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Rethinking Agricultural Domestic Support under the World Trade Organization

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Executive Summary

This paper focuses on the third pillar of the Uruguay Round Agreement on Agriculture (URAA) of the World Trade Organization (WTO), the discipline of agricultural domestic support. The paper examines the current definition of agricultural domestic support used by the WTO, focusing on the Aggregate Measure of Support (AMS) and other forms of support that are less to least distorting (Blue and Green Box payments). The analysis looks at the recent experience of four member states (the United States, the European Union, Japan, and Brazil). The structure of recent support varies considerably by country. Some countries, notably the United States, have strategically used the *de minimis* exemption to deflate their support figures substantially in order to remain within AMS limits, even though total support has exceeded these limits. The paper investigates the possible effects of changing the definition of the AMS so that it better reflects current support conditioned by market forces. If market prices (world and/or domestic) were to be used to compute current market support, a greater variability of the AMS would result, and violations of AMS limits would be more likely given the anticyclical nature of policies included in the AMS, especially for the United States and European Union.

We also identify possible changes that would lead to more substantial trade reforms. In particular, we argue for phasing out the *de minimis* exemption and Blue Box support, adding a generous Green Box definition, which would allow countries to move quickly away from trade-distorting policies (Amber Box and the most trade-distorting Blue Box policies), followed by a phase-down of Green Box payments over time. The recent reforms of the European Union's Common Agricultural Policy (CAP) exemplify the spirit of the first part of the recommendation, while resistance to phase-down of Green Box payments may be overcome by a "reasonable" reduction schedule.

Keywords: aggregate measure of support, agricultural domestic support, amber box, AMS, blue box, Doha, green box, World Trade Organization, WTO.

RETHINKING AGRICULTURAL DOMESTIC SUPPORT UNDER THE WORLD TRADE ORGANIZATION

Reforms in agricultural trade essentially began with the Uruguay Round and lag behind reforms in manufacturing sectors, which have gone through five WTO-GATT (World Trade Organization–General Agreement on Tariffs and Trade) rounds of reductions. Under the previous GATT rounds, agriculture had remained on the sidelines. The Uruguay Round negotiations established the "three pillars" of agricultural support: market access, export subsidies, and domestic support. The market access provisions required, among other things, tariffication; that is, all non-tariff trade barriers had to be replaced by tariffs and bounds were set upon those tariffs. The export subsidy provisions established maximum ceilings on the trade quantity and budgetary expenditures for export subsidies and implemented reductions in those ceilings over time. The domestic support provisions outlined various types of support, classified them by their apparent trade effects, and limited those programs deemed the most trade-distorting. In this paper, we concentrate our efforts on third-pillar issues.

The WTO negotiations under the Doha Round are slowly progressing toward an eventual new agreement on agriculture. A new framework for the agriculture agreement was approved by the WTO membership in August 2004. The pace of the agricultural negotiations has offered an opportunity to do some fundamental rethinking of the current definition of domestic support. The agreed-upon framework outlines reforms in all three agriculture pillars. The changes in the guidelines for domestic support could have effects on many countries and many types of support. However, many of the details on the specific regulations of the agreement are yet to be determined. There is potential for dramatic reforms in agriculture under the framework, but the decisions made in filling out the framework will determine if that potential is realized.

Governments provide support to agriculture in a myriad of ways: direct payments, research grants, loan programs, storage programs, and so forth. Under the current Uruguay Round Agreement on Agriculture (URAA), domestic support programs are

divided into three "boxes" that indicate the trade effects of the programs. "Green Box" programs are programs that are considered minimally trade distorting. The agreement sets out specific guidelines for the structure of such programs but does not set any limits on program expenditures by member countries. "Blue Box" programs are programs that are considered more trade distorting, but the programs have production limits embedded in them. These programs also are not limited under the current agreement. All other programs are "Amber Box" programs. Amber Box programs are considered the most trade distorting and are limited under the current agreement. Within the Amber Box, programs are classified as product specific or non-product specific. These classifications determine the rules, the so-called *de minimis* rules, by which certain Amber Box programs may be exempt from domestic support calculations. The following sections expand significantly on these descriptions.

WTO member states have had several years now to examine the domestic support guidelines and restructure their agricultural support to fit under those guidelines. For example, the 1996 and 2002 farm bills in the United States and the Agenda 2000 and 2003 Common Agricultural Policy (CAP) reforms in the European Union were all designed after the acceptance of the URAA. But has this restructuring led to more open agricultural markets or has support just shifted to programs that were deemed minimally trade distorting when these programs actually have significant trade effects? With negotiations for a new agriculture agreement underway, we use this opportune time to examine the rules governing domestic support, explore how well those rules have performed, and outline possible changes that would lead to more substantial trade reform.

