Classifying and Measuring Agricultural Support

Identifying Differences Between the WTO and OECD Systems

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Abstract

Most countries provide some level of support to their agricultural sectors. Because support can affect producers and consumers in other countries, a number of systems have been developed to measure agricultural support levels and classify types of support in ways that facilitate comparing them across countries. The WTO and OECD employ similar classification systems, generally addressing the same question and measuring the same programs. However, results can be surprisingly and fundamentally different, rendering comparisons inappropriate, meaningless, or even wrong. Careful attention to the sources of difference can prevent potential misunderstandings and misleading uses.

Keywords: domestic support measurement, US agricultural policy, WTO, Aggregate measurement of support (AMS), Green box, Amber box, OECD, Producer support estimate (PSE), Consumer support estimate (CSE), General services support estimate (GSSE).

Acknowledgments

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Summary

What Is the Issue?

Most nations provide some level of support to their agricultural sectors. Different types of support can affect producers and consumers both in the supporting country and in other countries. As such, measures of domestic agricultural support are highly contested in the negotiation of trade agreements. Two key systems have emerged for classifying and comparing agricultural support levels across countries. The World Trade Organization's (WTO) notification system produces the Aggregate Measurement of Support (AMS); member governments, in adherence to a formal trade agreement, submit their own data, though such notifications may be submitted irregularly due to lack of capacity or lack of timely and complete data. The Organization for Economic Cooperation and Development's (OECD) Producer Support Estimate (PSE) is also a consensus framework among member nations, but its purpose is to facilitate dialogue on policy reform and effective policy design. The OECD measure relies on data provided by members, supplemented with other sources by OECD experts in order to make annual estimates of transfers across sectors of the economy.

Governments, nongovernmental organizations, researchers, and journalists use both measures regularly to compare the levels and types of support to agriculture across countries. Since both systems produce measures based on the same support programs, some users may attempt to use the OECD measure as a proxy for the WTO measure, which is more narrowly focused and more irregularly reported. But because these two systems were developed for different purposes, they are not identical in their classification schemes, their policy inclusiveness, and their methodologies. These differences can result in surprisingly different results.

What Did the Study Find?

- The WTO classification system requires members to categorize their programs according to rules regarding their expected trade-distorting impacts, which determines whether those programs are subject to each member's maximum support commitments under the Uruguay Round Agreement on Agriculture. The OECD system classifies programs based on criteria related to program implementation, rather than expected impacts, and programs are separated based on whether support is to producers, consumers, or the agriculture sector generally.

- For the United States, these classification and measurement differences are reflected in a higher level of domestic agricultural support reported under the OECD system compared to the WTO system. From 1995 to 2007, annual domestic support reported under the WTO system ranged from 68 percent to 90 percent of that reported under the OECD system.

- In some cases the two systems employ different methods to measure the same type of support; for example, the methods used by the WTO and OECD systems to calculate market price support (MPS) yield strikingly different results. Because the OECD method uses the gap between two current (domestic and world) prices to calculate MPS, the amount of MPS may vary widely from year to year. When world prices are high, the

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gap between a supported domestic price and world price will likely be small, reducing MPS; when world prices fall, that gap will likely increase and MPS will be higher. In contrast, the MPS calculated under the WTO system compares the same fixed world reference price (the 1986-88 average) with a domestic administered price, so when the domestic administered price is stable, the WTO's MPS method will result in only slight variation from year to year based on changes in eligible production.

- For the United States, the difference in methodology for calculating MPS results in reported annual support differences ranging from $3 billion to $16 billion over 1995-2007. Combined with significantly different methods for classifying direct support to producers, these MPS results contribute to the OECD producer support estimate (PSE) ranging from $13 billion to $40 billion higher than the WTO aggregate measurement of support (AMS) over the same period.

- It may be possible to translate from one system to the other, perhaps to recreate a missing year of data or to develop new composite indicators, but the task requires a detailed knowledge of the methodologies used by both systems, a detailed understanding of country policies, sufficient reporting transparency to identify individual programs, and some choices about how to recalculate unique measures, like MPS.

How Was the Study Conducted?

A comparative framework for analyzing the two domestic support measurement systems was built by examining the origins, purposes, and classification schemes of both through published documentation and their use in reports and databases since the mid-1990s. This framework allows for juxtaposing the detailed classification and measurement methods of each system and making direct comparisons of how they would be applied across a set of country policies. The impacts that the differing categorization and measurement methods could have on domestic support reporting are demonstrated by analyzing their application to U.S. programs and data reporting from 1995 to 2007. The U.S. examples also provide an opportunity to clarify some common misconceptions about comparability between the WTO and OECD systems.

Introduction

Most nations provide some level of support to their agricultural sectors. However, that support can take many forms. Different types of support can affect producers and consumers both in the supporting country and in other countries. As such, measures of domestic agricultural support are highly contested in the negotiation of trade agreements. The desire for discipline of levels of support has led to intense efforts to characterize the types of support and to measure their likely impacts on production, trade, and the well-being of producers and consumers. Out of these efforts have come a number of systems to measure agricultural support levels and classify types of support in ways that facilitate comparing them across countries.

Two key systems for classifying and measuring domestic agricultural support have become widely accepted. One is the World Trade Organization's (WTO) Domestic Agricultural Support Notification System, which produces a measure called the Aggregate Measurement of Support (AMS). The other is the Organization for Economic Cooperation and Development's (OECD) Total Support Estimate, which produces a measure called the Producer Support Estimate (PSE) (table 1).

The WTO notification system and AMS exist for the purpose of securing commitments within the legal framework of a formal trade agreement. The rules governing domestic support reporting reinforce the agreement by providing a means through which adherence to commitments can be assessed. The OECD classification system and total support estimates are also a consensus framework among members, but their purpose is to facilitate dialogue on policy reform. OECD measures focus on identifying transfers across sectors of the economy and provide a foundation for economic analysis of effective policy design.

