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# Wheat and Barley Policies in Japan

**Hisao Fukuda, John Dyck, and Jim Stout**

## Abstract

Government payments provide high returns to Japanese wheat and barley farmers. In addition to prices received in the marketplace for their grain, farmers receive payments based on volume from the Income Stabilization Fund. Farmers who plant wheat and barley in paddies diverted from rice also receive payments per hectare from the Production Adjustment Program. Japan's Government controls trade within a tariff-rate quota and imposes a prohibitively high tariff on imports outside the quota. Trade within the quota is managed exclusively by the Food Department in the Ministry of Agriculture, Forestry, and Fisheries. The Food Department assesses a high markup on imported milling wheat, and the proceeds are funneled into the Income Stabilization Fund to support domestic production. As a result of the markup, wheat prices within Japan are well above world market levels, and consumers ultimately bear part of the burden of Japan's support for its domestic wheat by paying higher prices for wheat products. Government controls support domestic production for feed and brewing purposes. Substantial funding for the wheat and barley programs also comes from the general budget, paid for by Japan's taxpayers. Without government support, domestic wheat and barley production would be much smaller, and imports would be larger.

**Keywords:** Japan, wheat, barley, malting barley, policies, domestic support, trade, trade liberalization, tariff-rate quota, state trading.

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## Introduction

This article is one in a series examining Japan's policies that protect and regulate its agricultural markets.<sup>1</sup> These policies are of special interest both because Japan is one of the world's leading agricultural importers and because the policies are subject to review in the current "Doha" round of global trade negotiations conducted by the World Trade Organization (WTO).

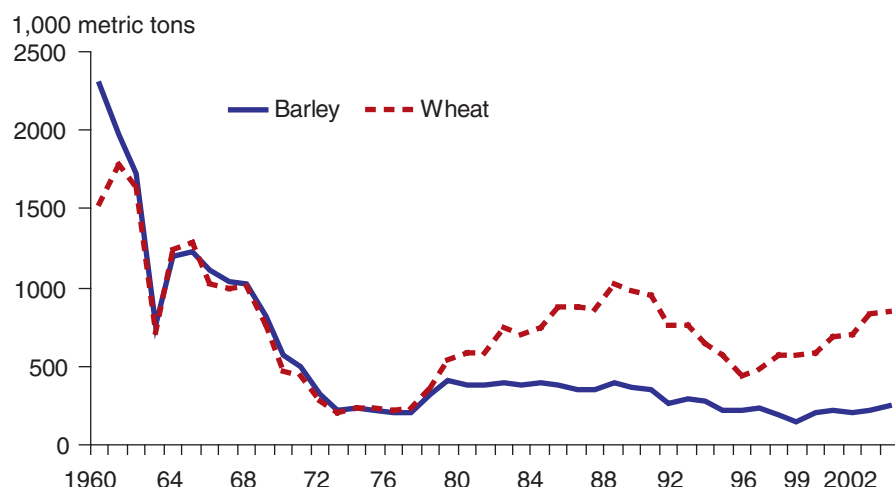
Wheat and barley have long been part of the Japanese diet, and were widely grown crops for centuries. Because food uses and production practices for the two grains were similar, Japan's policies treat them in almost identical fashion. In 1951, combined production of the two crops was 3.66 million tons, on 1.7 million hectares (ha). Since then, the area planted to the crops has declined, especially for barley. In 2003, production of the two crops was 1.05 million tons (fig. 1), and planted area was 276,000 ha.<sup>2</sup> Today, wheat, malting barley, and two-row barley are grown on paddy fields throughout Japan and on upland fields in Hokkaido; six-row barley is grown on paddy fields just to the north of Tokyo; and a small quantity of naked, or awnless, barley is grown on paddy fields on the southern islands of Shikoku and Kyushu. Over 100,000 farm households grow wheat or barley.

Wheat and barley consumption for food uses has been relatively stable for the last 30 years. Per-person use of wheat flour is about 32 kg (70 lbs.) per year. On a whole-wheat basis, this is over 5 million tons per year. Barley is used for a variety of foods and beverages, including a traditional distilled liquor called *shochu*, beer, *miso* (bean paste), and barley tea. Over 1 million tons of barley is used for beer brewing (imported in the form of barley malt, or from domestic production), and about 100,000 tons for the other nonfeed uses. About 1.3 million tons of barley and over 300,000 tons of wheat are used for feed each year. Barley is particularly important in feeding beef cattle because it produces high-quality beef with the white marbling Japanese consumers prefer. Figure 2 shows the stable consumption pattern for these grains.

<sup>1</sup>See recommended readings in the Japan Briefing Room, on the ERS website—[www.ers.usda.gov/briefing/japan/](http://www.ers.usda.gov/briefing/japan/)

<sup>2</sup>Equivalent to 1.2 percent of U.S. area harvested of the two crops, and 1.5 percent of U.S. production.

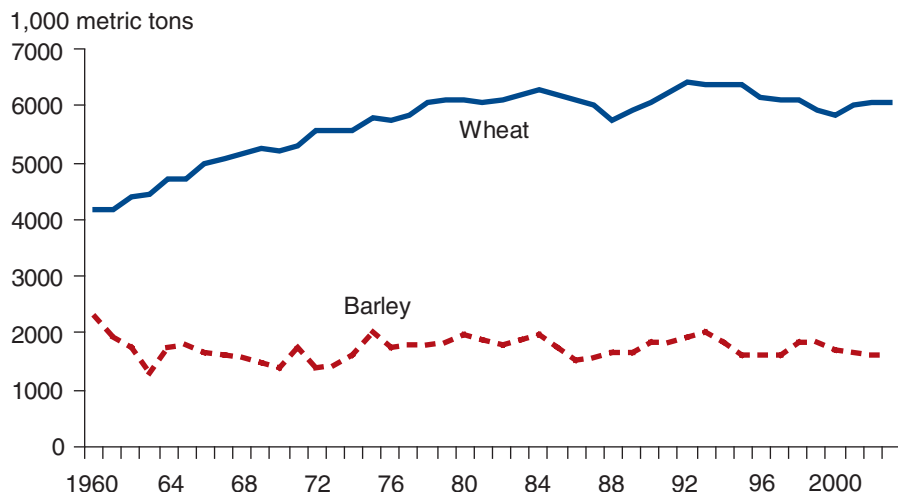
Figure 1  
**Japan: Wheat and barley production**



Source: Production, Supply, and Distribution database, USDA, 4/2/04.

Figure 2

**Japan: Wheat and barley consumption**



Note: Does not include significant use of imported barley malt.  
 Source: Production, Supply, and Distribution database, USDA, 4/9/04.

Imports of wheat and barley supply most of Japan’s needs.<sup>3</sup> In addition to imports of the whole grains, Japan imports large quantities of barley malt for beer brewing. Japan is usually one of the world’s five largest import markets for wheat, and one of the three largest importers of barley. Japan exports wheat flour to Hong Kong and other markets, milled from over 400,000 tons of imported wheat.

Although Japan is a stable market for wheat and barley, government interventions in the markets raise Japanese prices far above world market levels. Through budgetary outlays paid for by taxpayers and through higher flour prices ultimately paid for by consumers, Japan’s citizens annually spend over \$800 million on wheat and barley programs that they would not spend if support and protection for these grains were ended. Costing well over \$1,000 per metric ton, Japanese wheat is regarded as inferior in quality to imported wheat that costs much less. If Japan gave up its support for wheat and barley farming, foreign suppliers could expect to replace most of the current level of wheat production (up to 850,000 tons) and barley production (up to 200,000 tons). Japanese Government interventions, including subsidies to production and state control of importing, are increasingly being questioned, inside and outside of Japan, and are the subject of this report.

