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Japan: Shadow WTO Agricultural Domestic Support Notifications

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Markets, Trade, and Institutions Division

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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CONFERENCE PROGRAM

Improving WTO Transparency:
Shadow Domestic Support Notifications

Measurement Issues and Analysis for Eight Countries—
European Union, United States, Japan, Norway, Brazil, China, India and the Philippines
http://www.ifpri.org/events/conferences/2008/20080314.asp

Friday, March 14

9:00-10:00 **An Overview of WTO Domestic Support Notifications**
David Orden
Discussion Opener: Lars Brink

10:00-11:10 European Union
Tim Josling and Alan Swinbank
Discussion Opener: Erling Vårdal

Coffee Break

11:30-12:40 United States
David Blandford and David Orden
Discussion Opener: Munisamy Gopinath

Lunch

1:30-3:30 Brazil
André Nassar and Diego Ures
China
Fuzhi Cheng
Discussion Opener (both papers): Caesar Cororaton

Afternoon Break

3:45-5:45 India
Munisamy Gopinath
Philippines
Caesar Cororaton
Discussion Opener (both papers): Yoshihisa Godo

Saturday, March 15

9:00-11:00 Japan
Yoshihisa Godo
Norway
Erling Vårdal
Discussion Opener (both papers): André Nassar

11:15-12:30 Wrap Up

ABSTRACT

The purpose of this paper is to provide a comprehensive review of Japan's agricultural domestic policy since 1995 in the context of the current international negotiations in the WTO Doha Round, which has as one aim further reductions of trade-distorting support among member countries. An overwhelming majority of farmers in Japan own small plots of rice paddy fields and earn their living mainly on their off-farm income. They go out into rice paddy fields in their spare time as a subsidiary business. Traditional small farming communities are powerful voting groups that seek to maintain their political power. By exerting political pressures on the authorities, farmers can obtain large returns through the manipulation of farmland use regulations, even though such manipulation causes social harm by preventing efficient land use. These inefficiencies in land use are a major reason why Japan is the only country whose food self-sufficiency rate keeps declining in spite of its heavy agricultural protection. In this sense, Japan is in sharp contrast to European and North American countries, where heavy agricultural domestic supports have resulted in an increased output of agricultural commodities and subsequent distortions in international markets.

Apparently, Japan's attitude towards agricultural domestic policy reform is one of compliance with the WTO, which requests member countries to reduce their Aggregate Measure of Support (AMS) through trimming trade-distorting (amber box) support and/or transforming traditional-type agricultural subsidies to decoupled-type ones. Japan reduced its amber box support by nearly 80 percent between 1995 and 2000. This drastic reduction is mainly attributable to Japan's removal of rice from the amber box in 1998. In addition, following the WTO's principle of decoupling, Japan launched an extensive agricultural subsidy reform in 2007. This paper, however, shows the ironical realities of Japanese agricultural policy. Neither a sharp reduction of amber box support nor Japan's 2007 reform necessarily mean there will be a reduction of trade-distorting effects. On the contrary, the 2007 reform may in fact stimulate domestic rice production.

In 2007, Japan's AMS is as little as 18 percent of its commitment level from the Uruguay Round WTO agreements. In addition, this paper projects that Japan's overall trade-distorting support (OTDS) for 2013 will be 469 billion yen, which is much less than the limit of 1,635 billion yen that is proposed in the modalities under discussion in July 2008 for the WTO Doha Round. Thus, the WTO Doha Round negotiations on domestic support policy are unlikely to restrict Japan's domestic agricultural support policy.

Keywords: Japan's agricultural support, WTO Doha Round, notification of domestic support, WTO compliance

1. INTRODUCTION

Japan's agricultural policy presents a rather arcane aspect to outsiders. In spite of its huge fiscal expenditure for the agricultural sector, Japan's food self-sufficiency ratio continues to decline, in sharp contrast to European and North American countries, where heavy agricultural domestic supports have resulted in excesses of agricultural commodities and a subsequent distortion in international markets. In this sense, Japan's agricultural domestic programs may appear harmless to foreign countries.

Japan's general attitude toward agricultural domestic policy reform is one of compliance with the World Trade Organization (WTO). WTO requests member countries to reduce fiscal expenditures for amber box supports, that is, those alleged to have the most trade-distorting effects. Japan reduced its amber box expenditures by nearly 80 percent between 1995 and 2000. As a result, Japan reduced its current Aggregate Measure of Support (AMS) to as little as 18 percent of its commitment level from the Uruguay Round agreements in 2000. In addition, following WTO's principle of "decoupling," Japan launched an extensive agricultural subsidy reform in 2007.

This seemingly unimpeachable attitude on domestic agricultural policy reform contrasts with a less-flexible attitude on border protections for agricultural commodities. Japan's nominal protection rate for agricultural commodities is one of the highest among developed nations. Japan, which is surrounded by the ocean and poorly endowed with natural resources, relies heavily on trade. Nevertheless, Japan's strong resistance to reductions in border agricultural protection has repeatedly hindered its trade negotiations with other countries. A typical example is the WTO Uruguay Round negotiations. Up until the last minute, Japan lobbied hard to maintain its rice autarky policy, which was an obvious violation of the GATT rules. An inflexible stance on rice imports almost resulted in Japan's failure to join the final agreements.

In consideration of this background, this paper attempts to answer the following four questions: (1) Why has the food self-sufficiency ratio declined in Japan in spite of its heavy agricultural protection? (2) Why is Japan so accommodating to the WTO principle of decoupling? (3) How did the sharp reduction of Japan's amber box supports affect its agricultural production? (4) What subsidies compose Japan's domestic support notifications to the WTO, and how do these subsidies compare to disciplines under the Uruguay Round or a potential Doha Round WTO agreement?

By answering these questions, this paper aims to provide a comprehensive picture of Japan's agricultural policy. The centerpiece of Japan's agricultural political dynamics is the "alchemy" of farmland. In Japan, farmland regulations are often manipulated, bringing such a large amount of easy money to farmland owners that the overwhelming majority of farmers are more concerned with manipulation of farmland regulations than earning profits from farming. This alchemy is a deep-seated problem, and Japanese citizens (including the mass media and academics) are reluctant to question it. As a result, the manipulation of farmland regulations has been treated as a taboo subject for open discussion in Japanese society. The present paper aims to defy this taboo and reveal the actual workings of Japanese agricultural policy.

Section 2 describes the overall structure of the political dynamics of Japanese agriculture. Farmland and rice are the two major issues in Japanese agricultural policy and are addressed in Sections 3 and 4, respectively. Section 5 discusses an extensive agricultural policy reform implemented in 2007, while Section 6 studies Japan's notifications of domestic support submitted to the WTO. Section 7 concludes the paper.

2. STRUCTURE OF POLITICAL DYNAMICS IN THE JAPANESE AGRICULTURAL SECTOR

Discrepancy between Optimal and Actual Farm Sizes

It is useful to quickly review the geographical and ecological characteristics of Japan's farmland before discussing its problems. Although Japan has substantial rainfall, water flows quickly to the ocean due to the mountainous topography. Thus, farmers need a highly sophisticated water control system. Japan's water usage system for paddy fields is unique compared to those of Australasia, North America, and Europe. A paddy field consists of many small plots of land. Water drawn from a floodgate of a river moves though all plots in a farming community in a set order (from upper plots to lower plots), slowly but continuously. Because of this continuous water flow, rice farming in monsoon Asia is free from the continuous cropping hazard (damage from repeated cultivation of the same crop in the same soil) that is the biggest farming problem in Australasia, North America, and Europe.

Since farmers in a Japanese farming community share the same water, inappropriate water usage on one plot profoundly affects farming in other plots on the paddy field plain. Thus, all the members in a farming community must collaborate with each other in the use of farmland and water.

A traditional farming community in Japan consists of about 20 farm households. Each farmer has several tiny plots of land at different locations in a paddy field plain. The average individual farm size is around 1.0 hectare. Therefore, farm ownership is expressed as a mosaic pattern. This structure is reasonable for traditional small-size farming because each farmer's paddy field plots adjoin different farmers' plots at various parts of the paddy field plain, allowing farmers to routinely observe each other's activities, making collaboration on water and farmland use easier.

However, after the development of labor-saving technology in the postwar period, this traditional farming community structure turned out to be inefficient. Today it is estimated that the optimal farm size is over 15 hectares and that the production cost of rice could be halved if farmland was consolidated into large-size farms.[1]

Thus, if the price mechanisms functioned properly in the farmland market, small-size farmers would have been weeded out, and only large-size farmers could have survived. In reality, however, the average farm size has not increased sufficiently to capture this economy of scale. Nearly 70 percent of Japan's farmland is still operated by inefficient tiny-scale farmers whose farms are less than 3.0 hectares.[2] As of 2005, the average farm size was still around 1.4 hectares. While large-acreage farms that exceed 30 hectares have also emerged, the number is still small.[3]

1 See Ministry of Agriculture, Forestry, and Fisheries, 1992.

2 This figure is taken from the data for the totaled results for all prefectures except Hokkaido in the 2005 Agricultural Census.

3 The number of farms that exceed 30 hectares is 555. This is less than 0.02 % of the total number of farms (2.8 million). These figure are taken from the data for the totaled results for all prefectures except Hokkaido in the 2005 Agricultural Census.

Table 1. Comparison of household income as of 2003

	Farm size	Number of farm households (in thousand)	Household income per head (in thousand yen)	Percentage of farm income in total household income
Commercial farm household	Total	1,911	1,693	19
	Below 0.5 ha	436	1,763	4
	0.5-1.0 ha	673	1,786	8
	1.0-1.5 ha	498	1,579	13
	1.5-2.0 ha		1,684	22
	2.0-3.0 ha	159	1,561	34
	Above 3.0 ha	144	1,678	54
Salaried worker household	n.a.	n.a.	1,515	n.a.

Source: Ministry of Agriculture, Forestry and Fisheries, Statistical Survey on Farm Management and *Economy*, various issues; Ministry of Internal Affairs and Communications, *Family Income and Expenditure Survey*, various issues.

Note: Commercial farm households is defined as farm households whose farm size is over 0.3 hectares or whose agricultural revenue is over 0.5 million yen.

Small-size farmers' agricultural productivity is low, so they hardly earn profits from farming. This does not mean, however, that small-size farmers lead indigent lives. On the contrary, the average income of small-size farmers exceeds that of urban workers (see Table 1). This is because small-size farmers usually have stable nonagricultural income opportunities. Small-size farmers earn their living mainly from their off-farm income. In that sense, small-size farmers should be called "well-off salaried workers who own farmland available for side businesses." These side businesses include not only farming but also "alchemy," as will be described in detail in Section 3.

Small-Size Farmers' Political Power

Why do small-size farmers dominate Japanese agriculture while being inferior to large-size farmers in terms of agricultural productivity? The answer to this question lies in the political dynamics of Japanese agriculture. This subsection describes the agricultural political dynamics that prevent the price mechanisms from functioning properly in the farmland market.

Geographically, the amount of flat land is extremely limited in Japan. In particular, high-quality farmland, which consists of flat and well-shaped plots of paddy fields, is very limited. If a farmer wants to enlarge his farm, he must purchase or borrow farmland from other farmers. This means that the development of large-size farming inevitably breaks the structure of traditional small farming communities.

The traditional farming community has several characteristics attractive to politicians. Traditional small-size farmers have cultivated the same land for generations and have strong community ties. The need to share irrigation water leads farmers to cooperate on issues in which they have common interests. These characteristics allow farmers to easily consolidate their support for politicians.

In addition, the number of registered voters per member of the Diet (parliament) is smaller in rural than in urban areas. While this rural-urban disparity was reduced to some degree in the 1994 reform of the electoral system, rural voters still have nearly three times the voting power of their urban counterparts. This disparity has maintained the heavy weight of farmers' votes.

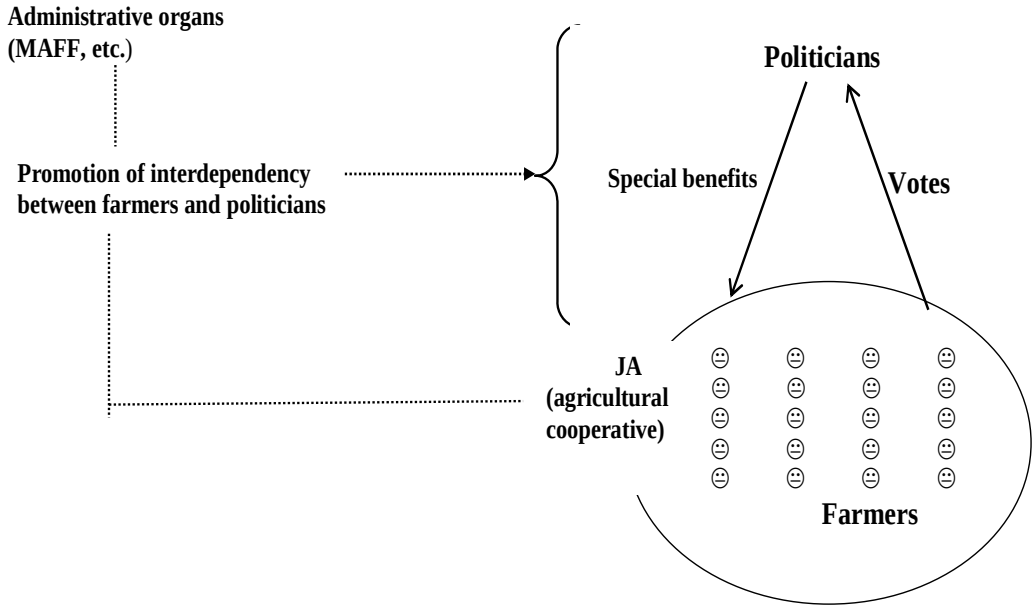
It has therefore been in the interests of politicians to maintain the structure of the traditional small farming community, and to obtain the electoral support of farmers. This has been the primary strategy of the Liberal Democratic Party (LDP), which has ruled the government for almost the entire postwar period.