The Rules as They Now Stand

The URAA is quite specific about the programs that can be classified as Green or Blue Box. Blue Box policies are production-limiting policies that base payments on fixed yields and acreage. Payments must be limited to 85 percent of a base level of production.[1] The old target price-deficiency payment program that existed before 1996 in the United States was a Blue Box program, as are the compensatory and headage payments in the European Union and the Rice Farming Income Stabilization Program in Japan. Green Box policies are policies that have minimal trade impacts. Payments from Green Box

policies cannot be linked to current production and/or prices. The URAA lists several types of Green Box policies and the guidelines that they must follow. The following program types can qualify for the Green Box:

1. general services,
2. public stockholding for food security purposes,
3. domestic food aid,
4. direct payments to producers,
5. decoupled income support,
6. government financial participation in income insurance and income safety net programs,
7. payments for relief from natural disasters,
8. adjustment assistance provided through producer or resource retirement programs,
9. adjustment assistance provided through investment aids,
10. payments under environmental programs, and
11. payments under regional assistance programs.

Each of these program types has guidelines that define the eligibility of the program for the Green Box. Any direct payments to producers provided by a government program cannot involve transfers from consumers (only from taxpayers). Thus, Green Box programs cannot support prices. The guidelines for decoupled income support are as follows:

1. eligibility for the program must be based on clearly defined criteria over a fixed base period;
2. payment amounts cannot be related to production, prices, or input usage after the base period; and
3. no production can be required to receive payments.

For government-provided income insurance or safety net programs to be Green Box, the requirements are as follows:

1. income and income loss can only be from agricultural sources;
2. loss must exceed 30 percent of average gross income (or an equivalent amount

of net income) where average income is determined by a three-year average income (from the previous three years) or a five-year "olympic" average income (removing the high and low years before averaging); and

3. if payments are provided by this program and a natural disaster relief program, the total amount of payments cannot exceed 100 percent of the producer's total loss.

The requirements for natural disaster relief follow a similar logic:

1. eligibility is determined by a formal disaster announcement from the government with at least a 30 percent production loss based on average production (the previous three-year average or the five-year "olympic" average);
2. payments may only be made on losses due to the disaster;
3. payments cannot be for more than the amount of loss and requirements on future production; and
4. if payments are provided by this program and a natural disaster relief program, the total amount of payments cannot exceed 100 percent of the producer's total loss.

Producer retirement programs qualify for exemption if eligibility for the program is clearly defined on criteria to transition the producer out of agricultural production, and the payments are conditional on complete retirement from agricultural production. Resource retirement programs qualify under the following stipulations:

1. payments are conditional on the resource staying out of agricultural production for at least three years;
2. requirements cannot be placed on alternative use of the resource or other resources employed in agricultural production; and
3. payments cannot be related to any remaining agricultural production in which the producer is involved.

Environmental program payments qualify for the Green Box exemption if eligibility requirements are clearly defined and dependent on specific conditions, possibly involving production inputs or practices, and if the payment is limited to the extra cost or income loss the producer faces to be in compliance. Programs that fit these general types but fail to meet the exemption conditions (e.g., if program payments exceed the cost of compli-

ance) and all other domestic support programs would fall into the Amber Box and would possibly be limited under the URAA.

The Aggregate Measurement of Support (AMS) is a measure of the annual level of support provided to producers of agricultural products expressed in monetary terms. The AMS limit is based on the member state's agricultural support over a base period, usually 1986–1988. The countries that signed the URAA agreed to limit Amber Box spending to a level at or below their AMS from their base period. Implementation of the reforms began in 1995. Developed countries were given six years to meet the commitments. Developing countries had 10 years to do the same. Developed countries were to reduce their AMS by 20 percent during the implementation period. Developing countries faced 13 percent reductions (WTO 2000).

Amber Box policies can be exempted from the AMS counted against a country's limit if the policy is termed *de minimis*. Within the Amber Box, support is divided into commodity-specific and non-commodity-specific groups. The non-commodity-specific support (the definition of which is still contentious) is not specifically tied to a certain commodity, and the AMS is assigned to all agricultural production. Once the AMS is classified, the values are compared against minimum values, called *de minimis* values. The *de minimis* rule states that, for developed (developing) countries, AMS values below 5 (10) percent of the commodity's value of production for commodity-specific support and AMS values below 5 (10) percent of the country's overall value of agricultural production for non-commodity-specific support are exempted from the URAA's domestic support limits.

There were 34 member states that had base-period AMS values exceeding the *de minimis* levels (WTO 2004c). Thus, only these 34 member states (out of the entire membership of the WTO) faced the prospect of cutting domestic support programs. There have been five reported cases (Argentina in 1995, Hungary in 1998, and Iceland in 1998–2000) where countries have exceeded their commitment levels; however if inflation is factored in, then the countries had not exceeded the levels. An aspect of more concern relates to attempts to water down the AMS ceilings by either crediting negative and positive commodity supports or "carry over" unused AMS limits from year to year to meet the AMS ceiling on average (Shetkari Sanghatana 2001). For example, India proposed that negative AMS values from product-specific support be allowed to offset positive

non-product specific support (WTO 2001). Nevertheless, these attempts have been limited and unsuccessful and are clearly not allowed by Article 6 of the URAA (WTO 1994). The consensus view is that a new agreement on agriculture would not allow such dilution of the original intent of the URAA (Wainio 2004).