**Domestic policies**

Japan overhauled its wheat and barley policies in 2000, but the basic pattern of subsidies to encourage production of these grains, ultimately paid for by Japan’s consumers and taxpayers, remained in place. For at least the past 4 decades, Japan’s Government has imported wheat and barley and then sold the wheat to flour millers and other food processors at high prices. The profits on this transaction have been used to subsidize domestic production of wheat and barley.

<sup>3</sup>In the two years, 2002-2003, imports supplied about 87 percent of Japan’s wheat use and 86 percent of barley use.

**Japan's New Wheat and Barley Policies—the Income Stabilization Fund.** Formulated in 1998 and implemented over the 3 crop years 2000-2002, the New Policies ended the longstanding direct purchases of domestic wheat and barley by the Food Agency of the Ministry of Agriculture, Forestry, and Fisheries (MAFF). Private firms now purchase the wheat and barley.<sup>4</sup> In addition to the price received from the sale to private firms, Income Stabilization payments are offered for all wheat and barley that is at or above quality grade 2 and not destined for feed or brewing (malting) use.<sup>5</sup>

The Food Department<sup>6</sup> provides a standard Income Stabilization Fund (ISF) unit payment—for wheat, 106 yen/kg in 2003<sup>7</sup>—which is delivered to farmers through farmer organizations (chiefly the cooperatives that are part of Japan Agriculture, the national federation), after harvest and sale. Farmers receive both the price at which they sold the wheat to private buyers and the government subsidy from the ISF.

In theory, the ISF standard unit payment is just a direct payment. In practice, the ISF unit payment remains the difference between a farm purchase price and resale price for domestic grain under the old policies. Before the institution of the New Policies, MAFF's Food Agency simply bought all the wheat and barley at a high purchase price and then resold it to millers at lower, fixed prices (called the resale price). MAFF continues to publish [high] purchase and [lower] resale prices, even though it is no longer involved in buying wheat and barley. Since the resale price is always far below the purchase price, the ISF payments in the wheat/barley transactions are very large—in fact, they make up the bulk of the revenue that farmers get from growing these crops.

To make the payments, the ISF receives the Food Department profits on purchases and resales of imported wheat (see below), as well as general government revenues. Japan classifies this policy as part of its Aggregate Measurement of Support (amber box) to the WTO (see box, “How Japan notifies its domestic policies on wheat and barley to the WTO”).

In 2002, the ISF payment for eligible wheat was 106.4 yen/kg (\$23.08 per bushel). Applied to 779,000 tons of domestic wheat, this implies a total outlay of 83 billion yen (\$661 million). Similarly, payments on 111,000 tons of domestic barley appeared to be 10 billion yen (\$81 million).

Although the payments (and the purchase subsidies under the previous policy) are high by world standards, they have declined gradually since 1987 (fig. 3).<sup>8</sup> Japan's government has used modest reductions in the payments to prod farmers to become more competitive.

Japan's flour mills regard wheat grown in Japan as inferior in quality to wheat that can be imported. The internal Japanese price of domestic wheat is always less than that of imported wheat. Over the years 2001-2003, the premium for imported wheat was 5,150 yen/ton (\$41 at the 2002 exchange rate) above the rate for domestic wheat. Japan's New Wheat and Barley Policies aim to increase the quality of domestic wheat and barley by having government breeders develop new varieties.

<sup>4</sup>MAFF, *An Outline of Japan's New Wheat and Barley Policies*, p. 2.

<sup>5</sup>In 2002, about 94 percent of wheat production and 50 percent of barley production received payments.

<sup>6</sup>The Food Department replaced the Food Agency as the office responsible for wheat policy after the dissolution of the Food Agency in 2002.

<sup>7</sup>Payments are made for a 60 kg bag.

<sup>8</sup>“Payments” before 2000 were the purchase price that the Food Agency paid farmers, less the amount that it received when it resold the wheat to millers. After 2000, the payments are the ISF unit payments. As explained above, the unit ISF payments are still calculated using a “purchase” and “resale” price from the old policies.

## How Japan notifies its domestic policies on wheat and barley to the WTO

Policy	Box	Justification	Value
Construction of irrigation/drainage facilities and rural roads; land consolidation	Green	Infrastructure services for agricultural sector.	N/A
Interest concessions for agricultural loans	Green	Structural adjustment assistance.	N/A
Price support through government purchases of wheat and barley	Amber	Direct government purchase of grain.	\$36.5 million
Payments related to the price of wheat and barley	Amber	Compensation to private traders in return for their purchase of grain at a high price and resale at a lower price.	\$788 million
Payments related to the volume of barley production	Amber	Payments to farmers who raise barley for feed use.	\$6 million
Payments to produce wheat and barley on land diverted from rice	Green	Environmental payments: for maintaining paddy fields in environmentally good condition through growing any plants other than rice.	N/A
Disaster insurance subsidies	Green and amber <sup>1</sup>	<b>Green:</b> payments for relief from natural disasters: subsidies on premiums of agricultural insurance for production loss more than 30% of average levels. <b>Amber:</b> subsidies on premiums of agricultural insurance for production loss less than 30% of average levels.	N/A

Sources: 1) Notification concerning domestic support commitments reported by the Government of Japan to the WTO for fiscal year 2000. G/AG/N/JPN/98, May 19, 2004. 2) Interviews with MAFF officials in Tokyo, June 20, 2003.

Notes: N/A=spending on wheat and barley is not broken out from the general budget for these programs.

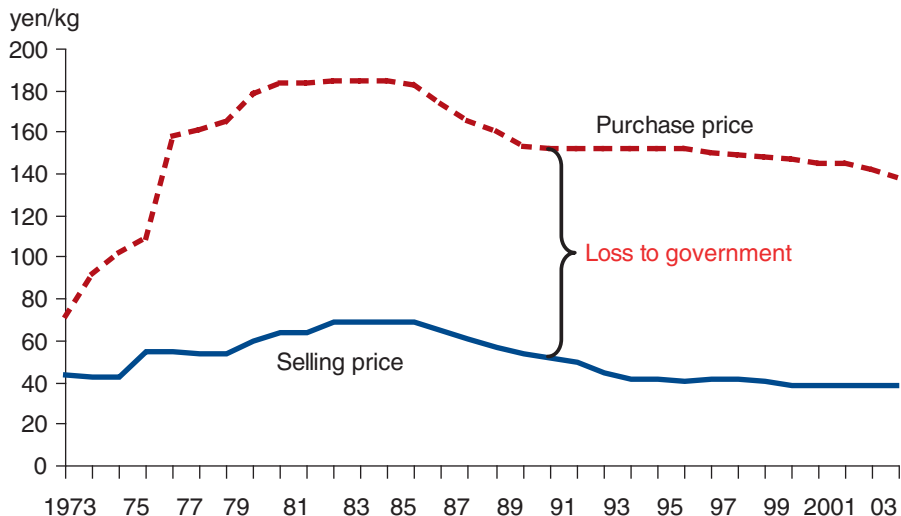
The amber box contains policies that tend to distort international trade, and which are subject to reduction commitments under the Uruguay Round Agreement on Agriculture (URAA) of the WTO. The green box contains policies that are regarded as minimally trade distorting, and not subject to reduction under the URAA.

