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IFPRI Discussion Paper 00821

November 2008

United States: Shadow WTO Agricultural Domestic Support Notifications

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Markets, Trade and Institutions Division

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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IFPRI's research, capacity strengthening, and communications work is made possible by its financial contributors and partners. IFPRI receives its principal funding from governments, private foundations, and international and regional organizations, most of which are members of the Consultative Group on International Agricultural Research (CGIAR). IFPRI gratefully acknowledges the generous unrestricted funding from Australia, Canada, China, Finland, France, Germany, India, Ireland, Italy, Japan, Netherlands, Norway, South Africa, Sweden, Switzerland, United Kingdom, United States, and World Bank.

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[1] Effective January 2007, the Discussion Paper series within each division and the Director General's Office of IFPRI were merged into one IFPRI–wide Discussion Paper series. The new series begins with number 00689, reflecting the prior publication of 688 discussion papers within the dispersed series. The earlier series are available on IFPRI's website at www.ifpri.org/pubs/otherpubs.htm#dp.

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Contents

Acknowledgments	v
Conference Program	vi
Abstract	vii
1. Introduction	1
2. U.S. Support Policies	2
3. WTO Notifications of U.S. Domestic Support	10
4. Potentially Underreported, Misclassified, or Omitted Subsidies	22
5. Projected U.S. Notifications	26
6. Summary and Conclusions: Implications for U.S. Agricultural Policy	41
References	43

List of Tables

1. Aggregate anticipated expenditures under the 2008 FCE Act (US$ billion) 7
2. Summary of U.S. domestic support notifications, 1995-2005 11
3. U.S. green-box notifications 12
4. Composition of the product-specific AMS by type of measure (before the application of de minimis) 13
5. Product-specific AMS by commodity (before the application of *de minimis*) 15
6. Product-specific total AMS by commodity (after the application of *de minimis*) 16
7. Product-specific total AMS by commodity (after the application of de minimis %) 17
8. U.S. non product-specific AMS 18
9. Composition of U.S. *de minimis* 19
10. Summary and alternative summations of notified U.S domestic support, 1995-2005 19
11. Support notified under the AMS with shadow notification for 2006 20
12. Summary of price variation for corn, soybeans, and wheat 30
13. Main U.S. domestic support provisions of the proposed DDA modalities of July 2008 32
14. U.S. domestic support base values and reductions under the proposed DDA modalities 33
15. Product-specific AMS bindings under the proposed DDA modalities 35
16. Product-specific blue-box bindings and the trade-off with AMS product-specific bindings 36

List of Figures

1. U.S. notified domestic support (US$ billion), 1995–2005 10
2. U.S. notified domestic support, 1995–2005 (%) 11
3. U.S. notifications (actual and projected) with no DDA agreement (US$ billion) 27
4. Projected composition of total U.S. support in 2014 (US$ billion and % of total) with no DDA agreement 27
5. Projected composition of disciplined U.S. support in 2014 (US$ billion) and available AMS with no DDA agreement 29
6. Projected impact of the ACRE program on U.S. total AMS with no DDA agreement, 2009–14 31
7. U.S. notifications, actual and projected, under the proposed DDA modalities (US$ billion), 1995–2014 37
8. Projections of OTDS, total AMS, and blue-box spending and proposed DDA commitments 38
9. Amount by which product-specific proposed DDA bindings are projected to be exceeded 39
10. Projected composition of support in 2014 and “available” OTDS (US$ billion) 40

ACKNOWLEDGMENTS

This discussion paper provides a revised version of a paper presented at the conference "Improving WTO Transparency: Shadow Domestic Support Notifications," held at the International Food Policy Research Institute (IFPRI), Washington, D.C., March 14–15, 2008. Helpful comments were received at the meeting and incorporated into this version. Some of the results relating to the impact of the WTO's 2008 Revised Draft Modalities on the WTO limits for U.S. domestic support (reported in this paper) were also included in a presentation and separate paper by David Blandford, David Laborde, and Will Martin for a conference in Geneva, organized by the International Centre for Trade and Sustainable Development (ICTSD), the International Food and Agricultural Trade Policy Council (IPC), and IFPRI on March 12, 2008.

In preparing this paper we have received helpful comments, suggestions and references from David Laborde, Will Martin, Randy Schnepf, Ann Effland, Ed Young, Jerry Hagstrom, Larry Saunders, Wes Harris, and Carl Zulauf. Tim Josling was instrumental in the development of the Blandford-Josling WTO simulator used herein to evaluate projected U.S. subsidies in light of possible Doha Round constraints.

The authors acknowledge the support of IFPRI through the project Foundation Analysis for Agricultural Trade Reform. Financial support to IFPRI for this project from The William and Flora Hewlett Foundation (Grant 2007-9399) is gratefully acknowledged. The project and conference are activities of IFPRI's Markets, Trade and Institutions Division. Antoine Bouet and David Orden are the IFPRI project leaders and Ann Tutwiler is project liaison for the Hewlett Foundation. Support of the Division Director, Maximo Torero, is appreciated. Shirley Raymundo provided administrative and technical support for the conference and preparation of the papers.

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 examines past and proposed U.S. domestic support in light of current and potential World Trade Organization (WTO) constraints. It provides a brief review of U.S. farm policies since the Uruguay Round WTO agreements went into effect, including a synopsis of the new Food, Conservation, and Energy Act of 2008. It examines the United States' notifications to the WTO of domestic support from 1995 to 2005 and provides a preliminary notification estimate for 2006.

Green-box (non trade-distorting) expenditures for domestic nutrition programs dominate the total dollar values notified by the United States. The main notified components of the U.S. support policies for agricultural producers include fixed direct payments, disaster assistance, and environmental payments in the green box; market price supports for dairy and sugar and substantial price-linked, loan-rate-related subsidy expenditures in the product-specific aggregate measure of support (AMS) category; and non product-specific support notified as *de minimis*, including crop market loss assistance payments, countercyclical payments, and crop and revenue insurance subsidies.

The United States' notification of total AMS has not exceeded the Uruguay Round commitment of $19.1 billion. It would have exceeded this amount in some years if the fixed direct payments were included in the AMS, an issue arising in challenges to the U.S. notifications. This paper discusses other subsidies that may be underreported, misclassified, or omitted, including the blender tax credits and mandates related to ethanol production that have been largely outside the disciplines of the Uruguay Round Agreement on Agriculture.

It also provides an assessment of projected U.S. support through 2014. Under the Uruguay Round rules, there is essentially no constraint on U.S. policies if high prices projected in mid 2008 are realized. The WTO constraints are tighter if the proposed Doha Development Agenda disciplines of July 2008 are agreed upon. In that case, under the projected prices, the United States would still have some leeway to increase expenditures under its commitments. Thus, if the economic environment that is foreseen in the projections proves correct, the United States would be able to adapt to the proposed Doha Round domestic support modalities by making only modest adjustments in its policies, although product-specific support for sugar, cotton, or other products could face constraints. Large payments under a new revenue guarantee program in the 2008 farm bill could violate the U.S. commitments, even if prices remain high enough not to trigger traditional countercyclical or loan-rate payments.

Keywords: U.S. agricultural support, Food, Conservation and Energy Act of 2008, WTO Doha Round, notification of domestic support, WTO compliance

1. INTRODUCTION

The issue of U.S. domestic support to agriculture has proved to be contentious in the World Trade Organization (WTO). A major part of the multiyear WTO negotiations under the Doha Development Agenda (DDA or Doha Round) has focused on the imposition of tighter disciplines on domestic support. The U.S. support expenditures, and those of other high-income countries, have been a significant element in the negotiations. The United States has signaled its willingness to accept tighter disciplines on domestic support, providing that these are balanced by increased market access in other countries.

Although the DDA negotiations broke down at a mini-ministerial conference in July 2008, domestic subsidies will remain a key issue when negotiations resume. Meanwhile, under the WTO dispute settlement process, several challenges have been concluded or are ongoing that raise questions about whether the United States is correctly notifying to the WTO or can continue some of its domestic agricultural support expenditures within the existing Uruguay Round rules.

The purpose of this paper is to examine past and projected U.S. domestic support in light of current and potential WTO constraints. The first section provides a brief review of recent U.S. farm policies, including a synopsis of the new farm bill, the Food, Conservation, and Energy Act of 2008. The second section discusses U.S. domestic support notifications to the WTO from 1995–2005 and provides a preliminary notification estimate for 2006. Section 3 provides a discussion of several subsidies that arguably may be underreported, misclassified, or omitted from the notifications. Section 4 provides an assessment of projected U.S. support through 2014. These projections are compared with the U.S. Uruguay Round commitments, in the absence of a new WTO agreement on agriculture, and to the constraints articulated, but not agreed upon, in the proposed July 2008 Doha Round draft modalities. Finally, Section 5 provides a summary and conclusions.

2. U.S. SUPPORT POLICIES

Agriculture in the United States today scarcely resembles the troubled sector of the Depression-era 1930s that led to farm support programs. The modernization of American agriculture has created a trimodal farm sector. At one end of the spectrum are the most efficient commercial farms producing the bulk of food and fiber. At the other end are various small farms that account for most of the enumerated units but only a small share of output. In the middle are a group of farmers caught in the dynamics of modernization. American agriculture is also trimodal in terms of the protection and support it receives from government. A few commodities are highly protected by tariffs and import restrictions (dairy, sugar, peanuts, and tobacco). Another group of commodities receives most of the subsidy payments (grains, oilseeds, and cotton). A third group of commodities (fruits and vegetables, livestock, and poultry) has received less protection or government support.

Reforms of U.S. farm policy have been undertaken as the production and income of farmers have undergone change. The basic direction of policy reform has been a shift away from acreage-idling supply controls combined with price supports above market-clearing levels to less supply intervention and more direct income support, at least for crops that are exported. The shift toward support payments began in the mid-1960s, when price support levels were lowered for corn, wheat, and cotton to enhance U.S. competitiveness, and farmers were offered payments as compensation (Orden, Paarlberg, and Roe 1999). Support payments increased from less than 6 percent of farm income in the 1950s to more than 20 percent in the 1960s, but farm programs remained dependent on idling land to control supply and boost market prices.

In the early 1970s, a commodity market boom briefly eliminated many government interventions in commodity markets, but farm support proved impossible to terminate in the inflationary era that followed. A second move toward payments came in the mid-1980s, when price supports that had been set too high in anticipation of continued inflation and a low-valued dollar that did not materialize were reduced, with payments once again offered to farmers in lieu of higher prices. Further steps in the direction of replacing market intervention came with fixed direct payments to farmers under the 1996 Federal Agriculture Reform and Improvement (FAIR) Act. Subsequently, low world prices resulted in re-institutionalizing of price-linked countercyclical support payments in 2002. Rising oil prices and energy legislation mandates since 2005 have increased biofuel production and have become a dominate factor in farm policy. The 2008 farm bill was written in the context of a surge in market prices and projections that prices will continue to be higher than they had been earlier in the decade. Traditional subsidies were consequently projected to be lower, but a new revenue guarantee program created the possibility of a sharp increase if prices fall from the high levels of 2007–08.

Unilateral Farm Policy Reform Under the 1996 FAIR Act

The 1996 FAIR Act initiated four changes in U.S. farm support programs for wheat, feedgrains, oilseeds, cotton, and rice, compared to previous legislation. First, farmers who received government support were given the flexibility to plant whatever crops they chose (except for most fruits and vegetables) on "base acreage."[1] Second, the U.S. Department of Agriculture's (USDA's) authority to require annual idling of acreage to limit crop supplies was ended. Third, farmers received fixed income transfers, known as production flexibility contract (PFC) payments, that were based on past production and were independent of current market prices and farmers' planting decisions. These fixed income transfers replaced earlier "deficiency payments" that had required production of the crop for which payments were received.

[1] The term "base acreage" refers to the acreage on which payment eligibility is determined; "deficiency payments" refer to subsidies provided on a fixed amount of base-acre output when market prices were below a legislated "target price," and "loan rates" refer to price guarantees for all output of the covered commodities. The 1990 farm bill provided limited flexibility under which farmers could shift part of their base acreage among crops, without that land permanently losing payments eligibility, but eligibility for deficiency payments was suspended on that acreage during years that alternative crops were grown.

Fourth, the price guarantees made to crop producers for any amount of current output through "loan rates" were capped under the FAIR Act at nominal levels well below market prices prevailing at the time. By 1996, mechanisms had also been put in place for most crops that allowed farmers to receive a loan forgiveness or cash payment (a "marketing gain" or "loan deficiency payment") if market prices were below loan-rate levels.[2] Farmers received these cash payments instead of forfeiting their crops into government-owned storage. Thus the loan rates continued to support prices for producers, but market prices were freed from the loan rate as a floor level and the government was extricated from cumbersome commodity stockpiling.

The changes to farm policy in 1996 were partial reforms in the direction of providing direct income transfers instead of using land idling or government stockholding to keep prices above free-market-clearing levels. Farmers responded to the increased flexibility, or "freedom to farm," that the FAIR Act allowed through substantial movements away from the crops to which deficiency payments previously had been tied, particularly by reducing wheat acreage and expanding planting of soybeans.

Despite its innovations, the extent to which the FAIR Act put farm policy on a less-interventionist or less-costly path was uncertain from the outset. The market-oriented innovations in the FAIR Act came at a time of high crop prices in 1995 and 1996. It is unlikely that farm policy would have abandoned annual acreage idling had market prices not surged upward. As prices rose, agricultural proponents in Congress were able to tout the end to annual acreage set-asides and introduction of fixed income-support payments as deregulation of a large part of agriculture. Freedom to farm had been a rallying point for the Republican Party in the 1950s, the last time before 1995 that Republicans controlled Congress and were in a position to set the farm policy agenda. Yet even Republican proponents of these agricultural policy changes knew that while the FAIR Act gave farmers more cropping flexibility, it also increased support expenditures in the short run because deficiency payments under the old farm program were falling as prices increased. Farmers liked the short-run outcomes under the FAIR Act of less regulation of their production and the new direct payments. When challenged that these policies undermined the longer-term support structure, proponent Pat Roberts (R-Kansas), the chairman of the House Agriculture Committee, opined that Congress (which had just considered but had rejected elimination of the permanent legislation underlying U.S. farm support programs) was the long-term safety net. This turned out to be the case.

Reinstitutionalizing Higher Farm Support Under the 2002 Farm Security and Rural Investment (FSRI) Act

After spiking upward in 1995 and 1996, crop prices began to fall in 1997 and remained low through 2001. As prices fell, support expenditures built into the FAIR Act increased automatically because of the price guarantees provided by loan rates. Loan rate expenditures rose to $3.7 billion for the 1998 crop marketing year, then exceeded $6.0 billion in 1999, 2000, and 2001.

Once prices fell sharply, the combination of PFC payments and the built-in increased expenditures for price guarantees under the FAIR Act provided less support to farmers than under earlier farm programs. Critics decried the 1996 act as "freedom to fail," with low prices, reduced support, and absence of a strong farm safety net. Congress stepped in with "emergency" legislation for supplemental annual appropriations for additional payments. The PFC payments were effectively doubled and Congress also added new disaster relief and crop insurance subsidies.

The next farm bill, the FSRI Act of 2002, was written with farm commodity prices still low. It incorporated all three tiers of existing support. Fixed direct payments were continued at rates similar to those provided by PFC payments under the FAIR Act and were extended to soybeans and other oilseeds. Loan rates were continued and most were raised slightly, compared with the maximum levels under the FAIR Act. Loan rates were added for several more crops (dry peas, lentils, small chickpeas) and reinstated for mohair, wool, and honey. The emergency payments were reinstitutionalized as new

[2] Loan repayment rates are determined for each country for wheat, feedgrains, and oilseeds and by a common "effective adjusted world price" for rice and upland cotton.

countercyclical payments. The countercyclical payments were to be made when the sum of the market price (or loan rate if the market price was lower) plus the direct payment was less than newly legislated target prices. But farmers retained flexibility to plant a range of crops—they did not have to produce the crops for which they received direct and countercyclical payments. Both the direct payments and countercyclical payments were made on 85 percent of base acreage for "payment yields" determined under the legislation. Each participant was allowed a one-time decision about bases and yields that then determined their payment eligibility for the duration of the FSRI Act. The rules for determining base acreage were the same for the direct and countercyclical payments, but differed for program yields.[3]

For the import-competing commodities of sugar and dairy, the traditional support programs were continued in both the 1996 FAIR and 2002 FSRI acts.[4] Sugar imports remained limited by tariff-rate quotas (TRQs) and domestic sugar remained eligible to be forfeited at the loan rate to USDA's Commodity Credit Corporation (CCC) under "non-recourse" loans (for which the commodity collateral is accepted in lieu of repayment). Thus, no basic liberalization of the sugar market was achieved and the loan rates continued to provide a floor under domestic market prices. For dairy products, TRQs remain the primary instrument for keeping domestic prices above world levels. Related dairy provisions of the domestic farm bill are among the most complex among farm programs.[5] To provide price support, the CCC is authorized to buy butter, cheddar cheese, or nonfat dry milk to sustain fluid milk prices at a statutory minimum level. Milk marketing orders also define the relationship between prices of fluid and manufactured dairy products and maintain a regulated geographic price structure.

Passage of the FSRI Act in 2002 was met with derision by domestic policy critics and a barrage of international condemnation. In reply, the U.S. House Agriculture Committee offered a strident defense of U.S. farm policy, arguing it was "important to national security, ensuring a safe, abundant, and affordable domestic food supply." A document posted on the Committee's web page, made the claim that "Critics of U.S. farm policy would cede our food production to unstable places like the Third World," and asked "but in these times does any American want to depend on the Third World for a safe and abundant supply of food and fiber?"