Table 1
Comparison of the WTO and OECD domestic support measurement system

	WTO	**OECD**
Purpose	Evaluate • Observance of trade agreements	Facilitate • Policy dialogue
Method	Measure • Trade-distorting support • Based on negotiated criteria related to expected trade impacts	Measure • Support to sector • Based on criteria related to program implementation
Outcomes	Annual notifications • Assess adherence to maximum support commitments	Comparative monitoring and evaluation report • Assess policy reform progress • Research database

Source: Economic Research Service, USDA, based on WTO *Notifications Handbook* and OECD *PSE Manual.*

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The WTO system was developed during the Uruguay Round of negotiations of the General Agreement on Tariffs and Trade (GATT), which brought the world agricultural sector under the umbrella of this longstanding global trade agreement (WTO, 1994). The Uruguay Round Agreement on Agriculture (URAA) became part of the system administered by the World Trade Organization (WTO), which in 1995 superseded the GATT as the institution charged with establishing the rules of trade and providing a forum for members to monitor the world's foremost multilateral trade agreement. Under the URAA, member countries (currently numbering 153) agreed to limit the most trade-distorting types of support provided to their domestic agricultural sectors.

The URAA establishes a legally binding framework and requires annual reporting (notification) of domestic support to ensure transparency among members, all of whom can question each other's notifications at regular meetings of the WTO Committee on Agriculture. WTO domestic support notifications are publicly available, and key summary data are available in spreadsheet format (WTO, *DS:1 and Relevant Supporting Tables*). However, more detailed data are available only through official documents accessed through a system that can be difficult and cumbersome to use.

The agricultural support measure adopted by the OECD—based on earlier work by Josling (1973) and originally called the Producer Subsidy Equivalent—was used in support of the Uruguay Round negotiations to quantify and categorize different policy instruments. In years since, OECD's system has been redesigned more than once and has been renamed the Producer Support Estimate (PSE). As member countries have adopted policies less directly linked to current production of individual commodities, the OECD measure has moved beyond a focus on commodity support and its cost to consumers to a more complex expression of the ways in which governments support their agricultural producers, consumers, and infrastructure.

The current OECD system no longer estimates all support in terms of individual commodity outputs. Initiated in response to the introduction of a more complex array of program designs by member governments, it now captures policy support to producers based on current production factors and farm revenue, historical production, and non-commodity (for example, environmental) outputs. The OECD system supports an annual monitoring and evaluation exercise to assess the progress of agricultural policy reform in member countries, as well as agricultural policy development in selected emerging economies. The system helps members and observers to evaluate policy tools objectively, measure the support provided by their own policies in comparison with others, and develop "best practices" guidance based on empirical evidence. OECD also maintains an annually updated multiyear database accessible to the public (OECD, *PSE/CSE database*).

How Do the Two Systems Measure Up?

The two systems address the same questions—how much support do individual countries provide to their agricultural sectors and what forms does that support take? But while the OECD monitoring and evaluation reports are released on a regular annual schedule, offering users a constantly updated source of data, the WTO domestic support notifications are made available as they are submitted by member governments. The OECD measure relies primarily on data provided by member countries; when the data are incomplete, OECD experts identify other sources or develop estimates in order to meet the requirements of an annual publication. WTO notifications, in contrast, are completed by member governments themselves and may not be submitted regularly for a variety of reasons, including lack of capacity or lack of timely and complete data. Because the regularity of reporting varies widely, WTO notifications are a less dependable source of data from which to draw comparable measures of domestic support across countries.

Both the OECD and WTO measures have been used by journalists, governments, non-governmental organizations, and researchers to report on the annual levels of support to agriculture, to provide a basis for comparing domestic support across countries in the context of trade negotiations and domestic policymaking, and to assess the character and potential impacts of various types of domestic support on markets and trade. Economists in particular have made use of these measurement systems in both qualitative and quantitative analyses of trade policy reform (Burfisher, 2001; Takahashi, 2009; Orden et al., 2011).

Since both systems measure essentially the same support programs, it may seem reasonable to use the OECD measure (for those countries for which PSEs are available[1]) as a proxy for the WTO measure to account for those years in which WTO notifications data are not available for all members. But because these two measures were developed for different purposes, they are not identical in their classification schemes, their policy inclusiveness, and their measurement methodologies. These differences can result in surprisingly different support totals, as a comparison of the WTO and OECD support totals for the United States shows (fig. 1). From 1995 to 2007, annual domestic support reported under the WTO system ranged from 68 percent to 90 percent of that reported under the OECD system.

[1]PSEs are produced for the EU and all other OECD member countries, and for some nonmember countries, including Brazil, China, the Russian Federation, South Africa, and Ukraine.

WTO Domestic Agricultural Support Notifications

The WTO system provides for annual reporting of domestic support to agriculture, based on a classification of support agreed upon by members. Members are expected to provide an annual accounting of their domestic support, including market price support and budgetary expenditures, to be circulated to other members through the WTO Committee on Agriculture (COA). Although the COA staff facilitate the process through advice and assistance, the individual member governments are responsible for the data and measures presented. Their reports are subject to questioning by other WTO members, but final content is determined by individual members.

