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China: Shadow WTO Agricultural Domestic Support Notifications

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Markets, Trade and Institutions Division

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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

This paper reviews recent agricultural policy changes in China and presents estimates of domestic support for the period 1996-2005. A set of relevant alternative subsidy-definition scenarios and their effects on the calculated levels of support are analyzed, and a projection of domestic support through 2013 is presented. The paper concludes with a discussion of new WTO rules that may be negotiated in the Doha Round and their implications for China.

Based on standard WTO subsidy calculation methods, our results indicated that China's domestic support for the period 1996-2005 has been well below the limits agreed at its WTO accession. The market price support (MPS) component of the aggregate measure of support (AMS) in China has been below zero, and this has dwarfed the relatively small but positive non-product specific AMS and led to a zero current total AMS after *de minimis*. China has no AMS commitments but can provide trade-distorting domestic support to agricultural producers up to 8.5 percent of the value of production (or RMB561 billion). Thus there appears to be substantial room for China to extend its amber box subsidy measures through heavy use of the *de minimis* provision.

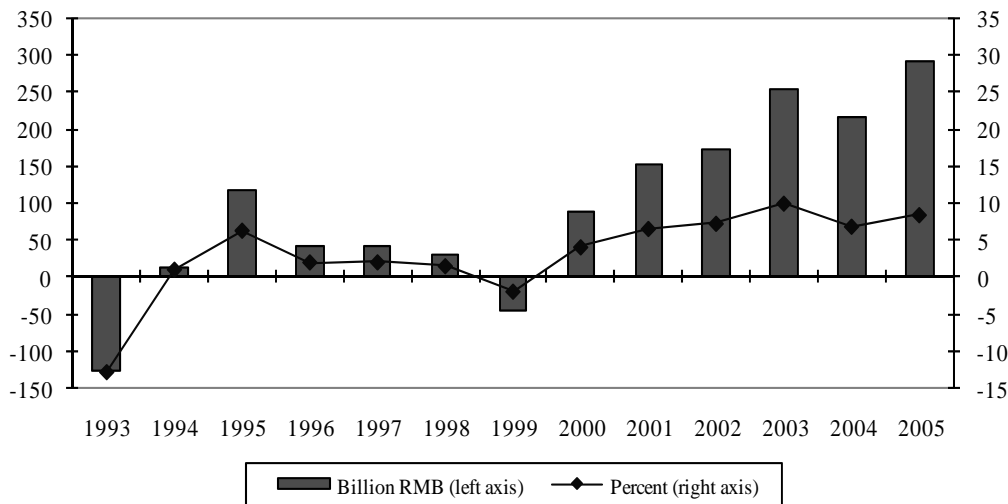
We project domestic support notifications through 2013 based on specified assumptions about domestic policies, including changes in administered prices and commodity program coverage. New rules potentially negotiated in the Doha Round are expected to provide more constraints on subsidies. Due to China's developing country status, with no AMS commitments under the Uruguay Round Agreement on Agriculture the impacts of these new constraints are shown to be limited, although our projections indicate that China may exceed its WTO commitment levels under certain price and commodity coverage scenarios.

Keywords: China agricultural support policies; WTO Doha Round; notification of domestic support; WTO compliance

1. INTRODUCTION

Chinese agricultural policy has undergone some fundamental changes in the past decade, with major policy shifts in pricing, marketing, trade, investment and technology. Most notably, China has implemented a series of new policies that directly favor the agricultural sector (Kwiecinski and van Tongeren 2007). These policies include direct payments to farmers, agricultural input subsidies, agricultural tax elimination, minimum and protective prices, dismantlement of barriers to private entry into agricultural marketing channels, and increased spending on rural infrastructure, research and development. The policy changes have resulted in higher support for the agricultural sector, which has been documented in various studies. For instance, the Producer Support Estimates (PSE) compiled by the OECD (2007) show a clear rising trend in subsidies in China since 1993 (Figure 1). Considering this finding in combination with empirical evidence disclosing disprotection in agriculture in earlier periods (e.g., Huang et al. 2007), one could conclude that there has been a transition of government policy stance from taxing agriculture to supporting the sector.

Figure 1. China's producer support estimate, 1993-2005



Source: OECD 2007

Recent agricultural policy changes reflect the Chinese leadership's renewed attention to agricultural problems, concisely described in official documents as the "San Nong" issue (agriculture, rural areas, and peasants). The policy changes also arrived amidst a sharply widening rural-urban income gap as well as rising social unrest and political tension. In a series of "No.1 Documents" issued by the Central Committee of the Chinese Communist Party, it is reiterated that increasing farm incomes is at the top of the leadership's agenda. The authorities believe that the provision of various subsidies to farmers will effectively raise their incomes, which would, in turn, pacify the widespread resentment against the present social economic system that has disproportionately benefited people in urban areas. The objective of self-sufficiency in food supply (grains in particular) is also embedded in the subsidy strategy because farmers are expected to produce more when provided with better economic incentives. Recent economic growth has made these subsidy policy changes fiscally feasible.

The impacts of China's new subsidy policies are far-reaching both within the country and internationally. The elimination of agricultural taxes and the provision of direct payments to farmers, for example, have been lauded domestically as major achievements in China's agricultural policy reforms—Chinese farmers are for the first time in the country's history being subsidized rather than taxed by the government, a transition that is intended to add significantly to the country's progress in poverty reduction. In the trade arena, however, there is a potential concern that some of the policies may prove

contentious during the Doha Round negotiations, just as agricultural subsidies in developed countries have been under intense scrutiny from the Uruguay Round onward. As China's influence on the world economy continues to increase, the global implications of its domestic policies will receive more attention. Specifically, one would question whether China's subsidy policy measures meet the disciplines of the current WTO Agreement on Agriculture (AoA) and whether they will fit within tighter rules that may be negotiated in the future, especially if China continues its current trend of increasing agricultural subsidies.

Compliance with WTO rules (or lack thereof) can be monitored by referring to each country's official subsidy notifications, which may be challenged by others through informal or formal procedures (e.g., review or dispute settlement). Each WTO member country is expected to routinely update notifications on the implementation of its domestic support commitments for monitoring by the WTO Committee on Agriculture. These notifications serve as the primary source of information on each country's domestic agricultural subsidy outlays, and on how such subsidies have been classified—as exempt from or subject to reduction commitments.

Unfortunately, however, few WTO members have regularly reported their domestic support notifications.¹ China has provided estimates of domestic support in its accession documents for the period 1996-1998 (WT/ACC/CHN/38/Rev.3) and updated them for 1999-2001 (G/AG/CHN/8). However, due to the lack of disciplines for notifications in the WTO and the intrinsic difficulty of obtaining subsidy data in a timely fashion (e.g., actual budgetary expenditures are often not known until well after a particular crop-production year), no official filing of notifications has been made for China beyond 2001, the year it became a member of the WTO. Apart from annual monitoring by the OECD, little is known in the outside world about how much support (in WTO terms) China has provided its agriculture in recent years, or whether China has complied with the relevant WTO rules. Recent agricultural policy reforms and the delay in official reporting suggest the need for an investigation into the consequences of policy changes in terms of China's WTO commitments in regard to domestic support as well as a projection of future notifications examining possible ramifications of continued policy development within China and at the WTO.

This paper attempts to provide a quantitative assessment for China of “shadow notifications” in which recent subsidy information is presented and changes in domestic policies and market conditions are discussed. In addition to providing basic notification calculations, several important controversies about different subsidy definitions and interpretation of the WTO rules are assessed. Future subsidies and their WTO compliance are projected and evaluated through 2013.

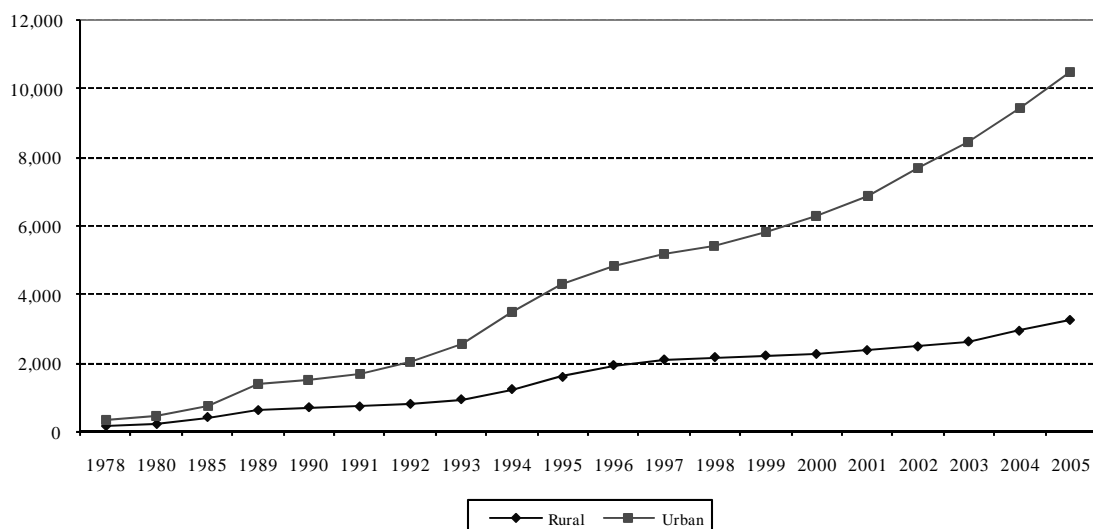
The rest of the paper is organized as follows: Section 2 provides a brief overview of China's agricultural sector. Section 3 reviews recent agricultural policy changes. Section 4 presents estimates of China's domestic support for the period 1996-2005 and discusses a set of relevant alternative subsidy-definition scenarios and their effects on the calculated levels of support. Section 5 describes the projection of domestic support through 2013 and discusses new constraints/latitude that may potentially be negotiated in the Doha Round with implications for China. Section 6 provides a summary.

¹ According to most recent WTO data, 1995 was the only year for which all members with domestic support reduction commitments for that year had submitted a notification. For 2000, out of 30 countries with commitments, 25 (or 83 percent) had submitted a notification. For 2003, of the 35 countries with commitments, 8 (or 23 percent) had submitted a notification and 27 were overdue.

2. A BRIEF OVERVIEW OF CHINA'S AGRICULTURAL SECTOR

China has a vast agricultural sector encompassing more than half of the population. The sector has witnessed considerable achievements since economic reforms were initiated in 1978. However, despite long-term growth, the agricultural sector has lagged significantly behind its urban counterpart. Incomes in rural areas, after a few years of strong growth in the early years of the reform, have stayed well below those in urban areas (Figure 2). The rising urban-rural income gap has become the most significant source of China's whole income disparity problem (Chang 2002). The rapidly expanding urban sector and the development of rural off-farm employment in township and village enterprises (TVEs) have alleviated the problem of surplus rural labor to some extent, but restrictions from the household registration ("*hukou*") system and other preferential employment treatments favoring only urban residents continue to constrain rural labor mobility. Today, a large share of China's idle population remains in rural areas, contributing to a high overall unemployment rate that has reached 14 percent in recent years (Giles, Park and Zhang 2005). This massive labor surplus in rural areas has also resulted in a high ratio of labor per unit of land and thus low labor productivity and agricultural returns.

Figure 2. Per capita income of Chinese urban and rural residents, 1978–2005 (RMB).



Source: NBS various years

Agricultural production in China is characterized by a combination of scarce land, abundant labor, limited mechanization and small-scale operations. The sector employs approximately 350 million people, or 45 percent of the total labor force, and the average farm size is less than 0.5 hectares (Fan and Chan-Kang 2005). Income from agriculture is an important component of the Chinese economy, although its contribution to overall GDP has steadily declined. In 2005, agriculture accounted for less than 13 percent of GDP, compared to nearly 30 percent in 1980 (NBS 2006). The decline of agriculture in the domestic economy is due primarily to the weak performance of the sector as well as stronger growth elsewhere in the economy (i.e., the industrial and service sectors). The annual growth rate of agricultural GDP since 1996 was only 3.5 percent, slightly higher than the 2.7 percent growth seen in the pre-reform era. In contrast, the industrial and service sectors have each registered higher growth rates of about 8-10 percent during the same period (Table 1).