The use of WTO-limited domestic support programs varies by member states. Over the reporting periods, New Zealand has not utilized any of its domestic support limits. Canada has restructured programs so that its AMS has fallen to 15 percent, on average, of the country's allowable amount. The average AMS level for Australia is 27 percent of the limit. The United States utilized 54 percent of its limit. The average AMS levels for Japan, the European Union, and South Korea were 45, 67, and 90 percent of their respective limits. As these numbers show, the participating countries have reduced their spending on programs that are classified as trade distorting, and these reductions have met or exceeded the requirements of the URAA.

AMS calculations are conducted for the base period of the URAA (1986–88) and the years of the implementation period of the URAA (1995 to present). The calculations are also targeted at defining the amount of support provided to the commodity as close as possible to the point of the commodity's first sale. AMS can be calculated in two ways. For most types of support, the direct measure of the budgetary outlays and foregone revenue to the government for the program is used as the AMS figure. National and sub-national support is to be included in the figure while any fees or levies paid by producers are to be deducted. For market price support (MPS) programs, the AMS is calculated by the product of the price gap between a fixed external reference price and the applied administered price from the program and the quantity of production eligible under the program. Hence, the MPS component of the AMS is not based on actual expenditures or current price gap information. This is the fundamental difference between the AMS and the producer subsidy equivalent (PSE) used by the Organization for Economic Cooperation and Development (OECD) on MPS estimates. The latter relies on actual market data to compute a price gap leading to the MPS component of the PSE.

The fixed external reference prices were set based on prices during the base period and represent the average free-on-board price for the commodity in a net exporting country and the average cost, insurance, and freight price for the commodity in a net

importing country. Adjustments to the fixed external reference prices are allowed for commodity quality differences.

Total AMS is the sum of all AMS figures (both commodity specific and non-specific). Current total AMS is the sum of all AMS figures after accounting for exemptions for Green and Blue Box programs and the *de minimis* rules. To examine the issues outlined in the introduction, we have chosen four member states to highlight: the United States, the European Union, Japan, and Brazil. Tables 1-4 show the domestic support for agriculture that these member states have reported to the WTO as of this writing. For Green Box support, we report the total amount of support, decoupled income support, marketing support, and transportation and infrastructure support. Total Blue Box support is also listed, along with figures for the Amber Box or AMS limits, total AMS, and current total AMS (the support actually counted against the limits after *de minimis* exemption).

In the United States, Green Box support represents most of the support to agriculture, as illustrated in Table 1. Roughly 60 percent of this support is in domestic food aid. Decoupled income support is roughly 10 percent of all Green Box support in the United States. Subsidies that are directly targeted at marketing, transportation, and infrastructure are about 2 percent of Green Box support.

The United States eliminated its Blue Box support with the 1996 farm bill. In the late 1990s, the United States expanded its Amber Box support, as some existing and some new programs provided support to counter the low prices experienced during the time. The latest U.S. farm legislation maintains most of the existing programs, including

TABLE 1. Reported domestic support from the United States

Box	Category	1995	1996	1997	1998	1999	2000	2001
					(billion dollars)			
Green	Total	46.04	51.83	51.25	49.82	49.75	50.06	50.67
	Decoupled Income Support	0.00	5.19	6.29	5.66	5.47	5.07	4.10
	Marketing	0.72	0.72	0.76	0.78	0.79	0.85	1.01
	Transportation & Infrastructure	Included in Marketing, could not be separated						
Blue		7.03	0.00	0.00	0.00	0.00	0.00	0.00
Amber	Limit	23.08	22.29	21.49	20.70	19.90	19.10	19.10
	Total	7.86	7.05	7.04	15.13	24.30	24.14	21.46
	Current Total	6.21	5.90	6.24	10.39	16.86	16.80	14.41

Sources: Sources for all the tables are given in the Appendix.

decoupled income support payments, and incorporates a new Amber Box program that provides support in low price scenarios. The United States has used the *de minimis* rules very effectively to meet its limits and would be seriously constrained by a phase-out of the exemptions.

The European Union has reported significant support in all three boxes. However, the reports show a trend of an increase in Green Box support and a decrease in Amber Box support. Decoupled income support and subsidies tied to marketing, transportation, and infrastructure account for less than 20 percent of all Green Box support. The Blue Box support consists of compensatory payments for grains and oilseeds and headage payments for livestock; these programs have production limits embedded in them. Recent changes in the European Union's CAP are structured to transfer much of the European Union's Blue and Amber Box support to the Green Box and are not fully reflected by the recent history shown in Table 2. The incorporation of many of the E.U. commodity-specific compensatory and headage payments into a single farm payment that is tied to a payment entitlement will transfer a great deal of E.U. agricultural support to the Green Box as decoupled income support payments.

Japan also utilizes support in all three boxes (see Table 3). Over half of its Green Box support is targeted at agricultural transportation and infrastructure. A shift in the Japanese rice program moved some agricultural support from the Amber Box to the Blue Box. The shift resulted in a significant decrease in AMS figures; current total AMS fell by over 75 percent. The shift also moved Japanese AMS levels well below the targeted limits.