Figure 1
OECD Total Support Estimate and WTO Total Domestic Support for the United States, 1995-2007
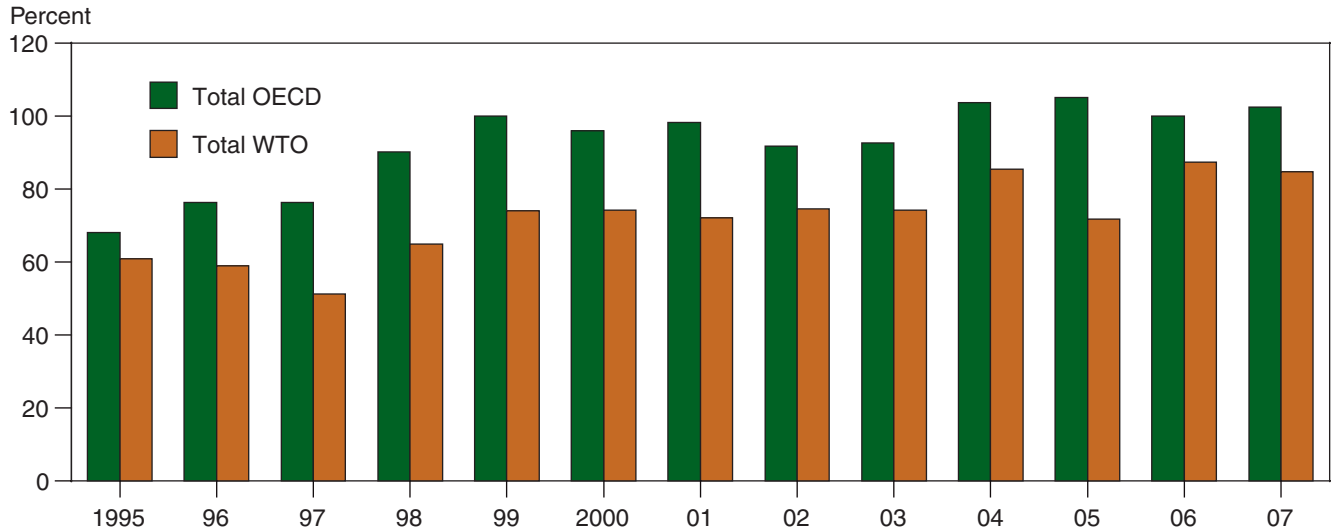
Percent

Note: WTO Total Domestic Support includes green box, blue box (1995 only), AMS, and *de minimis* (support less than 5 percent the value of production) exemptions; OECD Total Support Estimate includes PSE, GSSE, and CSE (see table 2 for definitions).

Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset.

The classification system requires members to categorize their programs according to specified criteria, which identify those programs that may be exempted from reporting as trade-distorting support (table 2). Policies that do not meet the criteria for exemption are by default determined to be trade-distorting, and any support they provide is subject to a maximum support commitment under the URAA. Programs are exempt if they meet the criteria for one of three categories:

- Policies that are at most minimally trade-distorting ("green box"),

- Policies that involve production limits ("blue box"), and

- Policies used by developing country members in the context of broader development programs and that provide development assistance for their low-income and resource-poor populations, as well as support to producers to encourage diversification away from growing illicit narcotic crops ("development box").

All other policies are subject to maximum support commitments and are reported as part of the Aggregate Measurement of Support (AMS), or the "amber box." Within the AMS, programs may be reported as product-specific support (associated with production of a specific commodity) or as non-product-specific support (cannot be assigned to specific commodities).

In the final calculation of support subject to a maximum commitment, the *de minimis* rule allows countries to exclude support from the product-specific or nonproduct-specific categories that falls below certain spending limits. For product-specific categories, the *de minimis* limit is 5 percent (10 percent for developing countries) of the value of production of the specific product; for the nonproduct-specific category, the limit is 5 (10) percent of the country's total value of agricultural production. (See WTO, 1994, for the official domestic support notification requirements.)

Table 2	
WTO and OECD main classification categories	
WTO	**OECD**
• "Amber box" (AMS) — *De minimis* exemptions exclude support less than 5% of the value of production (10% for developing countries) • "Blue box" (production limiting) • "Development box" (development measures—developing countries only) • "Green box" (minimally trade distorting)	• Producer Support Estimate (PSE) • General Services Support Estimate (GSSE) • Consumer Support Estimate (CSE)
Source: Economic Research Service, USDA, based on WTO *Notifications Handbook* and OECD *PSE Manual*.	

OECD Agricultural Policy Reform Monitoring and Evaluation

The OECD system operates as part of an annual monitoring and evaluation process carried out by the OECD Directorate for Trade and Agriculture. Member countries contribute to the collection of relevant data, but OECD staff are responsible for the reporting process and final calculations, subject to members' review.

OECD's classification system is based on the principle of estimating transfers to producers, both individually and collectively, through policy measures (table 2). The classification system for transfers to individual producers bases categorization on the implementation criteria of each policy, rather than the WTO criteria of whether policies are trade-distorting. OECD members have agreed that the potential trade-distorting impacts of various program designs should not be addressed in the classification scheme (OECD, *Introduction to the PSE and Related Indicators*).

The OECD classification system divides programs into three overarching categories, based on whether the programs are directed:

- to individual producers—the Producer Support Estimate (PSE),

- to producers collectively—the General Services Support Estimate (GSSE), or

- to consumers (first consumers at the farm gate, most often processors rather than final consumers)—the Consumer Support Estimate (CSE).

The total of these three categories produces the Total Support Estimate (TSE). Within each of these larger categories, the classification system further divides transfers based on a hierarchy of implementation criteria.

PSE criteria divide transfers among those based on output; those based on inputs; those based on area, animal numbers, farm receipts, or farm income (A/An/R/I); and those based on non-commodity criteria like environmental benefits. Within the category of A/An/R/I, a further distinction is made based on whether current commodity production is required to receive the transfer, and if so, whether it requires production of a specific single commodity, a group of specified commodities, or any commodity. These categories reflect an effort to organize the classification system to capture members' policy reforms. New transfer programs have moved substantial amounts of support away from traditional output and input subsidies to support based on current production factors and farm revenue, historical production, and non-commodity outputs.

The categorization in the GSSE and CSE is less hierarchical. GSSE categories include expenditures on research and development, agricultural schools, inspection services, infrastructure, marketing and promotion (including foreign food aid), and public stockholding. CSE categories include transfers associated with policies that raise commodity prices to consumers (the cost to consumers of market price support policies); commodity-specific transfers, such as the share of benefits retained by sugar processors under the sugar loan program; and noncommodity-specific transfers, such as domestic food assistance programs.

OECD goes beyond this initial classification with additional measures of how agricultural support is provided. These calculated measures include:

- Percentage PSE (%PSE), which indicates the share of producer income (gross farm receipts) that comes from transfers from consumers and taxpayers;

- Nominal protection coefficient (NPC), which indicates the share of transfers to producers based on commodity output;

- Percentage single commodity transfer (%SCT), which indicates the share of transfers to producers requiring production of a specific commodity;

- Nominal assistance coefficient (NAC), which indicates the share of transfers to producers from all policy measures; and

- Percentage total support estimate (%TSE), which indicates the share of GDP represented by all measures supporting agriculture.