Table 1. Annual growth rates of China's economy, 1970-2005 (percent)

	Pre-reform Period	Reform Period			
	1970-78	1979-84	1985-95	1996-00	2001-05
Overall GDP	4.9	8.8	9.7	8.2	8.7
Agriculture	2.7	7.1	4.0	3.4	3.5
Industry	6.8	8.2	12.8	9.6	10.6
Service	N/A	11.6	9.7	8.3	8.3

Source: NBS various years

Within the agricultural sector, crop production accounted for 51 percent of total agricultural output, while livestock contributed 35 percent, and fisheries 10 percent in 2005 (NBS 2006). While grain remains the key crop, its growth rate has steadily declined in the past two decades, due primarily to the changing incentive structure that favors production of crops other than grains as well as non-crop products (Table 2). In particular, oil crops, fruits and vegetables, meats and fishery products have experienced higher growth rates than other production categories.

The changing pattern of agricultural production first reflects government policies that encourage diversification. These policies include progressive relaxation of the grain procurement quota system and, more recently, removal of tax on all agricultural specialty products except tobacco leaf. Correspondingly, farmers have switched production from grains to other more profitable agricultural products, such as fruit and vegetables. These adjustments are also in response to emerging export opportunities and to changes in domestic demand as a result of rising income and urbanization. The structural change in production has led to a reallocation of resources to areas that are more in line with China's comparative advantage, as fruit and vegetables, meats and fish (aquaculture) are labor-intensive products whereas grain is land-intensive. Restructuring also occurred within grain production, with land sown to rice and wheat declining but that sown to maize increasing. This reflects a shift in maize use from food to feed in order to meet increasing consumption demand for livestock products.

Table 2. Agricultural production annual growth rates, 1970-2005 (percent)

	1970-78	1979-84	1985-95	1996-00	2001-05
Grain Production	2.8	4.7	1.7	0.03	-0.2
Rice	2.5	4.5	0.6	0.3	-0.9
Wheat	7.0	8.3	1.9	-0.4	-1.9
Maize	7.4	3.7	4.7	-0.1	5.5
Other Production					
Cotton	-0.4	19.3	-0.3	-1.9	6.5
Soybean	-2.3	5.2	2.8	2.6	2.4
Oil Crops	2.1	14.9	4.4	5.6	0.6
Fruits & Vegetables	6.6	7.2	12.7	8.6	29.5
Meats	4.4	9.1	8.8	6.5	4.6
Fishery	5.0	7.9	13.7	10.2	3.5

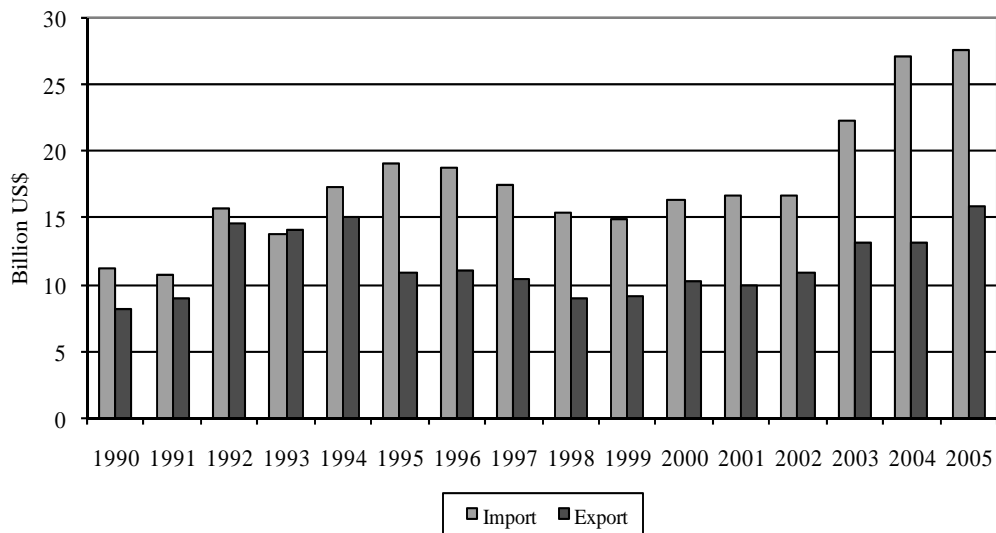
Source: NBS various years

China is a major player in world agricultural markets. Although the contribution of agriculture to China's overall trade flows has declined, the values of agricultural imports and exports have steadily increased. In 2005, the total value of Chinese agricultural trade reached US\$43.5 billion (import plus export), an increase of US\$16.9 billion from 2001 (Figure 3). Exports and imports of agricultural products were US\$15.9 billion and US\$27.6 billion, respectively, in 2005, resulting in a record high agricultural trade deficit of US\$11.7 billion. In fact, with the exception of 1993, China has been a net food importer since 1990. The rise of agricultural trade deficits in recent years is due primarily to a dramatic increase in domestic demand for cereals (mainly wheat), oilseeds (mainly soybeans), cotton and sugar. In

the export sector, fruits, vegetables, meats and fishery products have performed strongly in the past decade. However, these products are also the ones that have suffered substantially from foreign sanitary and phytosanitary barriers (Cheng and Tang 2007).

Adjustments in China's trade policy, including tariff reduction policies, have significantly changed China's agricultural export and import structure. Similar to its production pattern, agricultural trade in China has also moved in a direction that is more consistent with its comparative advantage, as argued by Hayes and Fuller (1999). For example, the proportion of grain exports fell to 20 percent of total agricultural exports in the 1990s, from more than 40 percent in the 1980s (Huang and Rozelle 2002). Horticultural, animal, and aquatic products accounted for more than 80 percent of agricultural exports in the late 1990s. By regrouping trade data according to factor intensity in production, Huang and Rozelle concluded that China's net exports of land-intensive bulk commodities, such as grains, oilseeds, and sugar crops, have fallen, while exports of high value and more labor-intensive commodities have risen. Similar trade patterns have also been observed in an earlier study by Carter and Li (1999).

Figure 3. Chinese agricultural imports and exports, 1990-2005



Source: FAOSTAT 2007

3. RECENT AGRICULTURAL POLICY

3.1. Need for Continued Agricultural Policy Reform

The Chinese economy has long been characterized by discrimination against agriculture arising from government policies, many of which can be dated back to pre-socialist times (Huang et al. 2007). The government either taxed agriculture explicitly or set commodity prices below market levels, creating disincentives to agricultural production. Monopoly parastatal marketing firms (e.g., state owned grain enterprises) fully controlled the distribution of agricultural commodities and, through pan-territorial and pan-seasonal agricultural pricing, served mainly the interests of a select group composed of the urban elite, the industrial sector, and government bureaucrats. By the 1970s, evidence had mounted that government interventions in agriculture had done more harm than good to the economy. Poor economic performance, a stagnating agricultural sector and intensifying political pressure forced the country to accept much-needed agricultural policy reforms within the broader context of economic reforms that started in 1978.

Because of the importance of agriculture in the domestic economy in terms of income generation and employment, agricultural reforms occupied a central place in the initial reform efforts. The agricultural reform measures were generally designed to correct previous biases against agriculture by reducing or eliminating price controls and parastatal marketing (Ke 2007). The expectation was that improving price incentives for farmers and reducing government intervention in the agricultural sector would generate a sizable supply response and promote the rapid emergence of well-functioning markets. The reforms, in general, have been successful, not least because of a sincere government commitment to market liberalization. Agricultural output rose substantially and there was an increase in competition and private trader entry into domestic and foreign agricultural markets. Greater competition and increasingly cost-effective private-sector trading led to lower marketing margins and improved market efficiency. As a result, farmers received a greater share of the rising retail and export prices.

Evidence also emerged, however, that reforms had not succeeded in other areas. In particular, they failed to properly transfer structural and institutional functions previously performed by the state to the private sector (Huang 1998). In some cases, parastatal firms continued to dominate the markets (grain markets in particular), while in others, government withdrawal had left a vacuum that could not be filled by the private sector (e.g., the provision of public goods). Deficiencies in research, extension, transportation, storage and communications infrastructure, as well as inadequate legal and other regulatory institutions dealing with contract enforcement, quality control, and property rights, caused high transaction costs that dampened the efficiency gains from better private entry and competition. Operations in agriculture remained informal and small-scale.

The absence of comprehensive reforms kept many urban-biased policies intact (OECD 2005). The legacy of an industry-oriented development strategy, aimed at promoting industrial growth within cities, continued to suppress the agricultural sector. A set of biased fiscal and monetary policies that favored urban residents (e.g., agricultural taxes and urban subsidies), combined with a flawed sectoral and regional development policies focusing on coastal areas, caused urban-rural income disparity to rise substantially. The continuation of a household registration system that limits labor mobility aggravated the impacts of both sector- and region-biased policies on spatial income disparity.

There was evidence that reforms had caused an increase in price volatility, resulting in high costs paid by vulnerable rural households to limit their exposure to risks and to absorb the consequences of risks. Further integration with world agricultural markets has made this effect more pronounced, leading to a dilemma in regard to agricultural policy goals, namely, market liberalization versus food security. The conflict between these policy goals arises from the difficulty of implementing interventionist government policies when the incentives for individual actors are determined by market forces (Solot 2006). Experiences in the 1990s showed that liberalization was associated with sharp price swings for some of the most important commodities, including rice. This high price variability offset gains from increases in producer prices and deteriorated investment incentives for farmers. On the demand side, the elimination of government purchase and pricing, which is equivalent to removing a price floor, often

amidst rising price volatility, typically had adverse impacts on income, food consumption and nutritional status, especially for poor smallholder farmers who were net food purchasers. As a result, the impacts of reforms on rural welfare in general are uncertain.

Faced with a new set of agricultural problems, the Chinese government has increasingly recognized that further progress in developing the agricultural sector will require not only further liberalization, but also a more concerted effort to go beyond the withdrawal of the public sector from agricultural markets. The government has perceived the need to assume a new, supportive role for agriculture both as a market facilitator and as a producer subsidizer. One aspect of this role is to strengthen investment in public goods such as infrastructure, research and extension, and market information, which are deemed necessary for the development of more competitive and efficient markets (Fan and Thorat 2007). A second aspect is to foster stronger government support for agriculture through pricing, marketing, trade and various transfer mechanisms to secure farm income. Consistent with these new roles, China has in recent years started a new wave of agricultural policy reforms and introduced a series of policy measures that directly favor the agricultural sector.

3.2. Trade Policies

China's foreign trade policy reforms have involved four key steps: lowering trade barriers, depreciating the exchange rate, decentralizing the trading system, and introducing competition into foreign trade so that prices can play a role in determining resource allocation (Martin 2003). China's agricultural trade policies—as part of an agricultural policy stance intended to maintain self-sufficiency in agricultural supply, especially in food grain production—have moved more slowly than other sectors in removing restrictions and reducing protection. Notwithstanding periodic standstills and reversals, China has progressively liberalized agricultural trade. In its WTO accession protocol, China has agreed to phase out state trading, bind 100 percent of its tariff lines, replace quantitative restrictions with a TRQ system, and eliminate export subsidies for all agricultural products.

Applied tariff rates on agricultural products, which are higher than non-agricultural tariff rates, fell from 23.1 percent in 2001 to 15.3 percent in 2005, as compared to the overall average applied rate of 9.7 percent in 2005 (Table 3). Tariff dispersion has also declined, from 0-121.6 percent in 2001 to 0-65 percent in 2005. Tariffs on dairy products dropped from 35.9 percent in 2001 to 12.1 percent in 2005. Tariffs on grain and oilseeds have also fallen substantially since 2001, from 51.9 to 33.9 percent and from 32.0 to 11.1 percent, respectively. Nevertheless, grain, and other agricultural commodities that have traditionally been highly protected, such as sugar and confectionary sugar (29.9 percent in 2005) and tobacco (25.4 percent in 2005), are still subject to higher than average tariffs. Some of the lowest tariffs apply to oilseeds, a sector that was previously highly protected. With the exception of oilseeds, it appears that lower tariffs apply to subsectors in which China apparently has a comparative advantage (i.e. labor-intensive farm products), such as horticultural and animal products.