The collusion between LDP politicians and farming communities also benefits the Japanese Ministry of Agriculture, Forestry, and Fisheries (MAFF). MAFF has been chronically criticized for its extravagant personnel practices and budget.4 In order to maintain its staff and budget, MAFF requires the support of LDP politicians.

A natural consequence of pricing mechanisms would be the replacement of small-size farmers by large-size farmers. Such a situation is undesirable for MAFF and rural politicians. Thus, MAFF and these politicians need a special organization to subvert the market mechanism, and this role has been filled by the agricultural cooperatives collectively known as Japan Agriculture (JA). JA not only lobbies politicians and provides services to farmers but also observes and controls members' activities, both directly and indirectly.

JA also functions as a de facto subgovernmental body that helps MAFF create and enforce policy. For example, many MAFF subsidies (including low-interest loans) for farmers are distributed through JA. Thus, MAFF does not introduce policies without considering JA's interests.

Figure 1. Political dynamics among farmers, politicians, MAFF, and JA



The political dynamics among small-size farmers, MAFF, politicians, and JA are summarized in Figure 1. Since this collusion has benefited these parties at a cost to society in general, great care is taken to ensure that their true objectives are concealed. MAFF has always favored small farming communities in policymaking and policy enforcement. While simultaneously stating the promotion of large-scale farming as its "official" objective, MAFF policies tend to be extremely complex and ambiguous. It is thus difficult for consumers (and other outside interests) to be fully informed of those policies' implications and effects. Likewise, JA's structural and operational complexity has been a strategy for camouflaging its real function.

The Agricultural Cooperative Law guarantees farmers freedom in establishing agricultural cooperatives, stipulating that there is no obligation for an agricultural cooperative to join the JA system and

4 As of 2004, the number of personnel in MAFF was nearly five times that of the Ministry of Economy, Trade, and Industry.

that farmers are free to join or leave agricultural cooperatives as they see fit. However, under implicit pressures from MAFF and rural communities, almost all farmers “voluntarily” join JA or “voluntarily” renounce the establishment of other agricultural cooperatives.

Many JA businesses have enjoyed heavy protection, as well as regulation, by the government. For instance, JA was given a monopolistic position in the collection of rice and the sale of fertilizer.

JA’s businesses are not limited to agriculture-related activities, such as operation of joint-use agricultural facilities, joint shipping of agricultural commodities, joint purchasing of agricultural inputs, and the establishment of agricultural machinery centers; JA also provides almost all services in rural life. JA’s nonagricultural businesses include financial activities (banking and insurance), supermarkets, ceremony halls, gasoline stations, travel ticketing, and land development, and these have been increasing. Currently, two-thirds of JA officers are devoted to nonagricultural activities.

Among JA’s businesses, banking and insurance services are the most profitable. Banking and insurance businesses had been under heavy supervision of the Ministry of Finance (MOF) up until the early 1990s. MOF’s various regulations on the financial market prevented weak financial companies from collapsing. This is known as ‘the convoy system’. Under the convoy system, MOF provided particularly favorable treatments toward JA’s financial activities. For example, JA was given more freedom than ordinary commercial banks to set up branch locations, its term-deposit interest rates, and insurance premiums. Because of MOF’s favorable treatments, JA enjoyed stable profits from its banking and insurance activities.

JA’s farming-support services are convenient for small-size farmers. Although entrepreneurial large-size farmers have made efforts to develop their own supply and distribution channels, traditional small-size farmers, who continue to make up the overwhelming majority of JA, have become more and more dependent on its services. Thus, despite deregulation of the market for farm products and farm inputs in the 1980s and 1990s, JA has maintained its market-dominant position in the supply and distribution of these products and inputs.

Farmers find it difficult to avoid relying on JA services thanks to the wide scope of its operations. Not only small-size farmers but also large-size farmers join JA and use some of JA’s services. Even those who are critical of JA avoid overt opposition to the organization for fear of retaliation from both the organization and other farmers. For these individuals, the only realistic form of resistance is reducing their reliance on the organization.

3. FARMLAND ALCHEMY

The largest source of pork barreling for small-size farmers by politicians is the “alchemy” of farmland. This alchemy has been treated as a taboo issue by the Japanese mass media and academia, as it involves deep-seated and often troubling issues. Godo (2007) wrote probably the first paper in English to extensively discuss the alchemy of farmland in Japan. The main assertion of this study can be summarized as follows.

- In Japan,” high quality for farming” in practice means “high potential for farmland conversion.” Favorable conditions for modern farming are flatness, abundance of sunlight, conveniently sized blocks of well-shaped plots, a good supply and drainage of water, and good access to roads. However, these five conditions are equally favorable for the conversion of farmland to nonagricultural uses such as shopping centers or public facilities.
- Because farmland has various externalities, such as prevention of floods, numerous laws have been written protecting and regulating the use of farmland. Among these, the Law concerning the Construction of Agricultural Promotion Areas (LCAPA) is particularly important. The LCAPA authorizes municipal governments to designate the zoning of Exclusively Agricultural Areas (EAAs). Farmers in EAAs are responsible for using farmland for farming purposes only. Abandonment of farmland and conversion to nonagricultural uses are prohibited. Under MAFF’s favorite slogan ’increase the food sufficiency rate’, MAFF allocates a large number of farmland improvement investments to EAAs. These investments increase not only agricultural productivity but also the potential for farmland conversion. In addition, farmland in EAAs receives favorable treatments in taxation and allocation of agricultural subsidies.
- On the surface, the laws regarding farmland use appear strict. In practice, however, the implementation of those laws is problematic. Farmland-use regulations are often manipulated if the authorities are subject to strong political pressure. A small-size farmer’s “ideal” scenario is that his farmland is initially included in an EAA so that he can enjoy agricultural subsidies and MAFF farmland improvement investments, as well as a reduction in asset taxes. MAFF investments then increase not only agricultural productivity but also the value for nonagricultural land use when conversion is permitted. Thus, when a farmland conversion plan is implemented, the farmer’s land will ideally be excluded from the EAA and the plan quickly approved by the local governor so that the farmer can also enjoy capital gains from his land.
- In order to realize this ideal scenario, small-size farmers usually join forces to pressure local authorities and policymakers. Although farmers cannot control critical factors, such as when and how a farmland conversion plan is approved, public construction projects provide the best conditions for land conversion. The public sector usually purchases farmland at a higher price than the private sector, and favorable tax treatment is granted when farmland is sold for public sector use. A large private development, such as a factory site or a shopping center, is the ”second-best” scenario, because prices tend to increase for these large-scale developments. As opportunities for public construction projects or large private development plans are limited, politicians are not always able to deliver such desirable opportunities to their farming constituents. However, in the long run, the possibility of securing a desirable land conversion can increase if these politicians continue their lobbying efforts.
- An overwhelming majority of farmland owners (i.e., small-size farmers) are more concerned with deriving capital gains from land conversions than making profits from farming. They prefer to maintain the structure of traditional small farming communities because it is favorable for forming good connections (including informal connections) with government authorities and policymakers.
- The ideal scenario also increases the national budget for farmland investments and public construction works, thus benefiting MAFF, which manages rural public construction works.

Thus, MAFF welcomes the ideal scenario. MAFF turns blind eye to the manipulation of farmland use regulations. Obviously the ideal scenario contaradicts with MAFF's slogan ”increase the food sufficiency rate”, MAFF need to hide the realities of farmland use regulations from the eyes of consumers (otherwise, MAFF will face difficulties in maintaining its etravagant fiscal expenditures). To do so, MAFF makes the system of farmland use regulations complexed so that outsiders cannot detect the realities.

- Since the ideal scenario is based on extensive collusion between small-size farmers and politicians, the expectation of the ideal scenario increases JA's presence in rural political dynamics. In addition, small-scale farmers who receive proceeds from the sale of farmland usually shift these monies to their JA accounts, producing more profit for JA's banking businesses. Thus, JA also encourages the ideal scenario.

4. RICE POLICY

Political Importance of Rice

Even if small-size farmers do not earn profits from it, they still try to keep farming for two reasons. First, asset taxes are low as long as they keep farming. Second, by keeping their commitment to water usage in the rural community, they can maintain close relationships with other farmers, which in turn is necessary to maintain their solidarity as a voting group.

Simultaneously, however, small-size farmers tend not to devote a great deal of time to farming, because they earn their living mainly from off-farm income. Thus, small-size farmers need a crop that can be grown with minimum labor inputs. In Japan, that crop is rice. Labor-saving technologies (such as agricultural machinery, agricultural chemicals, and irrigation systems) are developed mostly for rice farming. In addition, MAFF provides subsidies for JA's construction of joint-use facilities for rice farming. These facilities help part-time farmers, whose farms are too small to include individual rice milling and storage facilities.

Politicians demonstrate their allegiance to small-size farmers by displaying their efforts to protect rice, thus explaining why Japanese politicians are extremely sensitive to rice policy.

Government-Led Rice Production Cartel

In addition to heavy border protection for rice and various subsidies for rice farming, MAFF supported a special program aimed at supporting rice prices, the across-the-board set-aside program. This program, considered a government-led rice production cartel, was first established in 1970. Every year, MAFF set a target acreage of paddy fields to be diverted from rice planting so as to curtail rice production. The target acreage was allocated among all villages in Japan. All farmers in the villages collaborated to achieve the allocated acreages under JA's guidance and supervision. Around one-third of paddy field was diverted from rice planting. Farmers grew alternative crops, such as wheat, soy, and vegetables, which were less profitable, in the diverted paddy fields. MAFF provided financial support to rice farmers according to the acreage diverted from rice planting; it did not fully compensate for the reduction of rice income at the farm household level. Yet in the aggregate, the cartel effect of the across-the-board set-aside program benefited rice farmers by maintaining high rice prices. Thus, JA's ability to ensure the support of rice farmers was critically important to enact the across-the-board set-aside program. Under this program, around 20 to 40 percent of paddy field was diverted from rice planting.

From 1970 to 1994, MAFF did not have any written laws for carrying out the set-aside program. Instead of written laws, MAFF's administrative guidance, which had no legal legitimacy, coordinated the set-aside program. The Staple Food Law of 1995 was the first written law that stipulated the set-aside program. The Staple Food Law leaves farmers to make decisions as to whether to participate in the set-aside program. But the law did not make practical changes in the program. Persuaded by MAFF and JA, all the rice farmers joined the set-aside program from 1970 to 2006. But, as will be discussed below, it became increasingly difficult to convince farmers to do so, and this led to an extensive revision of the set-aside program in the 2007 reform.

MAFF's Intervention in the Domestic Rice Market

For Japanese consumers, rice is the staple food. Although the average household spends only 1 percent of its expenditures on rice, rice is included in every meal. Japanese eat rice steamed, without any spices or condiments. Because of this cooking style, Japanese consumers are sensitive to the quality of rice. Top-quality rice is often considered suitable as a gift, and is sold as such in Japanese department stores, while low-quality rice is used for inexpensive meals.

MAFF has a long history of rice market intervention. Until 1995, the Food Control Law controlled the distribution of rice. According to the Food Control Law, farmers had only two legal ways to sell rice.

One was as “government rice,” and the other was as “voluntary rice.” The former was purchased by MAFF at government-set prices (which differ depending on the shape and weight of the grain). The latter was purchased by JA at market price. In both cases, market channels were strictly controlled under the law.