<sup>1</sup>Premium payments for insurance coverage for losses less than 30 percent for all commodities (not just wheat and barley) were 20.9 billion yen (\$195 million) in 2000, which was 0.2 percent of the value of Japan's total agricultural output, and thus considered de minimis and not counted as part of Japan's total Aggregate Measurement of Support because the payments were less than 5 percent of the value of production.

**Payments for feed barley production.** Japan pays farmers to produce barley for feed use. The program is small, with reported payments of about 900 million yen (\$8 million in 1999) per year, 1995-99, declining to about 200 million yen (less than \$2 million) in 2002. Like the ISF payments, these are reported as part of Japan's aggregate measurement of support ("amber box") to the WTO, because they directly encourage production, thus displacing imports.

Figure 3

**Government wheat prices**



Source: Yearbook of Agriculture, Forestry, and Fisheries, Japan.

**Wheat and barley planted on rice paddies: the rice diversion program.**

Japan’s strong barriers against rice imports have insulated domestic producers from foreign competition. Rice prices within Japan soared to high levels in the 1960s, and farmers wanted to raise more rice to increase their revenues, even though rice consumption had begun to decline. As a result, Japan’s rice farms produced huge surpluses, which the government bought. The bulging government stocks were expensive to maintain and expand. In 1971, therefore, Japan turned to rice crop diversion measures to control the supply of rice; these measures have remained in effect through the present.

Diversion has been administered under five different plans since 1971.<sup>9</sup> The current Production Adjustment Promotion Plan (PAPP) commenced in 1998. Under it, MAFF determines adjustments to rice paddy area needed to bring supply and demand into balance. Farmers are offered payments if they use paddy land for certain purposes other than growing rice for food use. Per hectare payments from the government (revised annually) vary according to the use made of the diverted land. Payments for various crop alternatives have also varied over time (table 1). The main source of funds for the diversion payments is the national budget. However, farmers participating in the PAPP are required to pay 4,000 yen (\$33) per 10 ares<sup>10</sup> for the land kept in rice into a mutual compensation fund, which is used to fund part of the diversion payments.<sup>11</sup>

In the early diversion programs, the payments were the same for wheat and such other choices as vegetables and fruits (table 1). In recent years, however, the payments for planting wheat, barley, and soybeans have increased, and payments offered for alternatives have decreased. Wheat, barley, and soybeans have been favored because MAFF is trying to raise the caloric self-sufficiency of Japanese agricultural production, one of the goals set down by the Food Basic Law in 1998. Domestic output supplies most of the vegetables and fruits consumed in Japan, and further expansion of the

<sup>9</sup>See Wailes et al. for details on earlier plans.

<sup>10</sup>An are is one hundredth of a hectare. Because of the small size of farms, many policies are defined on the basis of 10 ares, which is equivalent to one-tenth of a hectare, or about one-quarter of an acre.

<sup>11</sup>Fukuda et al.



**Table 1—Maximum diversion payments for selected crops, 1971-2001**

Year	Wheat, barley, soybeans	Vegetables	Long-life crops (fruit orchards)
		<i>Yen/10 ares</i>	
1971 - 75	40,000	40,000	40,000
1976 - 77	50,000	47,000	47,000
1978 - 83	70,000	50,000	70,000
1984 - 86	62,000	42,000	70,000
1987 - 89	50,000	17,000	55,000
1990 - 92	50,000	19,000	55,000
1993 - 95	50,000	19,000	37,000
1996 - 97	50,000	26,000	39,000
1998 - 99	50,000	11,000	30,000
2000	73,000	13,000	13,000
2001	83,000	13,000	15,000

Note: 10 ares are equivalent to 0.1 hectare or 0.247 acre.

Source: Foreign Agricultural Service/Tokyo.

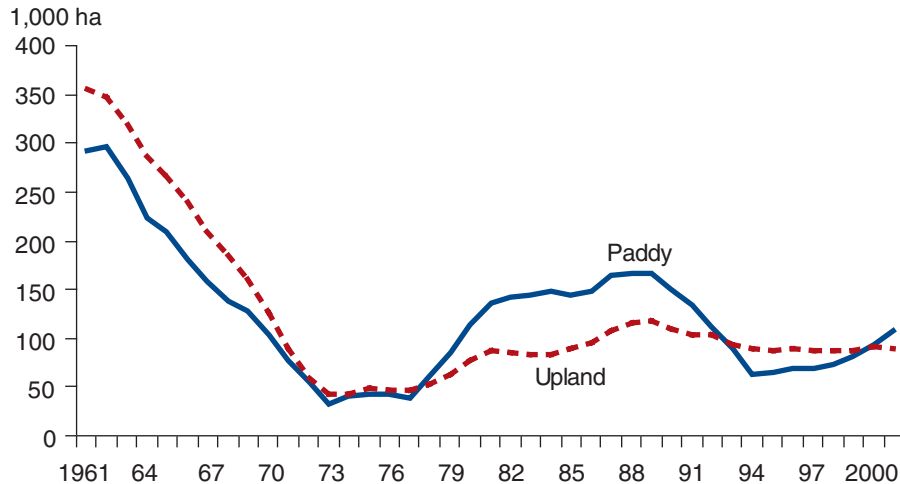
area in horticultural crops could lead to lower producer prices, as more supply enters the market. However, only a small portion of the wheat and barley consumed in Japan is produced there. Unlike vegetables and fruits, wheat and barley production in Japan is not determined by market interactions. Thus, more production does not lower the revenue farmers receive, but instead increases farmers' tax-paid subsidy payments—a cost that the government has so far been willing to shoulder. In response to higher PAPP payments, area planted to wheat and barley has been rising (fig. 4, paddy-grown wheat).

In 2002 and 2003, farmers were paid from 40,000 to 83,000 yen per 10 ares of paddy land diverted to wheat production. Available data do not show what the average PAPP payment was, or how much in total was spent on wheat and barley. A range of estimates can be made, however, given certain assumptions. The yield for wheat grown on paddy fields in 2002 was 3,300 kg/ha. On a per-kilogram basis, the PAPP subsidy for growing wheat in 2002 was thus 121-252 yen/kg (\$0.97-\$2.01/kg, or \$26.38-\$54.67/bu). Based on the minimum and maximum payments, PAPP assistance to wheat producers on the 115,000 hectares of paddy land planted to wheat in 2002 would have been in the range of 46-96 billion yen (\$367-\$766 million), assuming that all paddy field production was enrolled in the PAPP.<sup>12</sup> Farmers growing wheat on paddy fields receive the PAPP assistance and, in addition, sell their wheat. Adding the price at which the wheat was sold to private firms and the ISF payment (together, these were worth \$31.55/bu) to the range of PAPP payments produces estimated returns to paddy field wheat of \$57.93-\$86.22/bu in 2002 (this can be compared to the U.S. all-wheat farm price in 2002, which was \$3.56/bu).