Tariff rate quotas (TRQs) have been gradually increased and out-of-quota tariff rates reduced (Table 4). In 2006, China eliminated the TRQs on vegetable oils, reducing the number of quota-related agricultural tariff lines to 55. The impacts of changing TRQs on trade flows, however, have been limited, at least for the short period examined. This is because in-quota imports are usually low and most TRQs are unfilled. Imports of grain under TRQs have been especially low, with the exception of wheat in 2004. Since 2003, imports of cotton have exceeded the quota levels specified in China's Accession Protocol. However, out-of-quota cotton imports were charged the in-quota tariff rate, which is equivalent to an expansion of quota levels.

Table 3. China's applied most favored nation tariff, 2001-2005 (percent)

	2001		2002		2003		2004		2005	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Agricultural products	23.1	0-121.6	18.2	0-71	16.8	0-68	15.5	0-65	15.3	0-65
Live animals and products thereof	17.9	0-41	15.2	0-33	14.4	0-29	13.7	0-25	13.7	0-25
Dairy products	35.9	6-44	24.5	6-32	19.3	6-26	13.8	6-20	12.1	6-20
Coffee and tea, cocoa, sugar, etc.	30.5	0-114	24.2	0-71	22.3	0-68	20.3	0-65	20.2	0-65
Cut flowers and plants	10.7	0-36	9.4	0-24	9.0	0-23	8.6	0-23	8.6	0-23
Fruit and vegetables	20.9	0-42	18.1	0-36	16.9	0-33	16.0	0-30	16.0	0-30
Grains	51.9	0-114	37.3	0-71	35.6	0-68	33.9	0-65	33.9	0-65
Oil seeds, fats, oils and their products	32.0	0-121.6	15.9	0-52.4	13.9	0-41.6	12.2	0-30.7	11.1	0-30
Beverages and spirits	44.4	10-65	32.1	7.5-65	27.5	7.5-65	22.3	0-65	20.3	0-65
Tobacco	46.5	34-57	36.2	22-57	31.1	16-57	26.3	10-57	25.4	10-57
Other agricultural products, n.e.s. ¹	14.5	0-90	13.1	0-54.4	12.8	0-47.2	12.5	0-40	12.4	0-40
Non-agricultural products	14.4	0-90	11.2	0-51	10.1	0-50	9.3	0-50	8.8	0-50
Total	15.6	0-121.6	12.2	0-71	11.0	0-68	10.2	0-65	9.7	0-65

Source: WTO, 2006

Note 1: n.e.s.: Not Elsewhere Specified

The role of state-trading enterprises (STEs) in agricultural trade has diminished even though the government still retains some influence on imports and exports of key commodities. Agricultural imports now subject to state trading include maize, rice, wheat, vegetable oil, sugar, tobacco, and cotton. STEs also control exports of maize, rice, cotton, silk, and tobacco. The TRQ system mentioned above specifies criteria for allocating import quotas between STEs and private enterprises. Since 2001, the in-quota shares of STEs have decreased substantially for vegetable oils (palm, rapeseed, and soybean), which corresponds to a relaxation of the TRQs on these products. In contrast, the shares of STEs for imports of maize, cotton, rice, sugar, and wheat have been kept relatively high and fixed. Export quotas are exclusively controlled by the STEs. The continued use of state trading in the import and export of these “strategically important” commodities presumably allows the government to stabilize supply and price in the domestic market.

Since the end of 2007, China has introduced several new agricultural trade policies in response to pressure from high inflation, particularly rising commodity prices, and declining production worldwide. For instance, in early 2008, China's Ministry of Commerce (MOFCOM) announced a temporary quota policy for the export of wheat, maize and rice powder in order to guarantee an adequate domestic supply. The details of the quota are unspecified, but it will be implemented through a permit policy (MOFCOM 2008). In addition, China's Ministry of Finance (MOF) announced in late 2007 that China would eliminate export tax rebates (12 percent) on grains and processed grain products (MOF 2007a), and start levying export taxes on these products in the range of 5-25 percent (MOF 2008a). According to the MOF, China will further lower import tariffs for major agricultural products in 2008. The tariff for soybeans was temporarily reduced from 3 percent to 1 percent in October 2007 and the reduced rate will continue to be effective through the end of September 2008 (MOF 2008b).

Table 4. China's TRQs for agricultural products, 2002-2005

		2002	2003	2004	2005
Wheat	Quota level ('000 tons)	8,468.0	9,052.0	9,636.0	9,636.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	632	450	7,260.0	NA
	State-trading share	90.0	90.0	90.0	90.0
	In-quota MFN tariff rate (%)	1-10	1-10	1-10	1-10
	Out-of-quota MFN tariff rate (%)	71.0	68	65	65
Corn	Quota level ('000 tons)	5,850.0	6,525.0	7,200.0	7,200.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	10	<5	<5	NA
	State-trading share	68.0	64.0	60.0	60.0
	In-quota MFN tariff rate (%)	1-10	1-10	1-10	1-10
	Out-of-quota MFN tariff rate (%)	28-71	24-68	20-65	20-65
Rice	Quota level ('000 tons)	3,990.0	4,655.0	5,320.0	4,767.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	237	260	770	NA
	State-trading share	50.0	50.0	50.0	50.0
	In-quota MFN tariff rate (%)	1-9	1-9	1-9	1-9
	Out-of-quota MFN tariff rate (%)	22-71	16-68	10-65	10-65
Soybean oil	Quota level ('000 tons)	2,518.0	2,818.0	3,587.1	3,587.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	870	1,880	2,520	NA
	State-trading share	34.0	26.0	18.0	10.0
	In-quota MFN tariff rate (%)	9.0	9	9.0	9.0
	Out-of-quota MFN tariff rate (%)	52.4	41.6	30.7	19.9
Palm oil	Quota level ('000 tons)	2,400.0	2,600.0	3,168.0	NA
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	1,695	2,330	2,390	NA
	State-trading share	NA	NA	NA	NA
	In-quota MFN tariff rate (%)	9.0	9	9.0	9.0
	Out-of-quota MFN tariff rate (%)	52.4	41.6	30.7	19.9
Rape seed oil	Quota level ('000 tons)	878.9	1,018.6	1,243.0	1,243.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	78	150	350	NA
	State-trading share	34.0	26.0	18.0	10.0
	In-quota MFN tariff rate (%)	9.0	9.0	9.0	9.0
	Out-of-quota MFN tariff rate (%)	52.4	41.6	30.7	19.9
Sugar	Quota level ('000 tons)	1,764.0	1,852.0	1,945.0	1,945.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	1,183	780	1,210	NA
	State-trading share	70.0	70.0	70.0	70.0
	In-quota MFN tariff rate (%)	20.0	20.0	15.0	15.0
	Out-of-quota MFN tariff rate (%)	65.9	58.0	50.0	50.0
Cotton	Quota level ('000 tons) ¹	818.5	856.3 +500	894.0	894.0
	Out-of-quota imports ('000 tons)	NA	NA	NA	NA
	In-quota imports ('000 tons)	177	870	1,910	NA
	State-trading share	33.0	33.0	33.0	33.0
	In-quota MFN tariff rate (%)	1.0	1.0	1.0	1.0
	Out-of-quota MFN tariff rate (%)	54.4	47.2	40.0	40.0

Source: WTO, 2006.

Note: 1. Quota levels for cotton were increased during 2003-2005; NA – Not Available

3.3. Domestic Policies

The post-WTO accession domestic agricultural policy regime in China was characterized by the relaxation of price and marketing controls, the expansion of government subsidies and investments, and the elimination of agricultural taxes. Following the liberalization of non-strategic agricultural products including fruits, vegetables, livestock and fish in the 1980s and “important reserved materials” including cotton, vegetable oil, and sugar in the late 1990s and early 2000s, price and marketing controls were kept only for grain and tobacco. According to China’s WTO accession protocol, tobacco was subject to “state pricing” and grains to “government guidance pricing.” At present, China’s tobacco industry remains a state monopoly, with rigid control of production, price, marketing and trade. In contrast, government intervention in grain has been gradually minimized.

Prior to 1997, Chinese farmers were required to deliver a fixed amount (quota) of grain at a procurement price (quota price). Farmers could sell surplus output either to the grain bureaus at a negotiated price or directly to the market; hence there existed a parallel free market price along with the government price. In 1998, the state procurement quota system was dismantled and farmers were allowed to sell any amount voluntarily to the state-owned grain bureaus at a pre-set protective price. Selling to individuals or private firms was no longer permitted. The protective price scheme was gradually eliminated in the years that followed, but in order to give farmers an incentive to continue growing grains, a minimum price was set, initially for rice in 2004 and then extended to wheat in 2005. In 2006 and 2007, the minimum price for rice was set at RMB1400-1500/ton while that for wheat was RMB1380-1440/ton. These prices were increased in 2008 to RMB1540-1640/ton and 1440-1540/ton for rice and wheat, respectively. Relaxation of grain price controls was accompanied by changing functionality of the grain bureaus, which until the mid-1980s had dominated upstream and downstream distribution of agricultural products. Currently, the grain bureaus are largely decentralized and commercialized, with their roles largely restricted to the provision of information and the maintenance of strategic stocks (with the exception of tobacco). Private grain users (e.g., grain processors, feed manufacturers) and traders are generally allowed to enter the marketing channel.

In recent years, China has strengthened its support for agriculture by subsidizing agricultural inputs, including machinery, fertilizers, pesticides, electricity, fuels, water, and transportation. Charges for such inputs as fuels, water, electricity and transport tend to be lower for farmers, but the level of subsidy is difficult to assess as the cost of provision is different across various users. For instance, to lower prices of fertilizers, fertilizer producers have been given access to lower priced inputs, such as electricity. In addition, export taxes, temporary exemptions from Value-added Tax (VAT) and caps on sales prices are occasionally used to curb rises in fertilizer prices. In 2002, the government introduced a subsidy for farmers purchasing improved quality soy seed (through lower prices). In 2004 and 2005, this scheme was extended to include subsidies for purchasing improved seed for production of wheat, corn and rice, as well as soybeans. Annual seed subsidies reached RMB2.85 and 3.87 billion in 2004 and 2005, respectively (MOA 2006). The government also provides a small subsidy for the purchase of farm machinery (RMB0.07 and 0.3 billion in 2004 and 2005, respectively).

China has recently experimented with direct payment policies. Direct payment tied to grain acreage was put in place in 2002 in selected major grain-producing provinces: Anhui, Henan, Hubei, and Jilin (Gale, Lohmar, and Tuan 2005). China introduced its first nationwide direct payments to farmers in 2004. In 2005, the program covered 30 provinces. The payment rates vary across provinces, but on average they were RMB10 per mu (1/15 hectare) in 2004 and since then have increased to RMB12-14 per mu in 2007. The total grain direct payments reached RMB11.6 and 13.2 billion in 2004 and 2005, respectively, according to China’s Ministry of Finance. In 2006, direct payments were RMB14.2 billion, an increase of 8 percent over the 2005 level. According to Chinese authorities, direct payments to farmers will be continued and strengthened in the coming years (MOF 2007b).

In line with the move to help farmers, China has either eliminated or reduced various taxes on agriculture.² The tax on specialty crops (except for tobacco) was first removed, resulting in a RMB9

² Besides taxes, China also eliminated a myriad of fees levied on farmers to fund road construction, schools, and various other projects and services undertaken by village and township authorities (Gale, Lohmar, and Tuan 2005).

billion benefit to farmers in 2004. After two years of phasing-in, the government completely abolished the agricultural tax at the beginning of 2006. When the reductions in these two taxes are combined, the total annual tax savings for farmers in 2004 and 2005 were RMB18.2 and 18.3 billion, respectively (MOA 2006). It should be noted, however, that taxes on agriculture as a whole have increased in the two years when tax reforms occurred. This is due to increases in contract tax and tax on the use of cultivated land, which have very limited impacts on farmers.³ Therefore, exemption from various agricultural taxes has effectively reduced the amount farmers would otherwise have to pay and the absolute tax burden on farmers has been alleviated.