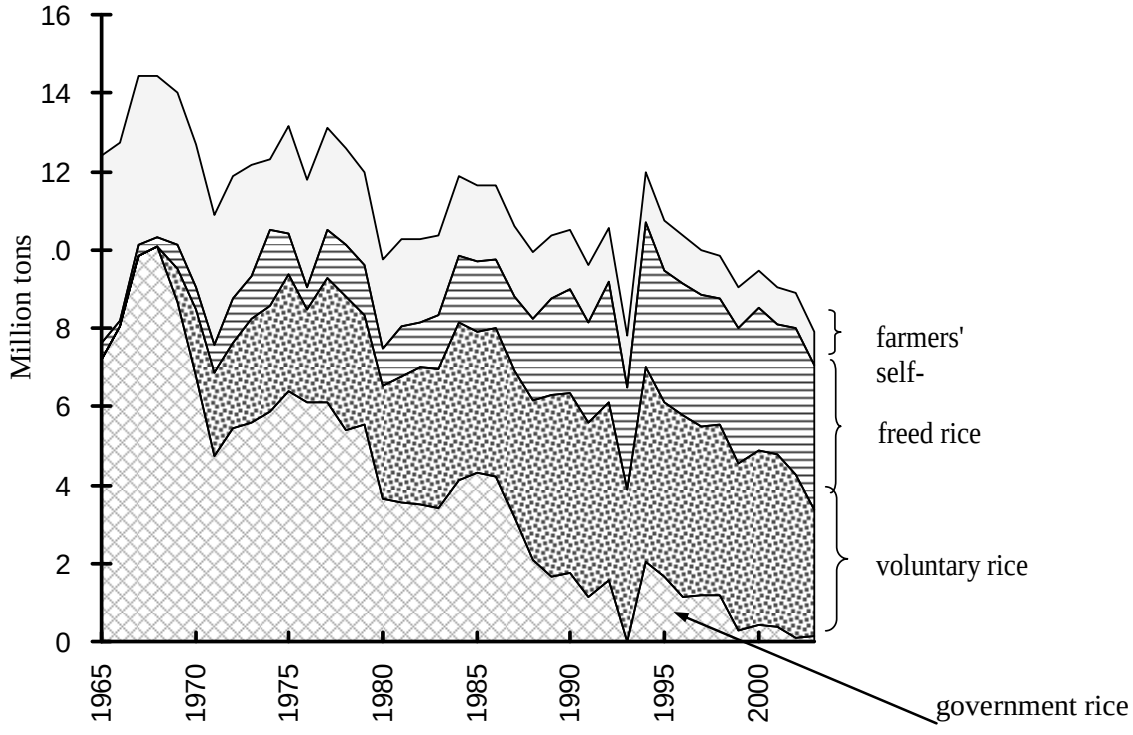
Farmers then determined how to sell their rice. Generally, high-quality rice was sold as voluntary rice and low-quality rice was sold as government rice. Since MAFF determined the procurement price for government rice before the harvest season, the percentage of government rice tended to increase in bumper years, when the market price sank.

All rice traders and rice market channels were required to be authorized under the Food Control Law. In practice, however, there was a significant amount of “illegal rice” (so-called freed rice) that circumvented the law. This is because the legal rice distribution system (as stipulated by the Food Control Law) was too rigid to meet consumers’ changing preferences. In particular, top-quality rice sold at higher prices in the illegal rice market. A significant number of farmers and consumers ignored the Food Control Law in favor of illegal rice, and MAFF also turned a blind eye to its purchase and sale.

In 1995, MAFF replaced the Food Control Law with the Staple Food Law, which legalized freed rice. The classifications of government rice, voluntary rice, and freed rice remained until 2005, when MAFF abolished these classifications altogether. While MAFF continued to procure rice for buffer stock, distribution was allowed on a commercial basis without MAFF’s administrative interventions.

Figure 2 shows the volumes of those three types of rice, that is, government, voluntary, and freed rice. As can be seen, government rice had been losing importance in the rice market since the introduction of voluntary rice in 1969. The percentage of government rice went down to less than 20 percent by the end of the 1980s.

Figure 2. Total production and distribution of rice, 1965-2003



Source: MAFF documents

5. THE 2007 REFORM

Until the early 1990s, the political ties between politicians, small-size farmers, JA, and MAFF remained strong. However, there was a turning point in Japan's political dynamics in the middle of the 1990s, which was brought on by two factors.

First, JA's the financial services faced an increasingly harsh business climate. MOF implemented financial market liberalization in the mid-1990s, which deprived JA's banking and insurance businesses of various privileges. As JA's banking and insurance businesses had been strongly protected in the financial markets, financial market liberalization profoundly damaged JA's profitability. Second, the reform of the lower house election system in 1994 reduced the voting power of JA. In the 1994 election reform, the former multi-seat system was replaced with the single-seat system. Before the 1994 election reform, JA was proud of its crafty techniques of dividing votes to different lawmakers in a single constituency. In the former multi-seat system, LDP needed to have a plural number of politicians elected in a single constituency in order to stay power. Thus, JA's technique of dividing votes was so attractive that LDP signaled its strong allegiance to JA. However, under the new single-seat system, JA's such technique became useless any more. Accordingly, JA's political voice became less influential. In addition, the 1994 election reform allocated less seats to rural areas. This also reduced JA's voting power.

These two factors seriously undermined JA's political power and, accordingly, organizing ability. As a result, each year it became more difficult for JA to persuade all rice farmers to join the across-the-board set-aside program. It was thus only a matter of time before MAFF would be forced to implement a comprehensive revision of its rice policy.

An extensive agricultural policy reform was ultimately launched in 2007. The 2007 MAFF reform can be characterized by two aspects. First, the set-aside program was completely changed from the former compulsory across-the-board set-aside program to the voluntary set-aside program. This revision left it entirely to individual farmers' discretion whether to participate in the set-aside program in exchange for receiving subsidies or to grow rice freely by giving up subsidies.

Subsidies for the set-aside policy were also revised. The 2007 reform marked the first introduction of direct-payment subsidies on a large scale. Price support subsidies for wheat, barley, potatoes, soybeans, and sugar beets, the five primary farm products grown in paddy fields set aside from rice farming, were replaced by direct-payment subsidies. Some of the new direct-payment subsidies are based on average agricultural production in the base years 2004–2006, while others are directly linked to agricultural production.

Moreover, Japan's direct-payment subsidies are unique in that there is an additional prerequisite for recipients. These recipients must be core farmers. Core farmers are those designated by the municipal governments as the bearers of local agriculture. More precisely, there are two types of core farmers: individual-type core farmers and group-type core farmers. The former are either individual farm households whose farm size is over 4 hectares. The latter are agricultural farming groups composed of farmers in the same community to form over-20-hectare joint-farming groups. Theoretically, any economic entity is allowed to organize group-type core farmers; in practice, however, only JA does so. This is because the paperwork for group-type core farmers' applications is too complicated for outsiders to compile. (JA's close relationship with MAFF allows JA to easily complete all paperwork.)

Why do new direct-payment subsidies focus only on core farmers? According to its official announcements, MAFF aims to raise agricultural productivity by promoting large-size farming through the concentration of agricultural subsidies in core farmers. However, these announcements should be read with caution. For example, it is unclear whether farming groups organized by JA are actually efficient. JA's farming groups are sometimes nothing more than patchworks of small-size farmers. Without making substantial changes in practice, JA is known to organize small-size farmers into farming groups for the sole purpose of receiving subsidies, to the benefit of both parties. Obviously, this is the case of mistaking the means (creating farming groups) for the ends (receiving subsidies). Even worse is the fact that JA deprives tenant farmland to individual large-size farmers by persuading farmland owners who hitherto loaned

farmland to individual large-size farmers to instead join JA's farming groups. This is called deprivation and confounds individual large-size farmers who have actual high productivity.

In sum, the 2007 reform supports JA's efforts to maintain its organizing ability by giving incentives to farmers to participate in farming groups organized by JA. Thus, it is unclear whether the 2007 reform will in fact improve the productivity of Japanese agriculture.

The 2007 reform has another serious problem. While the real effect of this reform will be a major topic of future empirical studies, there are good reasons to believe that it can stimulate agricultural production by contradicting the original purpose of "reform." Clearly, the 2007 reform stimulated rice production because farmers were allowed to depart from the set-aside program. In particular, small-size farmers who hold farmland in expectation of capital gains from farmland conversions, and therefore are unconcerned with farm income, have surged into rice production because rice is the most labor-saving crop. As a result, rice prices declined sharply in 2007. Even for farmers who joined the voluntary set-aside program, the 2007 reform stimulated the production of wheat, barley, potatoes, and sugar beets, because the farmers anticipated a shift in the base year production. Currently, the average production of the three years 2004–2006 is used for direct-payment subsidies. However, farmers expect that the base year will be updated in the near future,[5] stimulating the production of these four crops in paddy fields set aside from growing rice.

5 See Hart and Beghin (2006) for discussion of this effect.

6. JAPAN'S NOTIFICATIONS OF DOMESTIC AGRICULTURAL SUPPORT POLICIES

The WTO sets rules for capping and reducing trade-distorting domestic agricultural support. Domestic support policies are divided into three boxes—amber, blue, and green—depending on the effects on production and trade. Non-trade-distorting policies are put into the green box and were exempt from reduction commitments. Further exemptions fall into the blue box, including production-limiting policies that base payments on fixed yields and acreage. Japan's first blue box program was introduced in 1998, but government expenditures for the blue box program have remained at an insignificant level thus far. All other trade-distorting support policies are put into the amber box. Developed countries committed to reduce the total value of these policies by 20 percent, as measured by the AMS, during the implementation period. However, product-specific domestic support that does not exceed 5 percent of the total value of production of a basic agricultural product and non-product-specific domestic support that does not exceed 5 percent of the value of the total production are not required to be included in the AMS. (These amounts are called de minimis.)

Following this three-box categorization, the Japanese government has submitted its notifications on its domestic agricultural support programs to the WTO for 1995–2005. In addition to these official notifications, this section presents our estimates of Japan's "shadow" notifications for 2006–2007 in order to trace Japan's most recent agricultural policy reforms. Tables 2, 3 and 4 are summaries of the official and shadow notifications.

Table 2. Japan's notifications of domestic support (in billion yen)

	Year	Official 1995	Official 1996	Official 1997	Official 1998	Official 1999	Official 2000	Official 2001	Official 2002	Official 2003	Official 2004	Official 2005	Shadow 2006	Shadow 2007
Green Box	**Total**	3,169.0	2,818.1	2,651.7	3,001.6	2,685.9	2,595.3	2,546.9	2,275.2	2,086.3	2,098.3	1,916.3	1,875.4	1,895.1
	(a) General service	2,687.8	2,323.5	2,182.2	2,594.2	2,308.3	2,165.7	2,094.5	1,743.3	1,603.6	1,658.9	1,465.4	1,431.3	1,308.2
	(b) Public stockholding for food security purposes	59.9	61.5	67.3	56.6	46.8	46.4	43.3	36.3	31.9	28.2	24.5	24.6	26.9
	(c) Domestic food aid	28.1	27.0	26.4	13.8	9.3	5.4	5.3	4.8	2.5	0.0	3.2	0.0	0.0
	(d) Decoupled income support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.7
	(f) Payments for relief from natural disasters	68.3	65.8	62.0	58.6	57.9	55.5	54.1	53.6	48.3	48.0	49.0	51.5	46.9
	(g) Structural adjustment assistance provided through producer retirement programmes	119.4	98.6	90.9	84.9	85.4	88.3	97.6	162.7	158.1	156.5	155.8	156.0	157.2
	(h) Structural adjustment assistance provided through resource retirement programmes	7.9	0.5	0.5	0.5	0.5	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0
	(i) Structural adjustment assistance provided through investment aids	116.9	107.9	89.5	77.4	54.3	55.2	42.4	31.2	23.5	22.8	19.9	17.0	17.4
	(j) Environmental programmes	80.7	133.3	132.9	115.6	123.4	145.3	176.3	210.2	195.4	167.1	176.7	173.2	219.0
	(k) Regional assistance programmes	0.0	0.0	0.0	0.0	0.0	33.0	33.0	33.0	23.0	16.8	21.8	21.8	21.8
Blue Box		0.0	0.0	0.0	50.2	92.7	92.7	91.1	86.5	68.2	67.8	65.3	70.1	42.4
Amber Box	Price support	3271.3	3125.8	2967.9	641.5	619.6	503.9	389.7	404.0	405.6	403.0	394.7	406.9	373.1
	Domestic payment	248.7	215.5	214.7	177.9	138.8	215.4	289.1	349.1	253.1	228.9	198.6	178.9	133.2
	(Share of price support in total AMS)	93%	94%	94%	84%	83%	71%	58%	55%	63%	66%	67%	74%	79%
	(De minimis)	12.5	11.4	11.7	53.1	10.4	10.8	12.0	23.2	16.9	24.1	41.3	32.9	34.7
Current Total AMS		**3,507.5**	**3,329.7**	**3,170.8**	**766.5**	**747.8**	**708.5**	**666.7**	**730.0**	**641.8**	**607.8**	**593.3**	**593.3**	**471.6**
(Commitment)		4,800.6	4,635.0	4,469.5	4,304.0	4,138.4	3,972.9	3,972.9	3,972.9	3,972.9	3,972.9	3,972.9	3,972.9	3,972.9

Table 3. Japan's green box programs (in billion yen)

