously undermining consumer demand for rice.

The third major point to be learned from this report is changes in consumer demand for wheat products, and improvements in Japanese marketing techniques, can influence white wheat markets in the Pacific Northwest only in the long run. Food Agency import quotas are established for one year at a time, and are based heavily on quotas set in previous years. Therefore, changes in purchasing patterns occur slowly. Nevertheless, changes can occur, as evidenced by the success of promotional efforts by Western Wheat Associates.

BIBLIOGRAPHY

1. Cargill. "Ocean Transportation and the Exporter." Cargill Crop Bulletin, Box 9300, Minneapolis, Minnesota. January 1980.

2. Goetze, Norman R. Various conversations with Dr. Goetze, Extension Agronomist and Professor, Department of Crop Science, Oregon State University, Corvallis.

3. Greenshields, Bruce L. "Impact of a Resale Price Increase on Japan's Wheat Imports." Foreign Agricultural Economic Resport No. 128, Economic Research Service, U.S. Department of Agriculture, February 1977.

4. Japan Flour Millers' Association. "Japanese Wheat Import and Pricing Policies." Economic Research Service, Foreign Demand and Competition Division, U.S. Department of Agriculture, May 1978.

5. Nagao, Seiichi. A letter from Seiichi Nagao, Manager, Quality Control and Assurance, Flour Milling Department, Nisshin Flour Milling Company, Ltd., 19-12, Koamicho, Nihonbashi, Chuo-Ku, Tokyo, Japan.

6. Pacific Northwest Grain Standards and Quality Committee. "Quality Wheat from Pacific Northwest - U.S.A." Pendleton, Oregon. Various issues.

7. Rubenthaler, Gordon. Conversations with Dr. Rubenthaler, Pacific Northwest Wheat Quality Lab, Washington State University, Pullman, Washington, 99163.

8. Townsend, Terry. "An Economic Analysis of the White Wheat Marketing System Between the Pacific Northwest and Japan." An unpublished M.S. thesis for Oregon State University, 1980.

9. Ukon, Okikazu. Conversations with Okikazu Ukon, Assistant General Manager, Mitsui and Company (U.S.A.), Inc., Portland, Oregon.

10. U.S. Department of Agriculture. Grain Market News, Weekly Summary and Statistics. Agricultural Marketing Service, Livestock, Poultry, Grain, and Seed Division. Various issues.

11. Wada, Arata. Conversations with Arata Wada, Japanese Food Agency Representative, 2405 First National Bank Tower, Portland, Oregon.