Investment in agriculture-related projects is a major instrument for China to achieve rural development targets and is by far the largest component in government budgetary support for agriculture. Projects include spending on production infrastructure, such as improved irrigation facilities, rural hydroelectric plants, pasture enclosures, research, and construction of agricultural high-technology parks. China also boosts farm investment through a system of 35,000 rural credit cooperatives and state-owned commercial and policy banks (e.g., the Agricultural Bank of China and the Agricultural Development Bank of China). These financial institutions have provided preferential loans to rural areas.

³ Both taxes are related to the conversion of cultivated land to non-agricultural usage.

4. PAST AND SHADOW WTO NOTIFICATIONS

4.1. China's Domestic Support and WTO Commitments

The increasing importance of agricultural subsidies in China in recent years raises the question of whether China has complied with its WTO commitments on domestic support for agriculture. Compliance, or lack thereof, can be monitored or challenged. With this purpose, the Uruguay Round established a Committee on Agriculture and assigned it the duty of reviewing progress in the implementation of individual member's commitments. Each WTO member is required to abide by their commitments and to provide notifications of their implementation status. In principle, these notifications are intended to provide some transparency about the policy actions of each country. In reality, however, few countries update their notifications in a timely fashion. The WTO has no formal method for enforcing such requirements, and as a result, delays in submitting notifications frequently occur. Like other Member countries, China's domestic support notifications are long overdue. The most recent China notification was for 1999-2001, and was not submitted until January 10, 2006 (G/AG/N/CHN/8).

Given the dearth of official notification reports, and the resulting controversies regarding the actions of individual countries, estimates of the subsidy situation are needed to better inform national and international agricultural policy debates. Table 5 provides a summary of China's domestic support from 1996-2005 (the set of WTO style domestic support tables are reported in Appendix A). Data for 1996-2001 are drawn from China's two official notifications to the WTO (WT/ACC/CHN/38/Rev.3 and G/AG/N/CHN/8). These data are supplemented with our "shadow" calculations drawing on more recent data and taking into account changes in policy. All calculations of the support levels utilize the methods laid out in the two above mentioned official notifications.⁴ Based on the support estimates in Table 5, a general answer to the above question is that, in the absence of successful challenges to China's notifications, the country's domestic support for this period has been well below the limits agreed at its WTO accession. However, there are a number of interesting features that warrant further examination.

First, green box support has increased in China as a result of increased public investment in the agricultural sector. In 2005, total green box support reached RMB289 billion, which is more than twice the 1996 figure (RMB112 billion). The AoA placed no limits on green box subsidies, which are considered not to directly distort trade. These subsidies generally include government-supported general services such as research, disease control, training, extension, inspection, infrastructure and marketing. The green box category also includes expenditures on public stockholding for food security purposes, income-support payments made directly to farmers that do not stimulate production, assistance to help farmers restructure agriculture, and environmental and regional assistance programs.⁵

Within China's green box, infrastructure services (a major part of general services) and public stockholding for food security purposes are the two largest components. Together they account for 70-80 percent of total green box payments. Domestic food aid has dropped sharply while expenses on general agricultural services and environmental programs have increased. China has made no payments for marketing and promotional services, income insurance and income safety-net programs, or structural adjustment assistance, but since 2004 has provided decoupled income support to farmers. In the future, China will likely use green box subsidies to further strengthen direct payments to farmers, improve infrastructure and research, develop new grain varieties and technologies, address water shortages, and adjust agricultural production structures. However, spending on these programs will also be constrained by availability of funds.

⁴ Using our own data source, we are able to replicate historical support levels as reported in official notifications.

⁵ Recent direct payments to farmers (2004 and 2005) are classified as a green box measure in this calculation. Seed subsidies are product-specific support while other input subsidies (e.g., farm machinery, fertilizers) are non-product-specific support.

Table 5. China's domestic support, 1996-2005 (million RMB)

Policy Category	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Green Box ¹										
Total	112,178	131,254	210,815	184,335	207,899	242,331	215,696	247,361	291,312	289,358
Selected Categories										
General Services	66,648	74,542	135,949	109,110	121,230	145,045	115,284	124,829	140,616	137,021
Public Stockholding	28,773	35,335	51,027	47,596	53,799	59,685	48,172	52,264	62,079	53,746
Domestic Food Aid	2,012	1,875	1,766	2,640	2,360	683	160	128	128	93
Environmental Programs	4,954	5,460	5,620	7,097	12,700	17,475	33,346	46,862	51,994	55,386
Product-Specific Support										
Market Price Support ²	-34,980	-22,053	-18,622	-99,354	-97,159	-77,867	-65,152	-50,207	-42,986	-57,017
Other PS Support ³	0	0	0	2,854	3,503	1,790	0	330	2,850	3,870
Total (before <i>de minimis</i>)	-34,980	-22,053	-18,622	-96,500	-93,656	-76,077	-65,152	-49,877	-40,136	-53,147
Total (after <i>de minimis</i>)	0	0	0	0	0	0	0	0	0	0
Non-Product-Specific Support										
Total (before <i>de minimis</i>)	28,027	26,059	34,122	700	745	748	10,391	6,370	15,739	45,364
Total (after <i>de minimis</i>)	0	0	0	0	0	0	0	0	0	0
8.5% of Value of Production ⁴	166,258	175,640	180,562	186,916	188,727	198,599	198,783	207,476	257,653	279,855
Current Total AMS	0	0	0	0	0	0	0	0	0	0

Note: 1. Green box includes direct payments made in 2004 and 2005.

2. In calculating the Market Price Support, actual border prices and fixed, 1996-1998 average border prices are used for 1996-1998 and 1999-2005, respectively.

3. According to official notifications, other PS support was provided to cotton through interest subsidies for national cotton stockholdings during 1999-2001. From 2003-2005, this support included seed subsidies.

4. Value of production is based on producer prices.

Second, China has a zero current total aggregate measure of support (AMS) during the period examined. Since no total AMS commitment exists in Part IV of China's Schedule, the country can only provide support to agricultural producers up to the relevant *de minimis* level. The *de minimis* exemption on the AMS provided to a developing country member is generally set at 10 percent of the member's value of production (VOP), product-wise for product-specific (PS) support or in total for non-product-specific (NPS) support. In the case of China, this exemption is 8.5 percent as specified in its WTO accession agreement. Any subsidy amount over this *de minimis* limit would be considered a violation of China's WTO commitments. It seems, however, that to date neither the PS *de minimis* nor the NPS *de minimis* has imposed real constraints on domestic support measures in China because of the large value of agricultural production.

Although China's subsidy level is far from the binding level by the *de minimis*, setting the percentage *de minimis* level was a major hurdle in the final phase of China's WTO membership negotiations. Both sides, China and its negotiating counterparts led by US delegates, struggled to resolve their differences. The disputes, in retrospect, were more procedural rather than substantive, as the *de minimis* level has never been exceeded either by PS support or by NPS support in the historical period. In fact, when strictly calculated using the WTO definition and methodology (e.g., fixed reference prices at 1996-1998), the domestic support level has been far below zero for PS support (before *de minimis*) as a result of a large, negative Market Price Support (MPS). For NPS support, given China's enormous agricultural sector, there is little chance that this type of support can surpass 8.5 percent of the total value of agricultural production. During 1996-2005, NPS support (before *de minimis*), consisting of input and interest subsidies, accounted for an average of only 1 percent of the total value of production. Given a total agricultural production of RMB3,300 billion in 2005, China can potentially pay trade-distorting subsidies up to a maximum of RMB561 billion (PS and NPS *de minimis* combined). Thus there appears to be substantial room for China to extend its amber box subsidy measures. Like the US, China may become a heavy user of *de minimis* provisions to shield subsidies from being cut back.

Third, China has given up the right as a developing country to use "special and differential treatment" (as provided in Article 6.2 of the AoA) to report subsidy measures that are exempt from the reduction commitments. This is in contrast to many other developing country members which have reported in this category subsidies that are claimed to be "development programs" and targeted at "low-income or resource poor farmers."⁶ In its accession documents, China recognized the need to provide support of this type. However, it decided to include the amount of the support in the calculation of the AMS, effectively sealing off its own right under the AoA to introduce exempt S&D subsidies on agriculture in the future should this be judged necessary in order to protect the livelihoods of poor farmers or to achieve development priorities. This, the 8.5 percent *de minimis* and other commitments are accompanied by compromises China accepted in return for its WTO membership, which reflect both WTO+ and WTO- at work (Evenett and Braga 2005).⁷ In recent acceding countries including China have clearly negotiated with existing members.

Like other Member countries, China is eligible to use blue box payments (e.g., those that are associated with production limitation criteria). At present there is no cap on spending in this box. In China's official notifications and our replication, the blue box is zero, meaning that China has not provided such subsidies. However, should future support paid in the current forms approach or even exceed the exemption ceilings in the amber box (i.e., the *de minimis*), China may have to redesign its support programs to make them comply with these limits. One way of doing so without cutting spending is to switch from amber box trade/production-distorting support instruments to less distorting blue box payments (or decoupled instruments which can be classified as green box payments).

⁶ There is no indication on how low-income or resource-poor farmers are defined in the AoA, which gives countries some flexibility in notifying these measures.

⁷ WTO+ stands for additional commitments that go beyond the ones agreed to by the incumbent countries (WTO+ commitments) and WTO- denotes forgone rights available to other WTO members (WTO- rights).

4.2. Problems with Market Price Support

In calculating the MPS, several issues arise in the official and shadow notifications. First, the level of MPS is based on the gap between the current support price and the fixed, domestic currency denominated external reference price (1996-1998 average world prices). This could potentially pose a problem for China, where inflation rates have followed a cyclical pattern. For example, between the base years (1996-1998) and 2002, China experienced mild inflation and even deflation, but from 2003, inflation rates have increased, with price rises reaching nearly 20 percent in 2007 for agricultural commodities. Since the base reference prices are fixed in domestic currency terms, and if inflation is not accounted for, the MPS would also follow a cyclical trend (assuming administered prices correlate with general domestic prices), even though government policies may have remained unchanged. This problem, however, can be alleviated if the current total AMS is adjusted for inflation according to Article 18.4 of the AoA.

Second, there is some ambiguity in the AoA regarding whether the quantity eligible to receive the administered price is total production, or only the marketed surplus that is actually sold in the market, or the quantity that is actually procured by the government through price support mechanisms. Some member countries including China have used the quantity procured, whereas other countries (e.g., the US) have used total production. The logic of using total production in these computations is that the government-designated agency is bound to buy whatever is brought to the market at the pre-announced support price. This is also the requirement made clear in China's protective price policy for grains.⁸ However, there is a limit on this because the quantity brought to the market will not be more than the marketable surplus, given that self-consumption accounts for a very large share of the output of basic foodstuffs in a country like China. In addition, budget constraints preclude the possibility of unlimited purchases.

Third, the MPS double counts the protection afforded by border measures. The AoA requires each country to identify products with "administered prices" which should be included in the calculation of the MPS. In some cases, the administered prices are in addition to any import barriers or export subsidies that are already in place to keep domestic prices high. For example, China reports administered price support for grain products. However, the grain price support schemes are sometimes inoperative (except for the mandatory procurement portion) as in some years market prices have been well above support prices because of border measures. The conflation of domestic support and border protection can be described by referring to the formula that defines MPS:

$$MPS_{official} = (P_{official}^d - P_{base}^w) * Q$$

$MPS_{official}$: Market price support calculated based officially administered price

$P_{official}^d$: Officially administered domestic price

P_{base}^w : World market price in base period

Q : Quantity procured

where the official and base prices are not necessarily equal to the actual domestic and world market prices, respectively. If there is no difference between actual and formula prices, then the gap measured is the actual border protection and hence is double counted by the MPS (de Gorter and Ingco 2002). Because of the scope for double counting of the MPS, China could potentially limit its AMS by eliminating price support programs while retaining high tariffs or strict TRQ protection, a loop-hole already used by other nations. This calls for a reform of the strategies for domestic support reduction such as the design of a "flashing" amber box, as argued by de Gorter and Ingco (2002).