Barley planted under the PAPP receives the same payment options as wheat. In 2002, farmers planted about 58,000 hectares of barley in paddy fields. Using minimum and maximum PAPP payments, this implies total outlays of from 23 to 48 billion yen (\$183-\$383 million). Given 2002 yield of 3,300 kg/ha for two-row barley (the most common variety), the PAPP payment ranged from 121 to 252 yen/kg (the same as for wheat). Since the sum of

<sup>12</sup>MAFF budget outlays for the entire PAPP spending on all diverted paddy fields was 99 billion yen. While wheat likely receives the largest total outlay of any commodity under the PAPP, the size of the total budget implies that most farmers planting wheat were more likely to receive the minimum than the maximum PAPP subsidy.

Figure 4  
Wheat area planted in paddy and upland fields



Source: Statistical Yearbooks of Ministry of Agriculture, Forestry, and Fisheries.

the private purchase price and the ISF payment for barley in 2002 was 125 yen/kg, the total return from planting two-row barley in paddy fields was between 246 and 377 yen/kg, or \$53-\$82 per bushel (this can be compared to the U.S. price of \$2.63/bu for malting barley in 2002).

**Insurance.** In 2000, the Japanese Government paid about 6 billion yen (\$55 million) in insurance premium subsidies for wheat and barley.<sup>13</sup> About 83 percent of wheat and barley area was insured in 2002, and about 36,000 farmers (about a third of those with insurance policies) were paid claims.<sup>14</sup>

All wheat and barley farmers are eligible for insurance against yield losses, except those caused by farmer negligence. For farms that plant more than a minimum area (the minimum in most of Japan is set between .5 and 1 acre), participation is mandatory. The insurance is part of a national system that includes a local level (a municipality or insurance association), and prefectural and national levels. Normally, the local level indemnifies farmers for losses, drawing on premiums that are jointly paid by farmers and the national Government. If losses overwhelm local funds, additional indemnity is fully paid by the national and prefectural agricultural insurance agencies, and with general budget funds if necessary.<sup>15</sup>

Wheat and barley farmers are insured against losses in output caused by weather, fire, plant diseases, insects, birds, or other animals, and also against quality deterioration caused by those factors. The insurance is on income from production. Farmers can choose protection for up to 90 percent of a standard income that is the product of a national standard yield and a value per kilogram of the wheat or barley that is chosen by the farm from a menu of choices.<sup>16</sup>

Premiums rise when a higher proportion of the standard income is insured and when a higher value for the standard income is chosen. Premium rates vary by locality, reflecting the average annual damage rate for each locality over the past 20 years.<sup>17</sup>

<sup>13</sup>National Agricultural Insurance Association, p. 53.

<sup>14</sup>MAFF, *Statistical Yearbook of Agriculture, Forestry, and Fisheries, 2001-2003*, pp. 749-50.

<sup>15</sup>National Agricultural Insurance Association, pp. 9-12.

<sup>16</sup>*Ibid.*

<sup>17</sup>National Agricultural Insurance Association, p. 9.



MAFF pays for at least 50 percent of the premium, and in some cases as much as 55 percent. The average MAFF share of the premium in 2000 approached 54 percent. Farm households pay the rest of the premium. MAFF also pays the office expenses of the local, prefectural, and regional insurance associations.<sup>18</sup>

<sup>18</sup>National Agricultural Insurance Association, pp. 9, 55.

**Increased scale of farm production.** MAFF seeks to increase the size of farms and farm fields that grow wheat and barley, as well as other crops, in Japan. Several policies assist farmers in gaining access to larger areas for farming. Government programs subsidize the reshaping of paddy and upland fields into larger units, which are easier to farm with larger equipment and fewer hours of farm labor. Other policies encourage the formation of cooperative and corporate management bodies, in which farming is conducted by one or a few farmers on land that belongs to several households. In 2002, the cost per hectare of raising wheat by such “organized agricultural management bodies” was more than 18 percent lower than on individual household farms. The wheat area cultivated by these management bodies averaged over 5 ha (12 acres), versus .67 ha (1.7 acres) for the average individual operation.

**Increased scale of wheat milling.** While Japan’s Government has no program or budget to increase the scale of wheat milling, the Flour Milling Industry Promotion Association gives money to millers that go out of business. The funds come from membership fees paid by flour mills in proportion to the size of their operation. In the last decade, the number of mills declined by about a fourth, from about 150 to 110.

**Stocks.** The Government of Japan maintains national security stocks of wheat and barley. The goal for milling wheat is 2.6 months’ worth of consumption held in stocks. MAFF holds 2.3 months’ worth, and private firms store the rest. In recent years, 2.6 months’ worth of consumption was equivalent to about 1.2 million tons. The Feed Supply Stabilization Organization, a quasi-governmental organization, holds 400,000 tons of feed barley for use in an emergency (in addition to a combined total of 800,000 tons of corn and sorghum for feed use).

## Border Policies

**Tariffs, tariff-rate quotas, and state trading.** A single tariff-rate-quota (TRQ) covers wheat and many products derived from it, including wheat flour. Another TRQ covers barley and some of its products. A cabinet order annually establishes a third TRQ (not notified to the WTO) for barley malt. Only the Food Department of MAFF has the right to import products within the wheat and barley TRQs. Only firms that have been approved by MAFF can import within the barley malt TRQ. Imports outside any of the TRQs can be made by any private company.

Although Japan set a quantitative limit for the TRQs for wheat and barley as part of the Uruguay Round Agreement on Agriculture, actual amounts for importation within the quota are set by MAFF after consultation with the firms that will use the wheat and barley in Japan. MAFF determines from these users what total demand is likely to be, subtracts the likely level of domestic production of wheat or barley, and imports the rest. The major

groups using imported wheat and barley are wheat flour millers, firms dealing in animal feed (both for feed wheat and barley), and brewers of shochu, a traditional alcoholic beverage, who buy most of the barley imports that are not destined for feed use. If MAFF determines import quantities that exceed the notified limit, the size of the annual quota is adjusted upward to accommodate the larger quantities.

In practice, the TRQs for wheat and barley allow importation of very large quantities of unmilled grain but very little processed wheat and barley products. For firms wishing to import processed wheat or barley products within the quota, Japan's TRQ system places three obstacles in the way:

- Tariffs inside the quotas are zero for whole-grain wheat and barley, but substantial (usually 25 percent for wheat products, 20-25 percent for barley products) for products processed from the whole grains (tables 2 and 3).
- All imports must be purchased by the MAFF Food Department, which adds a layer of complexity and uncertainty to the decision to import.
- The Food Department can charge a markup (on top of the tariff) before selling imported products to a Japanese firm (see below).

As a result, imports of processed wheat and barley products within the quota are very small (tables 2 and 3).

Over-quota tariffs are specific tariffs, denominated in yen/kg. The percentage equivalent of the tariffs thus varies with the value of the yen and the market price of the grain. The over-quota tariffs on wheat products vary between 85 and 134 yen/kg (at 2003 exchange rates, equivalent to \$0.73-\$1.16/kg, or \$733-\$1,156/ton). For whole wheat grain, the over-quota tariff is 55 yen/kg (\$0.48/kg or \$475/ton). In 2003, the over-quota tariff was considerably higher than the world market price of wheat. By more than doubling the price of imported wheat, the effect of the over-quota tariff was to rule out any imports outside the quota. Ad valorem (percentage) tariff equivalents of over-quota tariffs for wheat and barley over the previous decade are shown in figure 5.