The disparate and sharply worded views of the 2002 farm bill are indicative of the global conflict that has continued to fester over U.S. agricultural trade and support policies. Yet severe critics of the 2002 bill and its staunch defenders both overstated their cases. The 2002 U.S. farm bill took few constructive unilateral steps toward the reduction of subsidies. Nor did it expand the worst subsidy policies as

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[3] Program yields for direct payments were unchanged in the FSRI Act for those crops previously covered under PFC payments. However, those farmers who updated their base acreage were also given options to update yields for the countercyclical payments. This distinction between the two support programs in part reflected WTO considerations. The United States reported the fixed payments to the WTO in the green box. By not allowing yield updating, the United States reduced the likelihood of a challenge to the classification of these payments, even though updating of the base acreage was allowed. The countercyclical payments were also to be made on a fixed acreage and yield and did not require production of specific crops. But the countercyclical payments were explicitly linked to market prices and were expected to be reported as trade-distorting policies. Thus a claim of being exempt from subsidy limit commitments was not being made and yield updating did not pose as much of a threat of a challenge to their classification. Despite these considerations, the Brazilian WTO dispute challenge to the U.S. cotton program raised doubts about whether the direct payments qualified for the green box because they were linked to production by precluding recipients from growing fruits and vegetables on the base acreage (WTO 2005). This issue is being pursued in subsequent cases about the U.S. total AMS brought by Brazil and Canada (WTO 2007a, b), as discussed further below.

[4] For peanuts and tobacco, the traditional production quota programs were abolished through buyouts in 2002 and 2004, respectively. See Orden, Blandford, and Josling (2008) for further discussion.

[5] One innovation under the FSRI Act involved a new national program of Milk Income Loss Contracts (MILC) under which countercyclical payments were to be made to dairy farmers on a monthly basis when market prices of fluid milk were low. Payment eligibility was limited to 2.4 million pounds of milk per year per operation, which corresponded to the production from a relatively small dairy herd of about 135 cows. With this limit, about 50 percent of total national milk production was likely to be eligible for direct payments, but only about 30 percent of the total production was from the smaller operations that produce less than the 2.4 million pound limit. For these small producers, the countercyclical payments created an incentive to expand production at the margin because the per-unit price they receive was supported at the target price level. For the larger farms producing about 70 percent of the milk in the United States, the payments program was decoupled from production in the sense that it provided a variable payment that was inversely related to the price of milk only for a fixed output. This was similar to the countercyclical crop support program in the FSRI Act.

abhorrently as is sometimes implied. Congress had already intervened to increase the PFC payments to farmers on an ad hoc basis when prices were low. The 2002 bill institutionalized those payments, but farmers retained the planting flexibility legislated in 1996. As a result, payments were more decoupled from production decisions than in earlier legislation under which production of specific crops was required. The FSRI Act also included a provision for the Secretary of Agriculture "to the maximum extent practicable" to adjust domestic commodity program expenditures to avoid exceeding allowed WTO domestic support ceilings, but this authority has never been tested.

Conservation Programs

Conservation and environmental programs play an important role in U.S. agricultural production decisions. Through these programs, producers receive rental, cost-share, and other payments in return for idling land for conservation purposes or using specified farming practices. The FAIR and FSRI acts continued and, in most cases, expanded various conservation and environmental programs. The programs that retire environmentally sensitive land from crop production were extended and expanded, but most new expenditures were targeted to measures for livestock operations and land that remained in production.

Idling of farmland under long-term contracts in the Conservation Reserve Program (CRP) has been the primary conservation and environmental program since 1985. This has a supply-depressing effect as well as providing environmental benefits. Written at a time of low prices, the FSRI Act increased the authority of the CRP to 39.2 million acres, compared with 36.4 million under the FAIR Act.

Among the other main environmental programs included in the FSRI Act, the Environmental Quality Incentives Program (EQIP) provides technical assistance, cost sharing, and incentive payments to assist livestock and crop producers with conservation and environmental improvements. Cost sharing (up to 75 percent) or incentive payments were authorized for a wide range of practices, including nutrient management, livestock waste handling, and conservation tillage, terraces, and filter strips. A new Conservation Security Program (CSP) was also initiated, focused on cropland-based practices. Producers were to develop and submit a conservation plan to USDA that identifies the resources and designates land to be conserved. The plan could include conservation practices that fell within one of three tiers in the program. Producers entering into first-tier conservation security contracts received a base payment for conducting practices designated in the conservation plan. Producers might also be eligible for bonus payments for implementing additional (tier two and three) conservation measures.

The mix of conservation and environmental support programs under the FSRI Act calls attention to the policy discretion involved in U.S. programs regarding acreage idling for these purposes. While the U.S. has maintained the CRP and related long-term land-idling since 1985, it is not under any international obligation to do so. Historically, the United States has enacted conservation land-idling as a supply control measure during times of low prices (the 1930s, the 1960s, and again in 1985) and has let these programs expire when market demand is relatively strong.[6]

Expenditures on the CRP fall in the WTO green box, and competitors in world markets naturally do not object to land idling in the United States, since this reduces U.S. production and gives foreign producers a competitive advantage. The CRP has occasionally been criticized for unnecessarily restricting output and keeping world prices for basic grains higher than otherwise, but this was not a policy issue with the low market prices in 2002. Were the United States to shift more fully toward support for environmental practices on land that continues in production, along the lines of the CSP, output could expand but competitors in world markets would have little basis to object under the Uruguay Round WTO agreements, providing that support meets the conditions specified under Annex 2 of the Agreement on Agriculture.

[6] The conservation land-idling program of the 1930s gave way to full-scale production during World War II, but supply abundance in the mid-1950s brought another long-term program. This second long-term land-idling program (the Soil Bank) enrolled a peak of 28.5 million acres in 1961 but was phased out in the 1970s when U.S. agricultural exports boomed.

Continued Support Under the Food, Conservation, and Energy Act of 2008

By 2006, the level of interest in a new farm bill was high. Whereas the Democratic administration in 1995–96 and the Republican administration in 2001–02 had been relatively passive in formulating farm bill proposals, for the anticipated 2007 farm bill, the Secretary of Agriculture called throughout the initial discussions for policies that were "equitable, predictable, and beyond challenge." In January 2007, the administration released a detailed proposal to meet its criteria through a set of incremental reforms along the path of further decoupling of support from market prices and planting decisions (USDA 2007).

Several of the administration's key recommendations related to primarily domestic aspects of farm policy. The administration endorsed continuation of direct payments but proposed that nearly $8 billion over 10 years be shifted from commodity support to conservation programs through other changes in policy design. Part of the claimed savings came from converting countercyclical payments from a price basis to a nationally calculated revenue basis. This was judged to lower expenditures by taking advantage of the natural price–quantity hedge (when output is low, prices are higher and vice versa), which partly stabilizes revenue. The administration also proposed a strict means test with a $200,000 income limit for support payment eligibility. In aggregate, the administration asserted its proposal held spending for agricultural commodity programs close to the level projected under a continuation of the FSRI Act. Because world agricultural commodity prices had strengthened noticeably by 2007, the commodity support spending in the administration's proposed farm bill was expected to be much lower than it had been during 2002–07. In short, under the administration proposal there was to be a squeeze down of traditional commodity subsidies with countercyclical payments and loan-rate-based price supports falling sharply.

Additional administration proposals were related to improving U.S. compliance with the existing WTO rules or those under negotiation in the Doha Round. For cotton, lower loan rates were recommended, compensated by higher direct payments. This potentially addressed the call for particularly strong reforms under the special cotton initiative within the WTO negotiations, with its tight commodity-specific cap on trade-distorting support. The administration recommended that cultivation of fruits and vegetables be permitted on base acres. This would address the issue of whether the direct payments could be counted in the WTO green box, raised by the Brazilian challenge to the U.S. cotton program (WTO 2005). Greater flexibility in U.S. food aid programs was recommended, which would provide the reform that the European Union was demanding in the Doha Round and defuse objections that U.S. food aid programs were implicitly subsidizing exports.

By July 2007, however, the House of Representatives had rejected most of the administration's commodity program reform recommendations and drawn objections from the administration over proposals for tax increases and use of timing shifts and other gimmicks to mask increased spending in the farm bill. The House bill retained the direct, countercyclical, and loan-rate tiers of existing support, assuring farmers that the existing programs remained in place in the event that prices fell to lower levels than were being projected. The loan rate for sugar was increased and the dairy support program modified to provide price supports only for processed products rather than fluid milk, potentially allowing a substantial reduction of the dairy support reported in WTO notifications, while having essentially no real market effects. The House bill offered new demand-augmenting support for fruits and vegetables but did not allow production of these crops on base acres, which was opposed by domestic growers.[7] Overall, the House bill partly mitigated the squeeze out of farm-sector spending that higher prices were creating, but it did not avoid the substantial reduction anticipated for commodity support due to these higher prices.

The Senate completed its farm bill in December 2007. The Senate bill also retained the three-tier support structure as an assurance to farmers in the event of lower prices. It added an optional crop revenue program in place of the existing loan rates and countercyclical payments. This proposal in the

[7] Domestic fruit and vegetable growers were concerned about expanded supplies and lower prices and objected to competing with farmers receiving base-acres subsidies. The domestic growers' objections parallel the challenge raised within the WTO to the notification of direct payments in the green box as allegedly decoupled. In the WTO challenge, however, the objection is to the adverse effects on prices of the subsidized crops from planting restrictions that limit movement into fruits and vegetables.

Senate bill differed substantially from the revenue-based program suggested by the administration because it linked the new revenue guarantees to a moving average of actual market prices and crop acreage and yields, instead of fixed target prices and fixed base-period production levels. The Senate revenue insurance program was estimated to provide similar benefits to the existing programs for corn, wheat, and soybeans when prices were relatively low but higher benefits if prices remained high (Zulauf 2007). This was another step toward avoiding a squeeze out of commodity support. Even so, at anticipated prices the Senate bill was expected to result in a decline in commodity program spending.

It took another six months for Congress to finalize the Food, Conservation, and Energy (FCE) Act of 2008. In the end, the administration reiterated its earlier criticisms of the congressional bills for failing to enact reforms and disguising higher levels of likely expenditures. When the administration showed little inclination to negotiate, Congress passed its bill with enough support to be enacted into law over a presidential veto.

In aggregate terms, the FCE Act distributes expected mandatory expenditures for fiscal years 2008–12 in a similar way to levels anticipated under extension of the FSRI Act. Total expected outlays increased by $5 billion and spending shifted significantly among categories at the margin, as shown in Table 1. These outcomes reflected efforts to attract a broad coalition of congressional backers through increased expenditures for nutrition, conservation, energy, and a host of other programs targeted at specific constituencies.

Table 1. Aggregate anticipated expenditures under the 2008 FCE Act (US$ billion)

	US$ billion, FY2008-FY2012 estimated outlays		
Category	**CBO projected baseline under 2002 FSRI**	**Proposed adjustments (House, Senate versions of the new farm bill)**	**Final FCE Act Expenditures**
Commodity Support	43.3	-1.0; -3.5	41.6
Conservation	21.4	2.8; 4.4	24.1
Crop Insurance	25.7	-4.0; -3.7	21.8
Energy	0.0	2.4; 1.0	0.6
Nutrition	186.0	4.2; 5.3	188.9
Other	7.9	1.5; 2.0	12.0
Total	284.0	5.9; 5.5	289.0

Sources: Congressional Budget Office 2008; Chite 2007; and Johnson 2008.
Notes: CBO is the Congressional Budget Office, FSRI is the Farm Security and Rural Investment Act, and FCE is the Food Conservation, and Energy Act.

Commodity program spending of $41.6 billion was projected under the FCE Act. In contrast, commodity support was $59.3 billion during the previous five fiscal years and was projected to be $78 billion during those years when the 2002 farm bill was written (Chite 2007). Authority for the CRP was reduced to 32 million acres by the FCE Act, but expected expenditures for conservation programs increased by $2.7 billion to $24.1 billion, reaching almost 60 percent of the projected commodity support, compared with just 25 percent during the previous five years. Thus, in the event of projected high prices, a substantial relative shift toward conservation will take place in farm program outlays. But farmers remain well protected if prices turn out lower than projected—through retention and even a marginal strengthening of the loan-rate and countercyclical tiers of commodity support. The FCE Act included only a small pilot program to allow production on base acreage of certain fruits and vegetables (for processing on 60,000 acres in seven Midwestern states), with any such acreage planted ineligible for support payments during that year. The FCE Act also increased dairy support through milk income loss payments and created a new program of payments to processors of domestic or imported cotton to replace the “Step 2” payments to processors of domestic cotton that had been ruled in violation of WTO rules in the case

brought by Brazil (WTO 2005). Various other titles of the farm bill expanded and added programs for biofuels, horticultural crops, and disaster assistance.

One of the proximate causes of the boom in commodity markets prices in 2007-08 was the U.S. ethanol fuel tax credit and ethanol use mandates designed to promote corn-based fuel production. These are highly product-specific policy instruments reinforced by a high import duty. Initiated in 1978, the tax credit, together with other federal and state incentives, had only induced a modest level of ethanol output (less than 2 billion gallons in 2005) until oil prices rose and new ethanol use mandates were enacted. The federal ethanol tax credit of $0.51 per gallon adds more than $1.50 to the break-even price that can be paid for corn converted into ethanol (Tyner 2007). The subsidy exceeded $3 billion by 2007, and the Energy Policy Act of 2005 mandated that production reach 7.5 billion gallons by 2012. As oil prices rose and wars festered in Iraq and Afghanistan, political calls arose for increased energy security for the United States. The Energy Independence and Security Act of December 2007 expanded the mandate for biofuels use to 36 billion gallons by 2022, of which 15 billion gallons were to come largely from corn-based ethanol production. A model-based estimate of the effect on corn market prices by de Gorter and Just (2007) suggested an increase of 25 percent ($0.74 per bushel) in 2006 due to the tax credit, assuming the mandate was not binding. Other studies have suggested increases of 12–14 percent (by then also around $0.70) in 2008–09 (Babcock 2008), or averaged over 2011–17 (FAPRI 2008), due to the mandates, tax credits, and U.S. import duties of $0.54 per gallon of ethanol. With record oil prices stimulating ethanol production, the new farm bill reduced the ethanol tax credit to $0.45 per gallon but extended the ethanol import duty through 2012.

With high farm commodity prices in 2008, the fixed direct payments to farmers came under scrutiny in the domestic policy debate. Decoupled income support payments are encouraged by WTO rules as a way of providing an attractive non trade-distorting support option. But with the fixed direct payments making up so large a share of the farm support anticipated under the FCE Act, proponents of alternative spending eyed reducing those payments as a source of funding for other programs. The direct payments were retained only after a rancorous domestic confrontation, particularly in terms of income eligibility limits on the recipients. Payment eligibility criteria were tightened modestly (to caps on nonfarm income of $500,000 for all three commodity support programs and farm income of $750,000 for direct payments only). Payments were also reduced by 2 percent by limiting the base acreage on which they were made from 85.0 to 83.3 percent through 2011, then restoring the initial level in 2012 to retain a larger budget baseline for future payment projections when the next farm bill is written.

In one respect the sharp rise in prices in 2008 shifted policy toward a new instrument, as rising prices had in 1995–96. In this case, however, the shift was toward a program more closely tied to production and market prices. The FCE adopted a modified Senate version of revenue insurance in the form of an optional new Average Crop Revenue Election (ACRE) program, which is likely to be considered product-specific, trade-distorting support in the WTO. Starting with the 2009 crop, farmers electing ACRE for all covered commodities for the duration of the FCE Act incur a 20-percent cut in direct payments and a 30-percent cut in their loan rates. In exchange, if crop revenue for the state (yield per planted acre times the national average annual price) is below a guaranteed level, and the producer incurs a loss of revenue for the crop on their farm, then they are assured of payments of up to 25 percent of the revenue guarantee. The guarantee is 90 percent of the revenue derived from multiplying the two-year national average of lagged prices times the five-year Olympic average of state average yields per acre (Committee on Agriculture, House of Representatives 2008; Harris et al. 2008). This guarantee covers 83.3 percent of the acreage planted or considered to be planted by a farmer in each of the covered crops; thus it is based on current production of each crop but total planted acres covered by ACRE are capped at the farmer's total base acres. Once the initial revenue guarantee per acre for each crop is established for a farmer entering the program, it cannot vary by more than 10 percent from the previous year's guarantee, moderating any sharp revenue downturn.

In assessing the cost of the farm bill, the Congressional Budget Office (CBO) concluded that only a relatively small fraction of farmers would enroll in the ACRE program and that its cost would be modest. But with prices at historically high levels in the first half of 2008, the administration argued that

initiating ACRE with the moving average of prices prevailing in 2007–08 ran the risk of inducing subsidy payments at much higher price levels than under the target prices of the countercyclical payments program. As an example, the administration assumed that if 90 percent of farmers opted for the ACRE program, payments for corn alone would be nearly $4 billion in 2009 at prices as high as $4.00 per bushel, compared to no countercyclical payments at prices above the corn target of $2.63 per bushel (USDA 2008a). Although the ACRE payments decline once prices stabilize, this example illustrates that the ACRE program ratchets up the price level at which subsidy payments would occur during a transition period when high prices fall. The ACRE program opened the most substantial opportunity within the FCE Act to avoid a squeeze down of subsidy payments due to high prices, as acknowledged by its proponents (Brasher 2008). Subsequently, Blandford and Josling (2008) concluded that ACRE program payments would in some years exceed commodity-specific caps under negotiation in the Doha Round if prices of corn, wheat, and soybeans during 2007–12 followed a pattern similar to the 1970s, 1980s, or 1990s. We also provide an analysis of possible ACRE costs in our assessment of projected U.S. domestic support below.