Finally, the officially reported MPS can mis-count actual price support for commodities. If we define:

⁸ For example, in the State Council's "Decision on Deepening the Reform of the Grain Circulation System," the government required the grain bureaus to purchase all grain that producers wished to sell at the state-set protective price.

$$MPS_{actual} = (P_{actual}^d - P_{actual}^w) * Q, \text{ then}$$

$$\text{Over(under) Counting} = MPS_{official} - MPS_{actual}.$$

Over- or under-counting can occur due to changes in the official domestic support price, the actual world price, the domestic actual market price, and the exchange rate. If $P_{actual}^d = P_{official}^d$ and $P_{actual}^w > (<)P_{base}^w$, then actual support has declined (risen) and so the $MPS_{official}$ overcounts (undercounts). If $P_{actual}^w = P_{base}^w$ and $P_{actual}^d < (>)P_{official}^d$, then actual support has declined (risen) and so the $MPS_{official}$ overcounts (undercounts).

Table 6 compares estimates of MPS based on different definitions of eligible production and reference prices with the administered price being the relevant domestic price. As can be seen, the calculation based on total production amplifies the price support measure as compared to that using actual quantity purchased. In the official notifications, China has selected smaller actual purchases in the calculation of the MPS, which, in reality, gives China more flexibility in expanding its price support. The effect of different interpretation of eligible production on China's AMS and WTO commitment compliances, however, is negligible because the MPS is negative and PS *de minimis* support is zero in both cases.⁹ But it will become more important when administered prices rise and the MPS moves to positive territory.

Table 6 also shows that the use of actual world reference prices indicates more protection (or less disprotection) and the officially reported MPS undercounts (negative miscounting). This occurs because of the weaker world prices relative to those in the base period (1996-1998). The impact of low world reference prices is particularly evident in 2002 and 2003 when the MPS based on actual reference price became positive whereas those based on fixed base reference price were negative. The MPS based on actual reference price subsequently turned negative in 2004 and 2005 following the sharp increase in world commodity prices.

Table 6. MPS under different assumptions (million RMB)

	Market Price Support					
	Actual Purchase			Total Production		
	Fixed Base Ref. Price	Actual Ref. Price	Mis-Counting	Fixed Base Ref. Price	Actual Ref. Price	Mis-Counting
1999	-99,354	-32,949	-66,405	-384,650	-165,073	-219,577
2000	-97,159	-11,251	-85,908	-367,050	-58,686	-308,364
2001	-77,867	-4,605	-73,262	-358,527	-24,889	-333,638
2002	-65,153	6,230	-71,383	-295,141	36,387	-331,528
2003	-50,207	6,427	-56,634	-225,202	40,057	-265,259
2004	-42,986	-17,455	-25,531	-281,263	-122,490	-158,773
2005	-57,017	-16,049	-40,968	-297,491	-108,513	-188,978

Source: Author's calculation

The reference period of 1996-1998 for China differs from that of most other WTO members whose baseline is set for 1986-1988, a period of exceptionally low world prices. For the latter group, world prices in the implementation period (1995-2000) were higher than the baseline values, and hence the countries faced higher MPS and difficulty in AMS reductions. For China, by contrast, the higher base reference price and an undervalued exchange rate for converting world prices into domestic currency terms have meant that China has had much smaller MPS (consistently negative during the period under

⁹ The application of total production instead of actual procured amount in the MPS calculation for the base period may change a country's initial AMS commitments. However this would not affect China because of the negative MPS and the resulting zero current total AMS estimated for the base period.

examination) and thus less difficulty in containing its AMS under its commitments. On the other hand, if world commodity prices were to resume their secular decline over time, the implied support from administered price (along with consumer transfers and border protection) will increase, even though the measured support in the AMS will not. This may have implications for the effectiveness of China's WTO commitments.

Continued appreciation of the Chinese currency would add to this problem. Between 2005 and 2007, the Chinese RMB nominal exchange rate appreciated 12 percent against the US dollar and is expected to revalue even further (Goldstein 2007). The literature has suggested an undervaluation of the currency still in the range of 20 percent or more (Cheng and Orden 2007; Frankel 2006). Were the appreciation trend to continue, it would make the actual MPS (based on the prevailing exchange rate and world reference prices) diverge further from the notified MPS (calculated using the exchange rate and world reference prices in the base period). The magnitude of the difference will depend on how actual world reference prices and the exchange rate change and the degree to which exchange rate fluctuations pass through to domestic and administered prices.

4.3. The Nature of Direct Payments

Controversies may arise from different interpretations of the subsidy policies and their classification in a WTO notification. Alternative subsidy definitions could affect the calculated levels of support and make otherwise unbinding commitments become binding. WTO members tend to have incentives not to notify or to mis-notify trade-distorting subsidy components because a notification of "amber box" measures amounts to an admission that the measures are subject to caps, reductions, and other disciplines. Typically, countries choose a notification scheme that best makes them appear compliant with WTO rules and then wait to see whether their measures are challenged in dispute settlement. There have been a number of complaints against such practices that have been brought to the WTO, mostly in regard to the practices of developed countries. For developing countries, non-notification or mis-notification issues also exist but are seldom challenged.

For China, a critical issue is whether its direct payments to farmers meet WTO green box criteria. Although our calculation has assumed these payments to be green box measures and therefore exempt, which is likely to be the case in future official notifications, it is far from clear whether they should be so categorized. According to the AoA, for a program to be classified as green box support, it must not distort trade, or at most cause minimal distortion (paragraph 1). The program must be publicly funded, not involve transfers from consumers, and not have the effect of providing price support to producers. In addition to these fundamental requirements, a program has to meet specific policy criteria, which are contained in Annex 2 to the AoA (the green box).

Specifically, the criteria include: (a) Eligibility for the payments shall be determined by clearly-defined criteria such as income, status as a producer or landowner, factor use or production level in a defined and fixed base period. (b) The amount of such payments in any given year shall not be related to, or based on, the type or volume of production (including livestock units) undertaken by the producer in any year after the base period. (c) The amount of such payments in any given year shall not be related to, or based on, the prices, domestic or international, applying to any production undertaken in any year after the base period. (d) The amount of such payments in any given year shall not be related to, or based on, the factors of production employed in any year after the base period. (e) No production shall be required in order to receive such payments. If a direct payment program does not meet these criteria, it must be reported to the WTO under the amber box (or possibly the blue box).

It appears that direct payments in China would violate a number of these provisions. Various methods have been used in China to provide payments to farmers, ranging from fixed subsidies not tied to the current year's production or marketing to those that are tied to market prices or production. Fixed subsidies were based on either historical household deliveries of grain to the government, historical grain production from the household's allocated land based on local tax records, or the actual production or marketing of grain. Thus, the fixed subsidies cannot be completely classified as green box measures as some of them are likely linked to production. In some provinces, price subsidies were used instead of

fixed subsidies. Price subsidies paid farmers the difference between a target price set by the government and a market price, which is equivalent to providing price support to farmers. This subsidy resembles two PS support components reported in the US WTO notification: “marketing loan benefits” when all outputs are eligible or “counter-cyclical payments” when only fixed base acreage is applicable. Using payment rates reported by Gale, Lohmar, and Tuan (2005) for wheat, rice and corn, Table 7 shows the potential non-exempt direct payments to farmers of these crops in 2004 and 2005 and the PS support. Because of the large negative MPS, the inclusion of these payments does not have an impact on the PS support after applying *de minimis* rules. However, if in the future China strengthens its direct payments and the MPS is positive, both of which are likely to occur given the current commodity boom, the PS *de minimis* will become a binding factor. This is shown in the next section.

Table 7. Non-exempt direct payments to farmers and product specific support

	Payment Rate	Eligible Production	Non-exempt payments	MPS	PS Support (before <i>de minimis</i>)	8.5% (keep ‘%’) of VOP	PS Support (after <i>de minimis</i>)
	<i>RMB/ton</i>	<i>000’ tons</i>			---- <i>Million RMB</i> ----		
2004							
Wheat	48.0	91,952	4,416	-7,193	-2,777	11,641	0
Rice	27.3	179,088	4,893	-26,919	-22,025	24,301	0
Corn	17.4	130,287	2,265	-8,874	-6,609	10,997	0
Total	--	401,327	11,574	-42,986	-31,411	46,939	0
2005							
Wheat	50.5	97,445	4,922	-11,902	-6,980	11,432	0
Rice	29.8	180,588	5,383	-32,385	-27,002	23,842	0
Corn	20.7	139,365	2,885	-12,729	-9,844	12,154	0
Total	--	417,398	13,190	-57,016	-43,826	47,428	0

Source: Author’s calculation

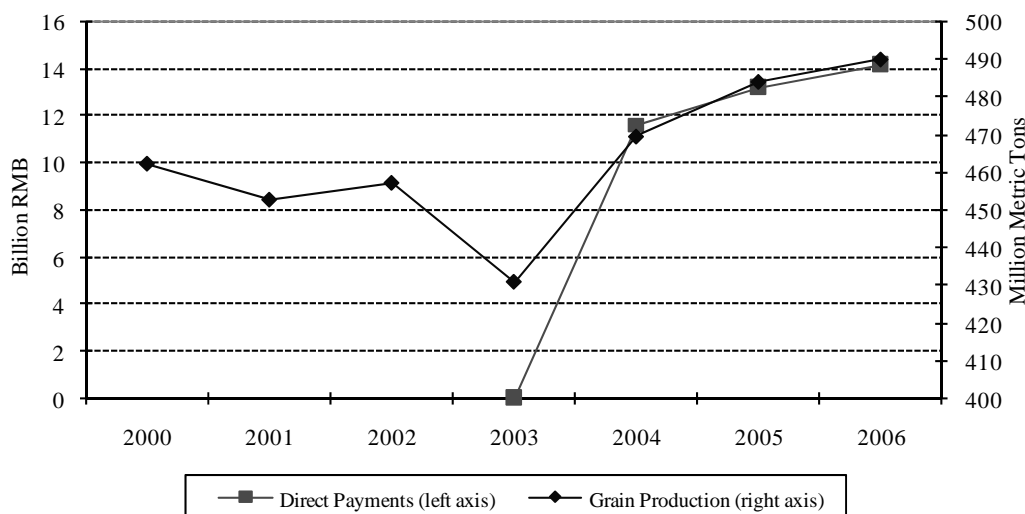
Note: Other non-exempt PS support is not reported.

The recent WTO panel and Appellate Body ruling in the Brazil/US upland cotton case (WT/DS267/R; WT/DS267/AB/R) makes the claim that the direct payments in China are green box measures even less convincing. In that case (DS267), Brazil brought a complaint against certain aspects of the cotton policies of the United States and a key issue was whether the direct payments provided by the US actually have an impact on production. As the payments were conditional on producers not planting certain commodities (specifically fruits, vegetables and wild rice) on the land upon which payments were based, the panel concluded that the US direct payments do not fully conform to the guidelines for green box direct payments. By the same argument, Chinese direct payments would not satisfy the green box requirements because farmers have to be current grain producers in order to receive the payments.

Even if direct payments in China can be classified as “decoupled payments” *de jure*, the question of whether they would alter farmers’ planting decisions and stimulate production *de facto* remains controversial. Figure 4 shows the amount of direct payments and grain production in recent years. The two series clearly exhibit some correlation after the direct payment scheme was introduced in 2004. So far, there have been no studies examining the nature of direct payments in China, partly because of the novelty of the policy and partly because of data constraints. However, various studies on decoupled payment programs in the US may shed some light on this issue. In general, these studies have presented mixed results, with some arguing that the effects of the decoupled payments are negligible (e.g., Burfisher and Hopkins 2003) and others showing varying degrees of distortion (e.g., Goodwin and Mishra 2006). The mechanisms for production distortion identified in the literature typically include wealth effects that impact attitudes towards risks; decisions on leisure and savings; overcoming credit constraints or other

input market imperfections; coverage of short-run production costs; and farmers' expectation about future government decisions on agricultural policy (Abler and Blandford 2005).