Name and description of measure with reference to criteria in Annex 2	Official 1995	Official 1996	Official 1997	Official 1998	Official 1999	Official 2000	Official 2001	Official 2002	Official 2003	Official 2004	Official 2005	Shadow 2006	Shadow 2007
Research:	84.9	65.3	66.0	87.5	82.1	82.8	89.7	90.5	83.9	85.1	86.8	78.6	74.5
Plant protection:	10.0	10.1	10.4	10.7	10.4	11.5	11.1	11.0	11.9	11.2	10.9	11.3	12.0
Animal health control:	6.1	4.7	4.8	8.6	5.3	6.7	6.1	9.1	6.0	6.8	7.1	8.6	9.1
Extension services:	49.8	49.1	57.0	42.9	40.7	39.8	41.3	40.6	36.5	27.9	24.2	4.9	4.9
Facilitation of management of agricultural organizations:	77.0	69.9	65.0	70.8	72.8	69.3	64.1	62.6	58.9	57.7	57.8	48.3	47.0
Compilation of statistical data and information:	6.1	6.1	5.4	5.4	7.2	8.2	8.4	6.4	5.9	6.1	6.5	4.2	3.0
Promotion of soil conservation and low-input farming:	0.5	0.5	0.5	0.4	0.4	-	-	-	-	-	-	-	-
Extension and infrastructural services for technological improvement of agricultural production:	50.6	47.0	48.3	71.7	59.0	49.4	37.1	51.5	21.7	16.3	50.2	15.3	14.3
General services for livestock industry including extension and infrastructure:	101.3	85.0	97.1	123.7	97.6	133.5	189.7	105.0	107.8	93.9	58.5	77.3	68.9
Programmes for improvement of food marketing, processing and consumption:	21.1	17.1	16.8	19.9	20.3	20.4	17.7	14.8	10.2	10.2	10.2	11.7	7.6
Inspection and information services for agricultural production materials:	9.6	7.9	8.1	9.5	8.4	9.2	10.0	9.6	3.4	3.4	3.4	1.6	1.6
Infrastructural services for agricultural sector and rural area:	1,907.9	1,680.8	1,487.7	1,800.7	1,552.4	1,428.4	1,342.4	1,067.6	950.7	909.9	840.0	854.0	800.6
Disaster rehabilitation services:	111.5	36.4	70.3	92.7	87.2	54.0	30.7	21.6	32.3	112.5	41.6	46.8	8.1
Infrastructural services for market facilities:	20.1	12.4	10.4	21.4	13.8	9.9	8.3	6.8	5.7	6.0	-	11.6	12.5
Advisory services for structural improvement:	48.3	53.4	54.9	49.3	51.8	44.8	47.1	51.0	48.6	57.9	34.7	9.6	9.3
Personnel expenses for the Government officials:	183.0	177.8	179.5	179.0	198.9	197.8	190.8	195.2	220.1	254.0	233.5	247.5	234.8
Public stockholding:	59.9	61.5	67.3	56.6	46.8	46.4	43.3	36.3	31.9	28.2	24.5	24.6	26.9
School lunch programmes:	28.1	27.0	26.4	13.8	9.3	5.4	5.3	4.8	2.5	0.0	3.2	0.0	0.0
Cross-commodity income stabilization based on historical acres:	-	-	-	-	-	-	-	-	-	-	-	-	97.7
Agricultural insurance scheme:	66.4	64.5	61.2	58.1	57.6	55.3	54.0	53.6	48.3	47.8	48.9	51.5	46.9
Natural disaster relief loans:	1.9	1.3	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.2	0.1	0.0	0.0
Farmers' pension programmes:	117.6	98.4	90.7	84.9	85.4	88.3	97.6	162.7	158.1	156.5	155.8	156.0	157.2

Table 3. Continued

Name and description of measure with reference to criteria in Annex 2	Official 1995	Official 1996	Official 1997	Official 1998	Official 1999	Official 2000	Official 2001	Official 2002	Official 2003	Official 2004	Official 2005	Shadow 2006	Shadow 2007
Land retirement programmes for citrus production:	1.8	0.2	0.2	-	-	-	-	-	-	-	-	-	-
Programmes for reduction of number of livestock:	7.9	0.5	0.5	0.5	0.5	0.5	0.4	0.1	0.0	-	-	-	-
Agricultural loans:	116.9	107.9	89.5	77.4	54.3	55.2	42.4	31.2	23.5	22.8	19.9	17.0	17.4
Payments for conversion from rice production:	80.7	133.3	132.9	115.6	116.7	136.2	166.7	200.6	185.8	158.8	168.4	166.5	212.4
Support programme for reduction of environmental burden due to dairy farming:	-	-	-	-	6.7	9.1	9.6	9.6	9.6	8.3	8.3	6.7	6.6
Direct payment to farmers in the hilly and mountainous areas:	-	-	-	-	-	33.0	33.0	33.0	23.0	16.8	21.8	21.8	21.8
	3,169.0	**2,818.1**	**2,651.7**	**3,001.6**	**2,685.9**	**2,595.3**	**2,546.9**	**2,275.2**	**2,086.3**	**2,098.3**	**1,916.3**	**1,875.4**	**1,895.1**

Table 4. Name and description of the green box programs

Measure Type	Name and description of measure with reference to criteria in Annex 2	
(a) General services	Research:	General research, research in connection with environmental programmes, and research programmes relating to particular products.
	Plant protection:	General and product-specific pest and disease control measures.
	Animal health control:	General and product-specific animal health control for livestock and animal medicine inspection.
	Extension services:	Education, extension and advisory services, and programmes for practical application of new technologies.
	Facilitation of management of agricultural organizations:	Facilitation of training and advisory services through agricultural organizations.
	Compilation of statistical data and information:	Compilation and provision of statistical data and information for producers and consumers.
	Promotion of soil conservation and low-input farming:	Extension and advisory services, research programmes for soil conservation and low-input farming.
	Extension and infrastructural services for technological improvement of agricultural production:	Extension and advisory services, research programmes, and infrastructural services for technological improvement of agricultural production.
	General services for livestock industry including extension and infrastructure:	Infrastructural services, extension and advisory services on technologies, and information services for promotion of livestock products.
	Programmes for improvement of food marketing, processing and consumption:	Providing marketing information to consumers, research related to food or agricultural products processing, marketing promotion, and inspection.
	Inspection and information services for agricultural production materials:	Inspection, research, extension and advisory services for agricultural machinery, fertilizers, agricultural chemicals, seeds and seedlings.

Measure Type	Name and description of measure with reference to criteria in Annex 2	
	Infrastructural services for agricultural sector and rural area:	Construction of irrigation/drainage facilities and rural roads, land consolidation.
	Disaster rehabilitation services:	Reconstruction of irrigation/drainage facilities and rural roads damaged by natural disasters.
	Infrastructural services for market facilities:	Provision or construction of market facilities.
	Advisory services for structural improvement:	Advisory services for effective farm land utilization.
	Personnel expenses for the Government officials:	Personnel expenses for the Government officials.
(b) Public stockholding for food security purposes	Public stockholding:	Public stockholding of rice, wheat, barley, soya beans and feedgrains.
(c) Domestic food aid	School lunch programmes:	Supply of rice, milk, and fruit juice for school children at subsidized prices.
(d) Decoupled income support	Cross-commodity income stabilization based on historical acres:	Decoupled income support based on historical acres for farmers harvesting soybeans, wheat, barley, sugar cane and potato for starch

Table 4. Continued

Measure Type	Name and description of measure with reference to criteria in Annex 2	
(f) Payments for relief from natural disasters	Agricultural insurance scheme:	Government subsidies on premiums of agricultural insurance.
	Natural disaster relief loans:	Loans for relief of damaged farmers by natural disasters.
(g) Structural adjustment assistance provided through producer retirement programmes	Farmers' pension programmes:	Payments of pension to retired farmers on condition of transfer of the management.
	Land retirement programmes for citrus production:	Payments for land retirement from citrus production to adjust to changes in supply and demand situation caused by trade liberalization.
(h) Structural adjustment assistance provided through resource retirement programmes	Programmes for reduction of number of livestock:	Payments for slaughtering of sow and cow to avoid overproduction of pork and milk.
(i) Structural adjustment assistance provided through investment aids	Agricultural loans:	Interest concessions for government programmed agricultural loans.
(j) Environmental programmes	Payments for conversion from rice production:	Payments for maintaining paddy fields in environmentally good condition through growing any plants other than rice or other appropriate managements.
	Support programme for reduction of environmental burden due to dairy farming:	Payments to dairy farmers who practice appropriate management to tackle environmental problems
(k) Regional assistance programmes	Direct payment to farmers in the hilly and mountainous areas:	Payments for farmers who continue farming activities for at least five years under the community agreements.

Estimation Procedure

The first part of this subsection outlines an estimation procedure for shadow notifications. The details of our estimation and projection procedures for the shadow notifications are available in the appendix of this paper.

We first tried to replicate the 2004 and 2005 data; however, the official documents do not provide any information on data sources and details of calculation. Thus, we had to make a best guess based on the financial statements of the government and relevant extra-governmental organizations. Fortunately, we succeeded in replicating de minimis, AMS, and the amber and blue boxes for 2004 almost completely. Based on this replication process, we prepared shadow notifications for de minimis, AMS, and the blue and amber boxes for 2006 with little difficulty. Estimation for 2007, however, is problematic for two reasons. First, some data on crop production and fiscal expenditures are yet not available. For crop production, which is necessary to calculate AMS, we used the data for 2006 in place of data for 2007. For fiscal

expenditures, we used provisional figures of accounts in place of the settlement of accounts. Another and more critical problem in estimation for 2007 is the treatment of the new direct-payment subsidies introduced in the 2007 reform. The Japanese government has not made any official announcements on how the new subsidies should be classified. As mentioned in the previous section, some are base year production-based subsidies that should be in the green box, and some are annual production-based subsidies that should be in the amber box. However, there are "gray zones" in characterizing the new subsidies. We made a best guess based on various governmental documents and prepared data for 2007. However, we admit that the estimates for 2007 are less accurate than those for 2006.

The green box was more difficult to replicate. From the government report on the national budget, we can find items of expenditure that seem to correspond to the components in the official notifications. However, there are gaps between them. For example, "extension and advisory services, research programmes and infrastructural services for technological improvement of agricultural production" in the government report on the national budget seems to correspond to "extension and infrastructural services for technological improvement of agricultural production" in Japan's official notification. However, the expenditure of the former is 44 percent larger than that of the latter. This is because the former includes the personnel expenses of officers who are not engaged in extension services. In Japan's official notifications, the Japanese government calculates components of the green box based on data for insiders only. We thus estimated "extension and infrastructural services for technological improvement of agricultural production" by dividing "extension and advisory services, research programmes, and infrastructural services for technological improvement of agricultural production" by 1.44 (144 percent) for 2006 and 2007. Likewise, we estimated all components of the green box for 2006 and 2007.

Characteristics of Japan's Green Box

Most noticeably, "infrastructural services for the agricultural sector and rural areas" under General Services makes up the largest portion of the green box (see Tables 3 and 4). This expenditure corresponds to MAFF public construction works, such as farmland improvement investments and construction of rural roads. As discussed in Section 3, these construction works are the most welcomed program for small-size farmers, who own farmland with the expectation of future capital gain and are unwilling to work long hours at farming.

Traditionally, the Japanese government has used public construction works as an antirecession fiscal policy. This is why expenditure for infrastructural services for agricultural sector and rural area surged in 1998, when the Japanese economy plunged into the worst economic slump since the oil crises of the 1970s. However, in response to increasing criticism of public construction by Japanese citizens, the national budgets for infrastructural services for agricultural sector and rural area have been decreasing since then. In particular, from 2001 to 2005, when Prime Minister Koizumi—who gained popularity by posing as a dauntless reformer—was in power, the budgets for public construction works were severely rolled back.

According to the reduction of expenditures for infrastructural services for agricultural sector and rural area, the total amount of the green box also decreased during this period. "Environmental programmes" increased by 50 billion yen in 2007 in response to the MAFF reforms. However, since infrastructural services for agricultural sector and rural area kept declining, the total amount of the green box did not change much between 2006 and 2007.

"Environmental programme" corresponds to the subsidy for rice set-aside program. Farmers who join the set-aside program receive subsidies according to the acreage of paddy field diverted from rice planting. This acreage-base subsidy program is classified as "environmental programme". It is unclear whether this program has any effects for protecting environment. In spite of such unclearness, however, WTO accepts this treatment.

Characteristics of Japan's Amber Box

When WTO started in 1995, Japan had amber box programs for rice, soybeans, wheat, barley, sugar, starch, beef and veal, meat of swine, and silk-worm cocoons. From 1995 to 1997, Japan's amber box had been close to its commitment level.

In 1998, Japan's amber box decreased significantly because rice was removed from the amber box in that year. Interestingly, there was no corresponding revision in the Staple Food Law, and MAFF continued to procure rice from farmers at administrative prices even after 1998. However, in its 1998 policy guideline, MAFF announced that government rice procurement should be limited to purchase of rice stocks for food security, thus indicating the removal of rice from the amber box. We (as well as an overwhelming majority of Japanese researchers) are skeptical of whether MAFF's new guideline of 1998 had any practical meaning. In fact, even after 1998, MAFF's procurement of rice has been occasionally done for the political purpose of supporting rice price. A typical example appeared in 2007. While MAFF's rice stock was already at a sufficient level for the purpose of food security, MAFF decided to increase rice stock after receiving strong pressure from LDP politicians who wanted to get in favor with farmers6. In this case, MAFF's rice procurement can be seen as a de facto market price support measure. Thus, there is enough ground for controversy about whether MAFF's rice procurement should be regarded as the green box measure.

In addition, since Japan's rice is protected by prohibitively high tariffs, abandonment of the administrative price may not reduce real protections for rice.7

However, we also recognize that MAFF's intervention in the rice market had been getting less and less effective after MAFF introduced voluntary rice in 1969. MAFF's rice procurement (i.e., government rice) had been decreasing throughout these three decades (see Figure 2). Thus, even though there was not a clear-cut turning-point year (such as 1998), Japan needed to remove rice from the amber box at some time.