In addition to the ACRE program, which provides a new optional revenue guarantee, traditional crop and revenue insurance programs have expanded with increased government costs in the early 2000s. The FCE Act stipulated that total premiums be adjusted slightly to equal total indemnities payments (resulting in an expected loss ratio equal to one) and reduced the administrative costs of delivering crop and revenue insurance programs by cutting the service rates to insurance agents. Larger claimed five-year savings were achieved simply by postponing the timing of some payments past 2012. Nevertheless, with higher crop prices the subsidies for crop and revenue insurance were projected to be higher than they had averaged under the FSRI Act.

Congress also had appropriated annual disaster relief to agriculture that averaged nearly $2 billion annually during 2000–05. The FCE Act created mandatory funding for five disaster relief programs by amending the Trade Act of 1974 to establish a mandatory program (of nearly $4 billion over five years) financed from import duties. Again this was a step toward avoiding a squeeze down of support to agriculture by ensuring at least partial availability of funds for disaster relief without requiring annual congressional appropriations.

Slight increases in loan rates and target prices contained in the FCE Act strengthen policy instruments coupled to production. These will prove innocuous (with the exception of raising the sugar loan rate) if prices remain well above loan-rate levels as projected.[8] But these parameter adjustments are another signal of the strength of the farm lobby. The argument made, and which will be extended if farm price and income conditions deteriorate from their 2008 levels, is that higher energy prices and related production costs render inadequate the safety net that was good enough, indeed lauded by many farm groups, from 2002 to 2006. Based on this argument, traditional price and income support levels that were raised only slightly in 2007 could be increased further in the future.

Despite all of these considerations, the high world prices that were straining the global food system and prompting defensive policy reactions among exporters and importers worldwide in mid 2008 had only modest effects on the commodity support provisions of the U.S. farm bill. There was no significant shift toward decoupled policy instruments, as occurred when prices rose sharply in 1995–96, nor were there calls for an end to the permanent support legislation, as was articulated in the earlier debate. The veto-proof majorities assembled in Congress for the FCE Act demonstrated the ability of the farm lobby to secure a continuation of support programs that largely serve the same purposes and benefit the same interest groups as earlier legislation. Still, the farm lobby did not avoid, at least for the time being, a projected squeeze down of anticipated subsidy payments under the price-linked support programs.

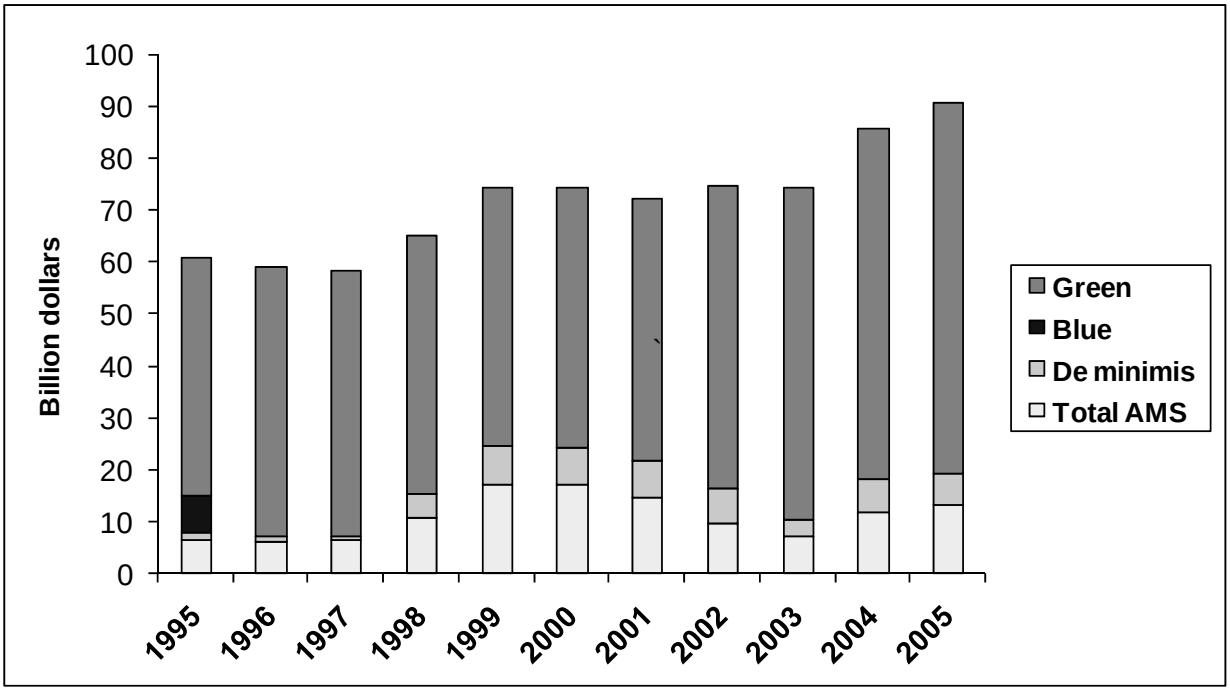
[8] The loan rate for raw cane sugar rises from $0.18 per pound to $0.1875 by 2012. The Secretary of Agriculture is required to set domestic marketing allotments at no less that 85 percent of estimated quantities for domestic human consumption and to purchase sugar to produce biofuels if necessary to avoid forfeitures of sugar to the Commodity Credit Corporation, thus insulating domestic producers from the pressure of increased imports under trade agreements.

3. WTO NOTIFICATIONS OF U.S. DOMESTIC SUPPORT

The United States has provided the WTO with notifications of its domestic support for the 11 years between 1995 and 2005. The notification for green-box support (Supporting Table DS:1 in the notifications) is on a federal fiscal year basis (October–September).[9] The product-specific tables on the aggregate measure of support (AMS) (Supporting Tables DS:3–7) are on a marketing-year basis. The non product-specific AMS data (Supporting Table DS:9) relate to both marketing years and fiscal years.[10] As a result, the aggregations used in calculating the notified AMS and *de minimis* include data for a mixture of years. Commodity and program details given in the tables in this paper are based on conformable data. If a notification was provided for any commodity or program during the period 1995–2005 that category is included in the table, but if no notification was provided in a given year, there is a blank entry in the table.[11]

Figure 1 graphs support notified to the WTO under the green, blue, total AMS and *de minimis* categories, and Figure 2 shows the percentage composition of support in each year. Table 2 provides the numerical detail for these support categories.

Figure 1. U.S. notified domestic support (US$ billion), 1995–2005



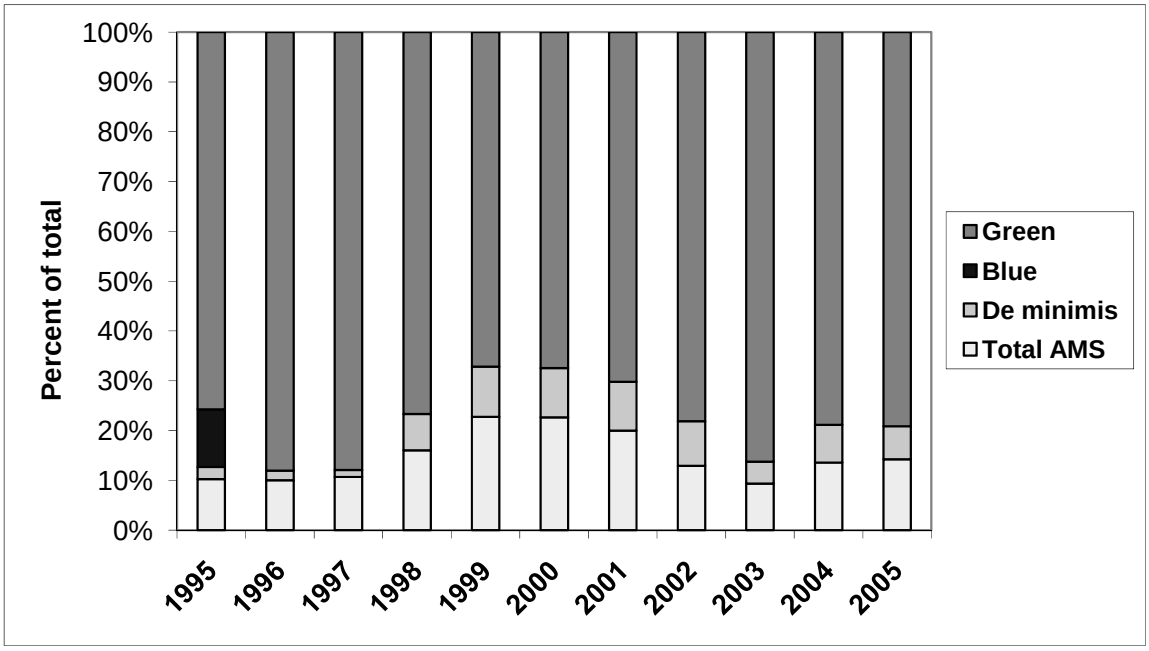
Source: Computed from WTO notifications.

[9] The structure of the WTO notification tables is presented in a WTO document (1995). See Brink (2007) and Orden (2008) for further discussion. The official U.S. notifications are available on-line in the G/AG/N series of documents (e.g G/AG/N/USA/60 for the notification for 2002–2005).

[10] The periodicity of the estimated data in Table DS:9 is unclear in some cases. It is possible that some of the source data relate to calendar years. The *de minimis* threshold below which product-specific and non product-specific support can be exclude from the total AMS is 5 percent of the value of production.

[11] The U.S. notification for 2004 contains an error for the market price support (MPS) calculation for sugar. This was notified as $1,219.8 million, but the correct value is $1,186.0 million, which is used in our tables.

Figure 2. U.S. notified domestic support, 1995–2005 (%)



Source: Computed from WTO notifications.

Table 2. Summary of U.S. domestic support notifications, 1995-2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						(US$ billion)					
Total AMS	6.21	5.90	6.24	10.39	16.86	16.80	14.41	9.64	6.95	11.63	12.94
De minimis[a]	1.48	1.15	0.80	4.74	7.43	7.34	7.04	6.69	3.24	6.46	5.98
Blue	7.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green	46.04	51.83	51.25	49.82	49.75	50.06	50.67	58.32	64.06	67.43	71.83
Total support	60.77	58.88	58.29	64.95	74.05	74.20	72.13	74.65	74.25	85.51	90.75
						Share of total support (%)					
Total AMS	10%	10%	11%	16%	23%	23%	20%	13%	9%	14%	14%
De minimis[a]	2%	2%	1%	7%	10%	10%	10%	9%	4%	8%	7%
Blue	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Green	76%	88%	88%	77%	67%	67%	70%	78%	86%	79%	79%
Total support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: WTO notifications and authors' calculations.
[a] Includes product-specific and non product-specific *de minimis*.

Green-Box Support

Total notified support rose from roughly $60 billion in the mid-1990s to more than $90 billion in 2005. The largest category of support is in the green box. This has grown from $46 billion in 1995 to $72 billion in 2005 and now accounts for roughly 80 percent of total notified U.S. support. Table 3 shows that the most rapidly growing category of green-box expenditure is for domestic food aid, which accounted for 70 percent of the green-box total in 2005. In terms of payments to farmers, decoupled income support has been the most important component of the green box. Decoupled income support is composed mostly of the fixed direct payments initiated in the 1996 FAIR Act whose status is being questioned in the WTO, but it also includes peanut and tobacco buyout payments starting in 2002 and 2004, respectively. Disaster relief and environmental payments have also been important green-box agricultural support expenditures. Together these three categories have totaled roughly $10 billion annually in recent notifications. Blue-box support is not important for the United States because the deficiency payments for major crops that would have been included in this category were eliminated by the FAIR Act.

Table 3. U.S. green-box notifications

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						US$ billion					
General services	6.42	6.55	6.80	7.23	7.69	8.55	9.21	10.26	10.94	11.20	11.35
Public stockholding/food security	0	0	0	0	0	0	0	0	0	0	0
Domestic food aid	37.47	37.83	35.96	33.49	33.05	32.38	33.92	38.01	42.38	45.86	50.67
Decoupled income support[a]	0	5.19	6.29	5.66	5.47	5.07	4.10	5.30	6.49	5.27	6.16
Income insurance/safety nets	0	0	0	0	0	0	0	0	0	0	0
Disaster relief	0.10	0.16	0.16	1.41	1.64	2.14	1.42	2.12	1.69	1.96	0.17
Producer retirement	0	0	0	0	0	0	0	0	0	0	0
Resource retirement	1.73	1.73	1.69	1.69	1.43	1.48	1.62	0	0	0	0
Investment aids	0.08	0.09	0.09	0.09	0.13	0.13	0.11	0.12	0.11	0.09	0.08
Environmental payments	0.23	0.28	0.27	0.26	0.33	0.31	0.29	2.51	2.45	3.04	3.40
Regional assistance	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	46.04	51.83	51.25	49.82	49.75	50.06	50.67	58.32	64.06	67.43	71.83

Source: WTO notifications.

[a] Subtracting peanut and tobacco buyout payments, fixed direct payments are 5.27 in 2003, 5.26 in 2004 and 5.22 in 2005.

Product-Specific Support

Figure 1 shows that amber-box support—defined as the total AMS plus product-specific (PS) and non product-specific (NPS) support that is notified as *de minimis*—can vary substantially from year to year depending on prices and production. In periods when prices are low, such as 1999–2000, support can increase markedly in comparison to periods such as 1996–97 when prices of farm products were relatively high. Table 4 provides a breakdown of the product-specific AMS (before the application of *de minimis*) by type of measure. The market price support (MPS) component of the AMS is based on administered (loan rate) support prices that exceed fixed reference price levels set in the U.S. Uruguay Round schedule. MPS amounts to nearly $6 billion in most years. The MPS for peanuts was eliminated as a result of changes in the peanut program under the 2002 FSRI Act.

Table 4. Composition of the product-specific AMS by type of measure (before the application of de minimis)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Type of measure						(US$ million)					
Market price support	6,213	5,919	5,816	5,776	5,921	5,840	5,826	5,771	5,758	5,832	5,908
Dairy	4,693	4,674	4,455	4,332	4,437	4,377	4,483	4,509	4,515	4,646	4,794
Sugar	1,108	937	1,045	1,093	1,180	1,133	1,032	1,262	1,242	1,186	1,114
Peanuts	412	308	315	350	303	330	311	0	0	0	0
Emergency payments	0	0	0	331	697	1,526	6	1,409	1	41	85
Price-linked subsidies	88	6	578	4,106	9,706	9,042	8,429	3,525	1,141	5,549	6,616
Other support[a]	10	12	80	338	567	457	367	523	487	853	447
Total	6,311	5,938	6,475	10,550	16,891	16,865	14,628	11,227	7,386	12,275	13,055
Type of measure						(% of total)					
Market price support	50%	50%	47%	35%	26%	26%	28%	34%	44%	32%	31%
Emergency payments	0%	0%	0%	2%	3%	7%	0%	8%	0%	0%	0%
Price-linked subsidies	1%	0%	5%	25%	43%	40%	41%	21%	9%	31%	35%
Other support	0%	0%	1%	2%	2%	2%	2%	3%	4%	5%	2%
Major price-linked subsidies						(US$ million)					
Certificate exchange gains	0	0	0	6	175	619	1,975	317	307	1,453	167
Commodity loan forfeit	0	0	-2	6	642	20	20	658	1	11	1,010
Loan deficiency payments	0	0	3	2,723	6,062	6,192	5,588	546	475	3,695	4,801
Marketing loan gains/payments	0	0	161	1,092	1,830	813	615	185	132	341	265
Cotton user marketing payments	35	6	416	280	446	237	182	0	0	0	0
Milk income loss contracts	0	0	0	0	0	0	0	1,795	221	9	352
Oilseed payments	0	0	0	0	460	921	0	0	0	0	0
Other[b]	53	0	0	0	92	241	49	23	9	40	21

Source: Computed from WTO notifications.

[a] Includes commodity loan interest subsidies and storage payments, cotton user marketing (Step 2) payments, bioenergy program payments, and assorted others.

[b] Includes adjustment assistance payments, support payments for mohair and wool, and miscellaneous payments for cotton, dry peas, sugar, and wheat.

Tables 5 to 7 provide detailed information on the commodity composition of the notified product-specific AMS. The first thing to note is that a comprehensive table reveals that in some cases notifications have been provided in various years under different headings for related commodities. For example, notifications have been provided for individual orchard and vineyard crops as well as an aggregate of those crops; the same applies to livestock. The impact of this on the AMS is unclear. But it is possible that part of the support notified for livestock in 2002 (more than $1.1 billion in Table 5), which was excluded from the notified total AMS (see Table 6) because of *de minimis*, would have been counted if it had been apportioned to individual livestock categories. This is not to imply that the notification was deliberately intended to achieve that effect, but when appropriate data is not available the mixing of overlapping product categories in the notifications raises an issue for identifying accurately the amount of support provided for individual commodities.

A comparison of the AMS in Tables 5 and 6 before and after *de minimis* reveals that product-specific *de minimis* has generally not been a major factor in reducing notified support, with the exception of the 2002 exclusion of payments to livestock farmers. However, the exclusion has reduced significantly the number of years for which AMS support has been notified for a wide range of commodities. For example, an AMS applied to barley in all 11 years, but after the application of *de minimis* less than half the years have a barley AMS included in the U.S. total AMS.