**Markups.** Japan applies markups to imports within the TRQs for wheat and barley (but not the TRQ for barley malt). The markups are bound by the Uruguay Round Agreement on Agriculture, within Japan's schedule of commitments (see tables 2 and 3). The maximum markups in the schedule represent the maximum profit that the Food Department can obtain when it sells imported products to private firms in Japan. For wheat grains, the markup is capped at 45.2 yen/kg (\$0.39/kg, or \$390/ton). The maximum (or bound) markup provides the upper limit for Japan's resale price of imported wheat to domestic flour millers. In 2001-2003, the actual markup that the Food Department added to average import values was from 21.3 to 22.3 yen/kg (\$0.18-0.19/kg, or \$180-190/ton), about half the maximum allowed.

The markup can be a substantial deterrent to imports. For example, a firm wishing to import a wheat mixture that contains more than 85 percent wheat

**Table 2—Japan: wheat and wheat-product tariffs, 2003**

	Duty		Markup (maximum) Yen/kg	Imports		
	Specific Yen/kg	Ad valorem Percent		Volume Tons	Value Billion yen    Million US\$	
Durum wheat (whole grain)	55	0	45.2	198,146	6.055	52.243
Other wheat (whole grain)	55	0	45.2	5,047,975	120.123	1036.428
Wheat bran		0		70,219	1.028191	8.871
Wheat flour, for MSG <sup>1</sup>	90	12.5	62.6	0	0	0.000
Wheat flour, other <sup>2</sup>	90	25	62.6	1,138	0.090424	0.780
Wheat groats, meal, and pellets	90	25	62.6	0	0	0.000
Rolled or flaked wheat <sup>2</sup>	112	25	80.6	0	0	0.000
Wheat otherwise worked <sup>2</sup>	90	25	62.6	0	0	0.000
Wheat germ		17		102	0.009645	0.083
Wheat starch	134	25	99.6	0	0.000262	0.002
Wheat gluten		21.3		13,335	2.229079	19.233
Wheat mixes and doughs, >85% wheat	90	25	62.6	69	0.010415	0.090
Wheat mixes and doughs, >85% wheat starch	134	25	99.6	0	0	0.000
Cake mixes <sup>3</sup>		12/23.8		11,068	0.880539	7.597
Other mixes and doughs, <85% wheat <sup>3</sup>		16/23.8/24		29,117	6.067476	52.351
Other baking-related preparations, >85% wheat content	90	25	62.6	37	0.013914	0.120
Other baking-related preparations, based on wheat starch	134	25	99.6	0	0	0.000
Other baking-related preparations, <85% wheat content, with added sugar <sup>4</sup>		23.8/24/28		83,619	5.721237	49.363
Other baking-related preparations, <85% wheat, without added sugar		16		19,045	1.667569	14.388
Udon, somen, and soba noodles	34			2,222	0.546577	4.716
Other pasta	30			123,715	16.805378	144.998
Couscous <sup>5</sup>	24			71	0.015898	0.137
Breakfast cereals		11.5		2,637	0.870108	7.507
Wheat preparations from swelling or roasting	85	19.2	58.8	15	0.004359	0.038
Other foods prepared from flakes	85	19.2	58.8	0	0	0.000
Bulgur wheat	85	25	58.8	0	0.00039	0.003
Other prepared foods	85	25	58.8	101	0.015978	0.138
Crispbread		9		159	0.01823	0.157
Gingerbread		18		4	0.002659	0.023
Sweet biscuits		20.4		437	0.175212	1.51
Waffles and wafers		18		2,831	0.884961	7.635
Toasted products		9		333	0.149255	1.288
Bread		9		7,451	1.923915	16.600
Biscuits, cookies, and crackers <sup>3</sup>		13/15		20,210	6.990036	60.310
Miscellaneous food preparations containing >30% wheat	85	25	58.8	47	0.051999	0.449
Total					172.30	1486.61
Quota items <sup>6</sup>					126.35	1090.15
Nonquota items					45.99	396.77

Notes: This should not be regarded as an authoritative or complete listing. For that, check the Customs Tariff Schedules of Japan.

Highlighted rows are subject to the overall wheat quota system. The specific tariff is the overquota tariff. The ad valorem tariff is the within-quota tariff.

<sup>1</sup>MSG is monosodium glutamate.

<sup>2</sup>The within-quota tariff is 20 percent for triticale.

<sup>3</sup>The higher tariffs are for products containing added sugar, and the lowest tariff is for products without added sugar.

<sup>4</sup>The higher tariff is applied if the sugar content is >15% and sugar is the leading ingredient by weight.

<sup>5</sup>The tariff is 12 yen/kg for imports from developing countries and zero for the least developed countries.

<sup>6</sup>Includes both imports within the quota and those that pay the overquota tariff.

Sources: Customs Tariff Schedules of Japan, 2003 and Japan's Trade Statistics.

**Table 3—Japan: Barley and barley-product tariffs, 2003**

	Duty		Markup (maximum)	Imports		
	Specific	Ad valorem		Volume	Value	
	Yen/kg	Percent	Yen/kg	Tons	Billion yen	Million US\$
Barley grain for feed	39	0	28.6	1,200,514	22.9785	198.261
Barley grain not for feed	39	0	28.6	241,159	7.71441	66.561
Barley flour	83	25	52	0	0	0.000
Barley groats, meal, and pellets	83	20	52	0	0	0.000
Rolled or flaked barley	91	20	57.8	0	0	0.000
Barley otherwise worked	111	20	72.4	15	0.001468	0.013
Malt	21.3	0	0	547,266	25.12235	216.759
Barley mixes and doughs, >85% wheat	83	25	52	0	0	0.000
Other baking related preparations, >85% barley content	83	25	52	0	0	0.000
Barley preparations from swelling or roasting	64	19.2	37.4	5	0.000226	0.002
Other foods prepared from flakes	64	19.2	37.4	0	0	0.000
Other prepared foods	64	25	37.4	92	0.012094	0.104
Miscellaneous food preparations containing >30% barley	64	25	37.4	0	0	0.000
Beer <sup>1</sup>		0		38,424	5.171147	44.617
Total					61.00	526.32

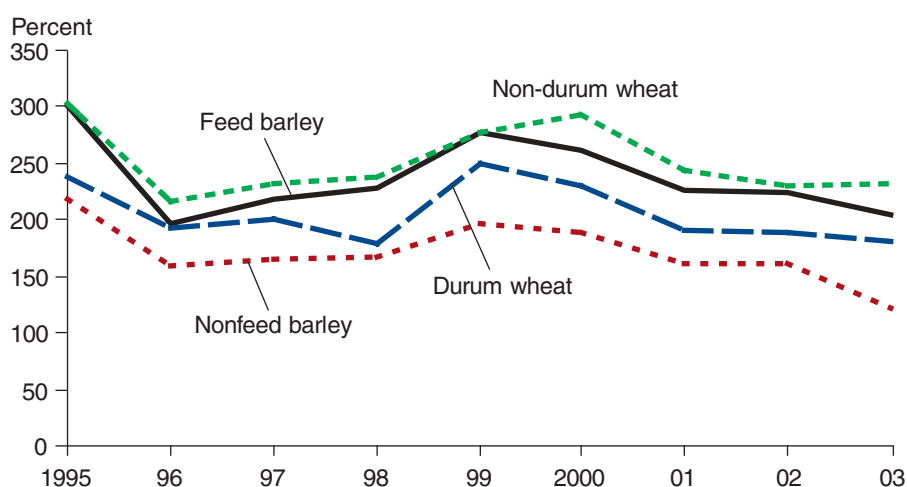
Notes: This should not be regarded as an authoritative or complete listing. For that, check the Customs Tariff Schedules of Japan. Highlighted rows are subject to the overall barley quota system or to the quota for malt. The specific tariff is the overquota tariff. The ad valorem tariff is the within-quota tariff.