TABLE 2. Reported domestic support from the European Union

Box	Category	1995	1996	1997	1998	1999	2000
				(billion euro)			
Green	Total	18.78	22.13	18.17	19.17	19.93	21.85
	Decoupled Income Support	0.25	0.22	0.21	0.13	0.96	0.49
	Marketing	0.46	0.60	0.76	1.09	1.07	1.02
	Transportation & Infrastructure	0.77	1.32	0.59	0.60	2.35	0.95
Blue		20.85	21.52	20.44	20.50	19.79	22.22
Amber	Limit	78.67	76.37	74.07	71.77	69.47	67.17
	Total	52.39	51.51	50.53	46.81	47.94	43.86
	Current Total	50.03	51.01	50.19	46.68	47.89	43.65

TABLE 3. Reported domestic support from Japan

Box	Category	1995	1996	1997	1998	1999	2000
				(billion yen)			
Green	Total	3169	2818	2652	3002	2686	2595
	Decoupled Income Support	0	0	0	0	0	0
	Marketing	21	17	17	20	20	20
	Transportation & Infrastructure	1908	1681	1488	1801	1552	1621
Blue		0	0	0	50	93	93
Amber	Limit	4801	4635	4469	4304	4138	3973
	Total	3625	3434	3282	922	851	719
	Current Total	3508	3330	3171	767	748	709

Brazil, like the United States, has provided most of its agricultural support through the Green Box (see Table 4). While the total amount of Green Box support has varied considerably over the reported years, support targeted at marketing, transportation, and infrastructure has held at between $450 and $750 million. The first year that Brazil reported any support that counted against the AMS limits was in 1998, before all Amber Box support was below the *de minimis* levels.

The New Framework, Recent Policy Changes, and WTO Rulings

The new framework for agricultural domestic support is targeted at achieving substantial reductions in trade-distorting domestic support. Harmonization of permitted support levels is approached by requiring larger cuts in higher levels of permitted support. New limits are put in place on *de minimis* support, Blue Box support, and

TABLE 4. Reported domestic support from Brazil

Box	Category	1995	1996	1997	1998
			(million U.S. dollars)		
Green	Total	4883	2600	3458	2420
	Decoupled Income Support	0	0	0	0
	Marketing	56	26	21	34
	Transportation & Infrastructure	597	436	716	617
Blue		0	0	0	0
Amber	Limit	1039	1025	1011	997
	Total	432	376	310	578
	Current Total	0	0	0	83

product-specific AMS. Total support, as measured by the sum of permitted AMS, *de minimis*, and Blue Box support, is to be limited. This limit on total support will be reduced during the implementation period. All member states face a 20 percent reduction in the total support limit in the first year of implementation. Additional reductions in the total support limit will be based on a tiered formula that is yet to be determined. However, the formula will result in larger reductions for member states that have higher levels of permitted support.

Total AMS and *de minimis* permitted levels will also be lowered throughout implementation. Product-specific AMS and Blue Box support are only capped. However, the required reductions in total support and total AMS may force reductions in these types of support as well. The Blue Box is redefined to include direct payment schemes that either are production limiting or do not require production at all. A member state's limit for Blue Box support will be based on 5 percent of their average total value of agricultural production over a historical period or the amount of existing Blue Box payments over a historical period, whichever is higher. Green Box guidelines are to be reviewed to ensure that all Green Box programs are minimally trade or production distorting.

Both the United States and the European Union have significantly altered their agricultural support in the last few years. These changes have moved a great deal of their agricultural support to direct payments to agricultural entities. The direct and countercyclical payments in the United States and the Single Farm Payments in the European Union all fit the description of direct payments. Given the current structure of the Green Box and the new definition of the Blue Box, the U.S. direct payments and the E.U. Single Farm Payments would be filed as Green Box, and the U.S. countercyclical payments would go in the Blue Box. These moves would seem to give the United States and the European Union a great deal of flexibility in dealing with the proposed reductions.

However, the WTO panel ruling on the Brazil-U.S. cotton dispute has questioned whether the U.S. direct payments belong in the Green Box. The panel concluded that the U.S. direct payments "do not fully conform" to the guidelines for Green Box direct payments. The major reason for this conclusion is the restriction on the production of fruits and vegetables on the payment base acreage (WTO 2004c). By the same argument, the

E.U. Single Farm Payments would not conform to the Green Box requirements. It could be relatively easy to fix both issues.

Should AMS be Redefined?

AMS is calculated in two ways. For most programs, the actual government expenditures on the program are used. However, for MPS programs, the AMS calculations depend on fixed external reference prices that are derived from import and export prices during the 1986-88 base period. The calculations also depend on the administered or policy prices for the member state during the given marketing year. AMS is computed as the product of the difference between the administered price and the external reference price and the amount of eligible production, less any fees or levies associated with the program. Having the calculations based on fixed prices simplifies them, as the only random parts of the AMS calculation are the eligible production and program fees. But does this definition of AMS truly capture the amount of support from these programs? The use of the administered price does not reflect the market situation in the member state for the given year, just as the external reference price does not reflect the world market situation. If domestic market prices are lower than the administered price and/or the actual world price is above the external reference price, then the amount of support, as computed under current AMS guidelines, is overestimated. If these price relationships are reversed (the domestic market price exceeds the administered price and/or the actual world price is below the reference price), then the amount of support is underestimated.