Table 7 shows the percentage composition of the product-specific total AMS by commodity after the application of *de minimis*. Dairy and sugar MPS has consistently accounted for significant shares of the total AMS. However, when crop prices have been low, for example during 1998–2001, the included subsidy payments have increased for the major field crops, such as corn and soybeans, and their share of the total AMS has been important. Cotton which has been particularly contentious in the WTO negotiations accounts for as much as 19 percent of the U.S. total AMS in several years.

Table 5. Product-specific AMS by commodity (before the application of *de minimis*)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commodity						**(US$ million[a])**					
Apples					99	175		4			
Apricots						2					
Avocados											0
Barley	1	1	4	84	40	70	16	4	1	83	46
Beef and Veal											
Blueberries, wild								0			
Cattle and calves								136			
Chickpeas								0	0	0	0
Corn	32	28	150	1,534	2,554	2,757	1,270	187	233	3,059	4,490
Cotton	32	3	466	935	2,353	1,050	2,810	1,187	435	2,238	1,621
Cranberries					20						
Dairy	4,655	4,691	4,456	4,560	4,660	5,070	4,483	6,305	4,737	4,663	5,149
Dry peas								0	14	32	37
Grapes									0		1
Hogs and pigs				123							
Honey	1			0	0	29		0	0	2	0
Lentils								2	0	1	11
Livestock								1,110	1	2	0
Lychee									0	0	
Minor Oil Seeds:											
Canola	0	0	0	8	39	82	23	0	7	4	14
Crambe					1	2	0	0	0	0	
Flaxseed		0	0	2	11	25	12			0	
Mustard Seed			0	0	1	0	0				
Rapeseed					0	0	0				
Safflower	0	0	0	0	2	3		2			
Sesame						0					
Sunflower	0	0	0	21	143	161	55	0	0		18
Mohair	15			0	2	2	0	5	4	3	2
Oats	0	0	0	20	31	45	4	0	3	3	0
Olives									1		
Onions						10					
Orchards & vineyards										5	0
Peaches						7					
Peanuts	415	299	306	340	349	438	305	66	21	32	89
Pears						3					
Pecan trees										1	
Potatoes					14	26			1		
Rice	12	6	6	21	435	624	763	712	503	131	133
Rye	0										
Sheep and lamb					13	10	22	23		14	
Sorghum	0	1	2	63	154	84	6	4	17	130	140
Soybeans	16	14	45	1,275	2,856	3,606	3,610	52	25	506	69
Sugar	1,091	908	1,011	1,055	1,207	1,177	1,061	1,328	1,250	1,248	1,199
Tobacco	-2	-21	-8	-7	924	519	-1	70	19	20	
Tomatoes						7					
Wheat	5	8	36	516	974	847	189	22	107	91	29
Wool	38				9	33		8	7	7	7
All commodities	6,311	5,937	6,475	10,550	16,891	16,865	14,628	11,227	7,386	12,275	13,055

Source: Based on data from WTO notifications

[a] No value means no notified support, 0 means less than $0.5 million.

Table 6. Product-specific total AMS by commodity (after the application of *de minimis*)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commodity						**(US$ million[a])**					
Apples					99	175					
Apricots						2					
Avocados											
Barley				84	40	70				83	46
Beef and Veal											
Blueberries, wild											
Cattle and calves											
Chickpeas									0	0	0
Corn				1,534	2,554	2,757	1,270			3,059	4,490
Cotton			466	935	2,353	1,050	2,810	1,187	435	2,238	1,621
Cranberries					20						
Dairy	4,655	4,691	4,456	4,560	4,660	5,070	4,483	6,305	4,737	4,663	5,149
Dry peas									14	32	37
Grapes											
Hogs and pigs											
Honey						29					
Lentils								2			11
Livestock											
Lychee											
Minor Oil Seeds:											
Canola				8	39	82	23				14
Crambe					1	2	0	0		0	
Flaxseed				2	11	25	12				
Mustard Seed	0	0	0	0	1	0					
Rapeseed	0	0	0		0	0	0				
Safflower	0	0	0	0		3		2			
Sesame						0					
Sunflower					143	161	55				
Mohair	15				2	2		5	4	3	2
Oats				20	31	45					
Olives											
Onions											
Orchards & vineyards											
Peaches											
Peanuts	415	299	306	340	349	438	305	66			89
Pears											
Pecan trees											
Potatoes											
Rice					435	624	763	712	503	131	133
Rye											
Sheep and lamb							22	23			
Sorghum				63	154	84				130	140
Soybeans				1,275	2,856	3,606	3,610				
Sugar	1,091	908	1,011	1,055	1,207	1,177	1,061	1,328	1,250	1,248	1,199
Tobacco					924	519					
Tomatoes											
Wheat				516	974	847					
Wool	38				9	33		8	7	7	7
All commodities	6,214	5,898	6,238	10,392	16,862	16,803	14,413	9,637	6,950	11,595	12,938

Source: Based on data from WTO notifications.

[a] No value means no notified support, 0 means less than $0.5 million.

Table 7. Product-specific total AMS by commodity (after the application of de minimis %)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commodity[a]											
Apples					0.6%	1.0%					
Apricots						0.0%					
Avocados											
Barley				0.8%	0.2%	0.4%				0.7%	0.4%
Beef and Veal											
Blueberries, wild											
Cattle and calves											
Chickpeas									0.0%	0.0%	0.0%
Corn				14.8%	15.1%	16.4%	8.8%			26.4%	34.7%
Cotton			7.5%	9.0%	14.0%	6.2%	19.5%	12.3%	6.3%	19.3%	12.5%
Cranberries					0.1%						
Dairy	74.9%	79.5%	71.4%	43.9%	27.6%	30.2%	31.1%	65.4%	68.2%	40.2%	39.8%
Dry peas									0.2%	0.3%	0.3%
Grapes											
Hogs and pigs											
Honey						0.2%					
Lentils								0.0%			0.1%
Livestock											
Lychee											
Minor Oil Seeds:											
Canola				0.1%	0.2%	0.5%	0.2%				0.1%
Crambe					0.0%	0.0%	0.0%	0.0%		0.0%	
Flaxseed				0.0%	0.1%	0.1%	0.1%				
Mustard Seed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
Rapeseed	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%				
Safflower	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%			
Sesame						0.0%					
Sunflower					0.8%	1.0%	0.4%				
Mohair	0.2%				0.0%	0.0%		0.1%	0.1%	0.0%	0.0%
Oats				0.2%	0.2%	0.3%					
Olives											
Onions											
Orchards & vineyards											
Peaches											
Peanuts	6.7%	5.1%	4.9%	3.3%	2.1%	2.6%	2.1%	0.7%			0.7%
Pears											
Pecan trees											
Potatoes											
Rice					2.6%	3.7%	5.3%	7.4%	7.2%	1.1%	1.0%
Rye											
Sheep and lamb							0.2%	0.2%			
Sorghum				0.6%	0.9%	0.5%				1.1%	1.1%
Soybeans				12.3%	16.9%	21.5%	25.0%				
Sugar	17.6%	15.4%	16.2%	10.2%	7.2%	7.0%	7.4%	13.8%	18.0%	10.8%	9.3%
Tobacco					5.5%	3.1%					
Tomatoes											
Wheat				5.0%	5.8%	5.0%					
Wool	0.6%				0.1%	0.2%		0.1%	0.1%	0.1%	0.1%
All commodities	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Based on data from WTO notifications.

[a] No value means no notified support, 0 means less than $0.5 million.

Non Product-Specific Support

Several important forms of support are included under the non product-specific (NPS) AMS category (Table 8). The crop market loss assistance (MLA) payments from 1998 to 2001 and countercyclical payments initiated in 2002 exceeded $4.0 billion in five years, including 2005. Crop and revenue insurance subsidies have been another important component of NPS support, with lesser payments under various emergency assistance programs.

The variability in the NPS support is also apparent in Table 8, and again this is related to price movements. The NPS support increased sharply in the late 1990s as Congress responded to declining prices by increasing the assistance provided to U.S. farmers. Among the measures taken was to supplement the fixed direct payments that farmers received under the 1996 FAIR Act through crop MLA payments. Since these were paid to farmers in proportion to their total eligibility for direct payments, they were notified as non product-specific support.[12] The 2002 FSRI Act introduced the countercyclical payments, which are directly linked to market prices but are based on fixed areas and yields. The introduction of these price-responsive forms of support has contributed to an increase in NPS support and has also made it more variable. Since 1998, when MLA payments were first introduced, such support has varied between $0.5 and $5.5 billion.

Table 8. U.S. non product-specific AMS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						(US$ billion)					
Irrigation projects	0.380	0.380	0.349	0.349	0.316	0.316	0.300	0.300	0.300	0.269	0.269
Livestock grazing	0.045	0.050	0.051	0.051	0.055	0.051	0.065	0.047	0.041	0.047	0.039
Crop and revenue insurance	0.913	0.636	0.119	0.747	1.514	1.396	1.770	2.889	1.862	1.123	0.756
Rio Grande water loss assistance								0.010			
Tree assistance program (CA/NY)									0.002		
Multiyear crop disaster payments				0.577							
State credit programs	0.049	0.049	0.049	0.049	0.049	0.049	0.049				
Emergency loans for seed producers					0.003			0.049	0.049	0.049	0.049
Farm storage facility loans					0.001	0.003	0.004	0.001	0.003	0.002	0.000
Crop market loss assistance payments				2.811	5.468	5.463	4.640				
Countercyclical payments								1.804	0.544	4.288	4.749
Total	1.386	1.115	0.567	4.584	7.406	7.278	6.828	5.101	2.801	5.778	5.862

Source: WTO notifications.

The United States has excluded NPS support from its notified total AMS as being under *de minimis* in all years. This *de minimis* exclusion has proved to be extremely important to the U.S. notifications. Table 9 summarizes the composition of the reported *de minimis* and shows the dominance of the NPS *de minimis* in total *de minimis*. Because of the large value of total U.S. agricultural production (averaging roughly $210 billion between 1995 and 2005), the NPS support would have had to have been roughly $3 billion greater than the maximum notified amount in order to breach the 5 percent *de minimis*

[12] Market loss assistance payments were provided for some commodities (e.g., dairy) that are not included in the determination of NPS payments to farmers. As noted above, these were notified as product-specific AMS.

ceiling. As shown in Table 2, *de minimis* as a whole has accounted for up to 10 percent of total notified support.

Table 10 presents several alternative summations of the notified U.S. support. The size of the *de minimis* exemption was equivalent to more than 40 percent of the notified total AMS (after *de minimis*) on average, and it almost reached 70 percent in 2002. Most significant, if the United States had not been able to use this exemption, it would have exceeded its total AMS binding in 1999–2001.

Table 9. Composition of U.S. *de minimis*

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	(US$ million)										
Product specific	97	40	236	158	29	63	215	1,590	436	680	118
Non product-specific	1,386	1,115	567	4,584	7,406	7,278	6,828	5,101	2,801	5,778	5,862
Total	1,483	1,155	804	4,742	7,435	7,341	7,043	6,690	3,237	6,458	5,980
	(% of total)										
Product specific	7%	3%	29%	3%	0%	1%	3%	24%	13%	11%	2%
Non product-specific	93%	97%	71%	97%	100%	99%	97%	76%	87%	89%	98%

Source: Calculated from data in WTO notifications.

Table 10. Summary and alternative summations of notified U.S domestic support, 1995-2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	(US$ billion)										
Total AMS	6.21	5.90	6.24	10.39	16.86	16.80	14.41	9.64	6.95	11.63	12.94
De minimis [a]	1.48	1.15	0.80	4.74	7.43	7.34	7.04	6.69	3.24	6.46	5.98
Blue	7.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green	46.04	51.83	51.25	49.82	49.75	50.06	50.67	58.32	64.06	67.43	71.83
Total support	60.77	58.88	58.29	64.95	74.05	74.20	72.13	74.65	74.25	85.51	90.75
	Alternative summations (US$ billion and %)										
URA AMS Binding	23.08	22.29	21.49	20.70	19.90	19.10	19.10	19.10	19.10	19.10	19.10
Total amber [b]	7.70	7.05	7.04	15.13	24.30	24.14	21.46	16.33	10.19	18.09	18.92
As percent of binding	33%	32%	33%	73%	**122%**	**126%**	**112%**	85%	53%	95%	99%
De minimis/total AMS	24%	20%	13%	46%	44%	44%	49%	69%	47%	56%	46%
De minimis/total amber	19%	16%	11%	31%	31%	30%	33%	41%	32%	36%	32%
Total AMS+NPS (with DPs)[c]	6.21	5.90	6.24	20.63	29.74	29.15	25.34	20.04	6.95	11.63	12.94
As percent of binding	27%	26%	29%	100%	**149%**	**153%**	**133%**	**105%**	36%	61%	68%
Total AMS + CCPs + DPs[d]	6.21	11.08	12.52	18.86	27.80	27.33	23.15	16.74	12.76	21.18	22.91
As percent of binding	27%	50%	58%	91%	**140%**	**143%**	**121%**	88%	67%	**111%**	**120%**

Source: WTO notifications.
Notes: URA is the Uruguay Round Agreement.
[a] Includes product-specific and non product-specific *de minimis*.
[b] Total amber is defined as total AMS + *de minimis*.
[c] Fixed direct payments (DPs) only count against the total aggregate measure of support (AMS) limit (and are added to the total AMS), if their inclusion in the non product-specific (NPS) support causes this to exceed the *de minimis* threshold. Fixed direct payments exclude buyout payments for peanuts and tobacco that are included in notified green-box decoupled income support.
[d] Assumes that crop market loss assistance (MLA) payments, countercyclical (CCP) payments and fixed direct payments (excluding buyout payments) are re-classified as product-specific support.

An important issue for the United States is the notification status of some of its programs in light of the Brazilian cotton case (WTO 2005) and further challenges to its support payments by Brazil and

Canada (WTO 2007a, 2007b). The cotton case ruling cast doubt on whether the fixed direct payments, which are currently notified as green-box decoupled income support, qualify for that category. If direct payments had been notified in the amber box, the United States would have violated its total AMS commitment in a number of years. Table 10 shows that if direct payments were notified as non product-specific support (following the approach used by the United States for countercyclical payments) the total AMS binding would have been exceeded in 4 of the 11 years for which notifications have been provided to the WTO. If both crop market loss assistance and countercyclical payments as well as the fixed direct payments were counted as product-specific support (as may be argued by Canada or Brazil, based on the precedent of the cotton case ruling) the United States would have exceeded its commitment in 5 of the 11 years.

Shadow Notification for 2006

Sufficient data are available to generate estimates for the U.S. total AMS for 2006.[13] These are contained in the final column of Table 11, which also summarizes comparable information from the official notifications.

The "shadow" notification for 2006 reinforces the point about the importance of commodity prices for U.S. WTO notifications. When prices are high, price-linked subsidies decline and this reduces notified support. The estimated total AMS for 2006 is $7.8 billion, compared to $13 billion in 2005. The MPS component increased by roughly $280 million due to higher production of milk and sugar, but higher prices caused a significant fall in product-specific AMS payments for crops. These price-linked payments fell from $6.7 billion for marketing year 2005 to $1.4 billion for 2006. The virtual elimination of loan deficiency payments for corn in 2006 accounted for most of the reduction in the product-specific AMS and support for this commodity fell below *de minimis*. Higher prices also caused the product-specific *de minimis* thresholds to increase slightly for several other important grains (barley, rice, and sorghum) and the reduced support for these crops also fell below the *de minimis* level in 2006.

Table 11. Support notified under the AMS with shadow notification for 2006

	Official notifications											Shadow
Type of support	**(US$ million)**											
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Product-specific (PS) support												
Market price support	6,213	5,919	5,816	5,776	5,921	5,840	5,826	5,771	5,758	5,832	5,908	6,191
Nonexempt payments	88	7	578	4,437	10,403	10,567	8,435	4,934	1,142	5,590	6,700	1,396
Other support	10	12	80	338	567	457	367	523	487	853	447	346
Total	6,311	5,938	6,475	10,550	16,891	16,865	14,628	11,227	7,386	12,275	13,055	7,933
Product-specific *de minimis* exclusion	97	40	236	158	29	63	215	1,590	436	680	118	153
Nonproduct-specific (NPS) support	1,386	1,115	567	4,584	7,406	7,278	6,828	5,101	2,801	5,778	5,862	5,121
Percent of value of production	0.7%	0.5%	0.3%	2.4%	4.0%	3.8%	3.4%	2.6%	1.3%	2.5%	2.5%	2.1%
NPS *de minimis* exclusion	1,386	1,115	567	4,584	7,406	7,278	6,828	5,101	2,801	5,778	5,862	5,121
Notified total AMS	6,214	5,898	6,238	10,392	16,862	16,803	14,413	9,637	6,950	11,595	12,938	7,780

Source: WTO notifications and authors' estimates.

[13] The principal source of information is the Commodity Estimates Yearbook of the Commodity Credit Corporation (USDA 2008b).

The U.S. NPS support is estimated to have fallen slightly from $5.9 billion in 2005 to $5.1 billion in 2006. Higher commodity prices resulted in a reduction in countercyclical payments from $4.7 billion to $3.2 billion, but crop and revenue insurance subsidies increased sharply from $750 million to $1.6 billion. The NPS support in 2006 was equivalent to roughly the same percentage of production as in recent years (2.1 percent) and remained comfortably below the *de minimis* threshold. The NPS support was equivalent to 65 percent of notified total AMS (after *de minimis*), thus accounting for nearly 40 percent of the non green-box support provided to U.S. farmers in 2006. The potential role of NPS support under tighter restrictions on domestic support being discussed in the Doha Round of WTO negotiations is examined later in the paper.