(See OECD, *PSE Manual,* for further details on these calculated indicators and other aspects of the OECD classification system.)

Correspondence Between the Systems

Despite the apparent similarities between these two systems, there are significant differences across the categorization schemes that limit correspondence between the two systems and their measures. For example, it might appear that the WTO's green box is roughly equivalent to the OECD's GSSE and CSE, since these categories include many of the same general services and consumer support programs. But the WTO's green box actually incorporates a number of policies that are classified by OECD in the PSE, including environmental payments, technical assistance, decoupled income support, disaster relief, and some credit programs. Similarly, some programs that are included in the OECD's PSE and GSSE are not included as part of the WTO domestic support notification at all. Foreign food aid, tariffs, and export subsidies are all reported to the WTO through other notification processes. Moreover, in some cases, the two systems employ different methods of measuring the same type of support. Both the WTO and OECD systems calculate market price support, but their methods produce very different results.

WTO's AMS vs. OECD's PSE

The comparability across the two systems, or lack thereof, may be shown by consideration of the WTO's Aggregate Measure of Support (AMS) and the OECD's Producer Support Estimate (PSE). Because both measures calculate direct support to producers, it may seem reasonable to assume that the measures are equivalent, or that having access to a country's PSE data would account for its AMS in years for which a country has not yet submitted a WTO domestic support notification.

That assumption would be incorrect. Some transfers included in the PSE—such as foreign food aid, tariffs, and export subsidies—are not covered as domestic support under the URAA. Thus, they are not reported as part of the AMS. The difference in total support as measured by these two categories is evident in comparing the PSE and AMS for the United States (fig. 2). The difference in methodology for calculating MPS results in reported support differences ranging from $3 billion to $16 billion over 1995-2007. Combined with significantly different methods for classifying direct support to producers, these MPS results contribute to the OECD's PSE ranging from $13 billion to $40 billion higher than the WTO aggregate measurement of support (AMS) over the same period.

The AMS includes all product-specific and non-product-specific support subject to a maximum commitment under the URAA. This includes transfers from higher market prices provided to producers through commodity price support programs. It also includes the value of support to producers from programs tied to production of specific commodities, whether through payments directly to producers or through other benefits like interest subsidies, and the value of payments and other benefits to producers through programs not tied to specific commodities. Support under these latter two categories, however, may be excluded from the maximum commitment ceiling—and thus deducted from the AMS—under the *de minimis* rule (table 3).

Figure 2
**OECD's Producer Support Estimate (PSE) and WTO's Aggregate Measure of Support (AMS)
for the United States, 1995-2007**

$ billion
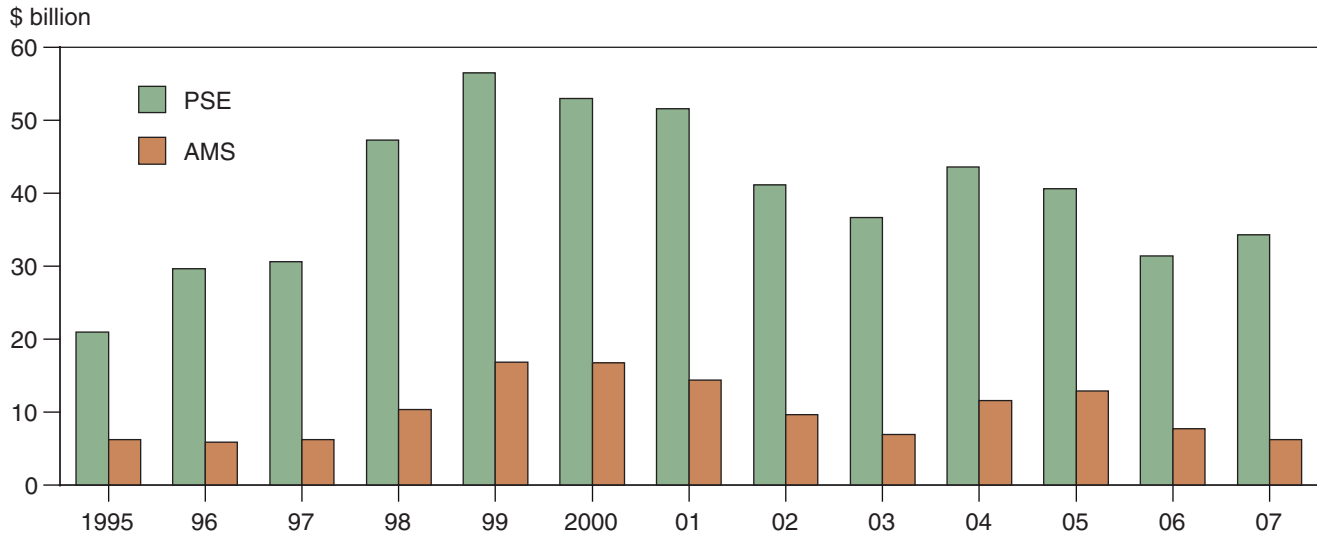
Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset.

Table 3
**OECD's Producer Support Estimate (PSE) and WTO's Aggregate
Measure of Support (AMS) subcategories**

AMS	PSE

Product-specific support
• Market price support
• Direct non-exempt payments
• Other non-exempt payments
 	
Non-product-specific support
 	
De minimis exemptions
    Any support less than 5% of the value of production (10% for developing countries). For product-specific support, the total must be less than 5% (10%) of the value of production of that commodity; for non-product-specific support, the total must be less than 5% (10%) of the total value of agricultural production.
	A. Support based on commodity output
	
	    1) Market price support
	    2) Payments based on commodity output
	
	B. Payments based on input use
	
	    1) Variable inputs
	    2) Fixed capital formation
	    3) Onfarm services
	
	C. Payments based on current area/ animal numbers/ receipts/income (A/An/R/I)
	
	D. Payments based on non-current A/An/R/I, production required
	
	E. Payments based on non-current A/An/R/I, production not required
	
	F. Payments based on noncommodity criteria
	
	    1) Long-term resource retirement
	    2) Specific non-commodity output
	    3) Other non-commodity criteria

Source: Economic Research Service, USDA, based on WTO *Notifications Handbook* and
OECD *PSE Manual*.