In computing the AMS for 1995–1997, Japan used the total production of rice as "eligible production." In the latter half of the 1990s, however, government rice made up less than 5 percent of total rice production. This is why the box shifting of rice did not make any significant increase in the total monetary value of green box in 1998.

Amber box support decreased by 80 billion yen in 2007 in response to MAFF reforms. De minimis made up only a limited portion of the amber box. Thus, there is little difference between AMS and current AMS throughout 1995–2007.

Characteristics of Japan's Blue Box

Japan had no blue box program when the Uruguay Round final agreements were concluded. The Rice Farming Income Stabilization Program (RFISP), which was implemented in 1998, was the first blue box program in Japan. RFISP can be seen as a countercyclical program. It stipulates that, if the market rice price falls below the average rice price of the previous three years, MAFF will provide income supports for farmers who join the set-aside program. As described above, almost all the rice farmers "voluntarily" participated in the set-aside program in 1998. RFISP seems inconsistent with the fact that MAFF continued procuring rice at administrative prices (i.e., government rice) even after the enactment of the Staple Food Law. A possible rationalization for RFISP is that with the government rice share only a limited portion of the rice market, the administrative prices do not significantly influence market rice prices. Indeed, an overwhelming majority of rice was distributed as either freed rice or voluntary rice at market prices in the latter half of the 1990s (see Figure 2). It may not be a coincidence that Japan reported removal of rice from the amber box in the same year RFISP was implemented.

In 2007, RFISP was replaced by the Program for Rice Farming Structural Reform. This new program is scheduled to terminate in 2010.

6 See page 5 in the morning paper of Nikkei as of October 26th, 2007.

7 See Blandford and Josling (2007) for discussion.

Projections of Domestic Support Notifications, 2008–2015

Understandably, it is difficult to make projections of domestic policy eight years in the future. We estimated Japan's future expenditures for domestic agricultural supports by taking trends and/or the average of Japan's past expenditures from 2002 to 2006. For agricultural commodities whose market prices are supported by MAFF, we made projections of production levels and prices by taking five-year trends from 2002 to 2006. Then we estimated amounts of market price supports for 2008–2015 by multiplying projected production and prices. For some expenditures that are under strong pressure of cutbacks from the Ministry of Finance, we extrapolated by taking five-year trends for 2002–2006. For others, we assume that annual expenditures for 2008–2015 will be the same as the averages of 2002–2006. For programs that will be newly implemented in 2008 and for programs whose duration is already stipulated, we made special treatments based on MAFF's announcements.

Our estimates for 2008–2015 are summarized in Table 5. We expect that Japan's domestic supports will keep declining till 2015. Of course, there are some uncertain elements. One of them is the possibility of a drastic reduction in border protection for agricultural commodities. Japan imposes high border protections for agricultural commodities, protections that are severely criticized in the international arena. If the Japanese government is forced to conclude an international agreement reducing border protection for agricultural commodities, the Japanese farmers, who form one of the strongest voting groups in Japan, will press the government for compensation programs, which should be accompanied with increases in fiscal expenditures. However, this kind of uncertain element is so difficult to predict that we simply took trends and averages of 2002–2006 data, as mentioned above.

Table 5. Projected notifications of Japan's domestic support, 2008-2015 (in billion yen)

	Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Green Box	**Total**	1,905	1,912	1,889	1,868	1,842	1,816	1,791	1,765
	(a) General service	1,340	1,351	1,330	1,311	1,286	1,262	1,238	1,214
	(b) Public stockholding for food security purposes	27	27	27	27	27	27	27	27
	(c) Domestic food aid	3	3	3	3	3	3	3	3
	(d) Decoupled income support	102	100	100	100	100	100	100	100
	(f) Payments for relief from natural disasters	45	43	41	39	38	36	35	33
	(g) Structural adjustment assistance provided through producer retirement programmes	157	157	157	157	157	157	157	157
	(i) Structural adjustment assistance provided through investment aids	20	20	20	20	20	20	20	20
	(j) Environmental programmes	189	189	189	189	189	189	189	189
	(k) Regional assistance programmes	22	22	22	22	22	22	22	22
Blue Box		32	31	0	0	0	0	0	0
Amber Box	Price support	353	350	348	345	343	340	337	334
	Domestic payment	133	135	135	135	135	135	135	135
	(share of price support in total AMS)	73%	72%	72%	72%	72%	72%	71%	71%
	(de minimis)	91	91	91	91	91	91	91	91
Current Total AMS		**486**	**485**	**483**	**480**	**477**	**475**	**472**	**469**
(Commitment)		3,973	3,973	3,973	3,973	3,973	3,973	3,973	3,973

Will the Doha Round negotiations restrict Japan's domestic support? To answer this question, we need to calculate Japan's base overall trade-distorting support **(**OTDS) as of 2000. Adding up the Final Bound Total AMS, that is, 3,972.9 billion yen, and 15 percent of the total value of agricultural production (the average for 1995–2000), that is, 1,477.5 billion yen, we obtain 5,450.4 billion yen as the base OTDS.8 According to the Falconer paper in July 2008, Japan's OTDS should be reduced to less than 1,635.2 billion yen (0.3 x 5,450.4) by 2013. On the other hand, our projection tells that the total value of Japan's blue and amber box for 2013 is 469 billion yen. Thus, the Doha Round negotiations are unlikely to restrict Japan's agricultural domestic policy.

8 The monetary value of the blue box is negligible (see Table 5) so that 15 (10 + 5) percent of the total value of agricultural production should be applied.

7. CONCLUSION

Japan reduced its amber box expenditures to less than 20 percent of the commitment level set in the Uruguay Round agreements and underwent extensive decoupling reform in 2007. These two features may provide an impression of Japan as a model of compliance, at least regarding domestic agricultural policies.

This paper, however, showed two ironic realities of Japanese agricultural policy. Neither a sharp reduction of amber box expenditures nor Japan's 2007 reform, characterized by decoupling, necessarily mean there will be a reduction of trade-distorting effects. On the contrary, the 2007 reform may in fact stimulate domestic rice production.

These ironies come from the characteristics of Japanese agricultural political dynamics. Traditional small farming dominates Japanese agriculture, and small-size farmers are richer than their urban counterparts, because they depend on stable off-farm income. Small-size farmers retain possession and use of farmland not for the purpose of earning farm income but to obtain easy money through the political alchemy of farmland.

A small number of innovative large-size farmers have high agricultural productivity. However, policymakers try to prevent development of large-size farms in order to protect traditional small farming communities, which form powerful voting groups.

Under such political dynamics, Japan's huge domestic agricultural support did not result in an oversupply of agricultural products. This is why Japan is the only country whose food self-sufficiency rate keeps declining in spite of its heavy agricultural protection.

In consideration of this background, we are skeptical about the significance of the WTO three-box classification. At least in Japan, WTO-style domestic policy reform may not be effective for promoting sound development of international agricultural trade.

APPENDIX: ESTIMATION AND PROJECTION PROCEDURES FOR WTO NOTIFICATIONS

1. Timing of WTO Reporting

Idealistically, every WTO member country should update its domestic support notifications once basic data, such as the total production of agricultural commodities and fiscal expenditures for agricultural support programs, are made available. However, member countries often delay their notifications, ostensibly for diplomatic reasons.

Table A.1. Timing of Japan's official notifications

Year for which the Japan reported the official notifications	Notification date
1995	06/03/97
1996	02/09/99
1997	02/09/00
1998	02/23/01
1999	02/05/02
2000	05/12/04
2001	02/03/05
2002	02/03/05
2003	02/16/07
2004	08/31/07
2005	03/11/08

The Japanese government normally updates its official notifications every three to four years, as shown in Table A.1. At the time of writing (August 2008), Japan's notifications were current up to 2005, making it one of the most punctual WTO members.

Since there were no major changes in domestic support policies in 2006, notifications for that year are projected to be released in either 2008 or 2009. Notifications for 2007, however, are likely to be delayed in the wake of the extensive subsidy reforms enacted by the Ministry of Agriculture, Forestry and Fisheries (MAFF) during that year (see Section 5 in the main text).

2. MAFF's System for Compiling Notifications

In order to clarify the details of the notification computation process, we conducted interviews with officers of the MAFF 'Kokusai-bu' (Department of International Relations), the contact department for WTO negotiations. Our interviews revealed that the Kokusai-bu is not directly responsible for computing monetary values of domestic support measures; instead, it allocates computation to the various MAFF departments that manage fiscal expenditures. The Kokusai-bu then collects and compiles these results to conform to the WTO notification format. The details of MAFF's computation procedures are difficult to access even for Kokusai-bu officers, and are thus effectively unavailable to the general public, including researchers.

Our interview with Kokusa-bu officers also revealed that the official notifications base on the initial budget of the national treasury. Theoretically, for the purpose of computing monetary values of domestic support programs, the settled account data should be more suitable than the initial budget data.

However, this is not considered a serious problem because the gap between MAFF's initial budget and settled account is generally small.

3. Estimation Period of Our Shadow Notifications

When our research project began in 2007, the Japanese government had not yet published the official notifications for 2005. In that time, however, expenditure data on the national budget and production and price data on agricultural commodities were available for up until 2007. Based on those data, we tried to estimate monetary values of domestic support programs for 2005-07 as our shadow notifications. After the official notifications for 2005 was published in 2008, we compared them with our shadow notifications for 2005. By this comparison, we can check the accuracy of our shadow notifications.

Estimation Procedure of Our Shadow Notifications

(1). Amber Box

Currently, the Japanese government has amber box programs for wheat, barley, soybeans, sugar, starch, beef and veal, meat of swine, and silk-worm cocoons. A sub-governmental body, the Agricultural and Livestock Industries Cooperation (ALIC), is also engaged in amber box programs for sugar, starch, beef and veal, meat of swine and silk-worm cocoons.

There are two types of amber box policies: 'non exempt direct payment', which is calculated from budgetary outlays and foregone revenue to the government, and 'market price support', which is calculated from the product of the difference between the fixed eternal reference price and the applied administered price of the program and the quantity of production eligible under the program: namely,

monetary value of market price support program
= (administered price – external reference price) x (eligible production).

here, external reference price is the import CIF price at the Uruguay Round base period (1986-88) and administered price is the lower boundary price set by the government (including sub-governmental bodies).

Barley and Wheat

The Japanese government had a market price support program for barley and wheat until 2004. Official notifications used the total amount of the government's procurement of barley and wheat as 'eligible production' instead of the total amount of production when estimating the amount support. As government procurement was almost zero between 2000 and 2004, market price support for barley and wheat was negligible during this period. Finally, in 2005, the program was abolished.

Besides the market price support program, Japan also has non-exempt direct payment for barley and wheat, which is reported as 105.8 billion yen in the official notifications for 2004. This is equivalent to the fiscal expenditure for the Wheat and Barley Farming Income Stabilization Program in the national budget. We used that fiscal expenditure for our shadow notifications.

Soya Beans

For soya beans, Japan has non-exempt direct payment but not market price support. The fiscal expenditures for the Soybean Farming Income Stabilization Program and the Subsidy Program for Soybean Producers in the national budget for 2004 totaled 27.8 billion yen. This is a close approximation of 27.6 billion yen, which is reported as the amber box support for soya beans in the official notifications for 2004. We used the total of these two expenditures for our shadow notifications.

Sugar

The Japanese government supports sugar production through non-exempt direct payment and market price support. The non-exempt direct payment for sugar in the official notifications for 2004 is 27.6 billion yen.

This is equivalent to the fiscal expenditure for *Nogyo Keiei Kiban Kyoka Tokubetsu Taisaku* (Agricultural Management Framework Reinforcement Special Policy) in the national budget. We used this expenditure for our shadow notifications.

For the market price support program for sugar, ALIC plays an important role. ALIC controls sugar imports and levies charges on sugar imports. Sugar farmers receive a grant from ALIC in addition to their sales at the administered price. Thus, the difference between the fixed external reference price and the applied administered price of the program does not capture the price support level. In order to cope with this problem, the official notifications employ the following equation to compute monetary value of the market price support for sugar.

monetary value of market price support
= (administered price – external reference price)
x (producer price / administered price) x (eligible production)

Price data are available in the *Pocket Sugar Statistics* published by *Seito Kogyo Kaikan* (Sugar Refining Industry Hall) and statistics are posted on ALIC's website. The data for the eligible production is available in the Crop Survey published by MAFF.

Starch

For starch, the Japanese government has market price support but not non-exempt direct payment. ALIC controls starch imports and provides grants to producers (potato farmers). The equation for starch is the same as that for sugar. Price and eligible production data are available on the ALIC website.

Milk

Milk is also subject to non-exempt direct payment only. Its monetary value in the official notifications for 2004 is 26.7 billion yen. This is equivalent to the total of MAFF's expenditures for *Shitei Seinyu-sha Dantai Kofukin* (Subsidy to Designated Milk Produce Organization) and ALIC's expenditures for *Kako Genryonyu Seisansha Keiei Antei Taisaku* (Business Stabilization Policy for Manufacturing Milk Producers), *Ekijo Nyuseihin Seisan Kakudai Jigyo* (Liquid Dairy Products Production Promotion Policy), *Rakuno Antei Tokubetsu Taisaku Jigyo* (Business Stabilization Special Policy for Dairy Farming), and *Juyo-ki Seinyu Seisan Suishin Taisaku* (Summertime Milk Production Promotion Policy). These expenditures are reported in the national budget and on the ALIC website. We used these five expenditures for our shadow notifications.