4. POTENTIALLY UNDERREPORTED, MISCLASSIFIED, OR OMITTED SUBSIDIES

Beyond the traditional price and income support programs (direct payments, countercyclical payments, and loan-rate program benefits), a number of questions arise about how subsidies are being captured in the U.S. notifications. Some of these issues are being addressed in the challenges to U.S. support programs raised by Brazil and Canada in their total Aggregate Measure of Support (TAMS) cases (WTO 2007a, 2007b). Others are not being raised in that context. Here we discuss briefly five categories of subsidies that may be underreported, misclassified, or omitted from the U.S. notifications.

Disaster Payments

The U.S. notifications report disaster payments of various types under the green box (Table DS:1), product-specific support (Table DS:6), and non product-specific support (Table DS:9), as shown in Tables 3, 4, and 8 in this paper. The Canadian request for establishment of a panel in the TAMS case lists 48 separate disaster programs over the period 1999–2005 (WTO 2007b). During that period, disaster relief payments notified in the green box ranged from a low of $100 million in 1995 to a high of $2.14 billion in 2000 (Table 3). Questions of whether all disaster programs have been included in the U.S. notifications, whether those notified in the green box satisfied the relevant criteria, and whether the annual expenditures on these programs have been correctly measured may emerge as issues in the WTO case. Potentially some disaster payments could be judged to provide product-specific support not exempt under the green box. Inconsistency of a disaster program with the specific green-box criteria for the reference period against which a loss is measured or the degree of loss triggering payments would be among the reasons for such judgements.

Federal Tax Exemptions for Agriculture

U.S. domestic support notifications do not include any reporting of revenue forgone due to special tax exemptions for agriculture. In its request for a TAMS panel, Brazil identified diesel fuel and gasoline tax exemptions, tax exemptions for agricultural vehicles, and income tax concessions as subsidies that might need to be notified (WTO 2007a). Among the income tax concessions are special capital gains treatment for unharvested crops (notified by the United States as a subsidy under the Subsidies and Countervailing Measures (SCM) Agreement), preferential availability of cash accounting rules for farm operations, and preferential availability of income averaging for farmers. The Organization for Economic Cooperation and Development includes income tax concession as a payment based on overall farming income, and energy subsidies as a payment based on input use, in its Producer Support Estimates (PSEs). The income tax concessions are reported to have increased from $554 million in 1996 to $2,078 million in 2005. Energy subsidies, defined as the “value of Federal and State exemptions or reductions in excise and sales taxes on diesel fuel for farmers relative to the standard rate taxes on fuels” are simply reported as a constant $2,385 million from 1986 though 2005.

Crop and Revenue Insurance Delivery Costs

The U.S. notifications for crop and revenue insurance report indemnities paid minus premiums paid by producers (net indemnities) as non product-specific support. The crop and revenue insurance programs also face differences between the total premiums from producers and government, compared with indemnities paid, resulting in annual variations in the loss ratio, so that premium subsidies provided by the government differ from the net indemnities reported. There are additional expenditures on crop and revenue insurance programs arising from delivery costs paid to private insurance agents. These two latter costs are not reported in the notifications, but they have been quite substantial, averaging $895.5 million per year from 1995 through 2005, whereas net indemnities averaged $1,170.5 million. One can argue that the cost reimbursements excluded from the notifications are made to companies on behalf of the

policyholders who are farm producers of the insured crops, and thus should be notified as non product-specific support.

One might also argue that delivery costs are an administrative expense and as such are exempt from the AMS. In that case, they should either not be reported at all or reported in the green box. The U.S. reports a wide range of program administration costs under "general services" but none explicitly associated with administering its price and income support programs. In contrast, for environmental programs, the U.S. reports expenditures for "conservation program technical assistance," which cost $1,320 million in 2005, compared with "environmental payments" of $3,400 million. In this case, both the technical assistance and the environmental payments may fit the green-box criteria. It is somewhat curious that the crop and revenue insurance delivery costs, which are directly related to delivery of benefits to farmers, are not reported. If they are considered a general service, at least they might be expected to be notified in the green box.

Irrigation and Electric Power

The U.S. reports interest on the debt for irrigation project construction as non product-specific AMS, arguing that "irrigators repay the premium but not the interest." The subsidy has been reported as declining from $380 million in 1995 to $269 million in 2005 (Table 8). Arguably, this interest subsidy could be considered part of expenditures "directed to the provision or construction of capital works" and exempt from the AMS under the green-box criteria of Annex 2 of the Agreement on Agriculture. Not having claimed that exclusion, the United States does not seem to include the subsidies to agricultural irrigators that arise from lower repayment of capital costs based on assessed "ability to pay," with the reduced capital cost charges to farmers being paid instead by hydroelectric power authorities of the projects (again, these subsidies might similarly be argued to be in the green box). No notification is made for subsidies that might exist related to maintenance and operating costs (which irrigators apparently are required to pay), nor for water charges to agriculture that are below charges to other users. No entry is provided concerning preferential charges for electricity used in agriculture, either to move water from its source to farmland or for on-farm use of electricity.

Ethanol

The issue of how ethanol subsidies are notified is increasingly germane. Some ethanol production subsidies were notified by the United States in 2007 for the period 2002–05, and these subsidies may increase under the FCE Act or other legislation. More substantially, the forgone revenue from the federal ethanol tax credit to fuel blenders and additional state tax provisions could approach $7–8 billion or more on corn-based ethanol alone by 2022. If these amounts were to be counted in the AMS, its nominal level would be quite different than without the ethanol tax-credit subsidies.

The United States currently notifies the federal ethanol tax credit to the WTO as an industrial subsidy under the SCM Agreement. However, ethanol is included in the set of products defined as agricultural under the Uruguay Round agreements, so the tax revenue forgone could be appropriate to be notified in the total AMS, with ethanol considered the relevant product. An issue would be the extent to which the tax credit is judged to be a "measure directed at processors" that is subject to inclusion in the AMS under Annex 3, number 7 "to the extent that such measures benefit producers of the basic agricultural product." There is some ambiguity about whether ethanol is a "basic" agricultural product. If so, the issue would arise of the extent to which the blenders' tax credit is passed through to producers of ethanol.

Because ethanol policies affect corn prices, they might alternatively be judged to be a measure directed at producers and affecting the price of corn as a basic agricultural product. This would correspond to the way the United States formerly notified Step 2 payments to processors of domestic cotton as part of the cotton product-specific AMS. The Step 2 payments were eliminated after being found inconsistent with WTO rules in the cotton dispute. It will be interesting to observe how the United

States next decides to report the new subsidies to processors of both domestic and imported cotton created in the FCE Act, to see whether an analogy between cotton processor subsidies and ethanol processor tax credits can continue to be drawn. Of course, if ethanol policies are justified on environmental grounds or as related to national security, they could be exempted from the AMS subsidy disciplines, provided they meet the criteria of the green box or GATT articles.

Moreover, the use of mandates versus tax credits raises an issue of whether a certain policy is judged a "measure" included among "all of its domestic support measures in favour of agricultural producers" that are subject to possible disciplines under the Uruguay Round Agreement on Agriculture Article 6 and Annex 3. As shown by de Gorter and Just (2007), when there is no binding mandate, the tax credit adds substantially to the level of production of ethanol, its price, and the price and output of corn. When there is a binding mandate, the effects of the tax credit itself are minimal, if it is a blend mandate as in most of the rest of the world, or zero if it is a consumption mandate as in the United States. In these latter cases, it is the binding mandate that has the main effect on ethanol and corn production and prices and, one can argue, it should be disciplined under the AMS.

A few calculations from the simplified de Gorter and Just model clarify the stakes in the notification of ethanol policies. They examine the situation in 2006 with a base-model corn price of $3.03, corn production of 10.5 billion bushels, an ethanol price of $2.32, and ethanol use of 6.7 billion gallons (including imports assumed fixed at 653 million gallons). The base case incorporates the existing tax credits and assumes there is no binding mandate. The elimination of the tax credit results in a corn price of $2.29, corn production of 9.4 billion bushels, an ethanol price of $2.06, and zero domestic ethanol production. With a binding mandate to increase ethanol production by 3 billion gallons, the corn price rises to $3.55, corn production to 11.2 billion bushels, the ethanol price to $2.51, and ethanol use to 10 billion gallons.

In this model, the revenue forgone due to the tax credit at the production level in the base case is $3.4 billion on total ethanol use ($3.1 billion on domestic production). Under the binding mandate case, the revenue forgone from the tax credit rises to $5.1 billion. But eliminating the tax credit would have little effect on ethanol or corn markets if the mandate is binding. Thus, if the mandate is the notified measure, its effects would have to be quantified, requiring a model and elasticity assumptions, which is more complicated than measuring tax revenue forgone. In the de Gorter and Just simulations, the mandate raises ethanol prices by $0.45 per gallon, compared with the simulation without mandates or tax credits, so the gross revenue of ethanol producers increases by $4.5 billion, measured at the level of production with the mandate (and by $25.1 billion, compared with revenue at the equilibrium price and output without the mandate or tax credits). Simultaneously, the mandate raises the price of corn by $1.26 per bushel, compared with the simulation without the mandate or tax credits, so the revenue of corn producers increases by $14.1 billion, measured at the level of production with the mandate (and by $39.8 billion, compared with revenue at the equilibrium price and output without the mandate or tax credits). Of course, these are not economic welfare effects but simply revenue effects using a price gap and some level of production for each scenario. Measuring gains in producer surplus as the benefit to ethanol or corn producers would yield smaller magnitudes.

Beyond determining the effects of alternative ethanol policies there is the question of who potentially suffers injury from these policies. Mandates and tax concessions themselves do not harm potential exporters of ethanol or corn. The mandates and subsidies raise agricultural prices, so it is net food-importing countries or livestock producers facing higher costs that may be adversely affected. There is no basis under the SCM Agreement for importers who are affected by higher world prices due to subsidy policies to bring disputes to the WTO, so this agreement would not be applicable to the ethanol subsidies and mandates except to the extent that world gasoline prices are depressed.

The AMS commitment could be relevant, but the AMS would be composed of a curious mix of policies if ethanol subsidies were included. The historic metaphor for U.S. policy has been that it often has "one foot on the gas and one foot on the brake" in terms of stimulating production. The "on the gas" part has been the focus of attention regarding the U.S. total AMS; what is the value of subsidies that stimulate production? The "on the brake" part has gone into two other categories: the green box for long-

term conservation land idling and the blue box in terms of pre-FAIR Act short-term acreage set-asides, where the annual land-idling component exempted the price support component from counting in the AMS.

With ethanol mandates and subsidies, the new metaphor for the AMS would be the United States having its feet on two accelerators. But the accelerators have different effects on world prices, and thus on the interests of various trade partners and constituents within these countries. The traditional accelerator of supply expansion drives world prices down. The new accelerator of demand augmentation drives world prices up. Recent events have demonstrated the potency of the latter policies.

5. PROJECTED U.S. NOTIFICATIONS

Using a spreadsheet-based model, we derive projections for the major categories in the U.S. notifications through 2014, using program parameters from the 2008 FCE Act for 2008–14. Data for 1995–2005 are drawn from official notifications, the shadow notification is used for 2006, and estimates for 2007 are derived using the parameters of the 2002 FSRI Act. The projections are based on the domestic support simulator developed by Blandford and Josling (2007). Data for projected production and prices are derived primarily from the February 2008 USDA baseline to 2017 (USDA 2008c), with updates through July 2008 for 2006–08 (where applicable) from the online data set of the National Agricultural Statistics Service (NASS), USDA. Cotton and peanut price and production projections are derived from the March 2008 CBO budget baseline (Hull, Langley and Hitz 2008). That is also the source for expenditures under conservation programs and on crop and revenue insurance, with adjustments considered to reflect the subsequent FCE Act. Overall, the commodity prices used in the projections are relatively high due to a range of factors, including domestic demand for biofuels, strong overseas demand for U.S. commodities due to income growth, dietary change, and a weak dollar.

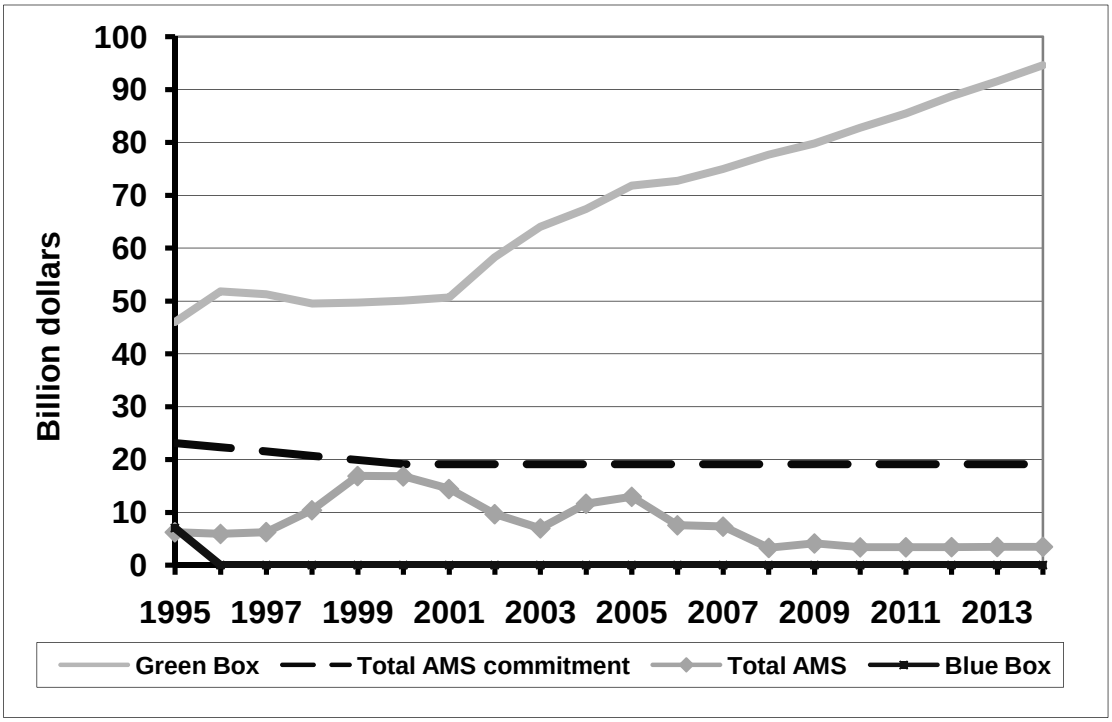
The projections are first evaluated in the context of continuation of the Uruguay Round Agreement (URA). We then examine the implications of proposed modalities under the Doha Development Agenda (DDA) negotiations.

With No DDA Agreement

Figure 3 summarizes the projected notifications in the various boxes through 2014. Green-box support is projected to increase steadily from the last officially notified amount of $72 billion in 2005 (Table 3) to roughly $95 billion in 2014, primarily due to increased expenditures on domestic food assistance programs projected on the basis of their recent growth rates. The general services component of the green box is also projected to increase from around $11 billion in 2005 to $15 billion in 2014 in line with a general increase in government costs. Expenditures on conservation programs are projected to increase from a notified value of $3.4 billion in 2005 to over $6 billion in 2014.[14] Our estimates incorporate a reduction in fixed direct payments of $0.8 billion. This results primarily because we assume that there is a substantial enrollment of 90 percent of the production of corn, soybeans and wheat in the optional ACRE program introduced in the 2008 FCE Act. The potential implications of this program are discussed in more detail below. On the basis of our projections, Figure 4 indicates that projected green-box support would make up roughly 95 percent of total support by 2014, compared with 80 percent in 2005.

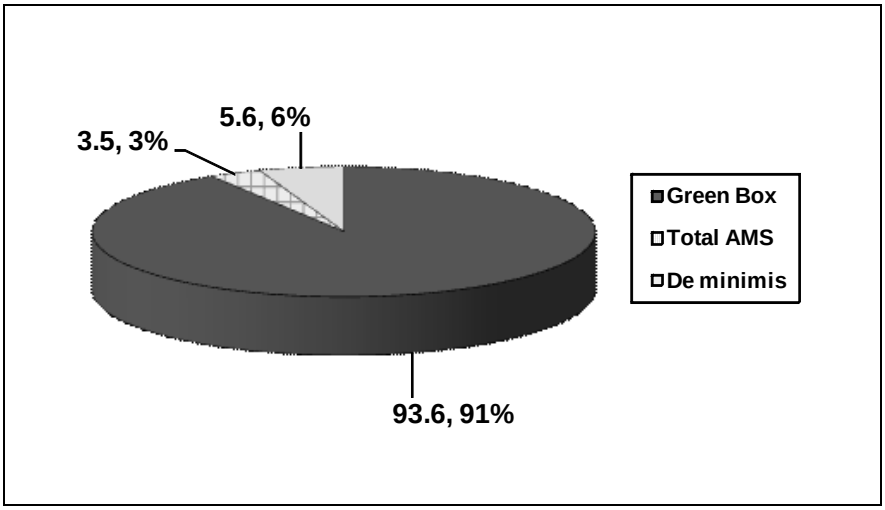
[14] These projections include adjustments to account for increased expenditures anticipated under the FCE Act compared to the 2002 FSRI Act based on the CBO March 2007 budget baseline (CBO 2008) rather than the 2008 USDA and CBO baselines that are utilized for our crop production and price projections.