Figure 4. Direct payments and grain production



Source: Author's calculation.

4.4. Adjustments in NPS Support

Reported Input Subsidies

The use of government budgetary outlays to state-owned agricultural input manufacturers (consisting of fertilizer, pesticide and mulching film producers) as NPS support in notifications is permitted by the AoA, although it over-simplifies the calculations.¹⁰ Currently, government subsidies to input firms are provided through a combination of direct budgetary payments, VAT rebates (e.g., fertilizer firms are generally given 50 percent VAT rebate), cash subsidies (e.g., firms producing or importing diammonium phosphate (DAP) received RMB100 per ton of DAP in 2004) and other implicit subsidies through lowered transportation and electricity charges. It is thus difficult to assess the total government subsidies (both direct and indirect) that benefit farmers, who usually feel the effects through reduced ex-factory or purchase prices of agricultural inputs.

It is also difficult to determine how much government subsidies actually end up with farmers. Some speculate that in China much of the government subsidies are used to cover losses resulting from inefficient operations; others argue that the subsidies have become part of the profits, even though the profit margin allowed by the government is relatively small. In both cases, however, subsidies are not fully transferred into lowered input prices that farmers pay. According to the AoA, subsidy measures directed to entities other than producers “shall be included to the extent that such measures benefit the producers of the basic agricultural products” (Annex 3, paragraph 7). Thus, one could argue a downward adjustment of budgetary outlays has to be made to reflect actual subsidies to farmers.

Generally speaking, government input subsidies are distributed between input producers and consumers (farmers in this case) with the extent of each depending on supply and demand elasticities. A rough estimate of subsidies that accrue to farmers can be made by comparing the subsidized prices with the higher, subsidy-free prices. This is consistent with the AoA provision “where the use of budgetary

¹⁰ Paragraph 13 in Annex 3 of the AoA stipulates that “other non-exempt measures, including input subsidies and other measures such as marketing-cost reduction measures: the value of such measures shall be measured using government budgetary outlays....”

outlays does not reflect the full extent of the subsidy concerned, the basis for calculating the subsidy shall be the gap between the price of the subsidized good or service and a representative market price for a similar good or service multiplied by the quantity of the good or service.” (Annex 3, paragraph 13). In the absence of other distorting factors, the representative market (or subsidy-free) prices would be the relevant world prices, adjusted for transportation and distribution costs. This price gap method, however, can be applied to estimate subsidies that reduce the end-use price of inputs, omitting from consideration other measures that actually raise the price of inputs to the users. These “other” measures typically refer to border measures, which, when present, would make subsidy-free prices differ from the comparable world reference prices.

In China, the input manufacturing industry has long been protected from foreign competition (Qiao et al. 2003). Imports of agricultural inputs such as fertilizers are subject to TRQs and state trading, which have kept domestic prices high. In some years, domestic agricultural input prices are higher than world reference prices, even after subsidization (and thus the net policy effect is a taxation of consumers of agricultural inputs). In this case, world prices cannot be used as a proper reference price to gauge price gaps as a result of subsidies. Instead, counterfactual simulations are sometimes needed in order to obtain the correct subsidy-free prices. One such counterfactual assessment, based on the Policy Analysis Matrix for Chinese agriculture, indicated that subsidies reduced input prices by between 13 and 30 percent on average between 1996-1998 (Fang and Beghin 2000). However, in recent years, agricultural input prices have risen at a faster rate than overall price inflation, suggesting that the effects of subsidies may have declined.

Agricultural Taxes

NPS support needs to be further adjusted to take into account various missing components in the notification, including agricultural taxes and subsidies related to irrigation, electricity and fuel (to be discussed below). There are two views as to how to incorporate agricultural taxes in the notification. One view holds that the taxes paid by farmers need to be subtracted from the NPS support. Compared to other countries, China may be the only one in the world to levy a high agricultural tax rate on farmers, which had stood as high as an average of 8 percent recently. Table 7 shows the various agricultural taxes from 1990-2005.

Not only are agricultural taxes burdensome, but they are levied differently from taxes on other sectors of the economy. For instance, agricultural taxes are levied exclusively on farmers. For instance, China’s urban taxes are generally levied on net profits, which allows adjustments for costs. In contrast, agricultural taxes are based on the amount of cultivated land and number of family members; hence farmers are obliged to pay the same amount of taxes both in prosperous and lean years. According to the AoA, specific agricultural levies or fees paid by producers should be deducted from the AMS (Annex 3, paragraph 4). As contract taxes and taxes on the use of cultivated land do not directly affect farmers, the deduction should at least include agricultural taxes, animal husbandry taxes and taxes on special agricultural products. These three taxes added up to RMB42.4 billion in 2003, but dropped sharply to less than RMB6 billion in 2005.

A different view is that agricultural taxes should not be deducted from the AMS; rather, the elimination of these taxes should be counted as a subsidy. The AoA stipulates that trade distorting subsidies include “revenues forgone by governments or their agents” in addition to budgetary outlays. The agricultural tax exemption by its very nature seems to meet this requirement as the government has “foregone revenue” that would otherwise be due. The drops in the amount of agricultural tax and animal husbandry tax combined in 2004 and 2005 were RMB9,222 million and RMB18,259 million, respectively.

Table 8. Agricultural taxes in China, 1990-2005 (million RMB)

Year	Total	Agricultural tax and animal husbandry tax	Contract tax	Tax on special agricultural products	Tax on use of cultivated land
1990	8,786	5,962	118	1,249	1,457
1991	9,065	5,665	189	1,425	1,786
1992	11,917	7,010	361	1,624	2,922
1993	12,574	7,265	621	1,753	2,935
1994	23,149	11,951	1,182	6,369	3,647
1995	27,809	12,812	1,826	9,717	3,454
1996	36,946	18,206	2,520	13,100	3,120
1997	39,748	18,238	3,234	15,027	3,249
1998	39,880	17,867	5,899	12,779	3,335
1999	42,350	16,308	9,596	13,143	3,303
2000	46,531	16,817	13,108	13,074	3,532
2001	48,170	16,432	15,708	12,197	3,833
2002	71,785	32,149	23,907	9,995	5,734
2003	87,177	33,422	35,805	8,960	8,990
2004	90,219	24,200	54,010	0	12,009
2005	93,640	5,941	73,514	0	14,185

Source: NBS, 2006

Agricultural tax exemptions also have the attributes of subsidies defined under the WTO Subsidies and Countervailing Measures (SCM) Agreement (Article 1). Two essential components of this definition are that there is a financial contribution by government and a benefit received by the recipient (SCM Article 1.1.). “Financial contribution” is itself a defined term in the SCM Agreement, and explicitly includes a range of situations other than direct cash payments, such as provision of goods and services or tax breaks where the government foregoes revenue “otherwise due.” “Benefit” denotes the requirement that a subsidy must confer a competitive advantage on the recipient; the notion of advantage is understood by reference to the conditions the recipient would otherwise have to face in a competitive marketplace, in the absence of the government intervention in question. An agricultural tax exemption clearly has both components and thus is a subsidy in SCM terms. Such an exemption becomes “actionable” if it is found to have effects contrary to the interests of another member (SCM Article 5). When this occurs, the country providing the exemption, in this case China, must take action to remove the adverse effects of the subsidy or withdraw it. Otherwise, the complaining member may take countermeasures commensurate with the degree and nature of the adverse effects (SCM Article 7).

Non-reported Input Subsidies

Irrigation subsidies are not included in the calculations, even though they may constitute a significant component in China’s NPS support. In China, irrigation accounts for more than two thirds of total water use, although its share has been decreasing as a result of rising competition from uses in non-agricultural sectors (e.g., industry) (Crook and Diao 2000). Major irrigation systems have been built and operated by government agencies (i.e., Ministry of Water Resources and local Water Resource Bureaus). Typically, irrigation water users are charged only a fraction of the cost of supplying water to them. The charges do not cover operations and maintenance (O&M) costs, and they never cover any of the substantial capital costs incurred in developing water collection and distribution systems. In some areas, charges for water are on a volumetric basis; in others, charges are based on the area irrigated rather than on the amount used. In both cases, however, charges are paid by townships, villages, and irrigation groups, not by

farmers, thus increasing incentives for overuse. For privately financed irrigation (e.g., wells and groundwater delivery systems), energy for water pumping is often subsidized.

A rough estimate of the extent of subsidies for irrigation water can be made from available information. Since data on annual depreciation of the capital stock are not available, average annual capital investment is used to approximate annual depreciation. In China, new irrigation land has been created each year during 1996-2005 except for 2003. The average unit cost of supplying irrigation can be assumed to be US\$5,300 per hectare (1995 prices), an Asian average according to Jones (1995). Annual investments in irrigation, therefore, are the product of new irrigation and the unit cost. Operations and maintenance costs can be roughly estimated as 10 percent of the annual capital investment (Repetto 1986). Total annual irrigation costs are the sum of capital investments and O&M costs. Assuming that cost recovery is only 65 percent of operations and maintenance costs, total annual irrigation subsidies in China can be estimated and are presented in Table 9. For the period 1996-2005, an estimated average of RMB32 billion is provided to irrigation annually in China. Note that this estimate does not include the opportunity cost of water in alternative uses or the associated environmental externalities.

Table 9. Estimated subsidies for irrigation in China 1996-2005

Year	Annual increase in irrigated land	Annual capital investment	Annual O&M costs	Total annual costs	Annual irrigation subsidies
	<i>000' ha</i>		<i>--- mil. RMB ---</i>		
1996	1,262	55,533	5,553	61,086	57,477
1997	857	37,704	3,770	41,474	39,023
1998	1,058	46,519	4,652	51,171	48,148
1999	862	37,937	3,794	41,731	39,265
2000	662	29,117	2,912	32,029	30,136
2001	429	18,876	1,888	20,764	19,537
2002	105	4,637	464	5,100	4,799
2003	--	--	--	--	--
2004	465	20,442	2,044	22,486	21,158
2005	551	24,221	2,422	26,643	25,069
Average	695	30,554	3,055	33,609	31,624

Source: Author's Calculation

Note: O&M costs are assumed to be 10 percent of annual capital investments and cost recovery is 65 percent of O&M costs. Estimates for 2003 are not available due to a decrease in irrigated land.

In China, agricultural users are charged discounted rates for electricity and fuels, relative to others in China.¹¹ Subsidies for agricultural energy uses, however, are not included in the notification because there are no budgetary outlay figures available. Similar to other input subsidies discussed above, electricity and fuel subsidies can be measured by the difference between actual prices and reference prices that would prevail in an undistorted market. The reference price can be either the border price for internationally traded energy products (i.e., fuels) or the cost of production for non-traded ones (i.e., electricity). Because of the existence of other distortions that affect the border price as well as the difficulty of obtaining production cost data, a substitute reference price based on the average domestic market energy price is used in this analysis. This is in accordance with the AoA, which stipulates that the basis for calculating the subsidy in the absence of budgetary outlays “shall be the gap between the price of the subsidized good or service and a representative market price for a similar good or service multiplied by the quantity of the good or service” (Annex 3, paragraph 13). However, it is important to note that this price wedge method only captures the market transfers from other energy consumers to agricultural users, or cross-subsidization, which may well underestimate the actual magnitude of the subsidies. Table 10 shows electricity subsidies for agricultural uses for 1996-2005.¹²

¹¹ Lower electricity prices apply only to agricultural production use not residential use.

¹² Fuel subsidies are not reported due to data constraints.