<sup>1</sup>Beer volume is measured in 1,000 liters.

Sources: Customs Tariff Schedules of Japan, 2003 and Japan's Trade Statistics.

Figure 5

**Ad valorem tariff equivalents of overquota tariffs on wheat and barley**



Overquota tariffs, calculated as specific tariff divided by unit value of actual within-quota imports.

by weight would pay the 25-percent import tariff and up to 99.6 yen/kg (\$0.86, or \$860 per ton) in a markup if it asked the Food Department to import the product within the wheat quota.

In practice, the Food Department does not put a high markup on imports of feed wheat or barley. If Japan applied the average markup of about 22 yen/kg to feed wheat, the cost of feed wheat to Japan's livestock and poultry farmers would be raised to more than 100 percent above world market levels. The effect on barley for feed would be similar. High feed costs

would make Japan's farmers less competitive against imports of meat, dairy products, and eggs.

In 1999, Japan began announcing simultaneous-buy-sell (SBS) auctions for feed wheat and feed barley. Under the SBS system, an announcement is made about the quantity of feedgrain that is being sought. Pairs of firms are invited to submit an offer to handle part or all of the announced amount. The firms must specify the price that the exporting firm is charging, and the price at which the importing firm will sell it in Japan. The Food Department chooses those bids that have the biggest spread between the prices. The spread becomes the markup, and the Food Department keeps it. The markup has been about 3,000 yen/ton for barley (\$26/ton). Equivalent to 3 yen/kg, the average SBS feed barley markup is far less than the 22 yen/kg markup typical for milling wheat. Details of the feed wheat markup are not available, but the markup is likely to be close to that for feed barley. In 2003, almost 70,000 tons of feed wheat and about 850,000 tons of feed barley were imported under the SBS system.

Lower markups applied to wheat for the 'more bran' program until 2004 and no markup is applied for wheat milled into flour for export (see box, "Special programs for imported wheat").

MAFF's Food Department puts the proceeds from the markup into the Wheat and Barley Income Stabilization Fund (fig. 6). That Fund pays farmers a direct subsidy for each kilogram of wheat or barley that they produce. In recent years, the extra production of wheat and barley induced by the rice diversion program has pushed outlays under the Income Stabilization Fund above the proceeds from the markups. As a result, Japan's general budget funds have had to make up the deficit.

**Avoiding the wheat TRQ.** The wheat TRQ has pushed up raw material costs for Japan's milling industry. To protect the milling industry from imported processed products, Japan imposes higher tariffs and markups for processed wheat products within the TRQ. Over time, however, firms have developed new products that contain wheat but do not fall in any of the TRQ categories. These new products often face a tariff (although always a lower tariff than the prohibitive over-quota tariffs on categories included in the TRQ system), but otherwise are freely importable. The Food Department has no role in purchasing them, and no markup can be applied. Imports of wheat products that avoid the TRQ have been increasing (fig. 7). Pasta, mixes and doughs containing less than 85% wheat, and other products outside the TRQ system comprised over 25 percent of the value of wheat-based imports in 2003. Such imports provide increasing competition for Japan's wheat food manufacturers.

**TRQ for barley malt.** Twice a year (in January and July), the Brewers Association of Japan (an industry association consisting of five beer manufacturers: Kirin, Asahi, Sapporo, Suntory, and Orion) requests the National Tax Agency for a TRQ for barley malt, the principal ingredient in beer brewing. The quota amount is calculated as the sum of the total demand for malt reported by the five brewers less domestic production of barley for malting, on a malt basis. Following the submission of the TRQ request, the

## Special programs for imported wheat

**Reduced prices for imported wheat used for flour exports.** Under this program, MAFF allows flour millers to import wheat outside of MAFF's control as long as they export an equivalent amount of wheat flour. This so-called "free wheat" is imported at world prices (less than half of MAFF's resale price) and is thus very profitable. This system also provides millers with an export market for their lower quality flour, which otherwise would have little value in the domestic market.

### Japanese exports of wheat flour by destination

Destination	CY 2001	CY 2002	CY 2003
		<i>Metric tons</i>	
Hong Kong	211,695	198,469	195,051
Vietnam	44,684	48,379	46,593
Singapore	25,557	30,586	38,537
Thailand	17,273	16,516	15,301
United States	456	679	623
Other	21,346	25,251	22,595
Total	321,011	319,880	318,700

Source: Ministry of Finance.

[From U.S. Dept. of Agriculture, Foreign Agricultural Service, GAIN report JA4020, 3/12/2004]

**Reduced prices for wheat that produces more bran and less flour.** The 'more bran' policy was introduced in the late 1950s in order to supply higher-quality feed to Japan's beef cattle and swine. Under this policy, which ended in March 2004, flour millers bought wheat from the Food Agency at a price lower than the ordinary resale price for imported wheat. The firms then milled the wheat to yield 40 percent bran, rather than the 22-percent bran yield that is customary. The bran contained more fiber and protein. Thus, the program resulted in a greater quantity of bran production and in higher quality bran. The flour quality was also higher. Flour from the mills tended to be used for noodle manufacture. In some years, over 10 percent of Japan's flour production came from 'more bran' mills, including 25 percent of the flour used for noodles.\*

Over time, the market for enhanced bran declined because of competition from other feeds, such as corn, and usage became limited mainly to high-value beef cattle. The program was ended at the end of the 2003 fiscal year.

National Tax Agency interviews each brewer and verifies that the demand projection is accurate, then instructs MAFF to announce the TRQ (in April and October).<sup>19</sup> If they expect a quality problem with domestic barley, or a poor harvest, brewers can ask for an increased amount of imports through the Association twice a year as part of the normal TRQ request.

Unlike the situation for milling wheat and barley for food use, beer manufacturers contract directly with Japanese farmers for the amount of barley for malting that they will purchase, and pay the full amount set by MAFF. Currently, the price paid to producers is about 170,000 yen/MT (\$1,467). In recent years, malting barley production has been over 60,000 tons per year.