Beef and Veal

Both non-exempt direct payment and market price support are applied to beef and veal.

The monetary value of the non-exempt direct payment for beef and veal in the official notifications for 2004 is 41.1 billion yen. This is equivalent to the total of ALIC's expenditures for *Nikuyo Koushi Seisansha Hokyukin Seido* (Subsidy Program for Beef Calve Farmers) and *Nikuyogyu Hi-iku Keiei Antei Taisaku* (Business Stabilization Policy), as reported on the ALIC website. We used these two expenditures for our shadow notifications.

ALIC's price stabilization program for beef and veal falls under market price support in the WTO's classification. ALIC sets the lower and upper boundary prices for beef and veal, buying when the market price is lower than the lower boundary price, and selling when the market price is higher than the upper boundary price. The lower boundary price for dressed carcass of beef cattle is used as the administered price. The eligible production is the total amount of carcass from adult beef cattle, Japanese veal calves and dairy veal calves. These price and production data are available from *MAFF Statistical Yearbook.*

Meat of Swine

The system of market price support for meat of swine is similar to that for beef and veal. The non-exempt direct payment for meat of swine in the official notifications (0.3 billion yen) is equivalent to ALIC's expenditure for *Chi-iki Niku-ton Seisan Antei Kikin Zosei Jigyo* (Funding Program for Production

Stabilization Foundation for Local Hogs) as reported on the ALIC website. The administered price is also the lower boundary price, and the eligible production is the total amount of pork carcass; price and production data are available from *MAFF Statistical Yearbook.*

Silk-Worm Cocoons

Silk-worm cocoons are eligible for both non-exempt direct payment and market price support. The monetary value of the non-exempt direct payment in the official notifications for 2004 is 1.1 billion yen. This is equivalent to the fiscal expenditure for *Sanshi-gyo Keiei Antei Taisaku* (Sericulture Business Stabilization Policy) reported on the ALIC website. According to the official notifications, the administered price for silk-worm cocoons has remained constant at 100,000 yen per ton since 2002; however, it is unclear where this price data (i.e., 100,000 yen per ton) originates. Despite this uncertainty, we consider 100,000 yen per ton suitable for the administered price for our shadow notifications. The eligible production is the total amount of silk thread as reported by MAFF.

The framework of the amber box programs remained unchanged between 2004 and 2006. Thus, we estimated monetary values of non-exempt direct payment programs for our shadow notifications for 2005 and 2006 based on the estimation procedures mentioned above. For market price support programs, however, some of the data for eligible production were not published yet when we prepared this paper. In such cases, we estimated eligible production based on trends of the corresponding agricultural commodities.

In 2007, market price support programs for wheat, barley, starch, soya beans and sugar were replaced by a cross-commodity subsidy program (see Section 5 in the main text). This new subsidy can be seen as a mixture of exempt and non-exempt direct payments (i.e., a mixture of green and amber boxes). The Japanese government has not made any formal announcement about how this new subsidy should be treated in WTO notifications. Studying MAFF's guidebooks for the new subsidy, however, we decomposed this new subsidy into two parts: eligible direct payment (green box) and non-eligible direct payment (amber box).

(2) De minimis

In 2004, the following four programs were reported as 'commodity-specific' *de minimis* and one program was reported as 'non-commodity-specific' *de minimis*: rice (7.5 billion yen), egg (1.3 billion yen), vegetables (14.1 billion yen), fruits (1.2 billion yen), and agricultural insurance (18.1 billion yen). *De minimis* values for rice, egg, and fruits can be obtained from fiscal expenditures reported in the national budget; e.g., 7.5 billion yen of rice is equivalent to the fiscal expenditure for *Kajo Mai Tanki Yushi Shikin Kashitsuke Kin* (Funding Program for Short-term Loan for Rice Surplus), 1.2 billion yen of fruit is equivalent to the fiscal expenditure for *Kajitsu Jukyu Antei Taisaku Jigyohi* (Working Expenses for Stabilization Policy for Fruit Supply and Demand) in *Kajitsu Seisan Shukka Antei Shikin Zosei Jigyohi* (Working Expenses for Funding for Fruit Production and Shipping Stabilization Foundation), and 1.3 billion yen of egg is equivalent to the fiscal expenditure for *Kei-ran Kakaku Antei Taisaku-hi Hojokin* (Subsidy for Egg Price Stabilization Policy). We used these expenditures for our shadow notifications.

Replication of *de minimis* for vegetables is more difficult than those for the other three items. This is because local governments, in addition to MAFF, are engaged in price support for vegetables. MAFF's expenditures for vegetable price support in 2004, based on the *Yasai Kakaku Antei Taisaku-hi Hojokin* (Subsidy for Vegetable Price Stabilization Policy) and *Yasai Jukyu Kinko Sogo Suishin-hi* (Subsidy for Comprehensive Policy for Vegetable Demand-Supply Adjustment) in the national budget, was 9.3 billion yen. However, it is difficult to collect data on local government expenditures for vegetable price support. Instead of collecting such data, we obtained the total expenditures of local governments' price support for vegetables for 2004 by taking a back-calculation. That is, by subtracting MAFF's expenditure from *de minimis* for vegetables, we obtained local governments' de minimus for vegetables for 2004 as 4.8 billion yen (=14.1 billion yen - 9.3 billion yen). Then, assuming that the ratio between MAFF and local government expenditures was constant between 2004 and 2007, we estimated shadow *de minimis* for vegetables from *Yasai Kakaku Antei Taisaku-hi Hojokin* and *Yasai Jukyu Kinko Sogo Suishin-hi*.

We could not figure out the data sources for *de minimis* for agricultural insurance. For our shadow notifications, we assumed that *de minimis* for agricultural insurance for 2006-07 was the same as the average for 2003-05.

(3) Blue Box

The blue box in Japan's official notifications for 2004 is 67.8 billion yen. This is equivalent to the total of the expenditures for *Inasaku Shotoku Kiban Kakuho Taisaku* (Rice Farming Income Stabilization Programs) and *Ninai-te Keiei Antei Taisaku* (Business Stabilization Policy for Farm Units with Approved Municipal Management Improvement Plans), which are reported in the national budget. We used the total of the two expenditures for our shadow blue box estimations for 2005-06.

In 2007, MAFF consolidated these two blue box programs into a new one. *Inasaku Kozo Kaikaku Sokushin Kofu-kin* (Subsidies for Promotion for Rice Farming Structural Reform) in the national budget gives the fiscal expenditure for the new program. According to the national budget, MAFF disbursed 29.0 billion yen for the new blue box program in 2007. In 2007, to offset the time-lag of implementation, additional 12.0 billion yen and 1.3 billion yen were disbursed by *Inasaku Shotoku Kiban Kakuho Taisaku* and *Ninai-te Keiei Antei Taisaku*, respectively. Thus, we estimated a total of 42.4 (=29.0+12.0+1.3; with the rounding error of 0.1) billion yen for the shadow blue box for 2007.

(4) Green Box

Japan's green box programs are classified into 11 categories, (a) to (k), which is different from the format used in the national budget; the names of green box programs also differ from those of expenditure items. Thus, it can be difficult to correlate these two sources. In addition, a detailed breakdown of fiscal expenditures is usually required to estimate green box programs, and this information is generally unavailable to the general public.

We addressed these estimation issues by choosing relevant items from the national budget and applying the following equations for our shadow notifications.

> *Monetary value of program v in year i (v= (a), (b),…, (k); i = 2005, 2006 and 2007)*
> *= (monetary value of program v in 2004) x (total relevant expenditures for program v in year i) / (total relevant expenditures for the green program v in 2004),*

The following is the list of green box programs and relevant expenditure items in the national budget.

(a1). Research: general research, research in connection with environmental programmes and research programmes relating to particular products (85.1 billion yen in the official notifications for 2004).

Relevant expenditure items: *Nogyo Seibutsu kei Tokutei Sangyo Gijutu Kenkyu Kiko* (Research Organization for Designated Industries Related to Agriculture and Biology), *No-rin Suisan Seisaku Kenkyu-sho* (Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries), *No-rin Suisan Gijutsu Kaigi* (Agriculture, Forestry and Fisheries Research Council), *Nogyo Seibutsu Shigen Kenkyu-sho* (National Institute of Agrobiological Sciences), *Nogyo Kankyo Gijutsu Kenkyu-sho* (National Institute for Agro-Environmental Sciences), *Noson Kogyo Kenkyu-sho* (National Institute for Rural Engineering), *Shokuhin Sogo Kenkyu-sho* (National Food Research Institute), and *Kokusai No-rin Suisangyo Kenkyu Senta* (Japan International Research Center for Agricultural Sciences). These eight expenditures for 2004 totaled 100.9 billion yen, which is 1.18 times that in the official notifications. We thus estimated the shadow (a1) by dividing the total of these eight expenditures by 1.18 for each of the corresponding years.

(a2). Plant protection: general and product-specific pest and disease control measures (11.2 billion yen in the official notifications for 2004).

(a3). Animal health control: general and product-specific animal health control for livestock and inspection of animal medicines (6.8 billion yen in the official notifications for 2004)

Relevant expenditure items: *Shubyo Kanri Senta* (National Center for Seeds and Seedlings), *Kachiku Densenbyo Yobo-hi* (Expenditures for Livestock Epidemic Prevention), and *No-rin Suisan-sho Kensa Shido Sho* (Inspection and Instruction Center of the Ministry of Agriculture, Forestry and Fisheries). The total of these three expenditures for 2004 is 19.4 billion yen, which is roughly approximate to (a2) and (a3) expenditures (11.2 billion yen + 6.8 billion yen = 18.0 billion yen). Judging from the item names, (a2) appears equivalent to the whole of *Shubyo Kanri Senta* (3.4 billion yen) and part of *No-rin Suisan-sho Kensa Shido Sho*. Likewise, (a3) seems to consist of the whole of *Kachiku Densenbyo Yobo-hi* (1.8 billion yen) and the remainder of *No-rin Suisan-sho Kensa Shido Sho*. Thus, we divided *No-rin Suisan-sho Kensa Shido Sho* (14.3 billion yen) into two parts, and calculated the share of (a2) as (11.2 x 19.4/18.0 - 3.4) /14.3 (= 0.61) and the share of a3 as (6.8 x 19.4/18.0 - 1.8)/14.3 (= 0.39). We then estimated the shadow (a2) and (a3) using the following equations:

monetary value of (a2) for year i (i=2005, 2006 and 2007)
= 11.2 x (fiscal expenditure for Shubyo Kanri Senta for year i + 0.61 x fiscal expenditure for No-rin Suisan-sho Kensa Shido Sho for year i) / (fiscal expenditure for Shubyo Kanri Senta for 2004 + 0.61 x fiscal expenditure for No-rin Suisan-sho Kensa Shido Sho for 2004), and

monetary value of (a3) for year i (i=2005, 2006 and 2007)
= 6.8 x (fiscal expenditure for Kachiku Densenbyo Yobo-hi for year i + 0.39 x fiscal expenditure for No-rin Suisan-sho Kensa Shido Sho for year i) / (fiscal expenditure for Kachiku Densenbyo Yobo-hi for 2004 +0.39 x fiscal expenditure for No-rin Suisan-sho Kensa Shido Sho for 2004)

(a4). Extension services: education, extension and advisory services and programs for the practical application of new technologies (27.9 billion yen in the official notifications for 2004).

Relevant expenditure items: *Nogyo Keiei Taisaku Chosa tou Itaku-hi* (Commission Expenses for Survey on Farm Management Policy), *Nogyo Keiei Taisaku Minkan Dantai Jigyo Suishin-hi Hojokin* (Subsidies for Promotion Expenses for Private Organizations' Activities for Farm Management Improvement), *Kyodo Nogyo Fukyu Jigyo Kofu-kin* (Subsidies for Extension for Group Farming) and *Nogyo Daigakko* (Farmer's Academy). The total of these four expenditures for 2004 is 28.9 billion yen, which is 1.04 times (a4) expenditure in the official notification. We thus estimated the shadow (a4) by dividing the total of these four expenditures by 1.04 for each of the corresponding years.

(a5). Facilitation of management of agricultural organizations: facilitation of training and advisory services through agricultural organizations (57.7 billion yen in the official notifications for 2004).

Relevant expenditure items: *Nogyo Kindaika Shikin Rishi Hokyu tou Hojokin* (Subsidies for Grants for Paying a Fixed Rate of Interest for Agricultural Modernization Fund), *Nogyo Kindaika Shikin Rishi Hokyukin* (Interest Subsidies for Agricultural Modernization Fund), *Nogyo Kyosai Jigyo Tokubetsu Jimu-hi Hojokin* (Subsidies for Designated Operation Costs for Agricultural Insurance), *Nogyo Kyosai Jigyo Un-ei Kiban Kyoka Taisaku-hi Hojokin* (Subsidies for Operation Framework Reinforcement Policy), *Nogyo Kyosai Jigyo Jimu-hi Hutankin* (Expenses for Operation Costs for Agricultural Insurance), and *Nogyo Kyosai Hokenkin Shiharai Shikin Shakunyu Risi Kofukin* (Interest Subsidies for Borrowed Money for Paying Insurance Benefits). The total of these six expenditures for 2004 is 56.6 billion yen, which is 0.98 times the monetary value of (a5) in the official notifications. We thus estimated the shadow (a5) by dividing the total of these six expenditures by 0.98 for each of the corresponding years.