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The PSE captures much more product-specific and nonproduct-specific support to producers, as well as other support that under the WTO system is exempt from reporting as part of the AMS (table 3). The PSE classification system incorporates transfers to producers based on output, both through market price support and through per-unit payments. It also includes transfers based on the producers' use of inputs, including variable inputs (fertilizer, fuel, etc.), fixed capital formation (structures, equipment, etc.), and onfarm services (primarily technical assistance). Transfers based on land area, animal numbers, farm receipts, or farm income are also included, and grouped by whether they require current production. Finally, included are transfers related to non-commodity criteria, including resource retirement, non-commodity outputs (like maintenance of certain landscape features), and other non-commodity bases (e.g., flat rate payment per farm).

The OECD's PSE also incorporates a number of policies that may be reported in the WTO green box category of minimally trade-distorting support. These include environmental programs, decoupled income support, and some disaster relief and credit programs. Because the PSE classification principle does not consider the objectives of transfers, programs like environmental payments are classified based on the way they are implemented. Thus, if payments help producers alter their use of variable inputs—limiting fertilizer or pesticide use, for example—the program benefits would appear in the category for transfers based on use of variable inputs. Similarly, if payments are made to producers per animal to support a reduced pasture load, those benefits would appear in the category for transfers based on current animal numbers (A/An/R/I). Decoupled income support, as a transfer to individual producers (in the sense that the land on which it is based remains in agriculture, although it may idled), is included in the PSE and is similarly categorized on the basis of the payment. If support is paid on historical production area or receipts, it will be included in the category for transfers based on non-current area/receipts and not requiring production (A/An/R/I, production not required).

The same contrast between the WTO and OECD systems holds for disaster and credit programs. In the WTO system, members report some types of these programs in the green box, based on criteria for what is considered minimally trade-distorting. In the PSE, benefits are classified according to how the benefit is provided. If the payment is per unit of output, it is classified in the category for payments based on commodity output; if the payment is based on area or animal losses, it is classified in the category for payments based on current area or animal numbers (A/An/R/I).

The implications of these major differences in categorization and inclusion can be seen in a comparison of the AMS and PSE by subcategory for the United States (fig. 3). While there is some movement in all support categories over time, the PSE category for support based on commodity output varies more than others and follows a pattern countercyclical to the rise and fall of market prices that drive most of these output programs. Since these are the programs that make up the bulk of the AMS, the two categories track fairly closely, although for the United States the AMS falls below the PSE output support category in most years. This can be explained almost entirely by the difference in measurement methodology for the component both systems call market price support.

Figure 3

PSE components compared with AMS for the United States, 1995-2007

$ billion

Legend:
- Output
- A/An/R/I
- Input use
- Non–commodity
- AMS
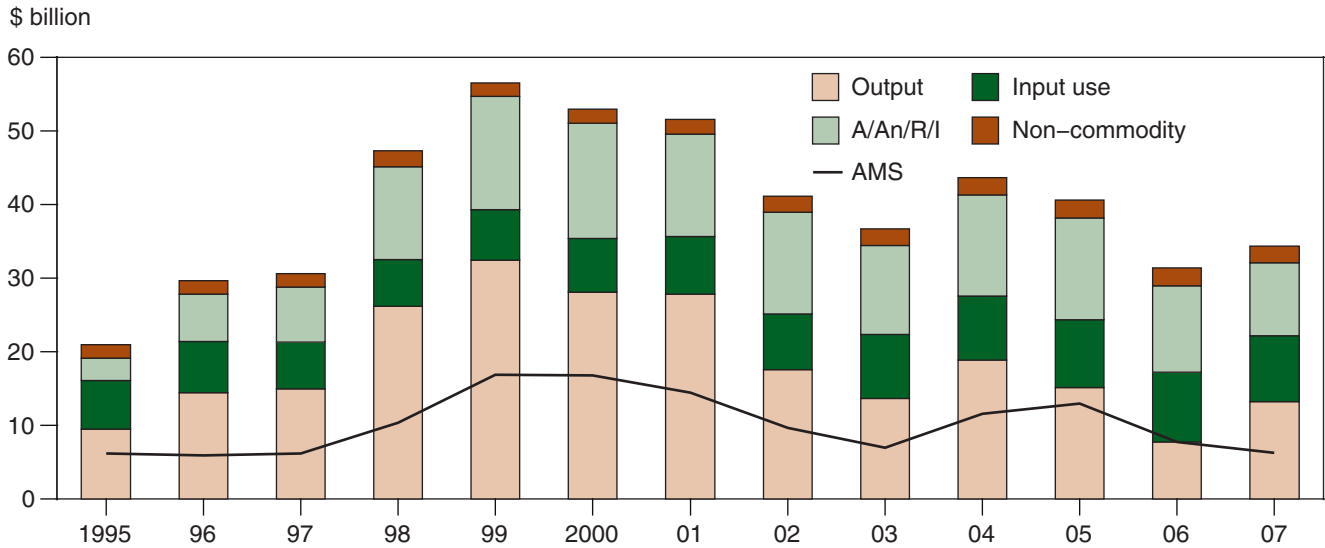
A/An/R/I = payments based on area, animals, receipts, or income.

Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset.

Market Price Support in the AMS and PSE

Market price support (MPS) in both the WTO and OECD classification systems is meant to capture the support provided to producers through measures that raise prices in the domestic market higher than they would be otherwise. These programs are generally operated by limiting imports through tariffs, through government purchases of commodities, and/or the use of export subsidies to support a domestic floor price. Often these measures are used in combination, since maintaining domestic floor prices requires limiting competition from imports to avoid supporting the prices of commodities produced in other parts of the world.