Figure 3. U.S. notifications (actual and projected) with no DDA agreement (US$ billion)



Source: WTO notifications and authors' estimates.

Figure 4. Projected composition of total U.S. support in 2014 (US$ billion and % of total) with no DDA agreement



Source: Authors' estimates.

In projecting the AMS, we have made several key assumptions about future U.S. notifications. The first relates to the notification of the MPS for dairy. The FCE Act introduces an important definitional change in U.S. dairy policy. As indicated above, prior to this act the U.S. dairy support program was defined with respect to a support price for milk. That structure was reflected in U.S.

notifications because the market price support calculation was applied to total milk production. The FCE Act redefines the program with respect to support for three dairy products: butter, cheddar cheese, and nonfat dry milk. Prices are defined to be consistent with the previous support price for milk ($9.90 per hundredweight). One consequence of this change is to allow the United States to notify market price support for dairy on the basis of production of the three dairy products concerned, rather than the total volume of milk production. We build this change in notifications into our projections beginning in 2008. There are some technical questions associated with how the calculation would be made, but we estimate that the redesign of the dairy support program would reduce notified market price support for dairy by roughly 65 percent.

The second key assumption concerns the ACRE program. Unlike countercyclical payments linked to fixed base areas and fixed yield levels, the revenue-guarantee payments under the ACRE program are linked to current acreage and yields of the crops grown. It remains to be seen how the United States will argue that these payments should be classified, particularly whether they will be argued to qualify as non product-specific: for example, because the ACRE program applies to all covered commodities and does not require that a farmer plant any particular crop. In our analysis, we assume that ACRE payments will be notified as product-specific due to the formula of the revenue guarantee tied to a moving average of prices and crop yields, rather than fixed base levels, with the ACRE payments depending on current prices and farm acreage and yields for specific crops.

The projected product-specific AMS varies from year-to-year, but relatively high commodity prices foreseen by USDA and other analysts early in 2008 imply that the projected support expenditures for major crops are extremely modest, typically averaging less than $0.4 billion per year. The notified product-specific AMS on all major products other than dairy and sugar would qualify for *de minimis* if there are no ACRE revenue-guarantee payments. On the basis of these projections, the total AMS would stay far below the URA total AMS commitment of $19.1 billion (Figure 3). Figure 4 shows that by 2014 the projected total AMS (after *de minimis*) would amount to roughly $3.5 billion, composed entirely of market price support for dairy and sugar, and it would account for only 3 percent of the total support notified by the United States, including all green-box expenditures.

As described above, during 1995–2005 the *de minimis* NPS support has been an important component in the U.S. notifications. Recall that this category of support has varied from less than $1 billion to more than $7 billion (Table 8). The major source of the variation is the price-linked payments (crop MLAs and countercyclical); annual crop and revenue insurance subsidies also varied significantly.

With the relatively high commodity prices assumed in the projections for 2008–14, there are only modest countercyclical payments for cotton and peanuts. However, crop and revenue insurance subsidies are expected to remain high, averaging roughly $4.4 billion per year.[15] The projected NPS support is less than $6.0 billion, including countercyclical payments. This level easily falls under *de minimis*. With a projected value of production of roughly $400 billion in 2014, it leaves room for about $14.8 billion of additional NPS spending without crossing the *de minimis* threshold.[16]

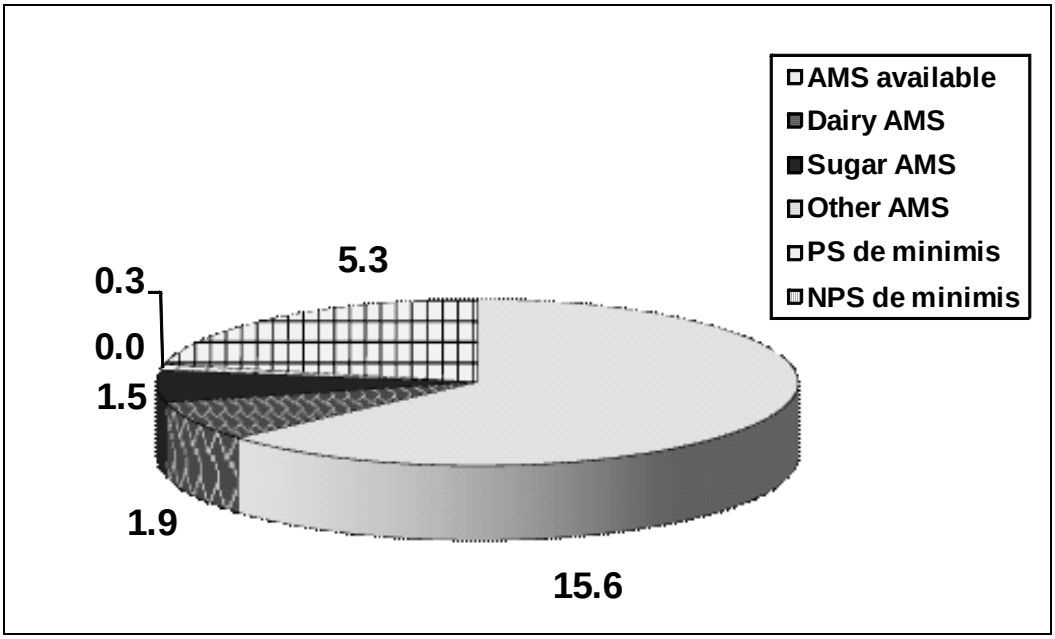
As shown in Figure 5 the "available" AMS (the difference between the notified total AMS and the total AMS binding) would be $15.6 billion in 2014. Domestic commodity programs could provide that much additional notified total AMS and the United States would still satisfy its Uruguay Round WTO commitment. If non product-specific support was kept under the *de minimis* threshold, additional support in the total AMS and NPS support categories could reach as much as $30.4 billion in 2014 without violating any U.S. commitments. The 2008 FCE Act pays little regard to the implications of any future WTO commitments and does not address issues that have been raised by recent WTO panel rulings, in particular the consistency of U.S. fixed direct payments with Annex 2 of the Uruguay Round

[15] These estimates of crop and revenue insurance subsidies exclude adjustments estimated by CBO to average $168 million over 2008–11 (due to reduced program costs) and $3,189 million in 2012 (due primarily to delay of some payments to lower the projected five-year cost of the FCE Act).

[16] The projected increase in the value of production from $236 billion in the 2005 notification to almost $400 billion in 2014 is a factor in the size of this potential exemption. Naturally, if prices of agricultural products were to fall substantially the NPS *de minimis* threshold would also decline.

Agreement on Agriculture. But with projected high commodity prices, the fixed direct payments could easily fit within the U.S. AMS commitment in the future, whether counted as product-specific or non product-specific support. Likewise, were a judgment made that ethanol blender tax credits (not incorporated into our projections) should be notified in the product-specific AMS category, they could also be included without violating the U.S. limit.

Figure 5. Projected composition of disciplined U.S. support in 2014 (US$ billion) and available AMS with no DDA agreement



Source: Authors' estimates.

This apparently favorable picture for U.S. policymakers and farmers of essentially no constraints on U.S. subsidies under the URA could change if prices are not as strong as forecast by USDA and others. Nevertheless, prices would have to fall substantially from recent and projected levels to trigger large payments with the loan rates and target prices specified for the traditional price-linked support programs in the 2008 FCE Act.

The new element of the ACRE program also needs to be considered. As noted above, ACRE is an optional revenue stabilization program. It is uncertain how many farmers will choose to enroll in the ACRE program. However, to *illustrate* the possible ACRE effects on the total AMS given the relatively high commodity prices in 2007 and 2008, we use the assumption that 90 percent of total production of three crops (corn, wheat, and soybeans) would be covered by the program.[17] ACRE payments can be triggered by a decline in state yields, the U.S. price, or a combination of the two, and they also depend on the extent to which individual farms in the eligible states demonstrate that they have suffered a loss of revenue. Our analysis does not take into account variations in yield at the national or state level, nor the farm-specific loss eligibility criterion. For illustration we simply examine the impact of price variations on possible ACRE expenditures and consequent total AMS notifications. Our limited aim is to illustrate how price variation alone could affect U.S. notified support with the ACRE program. The baseline production numbers are not altered in our analysis: it is difficult to relate variations in national production

[17] Actual sign up is in terms of farms. The share of production used here reflects an assumption that major producers of the three crops will elect to enroll. Such an assumption was used by the Bush administration in its critical analysis (discussed earlier in the paper) of the program during the final deliberations on the FCE Act .

to payments at the farm or state levels, so no attempt was made to incorporate this. Actual payouts could be higher or lower than estimated here as a result of production variations. The sign-up rate is always critical. For any given sign-up rate, the natural price–quantity hedge would be likely to lessen total payments, while eligibility determination by states is likely to raise total payments, with the individual farm eligibility criterion possibly acting again to reduce total costs (Zulauf 2008).

To simulate the possible ACRE revenue-guarantee payments, price patterns for corn, wheat, and soybeans were derived for three historical periods when price volatility was evident (1974–80, 1980–86, and 1995–2001). These patterns were applied to the base data in the current projections to give a "scenario" similar to the three historical periods.[18] Each of these periods (for convenience we refer to them as the 1970, 1980, and 1990 price patterns) was characterized by relatively high commodity prices in an initial year in each of the markets, similar to the recent situation. As is usual in projections based on trends, there is limited variability in the prices of commodities in the official baseline that we used for the projected notifications, and thus no ACRE revenue-guarantee payments are induced at the projected prices. However, Table 12 summarizes the average price variation (average absolute percentage year-to-year changes) for the three commodities in the baseline and for the three price pattern scenarios. The variability is substantially higher in all cases in the three scenarios than in the baseline projections and is more consistent with historical variation observed since the beginning of the 1960s (final column of the table).

Table 12. Summary of price variation for corn, soybeans, and wheat

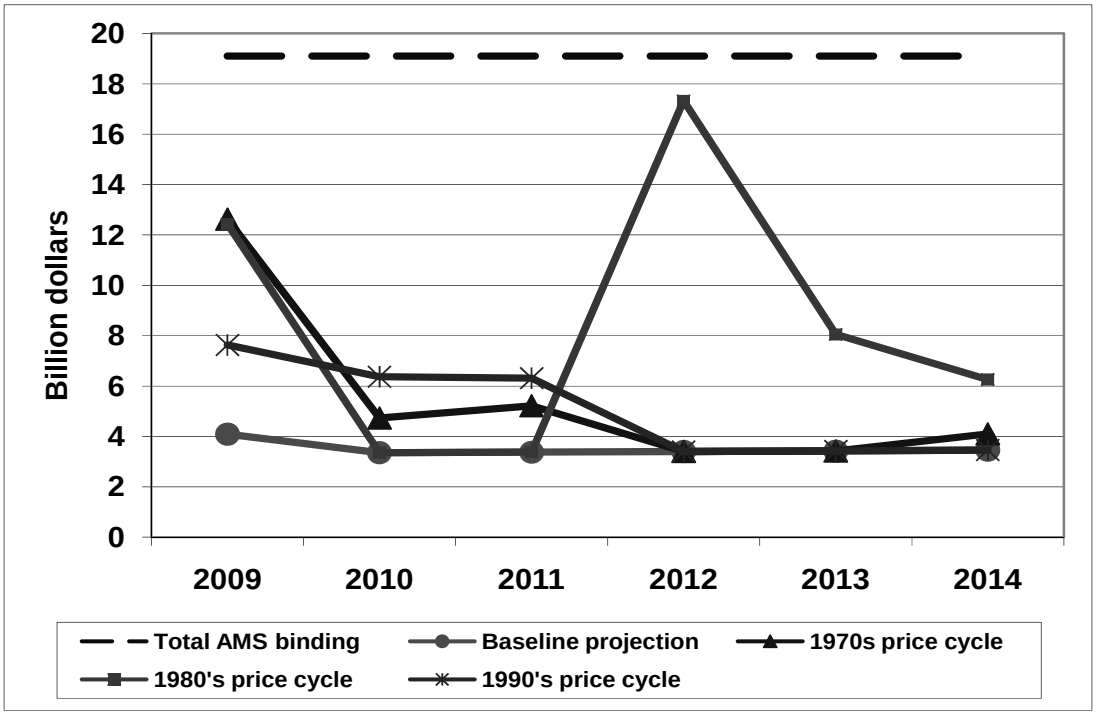
	Average annual change in prices (%)				
	Baseline	**1970s**	**1980s**	**1990s**	**1960–2007**
Corn	2%	14%	19%	10%	16%
Soybeans	1%	20%	18%	9%	15%
Wheat	3%	19%	8%	11%	16%

Source: Calculated from USDA data, various years.

Figure 6 summarizes the results of our ACRE analysis. It shows the notified total AMS over the period 2009–14 for the three commodity price-cycle periods, compared with the baseline projection without ACRE revenue-guarantee payments. The notified total AMS tends to be higher when price variability and ACRE payments are introduced. For example, under a repeat of the 1990s cycle that triggered substantial emergency payments to farmers, the total AMS is increased by roughly $4 billion in the initial years of price decline, but then the figures fall to the baseline numbers as prices become more stable. The 1980s cycle shows greater variation in the total AMS, and in 2012, it approaches the U.S. Uruguay Round commitment of $19.1 billion. This reflects the impact of a particularly sharp upward movement in corn and soybean prices in 2011 (1983 in the historical series), followed by an almost equally large downturn in prices in the following year. The ACRE revenue-guarantee price trigger is based on a two-year moving average, so (other things being equal) sharp downward movements in prices from year-to-year can result in significant payouts. Our results indicate that while it may be unlikely that the ACRE program would cause the United States to exceed the Uruguay Round commitment on total AMS, history suggests that this cannot be ruled out. Were the United States to face more stringent constraints on support as the result of a DDA agreement, the likelihood of violating the constraint would be increased substantially.

[18] Percentage year-to-year changes in nominal average U.S. farm prices were computed from National Agricultural Statistical Service (NASS/USDA) data. These percentages were then applied to the baseline prices used in the projections. Consequently, projected market prices in 2009 are computed as the USDA baseline price for 2008 (or the updated price from NASS) multiplied by the percentage change from 1974 to 1975 and so on through to 2014. For the other scenarios, the changes from 1980 to 1981 and from 1995 to 1996 provide the starting values. Use of these starting points avoids the introduction of initial commodity price spikes, for example in 1973–74, in order to avoid the introduction of excessive variation in the simulations, but it reflects periods in which commodity prices are initially quite high.

Figure 6. Projected impact of the ACRE program on U.S. total AMS with no DDA agreement, 2009–14



Source: Authors' estimates.

With a DDA Agreement

Table 13 summarizes the draft modalities for domestic support proposed by the chairman of the agricultural negotiations (WTO 2008) but not agreed upon by member countries when a WTO mini-ministerial meeting in Geneva ended in July 2008. At the time of the writing of this paper, it is unclear whether the negotiations will resume at some stage or whether the round has been abandoned. In any event, it is useful to examine what the terms of the agreement would imply for U.S. domestic support notifications.

The modalities are particularly complicated in the case of the United States, involving several provisions that are either unique or of particular relevance to the U.S. situation. Of particular note are:

1. a special provision for the calculation of product-specific AMS limits as described in the table;
2. the expansion of the blue-box criteria to include payments based on 85 percent or less of a fixed and unchanging base level of production; this implies that current U.S. countercyclical payments (but not ACRE payments) would be eligible for inclusion in the blue box, rather than being notified as non product-specific AMS as is currently the case;
3. a special provision for the calculation of product-specific blue-box limits, as described in the table, with a more stringent cap for cotton; and
4. a larger reduction in the AMS limit for cotton than for other commodities, with an accelerated reduction schedule.

Table 13. Main U.S. domestic support provisions of the proposed DDA modalities of July 2008

Item	Initial values	Reduction
Overall trade-distorting support (OTDS)	Base OTDS = Final Bound Total AMS + 15% of the average value of domestic production (VOP) for 1995–2000	Total reduction of 70%. Initial reduction of one third in first year; remaining reductions in five equal steps
Total aggregate measure of support (AMS)	Base level is Final Bound Total AMS (from Uruguay Round schedules)	Total reduction of 60%. Reduction of 25% on first day of implementation with remaining amount in equal annual steps over five years
Product-specific AMS	Derived by applying product-specific (PS) AMS averages for 1995–2004 to total PS AMS average for 1995–2000[a]	Implemented in full on first day of implementation period, except when PS AMS in two most recent years is higher. Then limits implemented in three equal installments with starting point being the lower of the two-year average or 130% of the scheduled limit
De minimis	Current allowance of 5% of current VOP	Reduction of 50% in allowance effective on the first day of the implementation period. Additional reduction if necessary to satisfy the OTDS binding in any given year during the implementation period
Blue box	Countercyclical payments based on fixed and unchanging areas and yields, and 85% of fixed and unchanging base production would qualify	Capped at 2.5% of the average VOP for 1995–2000 from the first day of the implementation period
Product-specific blue box	110–120% of amounts derived from applying proportionately legislated maximum permissible expenditure under 2002 FSRI Act to 2.5% average VOP for 1995–2000 – values as specified in the modalities	Scheduled limit can be increased with corresponding (1-to-1) decrease in PS AMS (2-to-1 ratio for cotton). Limit can be increased during implementation period subject to overall blue-box limit being respected
Additional cotton provisions		AMS reduction of 82.2% over two years. Product-specific blue-box limit to be one-third of that otherwise applicable

Source: Authors' summary based on WTO (2008).