Many of the agricultural programs in these four member states are considered market price support programs. In the United States, the dairy, sugar, and pre-2002 farm bill peanut programs fell into this category. The European Union has market price support programs for wheat, corn, rice, sugar, beef, butter, and several other commodities. Brazil has price support programs for cotton, edible beans, corn, rice, sisal, soybeans, and wheat. Japan supports wheat, barley, sugar, potatoes, milk, beef, and pork.

Table 5 shows the proportion of reported AMS that comes from MPS programs for the four member states. The table shows that the United States, European Union, and Japan have all relied on price support programs for a majority of their reported agricultural

TABLE 5. Market price support as a percentage of reported AMS

	1995	1996	1997	1998	1999	2000	2001	Average
				(Percent)				
United States	100	100	93	56	35	35	40	66
European Union	64	68	69	73	71	70		69
Japan	93	94	94	84	83	71		87
Brazil	0	0	0	1				0

support. The U.S. proportion has sizably dropped over the period, as other support programs have grown in expenditures. The E.U. proportion has remained steady over the period. The Japanese proportion has fallen as well, mainly because of the shift in support for rice. Almost all of Brazil's support comes from other types of programs.

As an example, let us look at the United States sugar program. The program is a price support program in which the support originates in the form of commodity-backed loans. The administered price is the loan rate for the program less a forfeiture penalty. The external reference price is the 1986-88 average Caribbean price for sugar plus transportation costs to the United States. No fees or levies are associated with the program. Table 6 displays the reported AMS figures for the U.S. sugar program from 1995 to 2001. The administered price only changes with a change in the loan rate for the program, as happened with the passage of the 1996 farm bill. The external reference price is a constant (the 1986-88 average Caribbean price of $202.16 per metric ton plus $28.66 per metric ton transportation charge). Thus, the AMS for the program only varies with the eligible production. The average level of AMS was $1.075 billion and the range between high and low years was roughly $250 million.

TABLE 6. United States sugar program AMS calculations

Year	Admin. Price	External Reference Price	Eligible Production	AMS
	(dollars/metric ton)	(million metric tons)		(million dollars)
1995	396.83	230.82	6.67	1,107.77
1996	374.79	230.82	6.51	937.19
1997	374.79	230.82	7.26	1,045.45
1998	374.79	230.82	7.59	1,093.25
1999	374.79	230.82	8.20	1,180.20
2000	374.79	230.82	7.87	1,132.84
2001	374.79	230.82	7.17	1,031.78

To show the effects of moving to different prices in the AMS calculation, we have calculated AMS for the U.S. sugar program utilizing the actual Caribbean sugar prices for the given years. These prices and the resulting AMS figures are given in Table 7. On average, the change has a minor effect, as the average AMS would have been $1.034 billion annually over the period. Thus, on average, the amount of calculated support from the program fell when actual world prices were used. But the variability of the AMS figures-dramatically increased with the inclusion of actual world prices. The range between high and low years increased to nearly $900 million.

A similar exercise for the E.U. sugar program shows parallel results. On average, annual AMS levels for the program would fall modestly over the reported period, but the variability of the AMS levels would increase. Reported AMS for the E.U. sugar program ranged from €5.72 billion in 1999 to €5.8 billion in 2000. Calculated AMS with actual world prices ranged from €4.5 to €6.5 billion.

If actual domestic prices were used in the AMS calculation, then additional shifts would be expected. In Table 8, we have calculated AMS for the U.S. sugar program utilizing the actual Caribbean sugar prices and estimates for the U.S. domestic prices for the given years. The estimated domestic prices are based on U.S. raw sugar prices that are reported with duty fees paid in New York on a fiscal-year basis (Economic Research Service, various). This change has a major impact on AMS figures. The average AMS level over the reported period would have been $1.739 billion, a nearly $700 million jump in estimated support. In some of the years, the estimated AMS levels in Table 8 are double the actual reported values from Table 6.

TABLE 7. U.S. sugar program AMS calculations with actual world prices

Year	Admin. Price	FOB Caribbean Price	Transportation Adjustment	Eligible Production	AMS
		(dollars/metric ton)		(million metric tons)	(million dollars)
1995	396.83	273.00	28.66	6.67	635.08
1996	374.79	257.00	28.66	6.51	580.21
1997	374.79	238.00	28.66	7.26	785.21
1998	374.79	155.00	28.66	7.59	1,451.41
1999	374.79	166.00	28.66	8.20	1,476.67
2000	374.79	216.00	28.66	7.87	1,023.96
2001	374.79	167.00	28.66	7.17	1,283.80

TABLE 8. U.S. sugar program AMS calculations with actual domestic and world prices