In both the AMS and PSE, the MPS methodology is based on measuring a price gap—the difference between a supported domestic price and the price at the country's borders, or a world reference price. The key difference results from the domestic and world reference prices used by each method and the set of commodities to which the method is applied. The AMS measure of market price support is based on a fixed, historical world reference price—as determined in the URAA in 1994—and applies to commodities for which a country maintains a statutory administered price. The PSE measure is based on current world reference prices and applies to commodities for which there is a measurable gap between the country's current domestic farm price and the world reference price.[2]

The AMS calculation of market price support was developed and agreed to by all members in the URAA. It compares a fixed historical world reference price for the commodity in question to a country's current administered domestic price for that commodity and then applies the difference to the

[2]The URAA specifies commodity coverage using the Harmonized System (HS) commodity codes developed by the World Customs Organization. The coverage is broad, including all animal (except fish and seafood), vegetable, and processed food products (HS chapters 1-24), plus edible oils, skins and hides, and raw natural fibers. The OECD focuses on a set of 15 common agricultural commodities for all member countries, plus additional commodities for each country to support actual price gap measurement for at least 70 percent of the total value of production for that country. The full MPS applies the average for covered commodities to the remaining 30 percent of the value of production. Although this difference could lead to more inclusive commodity coverage in the AMS than in the PSE market price support measure, most countries report AMS market price support to the WTO for only a limited number of products.

eligible production[3] of that commodity to estimate the support provided to producers:

WTO MPS = (current domestic administered price - 1986-88 average world reference price) * eligible production.   (1)

For example, the U.S. dairy MPS for 2007 was calculated as:

WTO MPS = ($218.258/metric ton - $159.825/metric ton) * 85.759 million metric tons = $5.012 billion.

The administered price used in the AMS MPS calculation may not reflect actual returns to producers if it is a floor price that triggers only when market prices fall below that level. Other policies in place such as tariffs and export subsidies may have more impact on producer prices than the administered price. The method does not make explicit reference to any border measures that might be in place in conjunction with the administered price support system—in the WTO, tariffs and export subsidies are notified separately from domestic support (WTO, 1994). Also, if the calculation yields a negative result, the MPS is generally reported as zero.

The URAA includes an alternative calculation when it is not practical to use the price gap methodology, as when no appropriate world reference price can be determined. The methodology for this Equivalent Measurement of Support (EMS) either multiplies the administered price times the quantity of production eligible to receive that price, or reports budgetary outlays used to maintain the producer price at the administered price level (WTO, 2003).

Commodity coverage under the AMS MPS is limited to production for which there is a statutory administered price. For the United States, that means market price support has been calculated for the dairy and sugar price support programs alone since 2002. Before the 2002 Farm Act ended the peanut price support program, peanuts were also included. Because the world reference price is fixed by the URAA, as long as the statutory administered price does not change, MPS for a commodity will vary only with eligible production. For the United States, eligible production of both dairy and sugar[4] has remained fairly constant, which is reflected in the level of AMS MPS (fig. 4.)

Market price support (MPS) in the OECD classification system is a more complex calculation, although it is also based on a price gap concept. The method for calculating the PSE MPS for any commodity is to compare the domestic farm-level price with an appropriate world price, usually determined as the price of that commodity at the country's border, adjusted to the farm level. For exporting countries, the appropriate border price is generally the FOB (free on board) unit value; if the country is an importer, the appropriate border price is generally the CIF (costs, insurance, freight) unit value. The differential, or price gap, is then applied to the country's total production of the commodity. Subtracted from the result are any contributions producers make to the MPS through levies or through "excess feed costs," the share of feed grain MPS that livestock producers have contributed through higher prices for feed (see equation 2).

[3] Member countries decide what constitutes eligible production for their AMS MPS calculations, leading to differences in the way MPS is measured. For example, some countries include all production of the supported commodity, while other countries may include only the quantity purchased by government at the administered price. As a result, if the same commodity is included in both the AMS and PSE MPS, the quantities used may be substantially different.

[4] The United States used total quantity of milk produced as eligible production for the dairy MPS through 2007. For sugar, the total quantity of sugar produced served as eligible production through 2001. After the 2002 Farm Act, eligible production became the smaller of total quantity of sugar produced or the Overall Allotment Quantity (OAQ), which governs the quantity of sugar that can be marketed in a given year.

Figure 4

U.S. market price support as measured by the WTO and OECD, 1995-2007

$ billion
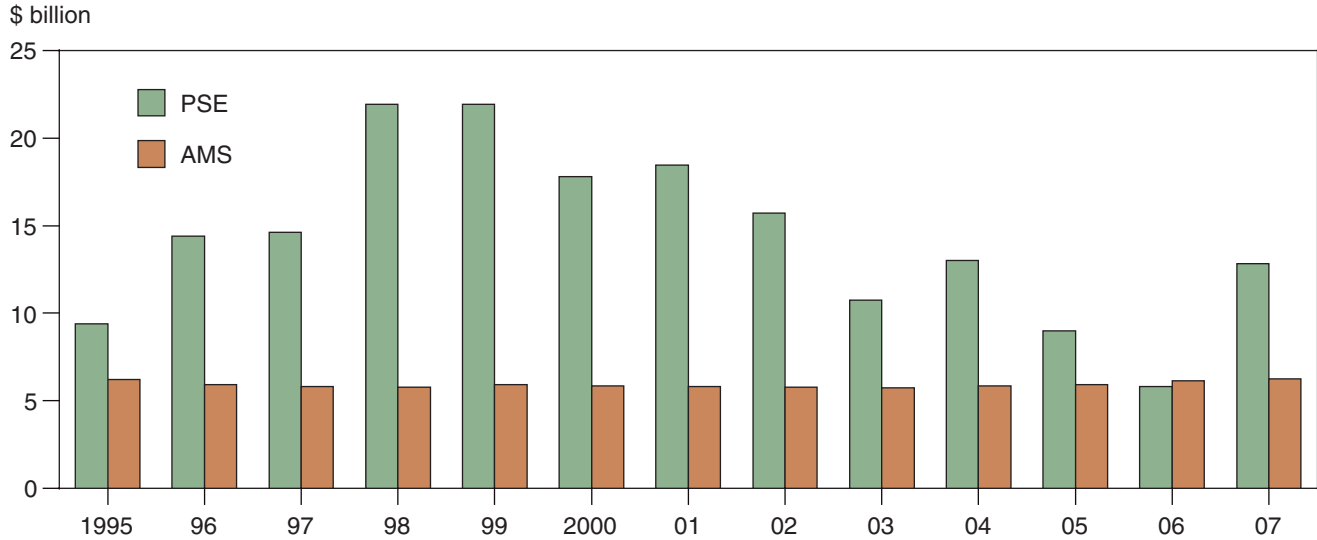
Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset. As noted in the text, the PSE and AMS market price support measures include different commodities. For the United States, the PSE includes wheat, maize, other grains, rice, rapeseed, soybeans, sunflowers, refined sugar, milk, beef and veal, sheepmeat, wool, pigmeat, poultry, eggs, and cotton, while the AMS includes only peanuts, dairy, and sugar before 2002 and only dairy and sugar from 2002 forward.