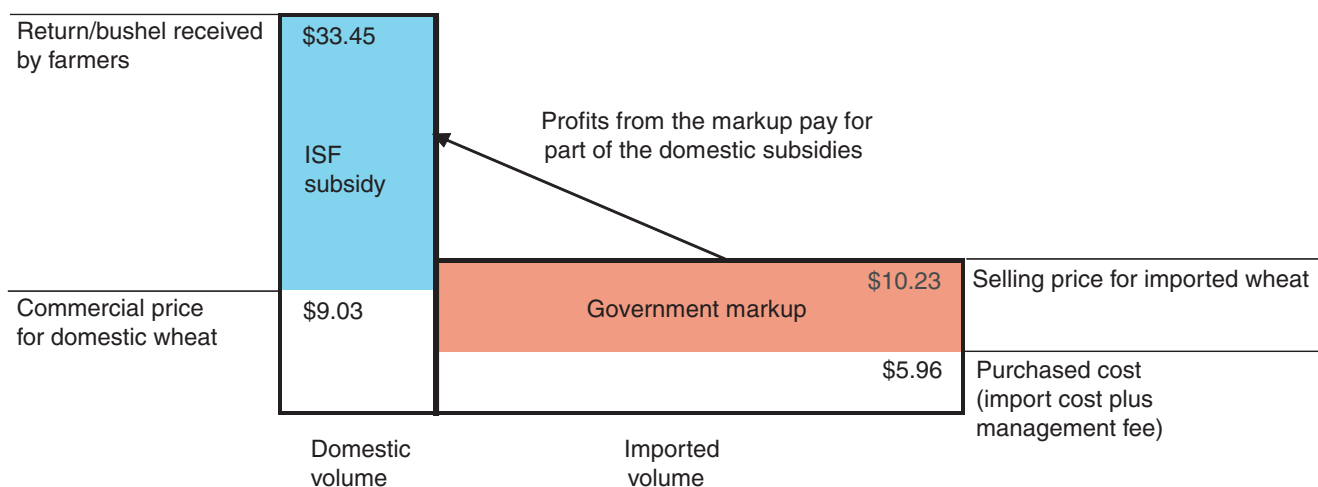
\*MAFF, *Statistical Yearbook of Agriculture Forestry, and Fisheries*, 2001-2003, p. 685.

<sup>19</sup>MAFF can accommodate requests for additional imports from small users, such as microbreweries and pharmaceutical companies making functional foods or beverages.



Figure 6

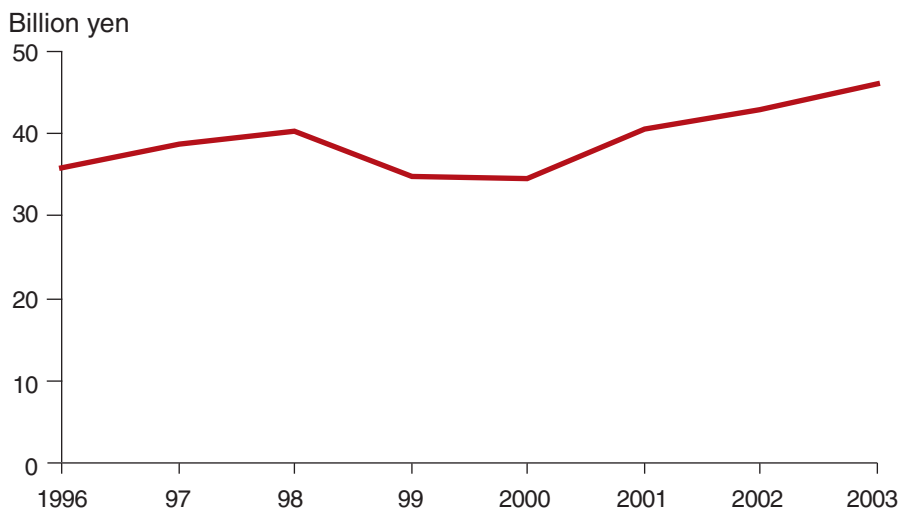
**Japan's wheat imports pay for domestic wheat production**



Notes: Values are U.S. dollars per bushel of wheat, as estimated by ERS. Estimates are for 2003, the last year with complete data. Since funds from the government markup on imported wheat did not cover the full cost of the subsidy to wheat farmers, funds from general revenues were used to make up the difference.

Figure 7

**Imports of wheat products--nonquota items**



The function of the TRQ appears to be to induce brewers to purchase domestic production at a very high price. Presumably, brewers refusing to purchase Japanese domestic production would be ineligible to import barley malt within the TRQ (at a zero tariff), and would thus have to pay the over-quota tariff. The over-quota tariff, 21.3 yen/kg, has been equivalent to a percentage tariff of from 38 to 68 percent over the last decade, and was equivalent to about 46 percent in 2003. Virtually all malt imports are within the TRQ. Since there is no TRQ and a zero tariff on beer imports, Japan's brewing industry is hurt because it pays a high price for a production input (domestic barley for malting) but the output (beer) must be priced to meet international competition from firms that pay world market prices for inputs.

## Implications

**Prices.** MAFF has virtually complete control over wheat prices in Japan through control over imports within the TRQ. By selling imported wheat to domestic users at sizable markups, MAFF's Food Department obtains funds that it uses to subsidize heavily the sales of domestically grown wheat. As a result, wheat farmers in Japan receive much higher payments than they otherwise would, and wheat millers pay much higher prices for wheat than they otherwise would.

Farmers receive about 138 yen/kg for wheat in 2004, equivalent to \$32 per bushel (at a 2003 yen/dollar exchange rate). Although comparisons of producer returns in Japan and the United States vary according to the exchange rate between the yen and the dollar, as well as because of year-to-year differences in each country's prices, returns in Japan have been much higher than U.S. prices (see table below). In addition, farmers who plant wheat in rice paddies can receive large diversion payments (discussed earlier).

	Farm returns, Japan	All-wheat farm price, U.S.	Ratio, Japan:U.S.
	<i>U.S. \$ per bushel</i>		
2000	37.24	2.62	14
2001	32.58	2.78	12
2002	31.43	3.56	9

Barley producer prices are also much higher in Japan than in the United States:

	Farm returns, Japan	Malting barley price, U.S.	Ratio, Japan: U.S.
	<i>U.S. \$ per bushel</i>		
2000	32.08	NA	
2001	28.06	2.48	11
2002	27.07	2.63	10

Most of the high returns to grain production go to cover farmers' costs. In 2002, the latest data available, variable costs for wheat farming were 110 yen/kg, including farmers' time valued at prevailing labor rates. Full economic costs, including a market rate of return to farmers' investments in land and capital, were 140 yen/kg.<sup>20</sup> These costs consumed most of the return of 145 yen/kg received in 2002.<sup>21</sup> For six-row barley, variable costs were 90 yen/kg, and full economic costs 111 yen/kg, while 2002 returns were 125 yen/kg. The margin above average costs provides farmers an incentive to produce more grain. However, most of the subsidy provided by Japan's policies goes to cover high costs.

Millers of wheat flour paid \$9.03 per bushel for domestic wheat and \$10.23 per bushel for imported wheat in 2003. At the same time, the average import price of wheat (including freight, insurance, and storage costs, but no government markup) was \$5.59 per bushel.

Millers pass on the high cost of wheat in the prices at which they sell flour and other products. Wheat flour costs consumers in Tokyo 70-80 cents per

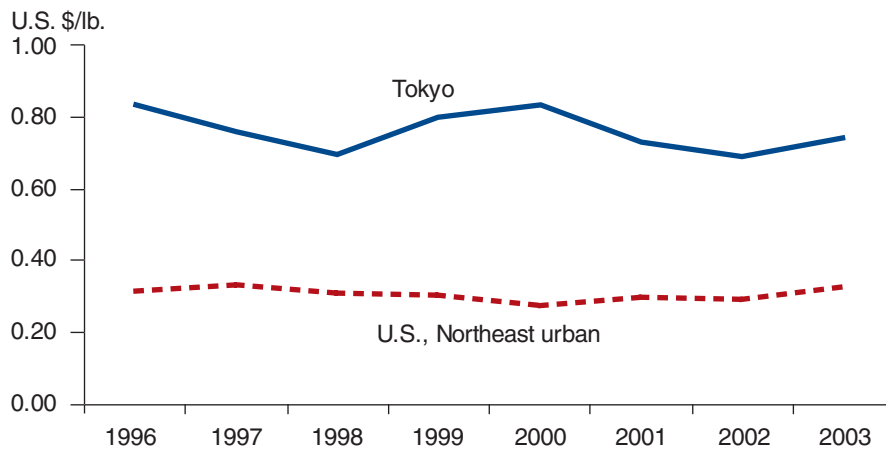
<sup>20</sup>Costs are from MAFF, *Statistical Yearbook of Agriculture, Forestry and Fisheries, 2001-2003*, pp. 350-51.