Year	Market Price	FOB Caribbean Price	Transportation Adjustment	Eligible Production	AMS
		(dollars/metric ton)		(million metric tons)	(million dollars)
1995	501.61	273.00	28.66	6.67	1,333.67
1996	495.97	257.00	28.66	6.51	1,369.12
1997	484.97	238.00	28.66	7.26	1,584.93
1998	486.93	155.00	28.66	7.59	2,301.82
1999	486.37	166.00	28.66	8.20	2,392.02
2000	405.55	216.00	28.66	7.87	1,266.20
2001	464.38	167.00	28.66	7.17	1,926.72

Whether such changes to the definition of AMS would increase or decrease a member state's chances of violating WTO commitments depends on the relative relationships among the administered program price, the domestic market price, the external reference price, and the actual world price. As the U.S. sugar example shows, any new definition of AMS may lead to decreased chances of violations in some years but increased chances in others. The current definition has the relative benefit to member states of being fairly stable (only varying with production and policy changes), while new definitions of AMS would likely be more variable, at least based on this example. However, if domestic and world prices move together (as they would with more open trade), then the variability of the AMS calculations utilizing actual prices would be lower than was previously demonstrated. An increase in AMS variability would also contribute to a higher chance of violations, especially given the lower levels of AMS commitments put forth under the framework. Also, the change from the administered price to an actual domestic market price changes the meaning of the support estimate. One argument for staying with the administered price is that it represents the price supported by the domestic support program in question. By moving to an actual domestic price, the support estimate is picking up the effects of other policies (such as tariffs) and market events not embodied in the domestic support program. With an eye toward the goal of the negotiations, the potential variability from these changes to AMS calculations could bring more policy discipline and decrease the reliance on anticyclical support. But the panel ruling on the Brazil-U.S. cotton dispute also gives us some insight on the framing of the URAA. In the ruling, the panel discusses MPS calculations for AMS. They state, "…a prime consideration of the drafters was to ensure that Members had some means of ensuring compliance with their commitments despite factors

beyond their control" (WTO 2004c, p. 134). Thus, the framers of the URAA chose to provide member states a greater degree of control over their MPS measurement at the expense of an updated representation of the effective support from the programs.

Another question related to AMS is the "double coverage" of such programs under the URAA. MPS programs essentially fall under two of the three pillars, market access and domestic support. Does it make sense to cover these programs twice? It would be relatively simple to remove MPS programs from both the base and annual AMS calculations and allow the market access commitments to govern their existence. This change would make clear how the programs are treated. The removal of the MPS programs from both reported and base AMS would also remove the possibility of another policy change like the one in Japanese rice policy. The Japanese government abolished its official price for rice. This move dramatically reduced Japan's reported AMS (shown in Table 3) without any reduction in permitted support. But the level of protection for rice was maintained. Events such as this highlight the loopholes in the MPS approach.

An example of "double coverage" is U.S. dairy policy before the 2002 farm bill. The programs consisted of border protection measures and a domestic support price. Thus, the policies were covered by both the market access and domestic support pillars. But as Sumner (2003) pointed out, the domestic support price "provides almost no support in addition to that provided by the dairy trade barriers." With the current structure of domestic support reporting, though, the United States reports $4.5 billion in dairy AMS for domestic support. However, the current "double coverage" does have the trade benefit of allowing either the market access or domestic support commitments to be binding. Thus, while a market price support program may be acceptable under the market access commitments, its domestic support commitments may not be met (or vice versa) and support reductions would be warranted. In different states of the world, different pillars may become binding. Also, many governments use trade restrictions to decrease the expected treasury cost of their farm support. A fundamental issue is to know if the domestic program would indeed become fiscally unsustainable with open borders. The answer is a qualified yes. It is clear that the foreseeable reduction in border protection is driving many of the E.U.

CAP reforms, the recent reform of the U.S. peanut program, and other reforms. Yet, there are a few powerful counter-examples such as U.S. and E.U. cotton subsidies, which appear sustainable despite open borders. A government's largesse is also conditioned on fiscal surpluses/deficits. The budgetary situation has been deteriorating for the largest providers of farm support in OECD countries.

Is the Third Pillar Worth the Trouble?

With market price support programs covered by market access commitments and most member states moving to Green Box support for most of agricultural support, does it make sense to continue to discipline domestic support? Only 20 percent of the WTO membership currently has explicit domestic support commitments. Many of the domestic support programs can be or are covered by the other pillars. Works such as that by Hoekman, Ng, and Olarreaga (2003) have shown tariff reductions to generate larger welfare gains than similarly sized reductions in agricultural subsidies. However, Hoekman, Ng, and Olarreaga point out "the importance of focusing on tariffs as well as subsidies" in agricultural trade negotiations. With some caveats on dirty tariffication and tariff rate quota administration, the two trade pillars have fairly clear measures of their effectiveness, whereas the domestic support pillar is much less transparent. The rules of the domestic support pillar are structured to separate those programs that have minimal to no trade effects from those that are trade distorting. But a program's ability to distort trade is "in the eye of the beholder." Earlier in this text, we outlined the list of program descriptors that define minimal- to non-trade-distorting programs (the Green Box guidelines). However, recent disputes within the WTO (such as the U.S.-Brazil cotton dispute) have questioned the trade impacts of some of these Green Box programs. The goal of the domestic support commitments is to allow member states to direct support to the agricultural sector while limiting the trade effects from such support. The ability of the commitments to do this is strictly dependant on the precision of the domestic support guidelines in categorizing programs in their trade impacts. Based on recent trade disputes, this precision is somewhat lacking.