Table 10. Electricity subsidies 1996-2005

	Ag. Usage	Electricity Price		Price Wedge	Subsidies
	<i>bil. kw</i>	Agriculture	Average		
			--- RMB/kw ---		<i>mil. RMB</i>
1996	168	0.51	0.41	0.10	16,765
1997	198	0.49	0.39	0.10	19,024
1998	204	0.48	0.39	0.09	19,220
1999	217	0.46	0.37	0.09	19,603
2000	242	0.45	0.36	0.09	21,364
2001	261	0.45	0.36	0.09	23,030
2002	299	0.43	0.35	0.08	25,238
2003	343	0.43	0.35	0.08	28,944
2004	393	0.4	0.32	0.08	30,847
2005	438	0.35	0.28	0.07	30,029
Average	276	0.45	0.36	0.09	23,407

Source: Author's calculation

The input subsidies reported in the official notifications (under NPS support in Table 5) average about RMB17 billion per annum for 1996-2005. The inclusion of non-reported subsidies would significantly increase this support level. When only irrigation and electricity subsidies are taken into account, an average of RMB55 billion will be added. However, even if these subsidies were to be reported, the NPS support in the notification would still be much smaller than the *de minimis* levels (averaging RMB204 billion for 1996-2005) resulting from China's large value of agricultural production. However, if all non-reported input subsidies are included in the official notifications, China will have less room to extend new NPS support to its farmers. Low domestic support levels in WTO terms differ from the PSEs reported by the OECD that show an average of RMB124 billion provided to the farmers during 1996-2005 (OECD 2007). In the PSEs, however, the MPS are calculated using current domestic and world reference prices, and are generally positive in this period. It also differs from more disaggregated studies, which show divergent support features for different commodities (Huang et al. 2007).

5. DOMESTIC SUPPORT PROJECTION AND WTO COMMITMENTS

5.1. Projections of Notification, 2006-2013

The rapid evolution of China's agricultural support policies has become an important element in the present trade policy debates in the Doha Round, along with continued discussion of farm policy in developed countries where subsidies are most prominent. Looking ahead, it appears that a reversal of subsidy policies in China is unlikely, given the economic progress the country is making. Rather, there are indications that the subsidies will be continued and even strengthened in the coming years. Assuming that China's agricultural policies evolve as expected, one can also ask whether China will violate the relevant disciplines on agricultural domestic support contained in the Uruguay Round (UR) AoA or tighter rules that might be negotiated in the new round. Table 11 shows a projection of domestic support notification into 2013 under current UR rules and Chinese commitments. Appendix B presents more detailed calculations. The projection of PS support (and in particular market price support) distinguishes two administered price scenarios (high vs. medium price) and two program coverage scenarios (four vs. two commodities).¹³ The scenario designs follow recent world commodity market developments and domestic policy deliberations.

For instance, there has been a world commodity market boom during the past few years with prices of key commodities forecast to rise consistently through 2016 (USDA 2007). For rice and wheat, the USDA predicted price increases for the period 2005-2013 are 24.7 percent and 31.6 percent, respectively. Continued strong global economic growth, increased oil prices, and strong demand for corn and sugar for ethanol production are likely to lead to upward adjustments in future forecasts. Although domestic price changes will reflect to a large extent the global market situation, a number of other factors including domestic and trade policies, location and status as exporter or importer, macroeconomic environment and exchange rate fluctuations are also important. Exactly how much of the world price increases passes through to domestic prices and at what point these will trigger a change in administered prices remain largely uncertain. The same uncertainty applies to price forecasts themselves as changes in policies and weather conditions are hard to predict.

Notwithstanding these uncertainties, policy makers and researchers in China concur that the current support prices for wheat and rice are too low (Xinhua Net 2007). Recommendations to increase these prices have been made in various State Council meetings.¹⁴ Because of recently soaring inflation rates for food and agricultural products (reaching 20 percent by the end of 2007), we argue that, under a high price scenario, an increase of minimum prices by 20 percent will occur, while under a medium price scenario the increase will be 10 percent. We assume that each administered price increase will remain effective for three consecutive years, i.e., 2008-2010 and 2011-2013, respectively (in reality, however, small adjustments may occur within each period). In addition to price increases, there are also policy discussions on whether the minimum price system should be extended beyond wheat and rice to include cotton and corn. Therefore, two commodity coverage scenarios are compared for the notifications.

¹³ The scenario of low commodity prices is also possible but not presented. Given that China will comply with its WTO commitments under the medium price scenario (to be discussed), the same conclusion can be drawn for the low price scenario.

¹⁴ The minimum prices for wheat and rice remained unchanged in 2006 and 2007 but were increased by about 10 percent in early 2008.

Table 11. Projection of China's notification under current WTO commitments, 2006-2013 (million RMB)

Policy Category	2006	2007	2008	2009	2010	2011	2012	2013
Green Box	317,235	337,809	358,383	378,957	399,531	420,105	440,679	461,253
Product-Specific Support								
<i>High Price</i>								
A: Total (before <i>de minimis</i>)	-62,665	-62,802	-21,486	-20,793	-20,099	33,331	35,022	36,713
Total (after <i>de minimis</i>)	0	0	7,874	8,107	8,341	40,099	41,134	42,168
B: Total (before <i>de minimis</i>)	-44,294	-43,778	-24,504	-23,875	-23,246	296	1,060	1,823
Total (after <i>de minimis</i>)	0	0	0	0	0	13,832	14,152	14,472
<i>Medium Price</i>								
A: Total (before <i>de minimis</i>)	-62,665	-62,802	-42,213	-41,935	-41,657	-17,208	-16,473	-15,738
Total (after <i>de minimis</i>)	0	0	0	0	0	9,311	9,564	9,818
B: Total (before <i>de minimis</i>)	-44,294	-43,778	-33,882	-33,310	-32,737	-21,662	-21,028	-20,393
Total (after <i>de minimis</i>)	0	0	0	0	0	0	0	0
Non-Product-Specific Support								
Total (before <i>de minimis</i>)	10,751	10,373	10,355	13,624	13,350	13,816	13,803	13,420
Total (after <i>de minimis</i>)	0	0	0	0	0	0	0	0
8.5% of Value of Production	261,635	272,525	283,416	294,306	305,197	316,087	326,977	337,868
Current Total AMS								
High Price: A	0	0	7,874	8,107	8,341	40,099	41,134	42,168
High Price: B	0	0	0	0	0	13,832	14,152	14,472
Medium Price: A	0	0	0	0	0	9,311	9,564	9,818
Medium Price: B	0	0	0	0	0	0	0	0
OTDS (High Price: A)	-51,914	-52,429	-11,131	-7,168	-6,749	47,147	48,825	50,133

Note: 1. High price: administered price increases 20 percent in 2008-2010 and a further 20 percent in 2011-2013. Medium price: administered price increases 10 percent in 2008-2010 and a further 10 percent in 2011-2013.

2. A: program-covered commodities include wheat, rice, corn and cotton. B: program-covered commodities include wheat and rice.

3. PS support only includes Market Price Support.

4. Projection of green box, NPS support and production is based on linear regression.

5. Because of negative MPS, support after *de minimis* might be higher than that before *de minimis*.

Furthermore, we assume in our analysis that direct payments to farmers will be notified in the green box, even though the results of the US/Brazil cotton dispute settlement have called into question the exact nature of such payments. China has sporadically provided product-specific (e.g., seed subsidies) and non-product-specific (e.g., machinery subsidies) support to grain producers. But because of the uncertainty of the continuous provision of these subsidies, we did not include them in the projection. Neither did we include subsidies related to irrigation, electricity and fuel, because they were not reported in the previous two official notifications and are not likely to be reported in the future. We further assumed that China will not report under the blue box, although the country may be forced to report in this box as a result of a progressively higher level of trade-distorting support. Projection of the green box, NPS support and quantity of production is based on a linear extrapolation of historical figures for the period of 1996-2005.

Assuming “business as usual” (i.e., a continuation of Uruguay Round rules at the WTO), China will comply with its commitments if current commodity programs are continued and there are no dramatic increases in support prices. This corresponds to a medium-price, two-commodity minimum price support program scenario (Medium Price: B in Table 11). However, if domestic administered prices increase by 20 percent in 2008-2010 and a further 20 percent in 2011-2013, and price support extends to cotton and corn (High Price: A), China’s AMS may exceed its *de minimis* ceiling as early as 2008. This occurs because the product specific support for cotton exceeds 8.5 percent of the value of cotton production (see Appendix Table B.1). Violations of WTO commitments will occur at a later date (2011) if prices are low or current commodity program coverage is maintained (Medium Price: A or High Price: B). It is noted that failure by China to comply with its commitments either in the high price or extended commodity coverage scenario results from over-*de minimis* product-specific payments; NPS support will remain under its *de minimis* levels despite steady increases.¹⁵

5.2. Effects of a Potential Doha Round Agreement on Agriculture

The most recent draft modalities put forward by Ambassador Crawford Falconer in August 2007 (TN/AG/W/4) and clarified in the December 2007 “Working Documents” serve as the basis for further negotiations of a new Agreement on Agriculture at the WTO. The Falconer text retains some of the features of the present AoA and it also makes recommendations for reforms in the three pillars of trade policy, namely, domestic support, market access, and export competition. Several new proposals on further constraining domestic support emerged in the modalities, which include a tiered harmonizing reduction of overall trade-distorting domestic support (OTDS) and final bound total AMS, product-specific AMS limits, reduction of the *de minimis*, and a cap on and criteria for blue box payments. Table 12 provides a brief summary of the main provisions in the modalities and their implications in terms of China’s domestic support commitments.

The base level for the reduction of OTDS is the summation of the final bound total AMS ceiling, 10 percent of the base-period (1995-2000) average VOP (20 percent for developing countries), and the higher of average blue box payments or 5 percent of the average VOP. A tiered reduction formula is developed so that countries with higher base OTDS are required to undertake higher reduction commitments. Similarly, a tiered approach is proposed for reducing final bound total AMS.¹⁶ New caps are designed to limit PS support to below average PS AMS for 1995-2000, overall blue box payments to below 2.5 percent of VOP (5 percent for developing countries), and PS blue box payments to below base-period average PS support. Specific provisions for cotton also apply. For China, because there is no final bound AMS, an 8.5 percent *de minimis*, and no historical blue box measures, the base level of OTDS is equal to 22 percent of VOP (8.5%+8.5%+5%). China’s status as a developing country with no AMS

¹⁵ Because of the negative MPS, PS support after *de minimis* can be higher than that before *de minimis*. For instance, in 2008 (high price: A), PS support is RMB8 billion after *de minimis* and RMB-21 billion before *de minimis*.

¹⁶ Reductions in OTDS and total AMS require a larger “first instalment” followed by smaller equal annual instalments over the rest of the implementation period.

commitments at the UR exempts it from OTDS reductions. And for the same reason, China does not have to make commitments to reduce total AMS or the *de minimis*. During the base period, PS support in China remained consistently below the *de minimis* level so that the new cap on PS AMS is effectively the present *de minimis* converted to monetary terms. China is entitled to make blue box payments up to 5 percent of average VOP while the PS cap in this category is 10 percent of the overall blue box ceiling.

Table 12. Main provisions of draft modalities and China's commitments

Categories	Draft Modalities	China's Commitments
OTDS		
Base Level	Final bound total AMS +10% (or 20%) VOP + higher of average blue box payment or 5% VOP	22% VOP
Reduction	Tiered reduction	No reduction
Total AMS		
Base Level	Final bound values in 2000	0
Reduction	Tiered reduction	No reduction
PS AMS		
Cap	Base period average PS AMS	<i>de minimis</i> in monetary terms
De Minimis		
Reduction	50% or 60%	No reduction
Blue Box		
Overall Cap	2.5% or 5% VOP	5% VOP
PS Cap	Base-period average PS support	10% of overall blue box ceiling
Cotton		
AMS	Formula reduction	No reduction
Blue Box	1/3 of PS blue box cap	1/3 of PS blue box cap
VOP		
Base Period	1995-2000 average	1996-2001 average

Source: TN/AG/W/4 and author's compilation

If the above arguments are correct, then the possible new Agreement on Agriculture will have minimal impact on China's current and future commitments. Most notably, the *de minimis*, which is to remain at 8.5 percent of VOP, will continue to be the binding factor for both PS and NPS domestic support. Because of China's large value of production (an average of RMB2,150 billion during 1996-2001), the limit on OTDS for China is RMB473 billion, is not a constraint for the country even under the highest support scenario (high administered price with four covered commodities) (see Table 11, last row). The new blue box implies that China can extend domestic support up to RMB108 billion overall and RMB11 billion for a specific product, provided that such support satisfies the blue box criteria set out in the new agreement. As China's PS AMS commitment of the draft modalities remain the same as the current one, i.e., *de minimis* of 8.5% of product specific VOP, support to certain key commodities would exceed the limits in high-price (wheat and cotton) and medium-price (cotton) scenarios (Table B.1.).