<sup>21</sup>Returns are *ibid.* p. 803: "government purchasing price."

pound in most years, compared with prices in northeastern cities of the United States that are generally close to 30 cents (fig. 8). Bread prices differ by much less (fig. 9), because the cost of wheat flour is only one of many costs that bread production and marketing entail.

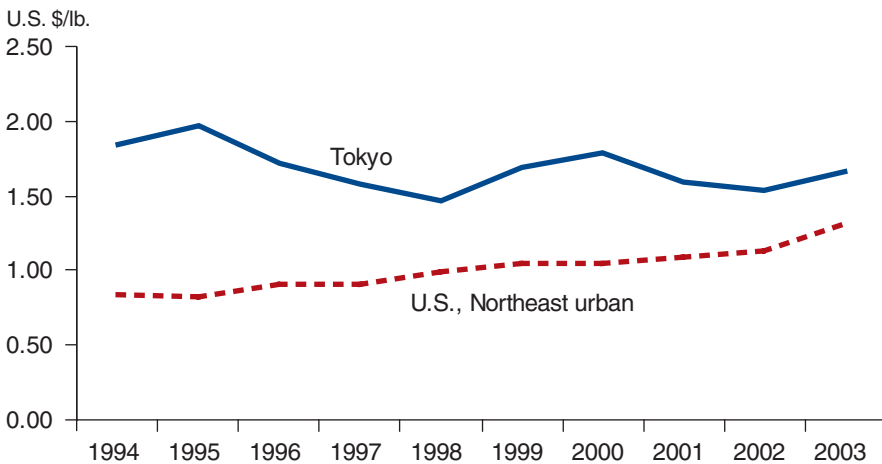
**Gains and losses.** Within Japan, consumers and taxpayers bear the ultimate burden of the extra costs of wheat. Consumers pay higher prices for products that contain wheat because of the markup that MAFF collects when it resells imported wheat to millers. Taxpayers ultimately pay for the losses that MAFF has accrued as the revenues from the markup have fallen below the payments made to reimburse farmers for the difference between the price at which wheat is purchased from them and the high cost of producing wheat in Japan. Taxpayers also pay for the subsidies to wheat production under the rice diversion program.

Figure 8  
**Wheat flour retail prices**



Sources: Tokyo: MAFF, Monthly Statistics. U.S.: CPI.

Figure 9  
**White bread retail prices**



Sources: Tokyo: MAFF, Monthly Statistics. U.S.: CPI.

One way to assess the effects of Japan's current policies is to think about a scenario that eliminates those policies. Japan's market-distorting interventions into the wheat and barley markets include

- those that fall into the WTO amber box (subsidies for the purchase of domestic wheat and barley and a portion of the insurance subsidy);
- the TRQs on wheat, barley, and barley malt, over-quota tariffs, state trading, and markups;
- the subsidy for planting wheat or barley in paddy fields diverted from rice.

If these interventions were ended, Japan's producers of wheat and barley would receive a lower return on their production. Production would fall, as farmers used their resources in other activities that provided a greater return than wheat or barley. The end of MAFF involvement in imports would mean that flour millers could buy wheat at the lower world market prices (in 2003, the price would have been 45 percent lower than the MAFF resale price). Flour millers would have to pass through much of the savings from lower wheat prices to flour users—otherwise, those users could import flour from overseas, since controls and tariffs over flour imports would also be eliminated. The baking, noodle, and other industries that use wheat flour would benefit from lower costs for flour.

Farmers in exporting countries would benefit when Japan's production fell, because imports would then rise. If Japan's flour consumption rose as a result of lower flour prices, imports would rise even more. However, in practice there is likely to be little increase in consumption, because Japan's consumers would likely spend savings on wheat flour products on other goods—consumption of wheat products is not very responsive to changes in price.

The end of interventions would have little effect on feed markets. Under the current TRQ system, the quota volume is always adjusted to suit the needs of domestic livestock industries, and the over-quota tariff is never applied. Markups within the TRQ are small. Ending the TRQ would have little effect on feed prices and demand, and imports would be expected to change little. Purchases of domestic barley for feed would cease, but the quantities are so small that the change in imports would be slight.

If the barley malt TRQ were ended, beer brewers would have no reason to purchase domestic barley for malting, since their costs would drop as they imported barley malt instead of buying domestic grain.

Production of Japanese wheat would fall, particularly since millers have long stated that its quality is not what they want to use. Barley production incentives would fall, leading to less production, but demand for traditional food and beverage uses of domestic barley might provide prices high enough to sustain some output. Foreign suppliers of wheat and barley would supply the grain formerly produced on Japan's farms.

Two recent modeling analyses have included liberalization of Japan's wheat and barley policies in a global context. The Australian Bureau of Agricultural and Resource Economics (ABARE) examined Japan's imports of grain

in the wake of a global liberalization by means of a 50-percent cut in both border barriers and domestic support in all countries, carried out over a 5-year period. Since the model included reforms in other countries and included other sectors of the economy as well as agriculture, changes besides those made by Japan to its wheat/barley policies affected the results. The exercise showed a 4.8-percent increase in Japan's wheat import volume, associated with a 43.3-percent decrease in production. Barley production fell by 49.7 percent.<sup>22</sup>

Modeling at ERS simulated the response after a few years of adjustment if Japan were to eliminate all its border protection (including markups) and trade-distorting domestic support for all commodities (but with the rest of the world keeping current policies).<sup>23</sup> The model did not include sectors other than agriculture. The removal of rice diversion payments was assumed to cut planting of wheat, barley, and soybeans by half. The reduction in producer returns from elimination of the Income Stabilization payments causes wheat and barley production to fall further, and production after liberalization for each crop is estimated to be about 70 percent less than before. User prices for wheat fall by 69 percent, and for barley by 40 percent (less sharply than for wheat, because markups for barley are much smaller in the current TRQ system). Food use of wheat rises by almost 5 percent. Wheat imports stay almost the same, because livestock production falls as liberalization allows greater meat imports, decreasing the need for feed wheat imports by about the amount that food wheat import demand rises. Imports of barley for feed use also fall as meat imports increase.

Through budgetary outlays paid for by taxpayers and through higher flour prices ultimately paid for by consumers, Japan's citizens annually spend over \$800 million on wheat and barley programs that they would not spend if support and protection for these grains were ended. Costing well over \$1,000 per metric ton, Japanese wheat is regarded as inferior in quality to imported wheat that costs much less. If Japan gave up its support for wheat and barley farming, foreign suppliers could expect to replace most of the current level of wheat production (up to 850,000 tons) and barley production (up to 200,000 tons).

<sup>22</sup>ABARE, 2001, pp. 64-5.

<sup>23</sup>ERS/Penn State Modeling Project.

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