PSE MPS = [(Domestic farm-level price - border farm-level price) *
quantity produced] – producer levies – excess feed costs.   (2)

For example, the U.S. dairy MPS for 2007 was calculated as:[5]

PSE MPS = [($421.74/metric ton - $318.40 /metric ton) * 84,233 million
tons] – 0 – 0 = $8.7 billion.

The PSE method calculates MPS for 15 common commodities—wheat, maize, other grains, rice, rapeseed, soybeans, sunflowers, refined sugar, milk, beef and veal, sheepmeat, wool, pigmeat, poultry, and eggs—across all OECD member countries. For each country, MPS is estimated for additional commodities based on their share of a country's value of production to ensure that at least 70 percent of the total value of agricultural production is covered. For some countries, MPS may be zero for some of the common and additional commodities. An extrapolation procedure is used to estimate total MPS for use in the PSE:

PSE MPS = (Sum of MPS of individual commodities/sum of
value of production (VoP) of individual commodities)
* VoP of all commodities.   (3)

As a comparison between the WTO dairy MPS ($5.01 billion) and the OECD dairy MPS ($8.7 billion) highlights, these two methods can yield widely differing results. Because the OECD method uses the gap between two (domestic and world) current prices to calculate MPS, the amount of market price support varies according to both current prices and current production. For the United States, most of the MPS is accounted for by dairy and sugar, with a small amount for sheepmeat. Since 1995, the U.S. MPS has also included wheat, beef, poultry, eggs, and cotton at much lower support

[5]Eligible production differs between WTO and OECD calculations because of different year definitions. The WTO marketing year for dairy begins October 1 of the notification year (October 1, 2007, for the 2007 domestic support notification). OECD uses the calendar year.

levels than for dairy and sugar. As a result, the PSE measure, following a pattern countercyclical to the rise and fall of commodity prices, is much more variable than MPS calculated for the AMS. When world prices are high, the gap between the supported domestic price and world price will be small, reducing MPS (as in 2006); when world prices fall, the gap increases and MPS is higher (as in 1999) (fig. 4). In contrast, the MPS calculated for the AMS compares the same fixed world reference price with a stable domestic-administered price, resulting in only slight variation from year to year based on changes in eligible production.

Comparing Across WTO Exempt Support (Green, Blue, and Development Boxes) and the OECD's GSSE/CSE

While the AMS and PSE encompass some major differences of inclusion and method, virtually all of the budgetary programs included in the AMS appear in the PSE. Other categories of the WTO's domestic support notification are not so easily compared. Blue box programs and development measures are, by definition, support that would otherwise be subject to maximum support commitments under the URAA and included in the AMS, except that they are exempted for specific agreed reasons. Blue box programs are most likely to appear in the OECD's A/An/R/I categories, since production-limiting programs have generally employed area or animal number limits. Development measures would generally appear among the categories for support based on input use (variable input use, fixed capital formation, and onfarm services) for those developing countries for which a PSE is calculated.

The United States has had no blue box programs since 1995, when deficiency payments and acreage reduction programs ended. The United States is not entitled to exempt development measures, but does notify programs in most green box categories.

WTO green box programs are similar to the OECD's GSSE and CSE catego-ries since they include many of the same programs that provide support for "general services" and "consumers" (table 4). However, these categories do not neatly track from the WTO to the OECD classification systems. For example, U.S. program spending reported as WTO green box consistently exceeds the total outlays reported as OECD's GSSE and CSE categories (fig. 5).

There are several key factors that account for the differences between the OECD and WTO measures. Most importantly, the OECD's CSE captures transfers from consumers to producers that reflect the cost of the higher market prices created through market price support policies. The share of those higher prices, or price transfers, that apply to imported commodities are accounted for as "other transfers from consumers" to differentiate them from transfers to domestic producers. This part of the CSE measure is generally negative, since it is meant to "credit" consumers for policies that create trans-fers through higher prices. Other components of the CSE include support to consumers from taxpayers, in particular the farm share of domestic food assistance, but also payments to processors. A final component, excess feed costs, accounts for the share of market price support paid for by livestock producers through increased feed prices. In the United States, these latter two components of the CSE have been very low and often zero (fig. 6).