(a6). Compilation of statistical data and information: compilation and provision of statistical data and information for producers and consumers (6.1 billion yen in the official notifications for 2004).

Relevant expenditure items: *No-rin Gyo Gyo Sensasu Jisshi Chohi* (Administrative Expenses for the Census of Agriculture, Forestry and Fisheries) and *No-rin Gyo Gyo Sensasu Jisshi Itaku-hi* (Commission Fees for the Census of Agriculture, Forestry and Fisheries). The total of these two expenditures for 2004 is 6.1 billion yen, which is equivalent to the monetary value of (a6) in the official notifications. We thus estimated the shadow (a6) by taking the total of these two expenditures for each of the corresponding years.

(a7). Promotion of soil conservation and low-input farming: extension and advisory services, research programs for soil conservation and low-input farming (0.0 billion yen in the official notifications for 2004).

We assumed 0.0 billion yen for the shadow (a7) for 2005-07.

(a8). Extension and infrastructural services for technological improvement of agricultural production: extension and advisory services, research programs, and infrastructural services for technological improvement of agricultural production (16.3 billion yen in the official notifications for 2004).

See (a12).

(a9). General services for livestock industry including extension and infrastructure: infrastructural services, extension and advisory services on technologies, and information services for promotion of livestock products (93.9 billion yen in the official notifications for 2004).

Relevant expenditure items: *Gyu Niku tou Kanzei Zaigen Chikusan Shinko-hi* (Expenses for Promotion for Livestock Industry Financed from Tariff on Beef), *Nochikusangyo Shinko Taisaku Kofukin* (Subsidies for Agriculture and Livestock Promotion Policy) in *Nogyo Seisan Shinko-hi* (Expenses for Agricultural Production Promotion) *and Nochikusangyo Shinko Kiko Unei-hi* (Administrative Expenses for the Agriculture and Livestock Promotion Organization) and *Kachiku Kairyo Senta* (Center for Improvement of Livestock). The total of these five expenditures for 2004 is 162.2 billion yen, which is 1.72 times the monetary value of (a9) in the official notifications. We thus estimated the shadow (a9) by dividing the total of these five expenditures by 1.72 for each of the corresponding years.

(a10). Programs for improvement of food marketing, processing and consumption: providing marketing information to consumers, research related to food or agricultural products processing, marketing promotion, and inspection (10.2 billion yen in the official notifications for 2004).

Relevant expenditure items: *No-rin Suisan Shohi Gijutsu Senta* (Food and Agricultural Materials Inspection Center), *Shokuhin Sogo Kenkyu-sho no Shishutsu* (Expenses at the National Food Research Institute) and *Sogo Shokuryo Taisaku-hi* (Expenses for Composite Food Policy). The total of these three expenditures for 2004 is 8.2 billion yen, which is 0.80 times the monetary value of (a10) in the official notifications. We thus estimated the shadow (a10) by dividing the total of these three expenditures by 0.80 for each of the corresponding years.

(a11). Inspection and information services for agricultural production materials: inspection, research, extension and advisory services for agricultural machinery, fertilizers, agricultural chemicals, seeds and seedlings (3.4 billion yen in the official notifications for 2004).

Relevant expenditure items: *Hishiryo Kensa Sho* (Fertilizer and Feed Inspection Center) and *Noyaku Kensa Sho* (Agricultural Chemicals Inspection Center). The total of these two expenditures for 2004 is 5.6 billion yen, which is 1.65 times the monetary value of the official notifications. We thus estimated the shadow (a11) by dividing the total of these two expenditures by 1.65 for each of the corresponding years.

(a12). Infrastructural services for agricultural sector and rural area: construction of irrigation/drainage facilities and rural roads, land consolidation (909.9 billion yen in the official notifications for 2004).

In the national budget, (a8) and (a12) cannot be distinguished. All expenditure items under budget code #46 seem to be relevant to (a8) and (a12). Budget code #46 consists of *Noson Shinko-hi* (Rural Promotion Expenses), *Fusuigai tou Taisaku-hi* (Natural Disaster Policy), *Nogyo Seisan Kiban Seibi Jigyo*

tou Shido Kantoku-hi (Instruction and Management for the Project for Improvement of Production Base), *Kaigan Jigyo-hi* (Expenses for Coastal Projects), *Nogyo Seisan Kiban Seibi Jigyo-hi* (Expenses for the Activities for Improvement of Production Base), *Gyuniku tou Kanze Zaigen Nogyo Seisan Kiban Seibi Jigyo-hi* (Expenses for the Activities for Improvement of Production Base financed by Beef Tariff) *Noson Seibi Jigyo-hi* (Expenses for Rural Areas Improvement), *Nochi tou Hozen Kanri Jigyo-hi* (Expenses for Farmland Maintenance), *Norin Gyogyo you Kihatsu-yu Zei Zaigen migawari Noson Seibi Jigyo-hi* (Expenses for Rural Road Construction financed by Gasoline Tax), *Chiho Noseikyoku Kaigan Jigyo Koji Sho-hi* (Miscellaneous Expenses for Local Agricultural Office's Coastal Project), and *Chiho Noseikyoku Jisuberi Taisaku Jigyo Koji Sho-hi* (Miscellaneous Expenses for Local Agricultural Office's Landslide Prevention Project). We assumed that shadow (a8) and (a12) increased at the same rate as that for the total of all expenditures under budget code #46. Then, using the 2004 (a8) and (a12) as benchmarks, we obtained the shadow (a8) and (a12) for 2005-07.

(**a13). Disaster rehabilitation services**: reconstruction of irrigation/drainage facilities and rural roads damaged by natural disasters (112.5 billion yen in the official notifications for 2004).

Relevant expenditure items: *Nogyo Shisetsu Saigai Fukkyu Jigyo-hi* (Expenses for Postdisaster Reconstruction of Agricultural Facilities) and *Nogyo Shisetsu Saigai Kan-ren Jigyo-hi* (Expenses for Activities Related to Agricultural Facilities Damaged by Disaster). The total of these two expenditures for 2004 is 112.5 billion yen, which is equivalent to the monetary value of (a13) in the official notifications. We thus estimated the shadow (a13) by taking the total of these two expenditures for each of the corresponding years.

(a14). Infrastructural services for market facilities: provision or construction of market facilities (6.0 billion yen in the official notifications for 2004).

Relevant expenditure items: *Sogo Shokuryo Taisaku Chiho Kokyo Dantai Jigyo Suishin-hi Hojokin* (Subsidies for Local Government's Promotion for Composite Food Policy) *Sogo Shokuryo Taisaku Minkan Dantai Jigyo Suishin-hi Hojokin* (Subsidies for Private Organization's Promotion for Composite Food Policy), and *Oroshi Uri Shijo Shisetsu Seibi-hi* (Wholesale Market Maintenance and Improvement). The total of these three expenditures for 2004 is 3.7 billion yen, which is 0.62 times the monetary value of (a14) in the official notifications. We thus estimated the shadow (a14) by dividing the total of these three expenditures by 0.62 for each of the corresponding years.

(a15). Advisory services for structural improvement: advisory services for effective farm land utilization (57.9 billion yen in the official notifications for 2004).

Nogyo Keiei Taisaku-hi (Expenses for Farm Management Policy) in documents of the national budget is relevant to both (a4) and (a15). By subtracting (a4) from the *Nogyo Keiei Taisaku-hi*, we obtained 38.3 billion yen, which is 0.66 times the monetary value of (a15) in the official notifications. We thus estimated the shadow (a15) by subtracting the monetary value of (a4) from *Nogyo Keiei Taisaku-hi* and dividing it by0.66 for each of the corresponding years.

(a16). Personnel expenses for the government officials: personnel expenses for the Government officials (254.0 billion yen in the official notifications for 2004).

Relevant expenditure items: *Norin Suisan Honsho* (Head Office of the Ministry of Agriculture, Forestry and Fisheries), *Norin Suisan Honsho Shisetsu-hi* (Expenses for Equipment of the Head Office of the Ministry of Agriculture, Forestry and Fisheries), *Chiho Noseikyoku* (Local Office of the Ministry of Agriculture, Forestry and Fisheries), *Norin Suisan Honsho Shisetsu-hi* (Expenses for Equipment of the Local Office of the Ministry of Agriculture, Forestry and Fisheries), *Hokkaido Nosei Jimusho* (Hokkaido Office of the Ministry of Agriculture, Forestry and Fisheries), and *Hokkaido Tokei Joho Jimusho* (Hokkaido Statistical Office of the Ministry of Agriculture, Forestry and Fisheries). The total of these five expenditures for 2004 is 210.0 billion yen, which is 0.83 times the monetary value of (a16) in the official notifications. We thus estimated the shadow (a16) by dividing the total of these five expenditures by 0.83 for each of the corresponding years.

(b) Public stockholding: public stockholding of rice, wheat, barley, soya beans and feed grains (28.2 billion yen in the official notifications for 2004).

Shokuryo Kanri Tokubetsu Kaikei (Food Control Special Account) seems relevant to this expenditure. However, *Shokuryo Kanri Tokubetsu Kaikei* also includes various expenditures in addition to those for public stockholding for food security. Unfortunately, it is very difficult to obtain decomposition of *Shokuryo Kanri Tokubetsu Kaikei*. The ratio between the monetary value of (b) (28.2 billion yen) and the total fiscal expenditure for *Shokuryo Kanri Tokubetsu Kaikei* for 2004 (228.9 billion yen) is 0.123. We thus estimated the shadow (b) by multiplying the expenditure for *Shokuryo Kanri Tokubetsu Kaikei* by 0.123 for each of the corresponding years.

(c) School lunch programs: supply of rice, milk, and fruit juice for school children at subsidized prices (2.5 billion yen in the official notifications for 2004).

ALIC's *Gakko Kyushoku Yo Kyushoku Jigyo* (Milk Supply Activities for School Lunch Program) seems relevant to (c). ALIC disbursed 2.2 million yen for *Gakko Kyushoku Yo Kyushoku Jigyo* in 2004. We estimated of the shadow (c) by dividing ALIC's *Gakko Kyushoku Yo Kyushoku Jigyo* by 1.14 (1.14 = 2.5/2.2) for each of the corresponding years.

(d) Decoupled income support (0.0 billion yen in the official notifications for 2004).

We assume that this category includes the new green box programs implemented in 2007 (see the description for the 2007 reform in Section 5 in the main text). We estimated this expenditure from various documents published from MAFF.

(f1). Agricultural insurance scheme: government subsidies on premiums of agricultural insurance (47.8 billion yen in the official notifications for 2004).

Nogyo Kyosai Saihoken Tokubetsu Kanjo he Kuri-ire (Transferred Money to the Agricultural Re-insurance Special Account) of *Nogyo Hoken-hi* (Expenses for Agricultural Insurance) seems relevant to (f1). By subtracting *de minimus* from the monetary value of *Nogyo Kyosai Saihoken Tokubetsu Kanjo he Kuri-ire* of *Nogyo Hoken-hi* for 2004, we obtained 49.8 billion yen, which is 1.04 times (f1) in the official notifications. We estimated the shadow (f1) from the following equations,

monetary value of (f1) for year i (i=2005, 2006 and 2007)
*=(1/1.04) * (monetary value of Nogyo Kyosai Saihoken Tokubetsu Kanjo he Kuri-ire of Nogyo Hoken-hi for year i - de minimis for year i)*

(f2). Natural disaster relief loans: loans for relief of damaged farmers by natural disasters (0.2 billion yen in the official notifications for 2004).

This expenditure item is difficult to replicate. Since the monetary value of (f2) in the official notifications is very small throughout 1995-2004, we assumed 0.0 billion yen for the shadow (f2) for 2005-08.

(g1). Farmers' pension programs: payments of pension to retired farmers on condition of transfer of the management (0.2 billion yen in the official notifications for 2004).

Relevant expenditure items: *Nogyosha Nenkin tou Jisshi-hi* (Operation Expenses for Farmer Annuity) and *Nogyosha Nenkin Kikin* (Foundation for Farmer Annuity). The total of these two expenditures for 2004 is 0.2 billion yen, which is exactly the same monetary value of (g1) in the official notifications. We thus estimated the shadow (g1) by taking the total of these two expenditures for each of the corresponding years.

(g2). Land retirement programs for citrus production: payments for land retirement from citrus production to adjust to changes in the supply and demand situation caused by trade liberalization (0.0 billion yen in the official notifications for 2004).

We assumed 0 billion yen for the shadow (g2).

(h) Programs for reduction of number of livestock: payments for slaughtering of sows and cows to avoid overproduction of pork and milk (0.0 billion yen in the official notifications for 2004).

We assumed 0.0 billion yen for the shadow (h) for 2005-07.

(i). Agricultural loans: interest concessions for government agricultural loans (22.8 billion yen in the official notifications for 2004).