6. CONCLUSION

Agriculture has long been heavily subsidized, especially in developed nations. Agricultural subsidies came into sharp focus during the 1986–1994 negotiations of the Uruguay Round Agreement on Agriculture (AoA). One of the landmark achievements in the AoA was the extension of multiple disciplines from border measures to domestic policies. These disciplines are also important for some developing countries, where rapid economic growth has brought about shifts in domestic policies toward increasing subsidization of the agricultural sector. The present paper provides an analysis of recent changes in agricultural policies in China and empirical estimates of China’s domestic support for agriculture.

The methods used in the estimation of the “shadow” domestic support notifications are based on those reported in official WTO documents. In general, our results indicated that, unless there are legitimate challenges that notifications should be made otherwise, China’s domestic support for the recent period (1996-2006) has been well below the limits agreed at its WTO accession. However, there are a number of interesting features that warrant further examination.

First, China’s level of green box support has grown as a result of increased public investment in the agricultural sector. In 2006, total green box support reached RMB289 billion, more than double the 1996 figure (RMB112 billion). Second, China has no AMS commitments but can provide trade-distorting domestic support to agricultural producers up to 8.5 percent of the value of production (China’s *de minimis* level). Third, the MPS component of the AMS has been far below zero, and this has dwarfed the relatively small but positive NPS AMS and led to a zero current total AMS after *de minimis*. Fourth, China has given up the right to use “special and differential treatment,” as provided in Article 6.2 of the AoA, to report subsidy measures that are exempt from the reduction commitments. Instead, subsidies of this type are counted in the amber box category. Finally, China has not reported any blue box measures, although it might do so in the future if the need arises.

An economic critique of the AMS is presented and a comparison of the MPS based on alternative assumptions of reference prices and eligible production is made. We show that the MPS double-counts border measures and miscounts actual protection levels. This measurement issue becomes more important under scenarios where actual world prices change and China’s currency continues to strengthen. We provide a discussion of a set of relevant alternative subsidy-definition scenarios and their effects on the calculated levels of support when applied in the historical period of analysis. These scenarios include alternative decisions about what categories certain expenditures are notified within, as might arise from domestic reporting decisions or related dispute settlement cases at the WTO (e.g., do China’s direct payments to farmers belong to the amber or green box?), and inclusion of subsidies previously not included in notifications (e.g., irrigation, electricity, and fuel subsidies).

We project domestic support notifications through 2013 based on specified assumptions about domestic policies, including changes in administered prices and commodity program coverage. Our projections indicate that China may exceed its WTO commitment levels under certain price and commodity coverage scenarios. New constraints/latitude potentially negotiated in the Doha Round are discussed, for example, new bindings on support levels in aggregate or for specific commodities, reductions in the *de minimis*, and redefinition of categories such as the blue box. Due to China’s developing country status, which means it has no UR AMS commitments, the impacts of these new constraints in terms of China’s WTO commitments are shown to be limited.

APPENDIX A. SUPPORTING DS TABLES

Table A.1. DS1: Measures exempt from the reduction commitment – “Green Box” (million RMB)

Measure Type	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
a) General Services	66,648	74,542	135,949	109,110	121,230	145,045	115,284	124,829	140,616	137,021
b) Public Stockholding for Food Security	28,773	35,335	51,027	47,596	53,799	59,685	48,172	52,264	62,079	53,746
c) Domestic Food Aid	2,012	1,875	1,766	2,640	2,360	683	160	128	128	93
d) Decoupled Income Support	--	--	--	--	--	--	--	--	11,575	13,190
e) Income Insurance and Safety-net	--	--	--	--	--	--	--	--	--	--
f) Payments for Natural Disaster Relief	3,791	4,042	5,453	5,023	5,317	5,956	5,808	7,216	7,725	9,276
g) Structural Adjustment Assistance provided through producer retirement programs	--	--	--	--	--	--	--	--	--	--
h) Structural Adjustment Assistance provided through resource retirement programs	--	--	--	--	--	--	--	--	--	--
i) Structural Adjustment Assistance provided through investment aids	--	--	--	--	--	--	--	--	--	--
j) Environmental Programs	4,954	5,460	5,620	7,097	12,700	17,475	33,346	46,862	51,994	55,386
k) Regional Assistance Programs	6,000	10,000	11,000	12,869	12,493	13,487	12,926	16,062	17,195	20,646
Total	112,178	131,254	210,815	184,335	207,899	242,331	215,696	247,361	291,312	289,358

Table A.2. DS 4, 5, 6, 7: Product specific support and total product specific AMS

Product	Ref. Price ¹	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	RMB/ton				Administered Price (RMB/ton)						
Wheat	1,698	1,480	1,410	1,340	1,254	1,136	1,124	1,025	1,128	1,489	1,380
Rice	2,659	2,161	2,038	1,893	1,152	1,152	1,124	1,511	1,766	1,400	1,400
Corn	1,199	1,120	1,170	1,120	926	936	918	918	918	918	918
					Eligible Production (000' tons)						
Wheat		15,000	46,002	27,956	37,800	35,050	38,600	42,013	36,820	34,481	37,452
Rice		15,750	35,105	25,620	45,100	44,900	30,600	21,896	21,098	21,381	25,723
Corn		12,500	26,922	38,674	53,500	37,250	31,100	41,820	37,025	31,581	45,299
					Market Price Support (million RMB) ²						
Wheat		-6,075	-11,223	-6,541	-16,783	-19,698	-22,156	-28,275	-20,973	-7,193	-11,902
Rice		-17,647	-9,970	-12,011	-67,966	-67,664	-46,971	-25,126	-18,831	-26,919	-32,385
Corn		-5,767	2,401	6,171	-14,606	-9,797	-8,739	-11,751	-10,404	-8,874	-12,729
					Other Non-Exempt PS Support ³						
Wheat		--	--	--	--	--	--	--	--	--	--
Rice		--	--	--	--	--	--	--	--	--	--
Corn		--	--	--	--	--	--	--	--	--	--
					8.5% of Value of Production (million RMB)						
Wheat		15,227	14,695	12,420	11,685	8,957	8,380	7,867	8,295	11,641	11,432
Rice		26,791	23,666	22,602	19,095	16,528	16,205	15,248	16,404	24,301	23,842
Corn		12,402	9,872	12,157	7,632	7,221	7,764	8,624	9,292	10,997	12,154
PS AMS (after <i>de minimis</i>)											
Wheat		0	0	0	0	0	0	0	0	0	0
Rice		0	0	0	0	0	0	0	0	0	0
Corn		0	0	0	0	0	0	0	0	0	0

Note: 1. Reference prices are fixed, 1996-1998 average border prices.

2. In calculating the Market Price Support, actual border prices and fixed, 1996-1998 average border prices are used for 1996-1998 and 1999-2005, respectively.

3. Other non-exempt PS support was provided to cotton through interest subsidies for national cotton stockholdings during 1999-2001. From 2003-2005, this support included seed subsidies. However, due to a lack of data, they are not allocated to specific commodities.

Table A.3. DS 9: Non-product-specific AMS (million RMB)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Non-Product-Specific Support										
Input Subsidies ¹	26,559	24,524	33,242	205	151	148	9,871	6,051	14,952	43,096
Interest Subsidies ²	1,468	1,535	880	495	594	600	520	319	787	2,268
Total (before <i>de minimis</i>)	28,027	26,059	34,122	700	745	748	10,391	6,370	15,739	45,364
8.5% of Total Value of Production	166,258	175,640	180,562	186,916	188,727	198,599	198,783	207,476	257,653	279,855
NPS AMS (after <i>de minimis</i>)	0	0	0	0	0	0	0	0	0	0

Note: 1. Input subsidies were primarily price subsidies for means of production provided to agricultural input manufacturers including fertilizer, pesticide and mulching film firms.

2. Interest subsidies are provided to agricultural producers through loans with preferential interest rates.

APPENDIX B. PROJECTION OF CHINA'S NOTIFICATIONS

Table B.1. Product-specific support

Product	Ref. Price ¹	2006	2007	2008	2009	2010	2011	2012	2013	
	RMB/ton			Administered Price: High Price (RMB/ton)						
Wheat	1,698	1,380	1,380	1,656	1,656	1,656	1,987	1,987	1,987	
Rice	2,659	1,400	1,400	1,680	1,680	1,680	2,016	2,016	2,016	
Corn	1,199	918	918	1,102	1,102	1,102	1,322	1,322	1,322	
Cotton	14,584	13,458	13,458	16,149	16,149	16,149	19,379	19,379	19,379	
				Administered Price: Medium Price (RMB/ton)						
Wheat		1,380	1,380	1,518	1,518	1,518	1,670	1,670	1,670	
Rice		1,400	1,400	1,540	1,540	1,540	1,694	1,694	1,694	
Corn		918	918	1,010	1,010	1,010	1,111	1,111	1,111	
Cotton		13,458	13,458	14,803	14,803	14,803	16,284	16,284	16,284	
				Eligible Production (000' tons)						
Wheat		42,294	43,401	44,507	45,614	46,721	47,827	48,934	50,040	
Rice		24,499	23,810	23,120	22,430	21,740	21,050	20,361	19,671	
Corn		46,400	48,131	49,862	51,593	53,324	55,055	56,786	58,517	
Cotton		4,733	4,882	5,031	5,180	5,329	5,478	5,627	5,776	
				Market Price Support: High Price (million RMB) ²						
Wheat		-13,450	-13,801	-1,869	-1,916	-1,962	13,832	14,152	14,472	
Rice		-30,845	-29,976	-22,634	-21,959	-21,284	-13,535	-13,092	-12,648	
Corn		-13,038	-13,525	-4,857	-5,025	-5,194	6,767	6,980	7,193	
Cotton		-5,332	-5,500	7,874	8,107	8,341	26,268	26,982	27,697	
				Market Price Support: Medium Price (million RMB) ²						
Wheat		-13,450	-13,801	-8,011	-8,211	-8,410	-1,349	-1,380	-1,411	
Rice		-30,845	-29,976	-25,871	-25,099	-24,327	-20,314	-19,648	-18,982	
Corn		-13,038	-13,525	-9,434	-9,761	-10,089	-4,857	-5,010	-5,162	
Cotton		-5,332	-5,500	1,103	1,136	1,169	9,311	9,564	9,818	
				8.5% of Value of Production (million RMB)						
Wheat		8,120	7,586	7,051	6,517	5,982	5,448	4,914	4,379	
Rice		18,290	17,892	17,494	17,097	16,699	16,302	15,904	15,507	
Corn		10,697	11,004	11,310	11,617	11,924	12,230	12,537	12,844	
Cotton		5,588	5,727	5,867	6,006	6,146	6,285	6,425	6,564	
PS AMS (after <i>de minimis</i>)										
				High Price (million RMB)						
Wheat		0	0	0	0	0	13,832	14,152	14,472	
Rice		0	0	0	0	0	0	0	0	
Corn		0	0	0	0	0	0	0	0	
Cotton		0	0	7,874	8,107	8,341	26,268	26,982	27,697	
				Medium Price (million RMB)						
Wheat		0	0	0	0	0	0	0	0	
Rice		0	0	0	0	0	0	0	0	
Corn		0	0	0	0	0	0	0	0	
Cotton		0	0	0	0	0	9,311	9,564	9,818	

Note: 1. Reference prices are fixed, 1996-1998 average border prices.

2. Market Price Support is the only component of PS support due to a lack of data.

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