This lack of precision was recognized in the URAA, as Blue and Amber Box programs were not completely restricted. If only non-trade-distorting programs were

allowed, the ability of member states to reach consensus on the guidelines for such programs would be severely tested. The Uruguay Round lasted eight years and the current Doha Round for agriculture is in its fifth year of negotiations. If the negotiations included strict guidelines on non-trade-distorting domestic support, we can imagine that the negotiations might take considerably longer and be even more contentious. One potential way to avoid this undesirable situation is to provide a temporarily generous definition of the Green Box, which would allow buyout or phaseout of Amber and Blue Box forms of support. Then a progressive phasedown of the Green Box would discipline remaining farm support over time. It took five GATT-WTO rounds to get rid of industrial protection. It is foolish to hope that vested agricultural interests in some of the OECD countries and middle-income developing economies would give up huge and concentrated rents without virulent and long fights. Part of the solution is also demographic in the European Union and North America. Their farming populations and farm political representation are aging rapidly and not being replaced.[2] Will current farm coalitions and political pressure be maintained with thinner ranks and less political clout?

Looking at the approved framework, negotiators are exploring extensions of current guidelines on domestic support, with the possible redefinition of what may be considered minimal- to non-trade-distorting policy. As we discuss the possibility of changing domestic support guidelines, it is important to try to balance the many issues linked with the support. Agricultural research, marketing, transportation, infrastructure, and inspection services are all covered by the Green Box. Programs with links to conservation, agricultural retirement, and disaster assistance efforts are also included. Many of these programs have multiple targets, and some of these targets are non-agricultural in nature. Part of the issue of tightening Green Box rules will be the trade-off between limiting the possible trade-distorting effects of current Green Box programs and limiting a country's ability to fund multi-purpose projects. Transportation and infrastructure support can illustrate this point. An example is the U.S. interstate highway system. The system was envisioned as part of a strategic plan for the defense of the nation. The system now serves more in an economic capacity than in a defense capacity (Weingroff 1996) and has become a non-trival factor of production.

There are two main areas of concern in the Green Box: the trade impacts from decoupled income support; and marketing, transportation, and infrastructure subsidies. The current guidelines indicate these programs are minimally trade distorting, but on the basis of the Brazil-U.S. cotton dispute ruling and other comments by WTO member state delegations, those assumptions are being questioned. Proposals, such as those from Pakistan and India, have called for an investigation of Green Box policies in combination with a reshaping of the Green Box guidelines (Ingco and Kandiero 2003). The framework explicitly calls for a review of Green Box criteria. Decoupled income support has become a favored way to support agriculture in the United States and European Union. The United States shifted to decoupled income support with the 1996 farm bill and continued this type of support through the 2002 farm bill. The European Union, in its latest agricultural policy change, moved to combine many individual commodity payments into decoupled income support (see Messerlin 2003 for a discussion of the political economy associated with these changes), the Single Farm Payment.

The G-20 countries have questioned whether this income support is truly decoupled. The payment bases for the U.S. and E.U. income support programs are set on historical, but recent, production decisions. In the case of the United States, the 2002 farm bill allowed producers to update their payment base to reflect recent shifts in production patterns and to allow the incorporation of a new commodity in the program. The decoupled income support utilized by the United States and European Union is being criticized on a number of grounds. First, the sheer size of the payments may affect producer decisions. As an example, for the 2001 marketing year, the decoupled income support targeted at U.S. rice producers equaled 38 percent of the total value of the U.S. rice crop. Second, the payments may reduce the risk of producing payment crops and the associated income stream. These wealth and input effects have been examined and found to be small (Hennessy 1998; Young and Westcott 2000). Third, as was the case for the U.S. program, the possibility of updating payment bases may induce linkages between current production and the payments. Fourth, these programs often require that the land remain in agricultural use and the program may restrict the ways in which the land can be utilized. For example, producers receiving decoupled income support in the United States cannot shift the payment acreage to the production of certain fruits and vegetables. In a recent

publication, de Gorter, Ingco, and Ignacio (2004) explore, in depth, the factors that could link income support payments to production decisions. As was noted before in this paper, a WTO dispute panel found that U.S. direct payments fail to meet Green Box guidelines. Ongoing negotiations should further strengthen and clarify the Green Box guidelines for direct support.