[a] Qualifications apply if product-specific AMS amounts above *de minimis* levels have been introduced since the base period (para 24) or the product-specific AMS was below the *de minimis* level during each year of the base period (para 25). In the former case, an average of the two most recent notified AMS values can be used as the base; in the latter case, the *de minimis* level for the base period may be used.

The implications of the proposed DDA modalities for the United States are summarized in Tables 14 and 15. Table 14 gives the year-by-year implementation schedule for reductions in the overall trade-distorting support (OTDS), total AMS, and cotton AMS, and the proposed reduction in *de minimis* and the blue box. The base value of OTDS from which reductions are to be made is $48.2 billion (not shown), comprised of the Uruguay Round AMS cap of $19.1 billion plus 15 percent of the U.S. total agricultural value of production, which averaged $194.1 billion during 1995–2000. The reduction for the cotton AMS is accelerated (reduction of 82.2 percent over 20 months from a base value calculated as $800 million), compared with the five-year implementation (completion by the end of year 5) proposed for the OTDS and total AMS.

With the proposed 70 percent reduction, tentatively agreed to by the United States in Geneva, the final binding for the OTDS is just under $14.5 billion at the end of a five-year implementation period.[19] The 60 percent reduction in the Uruguay Round total AMS would reduce this cap to $7.64 billion. The AMS for cotton would be cut to roughly $143 million. The product-specific and NPS *de minimis* thresholds would be reduced immediately from the current 5 percent to 2.5 percent. Total blue-box payments would be limited to a maximum of $4.85 billion.

Table 14. U.S. domestic support base values and reductions under the proposed DDA modalities

	Immediate	Year 1	Year 2	Year 3	Year 4	Year 5
Reductions						
Proportions of the base OTDS and AMS to be cut						
OTDS (70% reduction)[a]	0.33	0.40	0.48	0.55	0.63	0.70
AMS (25% initial; 60% total reduction)[b]	0.25	0.32	0.39	0.46	0.53	0.60
Cotton AMS (25% initial; 82.22% total)[c]	0.25	0.25	82.22	82.22	82.22	82.22
Scheduled limits						
OTDS (70% reduction; US$ million)	$32,310.2	$28,741.6	$25,173.0	$21,604.4	$18,035.8	$14,467.3
AMS (25% initial; 60% total reduction; US$ million)	$14,327.5	$12,990.2	$11,653.0	$10,315.8	$8,978.5	$7,641.3
Cotton AMS (25% initial; 82.22% total reduction; US$ million)[d]	$600.4	$600.4	$142.5			
De minimis						
50% immediate reduction (%)	2.5%					
Blue box						
2.5% value of 1995–2000 production (US$ million)	$4,853.5					

Source: Authors' calculations based on WTO (2008).

[a] Initial reduction of one third with the remainder phased-in in five equal steps (paragraph 5).

[b] Initial reduction of 25% with the remainder phased-in in five equal steps (paragraph 15).

[c] Two-year phase-in period with higher total reduction percentage.

[d] Implementation period is one-third of the general period.

Table 15 contains calculations for the product-specific AMS bindings. The first thing to note is that the sum of product-specific caps is just over $15 billion, almost double the proposed overall AMS limit. Thus, the United States would not be able to provide the full amount of support allowed for each specific commodity while respecting its total AMS commitment.

More specifically, the modalities in Table 13 imply the following:

1. Only one of the 47 commodity categories for which an AMS was notified by the United States for at least one year since 1995 would have a zero AMS binding. This is avocados, for which a small amount of trade-adjustment assistance payments was notified in 2005, thus falling outside of the base period.
2. Five of the commodities would be subject to the three-year phase-in for the reduction specified by paragraph 26 of the draft modalities (barley, corn, dairy, sorghum, and

[19] During the July 2008 negotiations a further reduction to $14 billion was also discussed.

sugar); all but dairy and sugar would be subject to an additional reduction in their AMS limit implied by the 130 percent restriction in paragraph 26.

3. The cotton binding would be superseded by additional provisions. In the absence of these provisions the cotton AMS binding would be reduced from a base value of roughly $1.5 billion to a bound value of roughly $1.1 billion (not shown in the table) over a period of three years. The additional provisions result in a reduction to a bound value of $143 million over a period of 20 months.
4. If the methodology specified in the modalities is applied strictly, some commodities could be eligible for multiple caps (for example, those products notified separately and under aggregates such as "livestock" and "orchards and vineyards").
5. Overall, the application of the rules specified in the modalities creates a considerable amount of space for policy flexibility by providing product-specific AMS limits for virtually all important and minor U.S. agricultural commodities, even if the actual notified support for some of these has been small in the past. But as revealed by the notified AMS for 2005 (final column in the table), it may be difficult to keep within some of the caps if prices were to fall. The cap on corn at $1.1 billion, compared with a notified AMS of $4.5 billion in 2005, is particularly noteworthy in this respect.

Table 16 contains information on product-specific blue-box bindings that are included in the draft modalities. The U.S. limits are based upon the maximum potential expenditure on countercyclical payments under the 2002 FSRI Act.[20] Using the lower of two proposed totals in the modalities (110 percent limit, see Table 13) the blue-box caps would permit an expenditure on countercyclical payments equivalent to roughly 61 percent of the legislated maximum. The higher figure (120 percent) yields 66 percent of this maximum. As indicated in Table 14, the maximum permitted expenditure under the blue box would be roughly $4.8 billion. This implies that it would only be possible to exploit the full allowance provided by the individual blue-box caps under the lower (110 percent) binding, as shown in Table 16.

The draft modalities indicate that countries can elect to increase the blue-box binding for individual products by reducing that product's corresponding AMS binding. This is done on a dollar-for-dollar basis, except for cotton where the rate is two-to-one. Table 16 analyzes the effect of this provision. Column E shows the cut in the product-specific AMS that would be required to increase the blue-box binding to the legislated maximum expenditure under the 110 percent blue-box binding. Column F flags those cases where this is not feasible because the AMS binding is too low. Column G shows the initial product-specific AMS that would result if either the blue-box binding for that product is increased to meet the legislated maximum expenditure (if the AMS binding is sufficient to allow this), or the maximum feasible blue-box binding (if all the available AMS amount for that commodity is used). Columns I through L repeat these calculations for the case of the 120 percent blue-box binding.

[20] The maxima are calculated as (target price – direct payment rate – loan rate) x countercyclical payments (CCP) yield per acre x base CCP acres x 0.85.

Table 15. Product-specific AMS bindings under the proposed DDA modalities

	Paragraph	Base	Year 1	Year 2	Year 3	Notified AMS 2005
			(US$ million)			
Apples	25	76.588	76.588	76.588	76.588	0.000
Apricots	25	1.813	1.813	1.813	1.813	0.000
Avocados	NA	0.000	0.000	0.000	0.000	0.000
Barley	23,26	35.636	32.895	30.153	27.412	46.196
Beef and veal	25	1,254.755	1,254.755	1,254.755	1,254.755	0.000
Blueberries, wild	25	1.785	1.785	1.785	1.785	0.000
Cattle and calves	25	1,255.376	1,255.376	1,255.376	1,255.376	0.000
Chickpeas	24	0.228	0.228	0.228	0.228	0.304
Corn	23,26	1,438.375	1,327.730	1,217.086	1,106.442	4,490.004
Cotton[a]	23,26	1,476.986	600.399	142.495	142.495	1,620.699
Cranberries	25	10.717	10.717	10.717	10.717	0.000
Dairy	23,26	4,905.901	4,864.218	4,822.535	4,780.853	5,149.254
Dry peas	24	34.771	34.771	34.771	34.771	37.431
Grapes	25	131.175	131.175	131.175	131.175	0.000
Hogs and pigs	25	512.837	512.837	512.837	512.837	0.000
Honey	23	2.891	2.891	2.891	2.891	0.000
Lentils	24	6.126	6.126	6.126	6.126	11.375
Livestock	25	1,255.376	1,255.376	1,255.376	1,255.376	0.000
Lychee	25	0.232	0.232	0.232	0.232	0.000
Minor oil seeds						0.000
Canola	23	15.119	15.119	15.119	15.119	13.518
Crambe	24	0.002	0.002	0.002	0.002	0.000
Flaxseed	24	0.041	0.041	0.041	0.041	0.000
Mustard seed	23	0.105	0.105	0.105	0.105	0.000
Rapeseed	23	0.026	0.026	0.026	0.026	0.000
Safflower	23	0.538	0.538	0.538	0.538	0.000
Sesame	23	0.011	0.011	0.011	0.011	0.000
Sunflower	23	35.544	35.544	35.544	35.544	0.000
Mohair	23	3.136	3.136	3.136	3.136	1.542
Oats	23	9.415	9.415	9.415	9.415	0.000
Olives	25	2.941	2.941	2.941	2.941	0.000
Onions	25	35.135	35.135	35.135	35.135	0.000
Orchards and vineyards	25	798.187	798.187	798.187	798.187	0.000
Peaches	25	21.979	21.979	21.979	21.979	0.000
Peanuts	23	249.190	249.190	249.190	249.190	89.185
Pears	25	14.034	14.034	14.034	14.034	0.000
Pecan trees	25	11.707	11.707	11.707	11.707	0.000
Potatoes	25	133.431	133.431	133.431	133.431	0.000
Rice	23	313.677	313.677	313.677	313.677	132.509
Rye	25	1.405	1.405	1.405	1.405	0.000
Sheep and lamb	24	7.000	7.000	7.000	7.000	0.000
Sorghum	23,26	55.378	51.118	46.858	42.598	139.751
Soybeans	23	1,123.717	1,123.717	1,123.717	1,123.717	0.000
Sugar	23,26	1,240.561	1,202.378	1,164.195	1,126.012	1,199.205
Tobacco	23	142.923	142.923	142.923	142.923	0.000
Tomatoes	25	86.202	86.202	86.202	86.202	0.000
Wheat	23	231.385	231.385	231.385	231.385	0.000
Wool	23	10.095	10.095	10.095	10.095	6.624
Total product-specific AMS		16,944.451	15,870.352	15,214.938	15,017.427	12,937.597

Source: Authors' estimates based on WTO notifications and WTO (2008). [a]The effective binding for cotton is that implied by the special reduction provisions but base value shown is not adjusted for these special provisions.

Table 16. Product-specific blue-box bindings and the trade-off with AMS product-specific bindings

					Reduction of the initial PS AMS to meet the legislated maximum CCP for each commodity							
	AMS binding[a]	Blue binding 110%	Blue binding 120%	Legis. Max. CCP	Reqd. cut in AMS with 110% Blue binding		New initial PS AMS	Max feasible Blue binding[b]	Reqd. cut in AMS with 120% Blue binding		New initial PS AMS	Max feasible Blue binding[b]
	Column											
	A	B	C	D	E	F	G	H	I	J	K	L
	(US$ million)							(US$ million)			(US$ million)	
Barley	27.4	32.0	34.9	46.7	14.7		12.7	46.7	11.8		15.6	46.7
Corn	1,106.4	2,359.8	2,574.3	3,224.2	864.4		242.0	3,224.2	649.9		456.5	3,224.2
Cotton[c]	800.5	336.3	366.9	1,376.5	2,080.4	INF	0.0	1,136.8	2,019.2	INF	0.0	1,167.4
Oats	9.4	5.3	5.8	8.7	3.4		6.0	8.7	2.9		6.5	8.7
Peanuts	249.2	149.5	163.1	200.9	51.4		197.8	200.9	37.8		211.4	200.9
Rice	313.7	234.9	256.3	323.1	88.2		225.5	323.1	66.8		246.9	323.1
Sorghum	42.6	106.8	116.5	147.4	40.6		2.0	147.4	30.9		11.7	147.4
Soybeans	1,123.7	400.4	436.8	550.3	149.9		973.8	550.3	113.5		1,010.2	550.3
Wheat	231.4	1,041.1	1,135.7	1,421.5	380.4	INF	0.0	1,272.5	285.8	INF	0.0	1,367.1
Total	3,904.4	4,666.1	**5,090.3**	**7,299.3**				**6,910.6**				**7,035.8**

Source: Authors' calculations based on WTO notifications and WTO (2008)

[a] It is assumed that the applicable figures for the calculation are the bindings that result after the application of any reduction provisions.

[b] Where insufficient PS AMS entitlement exists to reach the legislated maximum CCP, the maximum PS AMS entitlement is applied to the blue box.

[c] In the case of cotton, a $1 increase in the blue-box entitlement requires a $2 reduction in the PS AMS; this is applied to the figure in column 1. Cotton blue-box bindings are reduced substantially by the paragraph 56 condition.

INF = infeasible

Note: Totals in bold exceed permitted blue-box total of $4,835.5 million. Increases in blue-box limits only apply if initially scheduled; any subsequent changes would require reductions elsewhere, such that the initial overall blue box limit is not exceeded (paragraph 45).

The calculations show that box-shifting could achieve the legislated maxima for all commodities individually except cotton and wheat (this is without considering any additional constraints imposed by the total blue-box cap). For those commodities the AMS binding is too low to achieve the legislated maximum. However, it should be borne in mind that the sum of the individual product bindings is below the total blue-box cap only with the 110 percent figure. That yields a total of $4.7 billion in potential blue-box payments, compared with a total blue-box cap of $4.8 billion. Consequently, there may be some limits on the scope for box shifting for individual commodities while staying within the overall blue-box constraint. In the analysis that follows, we assume that the United State elects not to use this box shifting option for any of the commodities concerned. Possible ACRE revenue-guarantee payments are also not included in the basic calculations.

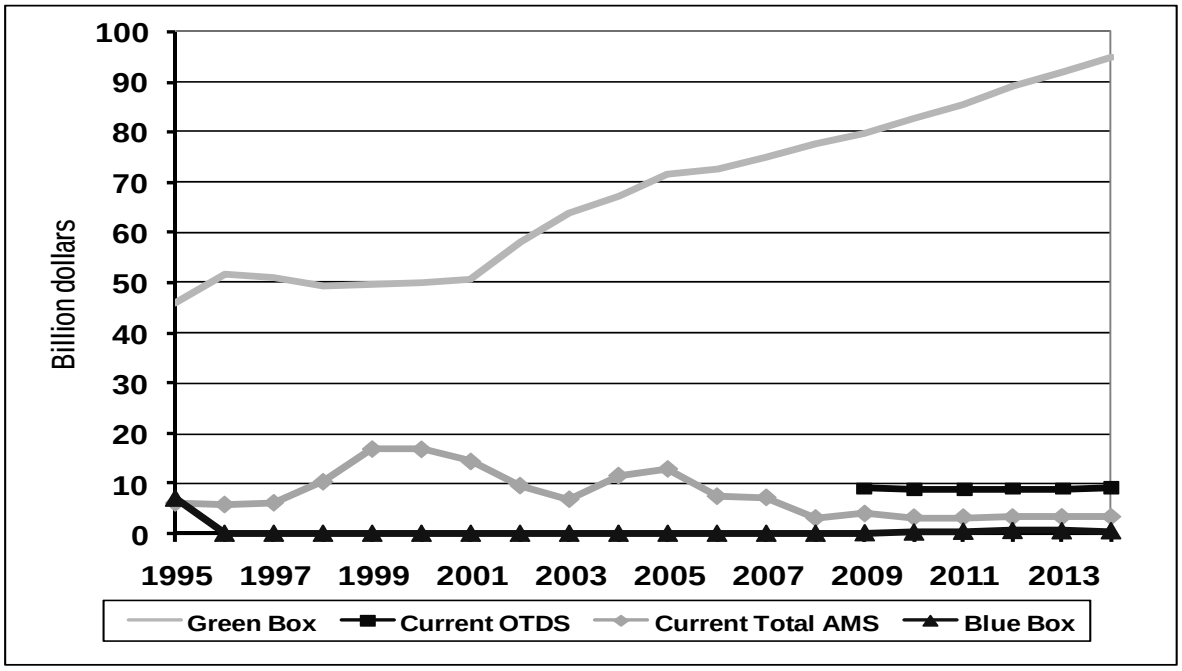
To derive projections of the extent to which the new DDA agreement might constrain U.S. domestic support policies, the following assumptions are made:

1. The first year for implementation of a new agreement is 2009 with complete implementation by 2014.
2. The OTDS commitment is reduced by 70 percent and the total AMS by 60 percent according to the schedule in Table 14.

3. The additional reduction in cotton AMS and accelerated reduction schedule is applied as in Table 14.
4. There is an immediate reduction in *de minimis* to 2.5 percent.
5. The product-specific AMS bindings included in Table 15 are imposed.
6. The 110 percent product-specific blue-box bindings (column B in Table 16) are applied.
7. No allowance is made for the transfer of product-specific AMS to product-specific blue box.
8. The parameters of U.S. support programs are those defined in the 2008 FCE Act.

Figure 7 summarizes actual and projected notifications in terms of the DDA concepts of the green box, the OTDS, the total AMS (after *de minimis*, so non product-specific support is excluded), and the expanded blue box. The green-box projection is unchanged from that discussed above. The switch of countercyclical payments out of the non product-specific AMS leads to modest blue-box payments that do not register visually on the graph. The total AMS and OTDS are below those in recent years because of the projected high price environment.