No-rin Gyo Gyo Kin-yu Koko Hokyukin (Subsidy for the Agriculture Forestry and Fisheries Finance Corporation) in the national budget seems relevant to (i). The fiscal expenditure for *No-rin Gyo Gyo Kin-yu Koko Hokyukin* for 2004 is 55.0 billion yen, which is 2.41 times the monetary value of (i) in the official notifications. We thus estimated the shadow (i) by dividing the expenditure for *No-rin Gyo Gyo Kin-yu Koko Hokyukin* by 2.41 for each of the corresponding years.

(j1). Environmental programs (158.8 billion yen in the official notifications for 2004).

Rice set-aside program is the only one that the Japanese government reports to the WTO as 'environmental programs'. As discussed in the Section 4 in the main text, rice set-aside program aims for diverting a certain percentage of paddy field from rice planting so as to prevent excess-supply of rice. Thus, it is unclear whether the rice set-aside program actual has environment-protective effects. Regardless, the WTO accepts the Japanese government's treatment of 'environmental programs'. *Suiden Nogyo Kozo Kaikaku Taisaku-hi* (Expenses for the Program of Establishment of High-productivity Paddy-field Farming) in the national budget corresponds to the rice set-aside program. The fiscal expenditure for *Suiden Nogyo Kozo Kaikaku Taisaku-hi* for 2004 is 151.9 billion yen, which is 0.96 times the monetary value of (j1) in the official notifications. We estimated shadow (j1) for by multiplying the expenditure for *Suiden Nogyo Kozo Kaikaku Taisaku-hi* by 0.96 for the corresponding years.

(j2). Support program for the reduction of environmental burden due to dairy farming: payments to dairy farmers who practice appropriate management to tackle environmental problems (8.3 billion yen in the official notifications for 2004).

Nochikusangyo Shinko Kiko (Agriculture and Livestock Industries Corporation) seems relevant to (j2). The fiscal expenditure for *Nochikusangyo Shinko Kiko* for 2004 is 162.2 billion yen, which is 19.5 times larger than the monetary value of (j2) in the official notifications. We estimated the shadow (j2) by dividing the expenditure for *Nochikusangyo Shinko Kiko* by 19.5 for each of the corresponding years.

(k) Direct payment to farmers in the hilly and mountainous areas: payments for farmers who continue farming activities for at least five years under the community agreements (16.8 billion yen in the official notifications for 2004).

By subtracting the fiscal expenditure for *Chusankan Chi-iki tou Chokusetsu Shiharai Suishin Kofukin* (Subsidy for Promotion for Direct Payment to Hilly and Mountainous Areas) from that for *Noson Shinko-hi* for 2004, we obtained exactly the same monetary value of (k) in the official notifications. Thus, we did the same thing for our shadow (k) for 2005-07.

5. Comparison of Our Shadow Notifications for 2005-07 and Official Notifications for 2007

Tables A.2, A.3 and A.4 compare the shadow notifications and official notifications for 2005. There is no significant difference between the two notifications. This demonstrates reliability of our shadow notifications.

Table A.2. Comparison between Japan's official and our shadow notifications for 2005

		Official notifications	Shadow notifications
Green Box	**Total**	1916.3	1908.1
	(a) General service	1465.4	1457.7
	(b) Public stockholding for food security purposes	24.5	25.6
	(c) Domestic food aid	3.2	1.8
	(d) Decoupled income support	-	-
	(f) Payments for relief from natural disasters	49.0	49.8
	(g) Structural adjustment assistance provided through producer retirement programmes	155.8	155.7
	(i) Structural adjustment assistance provided through investment aids	19.9	19.2
	(j) Environmental programmes	176.7	176.5
	(k) Regional assistance programmes	21.8	21.8
Blue Box		65.3	65.3
Amber Box	Price support	394.7	394.2
	Domestic payment	198.6	192.2
	(share of price support in total AMS)	66.5%	67.2%
	(de minimis)	41.3	41.6
Current total AMS		**593.3**	**586.4**

Table A.3. Detailed comparison between Japan's official and our shadow notifications for the AMS in 2005

		Official notifications	Shadow notifications
Wheat	Price support	0.0	0.0
	Direct payment	94.6	93.6
	Total	94.6	93.6
Barley	Price support	0.0	0.0
	Direct payment	10.0	11.0
	Total	10.0	11.0
Soya beans	Price support	-	-
	Direct payment	26.4	26.6
	Total	26.4	26.6
Sugar	Price support	54.8	54.4
	Direct payment	2.5	2.5
	Total	57.3	56.9
Starch	Price support	15.1	15.1
	Direct payment	-	-
	Total	15.1	15.1
Milk	Price support	-	-
	Direct payment	26.9	26.2
	Total	26.9	26.2
Beef and veal	Price support	72.9	72.9
	Direct payment	37.1	31.3
	Total	110.0	104.2
Meat of swine	Price support	251.9	251.8
	Direct payment	-	-
	Total	251.9	251.8
Silk-worm cocoons	Price support	0.0	0.0
	Direct payment	1.0	1.0
	Total	1.0	1.0
Tatal AMS		593.3	586.4
De minimis			
Rice		7.5	7.5
Eggs		1.3	1.4
Vegetables		13.2	14.5
Fruits		1.2	1.2
Agricultural insurance scheme		18.1	17.0
Total		41.3	41.6
Total AMS + de minimis		634.6	628.0

Table A.4. Detailed comparison between Japan's official and our shadow notifications for the green box in 2005

Measure Type	Name and description of measure with reference to criteria in Annex 2		Official notifications	Shadow notifications
(a) General services	Research:	a1	86.8	76.7
	Plant protection:	a2	10.9	11.4
	Animal health control:	a3	7.1	7.0
	Extension services:	a4	24.2	26.0
	Facilitation of management of agricultural organizations:	a5	57.8	54.4
	Compilation of statistical data and information:	a6	6.5	4.8
	Extension and infrastructural services for technological improvement of agricultural production:	a8	50.2	15.5
	General services for livestock industry including extension and infrastructure:	a9	58.5	79.5
	Programmes for improvement of food marketing, processing and consumption:	a10	10.2	10.0
	Inspection and information services for agricultural production materials:	a11	3.4	1.6
	Infrastructural services for agricultural sector and rural area:	a12	840.0	865.3
	Disaster rehabilitation services:	a13	41.6	41.6
	Infrastructural services for market facilities:	a14	-	6.9
	Advisory services for structural improvement:	a15	34.7	16.7
	Personnel expenses for the Government officials:	a16	233.5	240.3
(b) Public stockholding for food security purposes	Public stockholding:	b	24.5	25.6
(c) Domestic food aid	School lunch programmes:	c	3.2	1.8
(d) Decoupled income support	Cross-commodity income stabilization based on historical acres:	d	-	-
(f) Payments for relief from natural disasters	Agricultural insurance scheme:	f1	48.9	49.8
	Natural disaster relief loans:	f2	0.1	0.0
(g) Structural adjustment assistance provided through producer retirement programmes	Farmers' pension programmes:	g1	155.8	155.7
(i) Structural adjustment assistance provided through investment aids	Agricultural loans:	i	19.9	19.2
(j) Environmental programmes	Payments for conversion from rice production:	j1	168.4	169.0
	Support programme for reduction of environmental burden due to dairy farming:	j2	8.3	7.5
(k) Regional assistance programmes	Direct payment to farmers in the hilly and mountainous areas:	k	21.8	21.8
Total			**1916.3**	**1908.1**

Table A.4. Continued

Measure Type	Name and description of measure with reference to criteria in Annex 2	code	
(a) General services	Research:	a1	general research, research in connection with environmental programmes, and research programmes relating to particular products.
	Plant protection:	a2	general and product-specific pest and disease control measures.
	Animal health control:	a3	general and product-specific animal health control for livestock and animal medicine inspection.
	Extension services:	a4	education, extension and advisory services, and programmes for practical application of new technologies.
	Facilitation of management of agricultural organizations:	a5	facilitation of training and advisory services through agricultural organizations.
	Compilation of statistical data and information:	a6	compilation and provision of statistical data and information for producers and consumers.
	Extension and infrastructural services for technological improvement of agricultural production:	a8	extension and advisory services, research programmes, and infrastructural services for technological improvement of agricultural production.
	General services for livestock industry including extension and infrastructure:	a9	infrastructural services, extension and advisory services on technologies, and information services for promotion of livestock products.
	Programmes for improvement of food marketing, processing and consumption:	a10	providing marketing information to consumers, research related to food or agricultural products processing, marketing promotion, and inspection.
	Inspection and information services for agricultural production materials:	a11	inspection, research, extension and advisory services for agricultural machinery, fertilizers, agricultural chemicals, seeds and seedlings.
	Infrastructural services for agricultural sector and rural area:	a12	construction of irrigation/drainage facilities and rural roads, land consolidation.
	Disaster rehabilitation services:	a13	reconstruction of irrigation/drainage facilities and rural roads damaged by natural disasters.
	Infrastructural services for market facilities:	a14	provision or construction of market facilities.
	Advisory services for structural improvement:	a15	advisory services for effective farm land utilization.
	Personnel expenses for the Government officials:	a16	personnel expenses for the Government officials.
(b) Public stockholding for food security purposes	Public stockholding:	b	public stockholding of rice, wheat, barley, soya beans and feedgrains.
(c) Domestic food aid	School lunch programmes:	c	supply of rice, milk, and fruit juice for school children at subsidized prices.
(d) Decoupled income support	Cross-commodity income stabilization based on historical acres:	d	decoupled income support based on historical acres for farmers harvesting soybeans, wheat, barley, sugar cane and potato for starch
(f) Payments for relief from natural disasters	Agricultural insurance scheme:	f1	government subsidies on premiums of agricultural insurance.
	Natural disaster relief loans:	f2	loans for relief of damaged farmers by natural disasters.

Table 4. Continued

Measure Type	Name and description of measure with reference to criteria in Annex 2	code	
(g) Structural adjustment assistance provided through producer retirement programmes	Farmers' pension programmes:	g1	payments of pension to retired farmers on condition of transfer of the management.
(i) Structural adjustment assistance provided through investment aids	Agricultural loans:	i	interest concessions for government programmed agricultural loans.
(j) Environmental programmes	Payments for conversion from rice production:	j1	payments for maintaining paddy fields in environmentally good condition through growing any plants other than rice or other appropriate managements.
	Support programme for reduction of environmental burden due to dairy farming:	j2	payments to dairy farmers who practice appropriate management to tackle environmental problems
(k) Regional assistance programmes	Direct payment to farmers in the hilly and mountainous areas:	k	payments for farmers who continue farming activities for at least five years under the community agreements.

6. Detailed Projections of Domestic Support for 2008-15

(1). Amber Box

Direct Payment

As described in the fourth section of this appendix, Japan had non-exempt direct payment programs for wheat, barley, soya beans, sugar, milk, beef, veal, and silk-worm cocoons in 2007. In 2008, programs for wheat, barley, soya beans and starch were revised into a new amber box program of direct payment. MAFF budgeted 1.7 billion yen for the new program for 2008. We assumed 1.7 billion yen for the amber box direct payment program for these four commodities for our projection for 2009-15. For milk beef, veal, and silk-worm cocoons, we took the average for amount of 'direct payment' for 2005-07 for each commodity and use it as our projected value for 2008 and thereafter.

Market Price Support

As described in the third section of this appendix, Japan had market price support programs for soya beans, sugar, milk, beef, veal, and silk-worm cocoons in 2007.

As discussed above, total market price support for each commodity is calculated as the product of eligible production and the difference between the administered price and the reference price. We assumed that administered and external reference prices for 2008-15 are the same as those for 2007. We estimated eligible production by taking log-linear extrapolations from 5-year production data (2003 to 2007).

(2). De minimis

In 2008, MAFF launched a new *de minimis* program and prepared a budget of 55.5 billion yen for the first year. By adding 55.5 billion yen to the total amount of *de minimis* for 2007 (35.4 billion yen), we obtained 91.0 billion yen (with the rounding error of 0.1). We assumed that Japan's *de minimis* would be unchanged at 91.0 billion yen for 2008-15.

(3). Blue Box

Inasaku Kozo Kaikaku Sokushin Kofukin (Subsidy for Promotion for Rice Farming Structural Reform), which started in 2007 and is the only one-expenditure item in the blue box in 2008, is scheduled to

terminate in 2010. MAFF budgeted 32.4 billion yen for the *Inasaku Kozo Kaikaku Sokushin Kofukin* for 2008. For *Inasaku Kozo Kaikaku Sokushin Kofukin* for 2009, we took the average value of *Inasaku Kozo Kaikaku Sokushin Kofukin* for 2007-08 (30.7 billion yen), and assumed that Japan's blue box would be empty for 2010-15.

(4). Green Box

We assumed that the monetary values (a1), (a4), (a6), (a8), (a9), (a13) from 2008 to 2015 would remain at the 5-year average for 2003-07. For (b), which was implemented in 2006, we used the 2-year average for 2006-07 instead of the 5-year average. We assumed that the monetary values of (a7), (f2), (g) and (h), which were zero in 2007, would remain at zero from 2008 to 2015. We extrapolated monetary values for the other programs by taking log-linear regressions for 2003-07.

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