Marketing, transportation, and infrastructure subsidies have also received scrutiny from member states, often for mercantilist reasons. As exemplified by a letter from U.S. Senator Charles Grassley (2003) to the U.S. Department of Agriculture and the Office of the United States Trade Representative, this concern is targeted mostly at specific developing countries and comes from developed countries. Protectionist interests in developed countries, such as the U.S. sugar lobby, regularly complain about unfair infrastructure subsidies in competing developing countries (Roney 2004). The situation in Brazil is probably at the forefront of this discussion. As indicated in Table 4, Brazil has annually spent over $500 million dollars on marketing, transportation, and infrastructure support. Most of this support has been targeted at improvements in the Center-West region of the country, where there has been tremendous growth in agricultural production. In a 2001 study of Brazilian and Argentine agricultural development, Schnepf, Dohlman, and Bolling refer to "the Brazil Cost," the additional costs and distortions that affect Brazil's ability to market agricultural commodities effectively. One of major components of the Brazil Cost was the country's inefficient infrastructure and transportation system. In their analysis, Schnepf, Dohlman, and Bolling find that Brazil and Argentina have production cost advantages in comparison to the United States, but these advantages are largely eliminated by the difference in internal transportation and marketing costs. Fuller et al. (2000) examined five potential transportation improvements that could be made in Brazil and found that these improvements could lead to significant increases in producer prices for soybeans, in the range of $0.30 to $0.60 per bushel. Such changes in producer prices are likely to have major implications for the continued expansion of agriculture in the Brazilian Center-West, for the trading capacity of Brazil, and for the world agricultural trade outlook. Thus, it would be hard to argue that these expenditures will have minimal trade effects. But just as in the example of the U.S. interstate highway system, there will likely be other beneficiaries from the transportation and infrastructure expenditures, as

reductions in transaction costs are often nontrival. These beneficiaries will mostly be from non-agricultural sectors, giving the expenditures a public good aspect.

Blue Box supports have been significantly affected under the current framework. The changes include an expansion of the box by adding an additional category of payments: direct payments with a fixed payment base and no production requirement. Also, limits have been placed on the amount of support that can come from Blue Box programs, where the URAA placed no such limits. Seven member states (European Union, United States, Iceland, Norway, Japan, the Slovak Republic, and Slovenia) have reported Blue Box support. The United States eliminated its Blue Box programs with the passage of the 1996 farm bill. The other member states continue to utilize the box. Thus, Blue Box programs are not used by a vast majority of WTO member states. However, the new definition of the Blue Box opens its usage back up to all member states. The U.S. countercyclical program would seem to be a candidate for the new Blue Box. If U.S. direct payments and E.U. Single Farm Payments fail to meet Green Box guidelines, then those payments may also find a home in the Blue Box.

Recommendations for Improved Domestic Support Guidelines

The previous discussion highlights some of the issues embedded in the current WTO agriculture negotiations. The issues are many because of the myriad agricultural programs used by member states throughout the world. But the current framework for categorizing all of the programs has allowed us to condense this support into manageable points in which further clarifications can be made. Given the possible effects of decoupled income support and marketing, transportation, and infrastructure support on world trade, these programs may not truly fit the Green Box target of minimally trade-distorting policies. However, these programs are not directly linked to current production or prices and may have other non-agricultural benefits. Therefore, leaving them in the Green Box but tightening the rules for them may make the most sense. The new rules might include expenditure limits patterned after the *de minimis* rules and stricter guidelines on the definition of base periods and production for decoupled income support. Such changes would address the concerns raised about these programs while allowing member states to continue to employ them. As we explained previously, there is a political-economy trade-off

in disciplining the Green Box too much. An initially generous Green Box definition may facilitate negotiation of a phaseout of the Amber Box policies, which are the most damaging distortions.

The current AMS framework for market price support, while providing a stable estimate of support, cannot adequately reflect actual support levels. Moving to an AMS based on current world and domestic prices will better capture the actual level of support and align market price support programs with other Amber Box programs in which actual expenditures are used in the calculations. An alternative change would be to remove the market price support programs from both the AMS limits and the current AMS calculations. As shown by Japan, the URAA market price support AMS structure has a significant loophole, allowing the possibility that countries can make small changes in official policy (resulting in minimal changes in agricultural trade protection) and provide themselves large cushions from agricultural support reductions. Either of the proposals suggested here would close this loophole. Resistance to closing the loophole is likely to be virulent, given the vested interest of some OECD countries in the loophole.

The Doha agricultural framework has provided the possibility for significant agricultural trade reform in domestic support. The incorporation of new limits, such as those for Blue Box support and product-specific AMS, encompasses more support programs than before and provides additional rules for programs already covered by existing limits. But further steps could be taken. Changes such as the ones we have outlined address many of the concerns various member states have expressed during the negotiations while still allowing flexibility in domestic support. Additional changes, such as explicit language on the role of inflation in support limits, scheduled reductions in Blue Box and product-specific AMS limits, and rules evaluating the impacts of different policies on domestic versus export markets, may also be beneficial to agricultural trade reform. As the negotiations continue, these issues will have to be addressed by member states as they strive for a new agricultural agreement.

Endnotes

1. The limit on base level production is somewhat arbitrary but has become almost irrelevant given the new cap on Blue Box payments at a maximum of 5 percent of production value agreed upon in the Framework document (WTO 2004b).

2. A similar observation can be made of the agricultural economics profession!

Appendix

Data Sources for Tables 1-8

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