Figure 7. U.S. notifications, actual and projected, under the proposed DDA modalities (US$ billion), 1995–2014

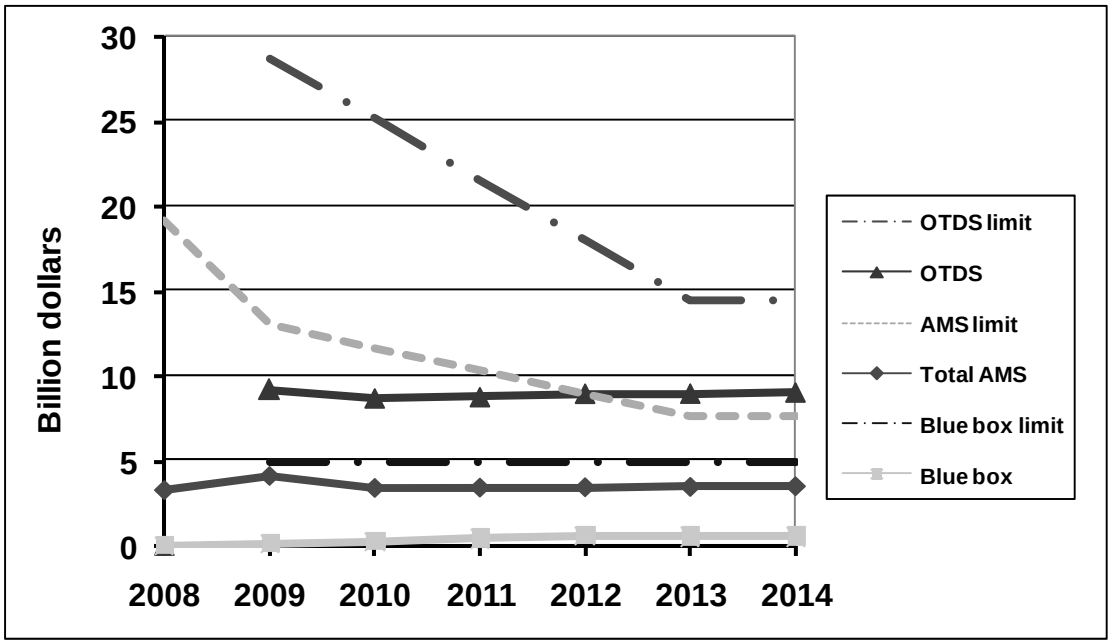


Source: WTO notifications and authors' estimates.

Figure 8 shows how the reductions in the OTDS, the total AMS, and the blue box relate to projected notifications for the assumed implementation period. The reduction in the OTDS does not become binding even by the end of the implementation period, but the leeway in the commitment, resulting from the limit being higher than projected notifications, is substantially reduced. Our projections suggest that in the first year of implementation of the agreement, there would be a roughly $20 billion cushion between the actual OTDS and the bound level. By 2014 this would have declined by about three-quarters to around $5 billion. The reduction in the total AMS binding is also significant, with a decrease in the AMS support cushion from roughly $8 billion in 2010 to $4 billion by 2014. Our analysis also shows that non product-specific support stays well below the *de minimis* threshold, but this threshold increases with increased value of production up to a limit imposed by the available OTDS not utilized in

other categories. The overall blue-box limit does not have much of an effect on our projections, since, as noted earlier, high prices mean that countercyclical payments are low. A maximum of only $0.5 billion dollars of the $4.8 billion binding is used each year during the assumed implementation period.

Figure 8. Projections of OTDS, total AMS, and blue-box spending and proposed DDA commitments

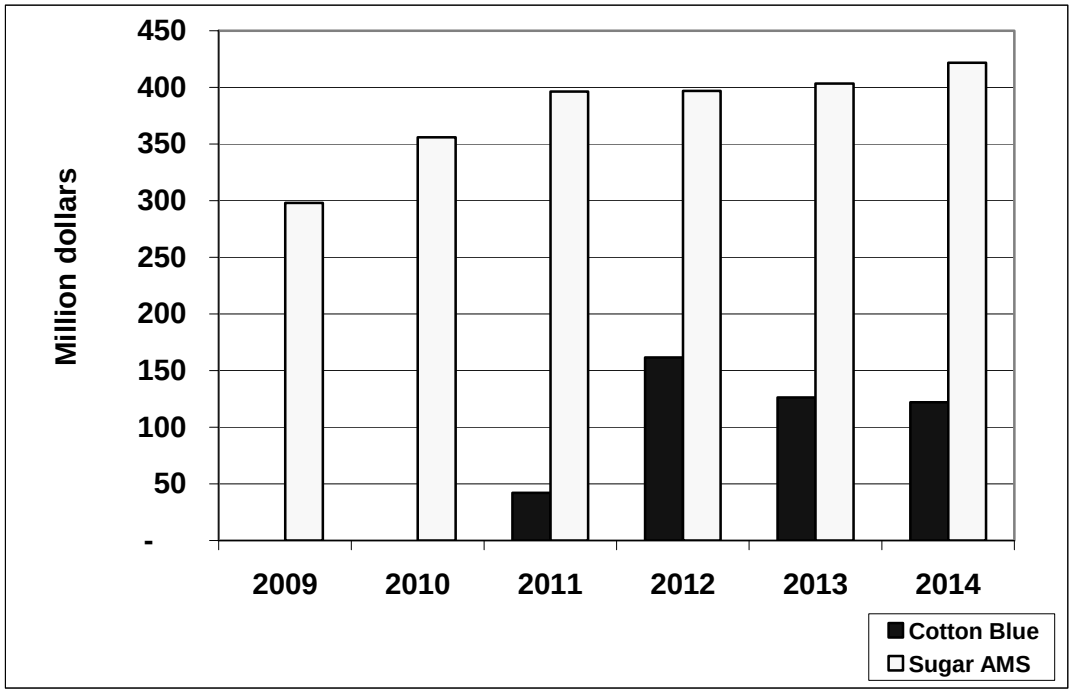


Source: WTO (2008) and authors' estimates.

We also analyze the implications of the product-specific AMS and blue-box bindings for some of the most important commodities (barley, corn, cotton, dairy, peanuts, rice, sorghum, soybeans, sugar, and wheat). Our projections suggest that the AMS binding would become operative for sugar from the first year of the implementation period and throughout. There is a gradual increase in the amount by which the product-specific AMS binding for sugar is exceeded (Figure 9) from around $300 million in 2009 to more than $420 million by 2014. Recall that for sugar the AMS arises from the market price support calculation based on a fixed reference price and the sugar loan rates (administered prices) in the FCE Act. Our projections also imply that the blue-box binding for cotton would be exceeded from 2011 onwards due to the severe reduction in the blue-box cap for this particular commodity. The blue-box calculation depends on projected cotton market prices.[21]

[21] Using earlier projected cotton prices, both the product-specific blue-box and AMS commitments were binding for cotton (see Blandford, Laborde and Martin, 2008).

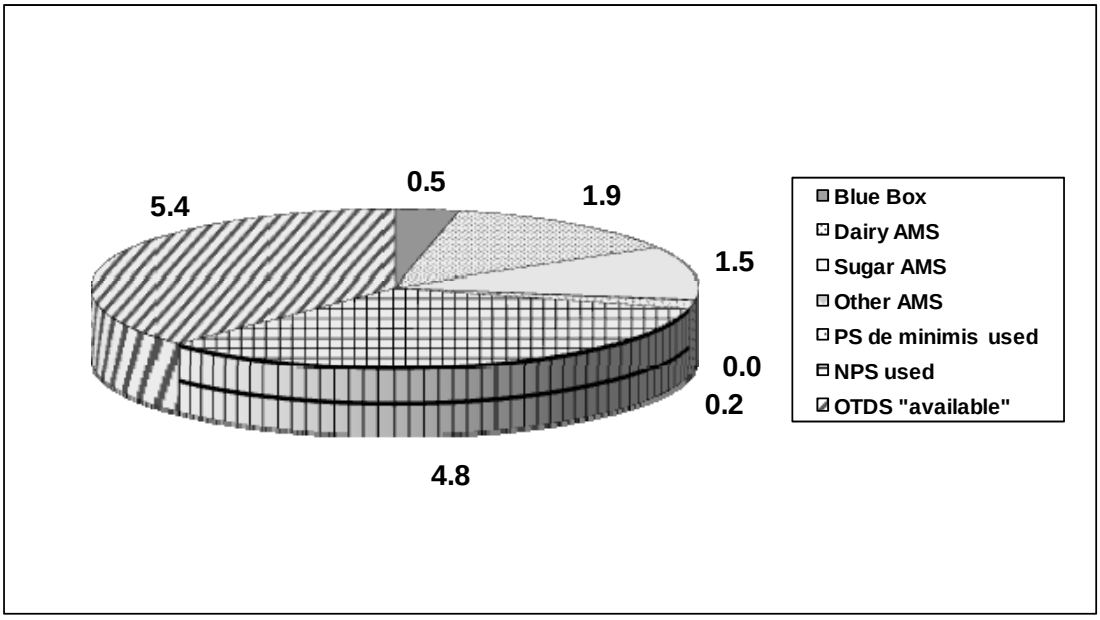
Figure 9. Amount by which product-specific proposed DDA bindings are projected to be exceeded



Source: Authors' estimates.

In summary, new DDA commitments are certainly much more stringent than those of the URA. The DDA commitments might constrain U.S. farm programs in terms of instrument choices or subsidy levels. Strengthened disciplines would reduce the leeway the U.S. would have for providing trade-distorting support but still provide flexibility if prices remain relatively high. The net outcome projected for 2014 is illustrated in Figure 10. It shows blue-box, AMS, and product-specific and non product-specific *de minimis* expenditures projected for 2014. Their sum is compared with the potential limit of almost $14.5 billion under a DDA constraint on OTDS by showing unused spending within that constraint. Projected blue-box expenditures (countercyclical payments) are only $0.5 billion, well under the modalities cap of $4.8 billion. Likewise, total AMS (excluding *de minimis*) is projected at $3.4 billion, well under the proposed cap of $7.6 billion. Product-specific *de minimis* is negligible and non product-specific *de minimis* is projected at $4.8 billion. These projections and caps leave room for various additional OTDS expenditures of $5.4 billion. More than half of the latitude available reflects the redefinition of the dairy support program in the FCE Act, which reduces the projected dairy AMS by as much as $3.6 billion.

Figure 10. Projected composition of support in 2014 and "available" OTDS (US$ billion)



Source: Authors' estimates.
Note: difference of sum in figure from OTDS limit is due to rounding error.

Finally, it should be stressed that we have not accounted for possible ACRE revenue-guarantee payments in this assessment of the possible effects of strengthened DDA disciplines on U.S. domestic support. As indicated above, these could be triggered even if market prices remain relatively high by historical standards. They could cause the $7.6 billion total AMS cap under the proposed DDA modalities to be exceeded, as Figure 6 shows, or cause product-specific AMS caps to be exceeded for certain crops. While the ACRE program is legislated to come into effect in 2009, concern about payments exceeding limits other than the total AMS commitment of the Uruguay Round will remain hypothetical unless a new WTO agreement is reached.

6. SUMMARY AND CONCLUSIONS: IMPLICATIONS FOR U.S. AGRICULTURAL POLICY

This paper has examined past and proposed U.S. domestic support in light of current and potential WTO constraints. In the first section we provided a brief review of U.S. farm policies since the Uruguay Round WTO agreements came into effect, including a synopsis of the new farm bill, the Food, Conservation, and Energy Act of 2008. Our review highlights the shifting alignment of U.S. support policies in response to relatively high prices when the 1996 farm bill was enacted versus relatively low prices when these policies were reconsidered in the 2002 FSRI Act. In 2008, market prices were again strong, but with the exception of the potentially significant ACRE program there was little change to the basic support polices adopted in the previous bill. This meant that U.S. price-linked subsidies were projected to fall sharply under the 2008 FCE Act, compared with their levels early in the 2000s, with higher subsidies projected for crop and revenue insurance. We also highlighted acreage-idling under the CRP and increased spending on environmental programs, both of which fall in the green box and are subject to its rules.

The second section provided an assessment of U.S. domestic support notifications to the WTO from 1995–2005 and our preliminary notification estimate for 2006. Green-box expenditures for domestic nutrition programs dominate the total dollar values notified by the United States. The main notified components of the U.S. support policies for agriculture include fixed direct payments, disaster assistance, and environmental payments in the green box; MPS for dairy and sugar and substantial price-linked expenditures (loan program payments) in the product-specific AMS; and the non product-specific *de minimis* support (crop market loss assistance (MLA) payments, countercyclical payments, and crop and revenue insurance subsidies). The AMS price-linked payments varied from a low of $6 million in 1996 to a high of $9.6 billion in 1999, while crop MLA payments and countercyclical payments varied from $0.5 billion in 2003 to $5.5 billion in 1999.

The U.S. notified total AMS has never exceeded the Uruguay Round commitment of $19.1 billion. It would have in some years without the non product-specific *de minimis* exemption or if fixed direct payments were included in the AMS as either non product-specific or product-specific support. These issues have been raised in past and ongoing Brazilian and Canadian challenges to U.S. subsidies. Section 3 of our paper discusses other subsidies that may be underreported, misclassified, or omitted from the U.S. notifications, some of which are also at issue in the WTO challenges. We note that tax credits and mandates related to ethanol production have been largely outside of the disciplines of the Uruguay Round Agreement on Agriculture and discuss arguments related to their inclusion in the total AMS.

In Section 4 we provided an assessment of projected U.S. support through 2014 and evaluated the extent to which either the Uruguay Round commitments or new disciplines under a DDA agreement might limit U.S. policies. Under the Uruguay Round commitments, there is almost no constraint on U.S. policies with projected high prices. The fixed direct payments, large ACRE revenue-guarantee payments, or ethanol tax credits could be accommodated without violating the U.S. total AMS commitment. That is unlikely to be the case if the new DDA disciplines proposed in July 2008 are agreed upon. With a DDA agreement, the room for maneuver is limited. Under high prices, there is still unused expenditure space within the OTDS of a projected $5.4 billion in 2014. With this flexibility, and assuming there are no ACRE revenue-guarantee payments, the U.S. could raise loan rates or target prices for countercyclical payments with the effect of increasing AMS or blue-box expenditures from projected levels of $3.4 billion and $0.5 billion, respectively, toward the DDA limits of $7.6 billion and $4.8 billion. Pushing both of these categories of support to their limits simultaneously would reduce allowed *de minimis* NPS support to only about $2 billion given the OTDS cap, which is less than the projected NPS support level.

With continued high prices an alternative possibility would be to expand the use of non product-specific support up to the limit imposed by the *de minimis* threshold or the overall OTDS constraint. The projected value of the NPS *de minimis* threshold is around $10 billion. Likewise, with the projected AMS and blue-box expenditures in 2014 the constraint on NPS support due to the OTDS commitment similarly is about $10 billion. There is more leeway to increase *de minimis* NPS support than total AMS under our

projections. For this reason, the United States might seek to notify ACRE payments under this category, as we have discussed. Despite this, the potential for box shifting is constrained by the NPS *de minimis* threshold and the total OTDS binding of $14.5 billion. This means large revenue-guarantee payments under ACRE, however notified, could violate the U.S. commitments, even if prices remain high enough not to trigger traditional countercyclical or loan program payments.

Even if the economic environment that is foreseen in USDA's mid-2008 price projections materializes, the United States would also have to adapt to new DDA domestic support modalities by making modest downward adjustments in the support provided by some of its domestic policies. Recent experience with farm legislation shows that this does not mean that such adjustments would be easy to make or be politically painless. Product-specific constraints, in particular, could impose some additional limits beyond the flexibility at the aggregate level. Sugar poses problems for AMS commitments even if world sugar prices are high because of the way MPS is calculated and notified. This might be resolved without substantive change in the degree of support provided to U.S. sugar producers by changing the nature of the sugar program to reduce the amount of support notified under the AMS.[22] The stringent modalities for cotton could create an issue in terms of meeting blue-box commitments under projected prices and policies. Other product-specific caps, such as for AMS for corn, limit expenditures well below levels that have been observed in the 2000s.

More generally, the optimistic price environment foreseen in mid 2008 and incorporated into our projections may not materialize. In that case, the total AMS constraint and some product-specific AMS limits could well be exceeded under a DDA agreement, unless some other alternatives to current support policies were found.

One option for U.S. policymakers in such circumstances would be to use the green box to alter the composition of farm support. Green-box support for farmers could be expanded, particularly under the environmental category, or under other categories such as decoupled income support payments or disaster relief payments that satisfy the green-box criteria. The future status of the U.S. fixed direct payments is perhaps in doubt as a result of recent and ongoing WTO challenges, but payment rules could be modified to ensure green-box compliance. Again, under low prices, if AMS and blue-box expenditures ratchet up, there would be only limited room for NPS *de minimis* expenditures under the capped OTDS.

In conclusion, the strengthened disciplines on domestic support in the proposed DDA modalities would have the effect of reducing substantially the leeway in the amount of support that can be provided to U.S. farmers and still meet WTO commitments. A few commodities pose problems in meeting product-specific commitments even with relatively high prices. The option of moving support into the non product-specific category could provide some policy space for meeting future WTO commitments, particularly in circumstances of binding product-specific AMS or blue-box limits. However, it should be stressed that our projections assume a relatively high price environment for major U.S. crops. If prices were to fall substantially, so that major countercyclical, price-support, or ACRE revenue-guarantee payments were triggered, the likelihood of meeting WTO commitments on domestic support under a continuation of existing programs would be substantially different from the basic projections-based assessment presented here.

[22] The inclusion of a provision in the 2008 FCE Act to divert government purchases of sugar to the production of ethanol opens up the interesting policy that the sugar program (or some part of it) could be defined as a bioenergy program. This might also be used to relieve any pressure on sugar protection that arises from changes in market access (tariffs and tariff-rate quotas) under a new WTO agreement.

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