Table 4
**WTO's green box and OECD's General Services Support Estimate/
Consumer Support Estimate subcategories**

WTO	OECD
Green box	**GSSE**
General services (includes research, extension, inspection, infrastructure, and domestic marketing programs)	Research and development
	Agricultural schools
Public stockholding	Inspection services
Domestic food aid	Infrastructure
Decoupled income support	Marketing and promotion
Income insurance and safety net	Public stockholding
Relief from natural disasters	Miscellaneous (e.g., undifferentiated state-level expenditures)
Structural adjustment—producer retirement	
Structural adjustment—resource retirement	**CSE**
	Transfers to producers from consumers
Structural adjustment—investment aids	Other transfers from consumers
Environmental payments	Transfers to consumers from taxpayers
Regional assistance	Excess feed costs

Source: Economic Research Service, USDA, based on WTO *Notifications Handbook* and OECD *PSE Manual*.
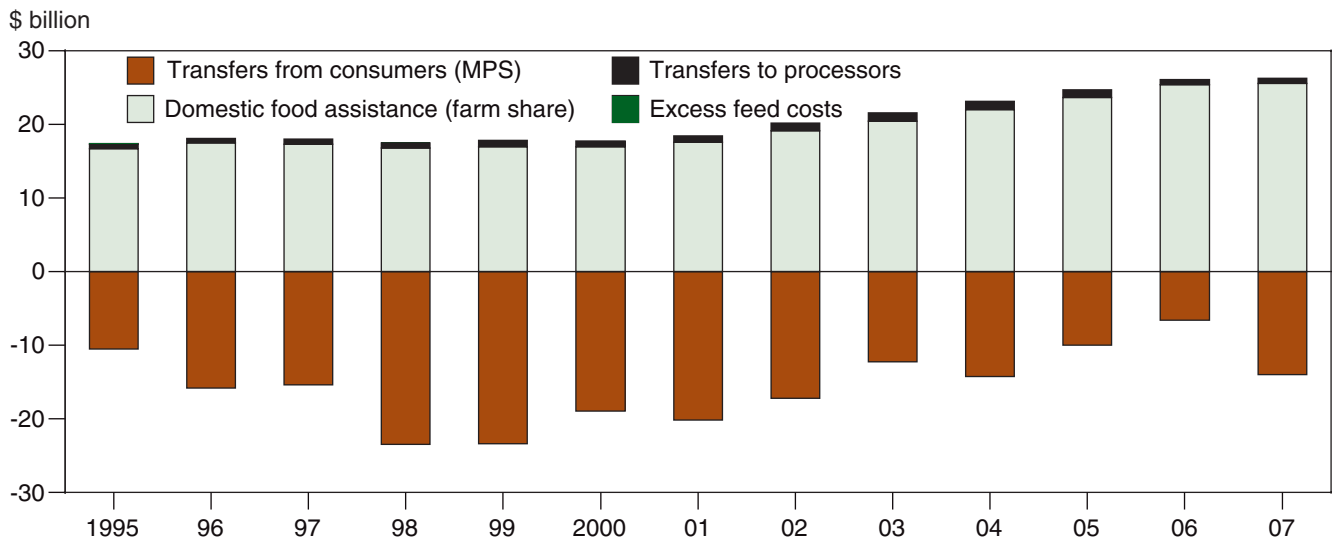
Figure 5
General Services Support Estimate/Consumer Support Estimate (OECD) and green box support (WTO) levels for the United States, 1995-2007
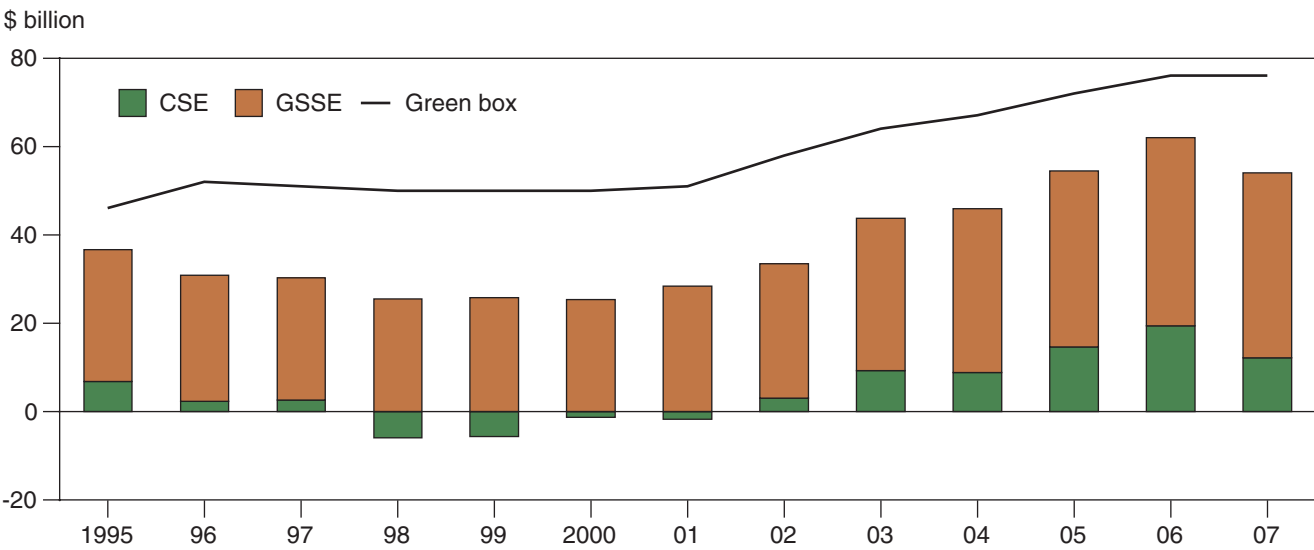
Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset.

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Other differences between the WTO's green box and the OECD's GSSE and CSE totals are accounted for by a number of payments to producers that are exempted from maximum support commitments in the WTO agreement. They are reported in the green box because they are considered to have, at most, a minimal impact on trade—decoupled income support, certain types of income insurance and safety-net programs, certain types of disaster relief, certain types of structural adjustment expenditures for producer and resource (usually land) retirement and for investment aids (e.g., credit subsidies), environmental payments, and regional assistance programs. These expenditures appear in the PSE portion of the OECD classification system because they represent transfers to producers. In combination with removing the CSE MPS measure, they account for the difference between the GSSE/CSE and green box totals (fig. 7).

Figure 6
Consumer Support Estimate subcategory shares for the United States, 1995-2007

$ billion

Source: ERS, using data from OECD PSE/CSE database.

Figure 7
General Services Support Estimate, non-Market Price Support Consumer Support Estimate, and selected WTO green box subcategories compared with total green box support level, United States, 1995-2007

$ billion
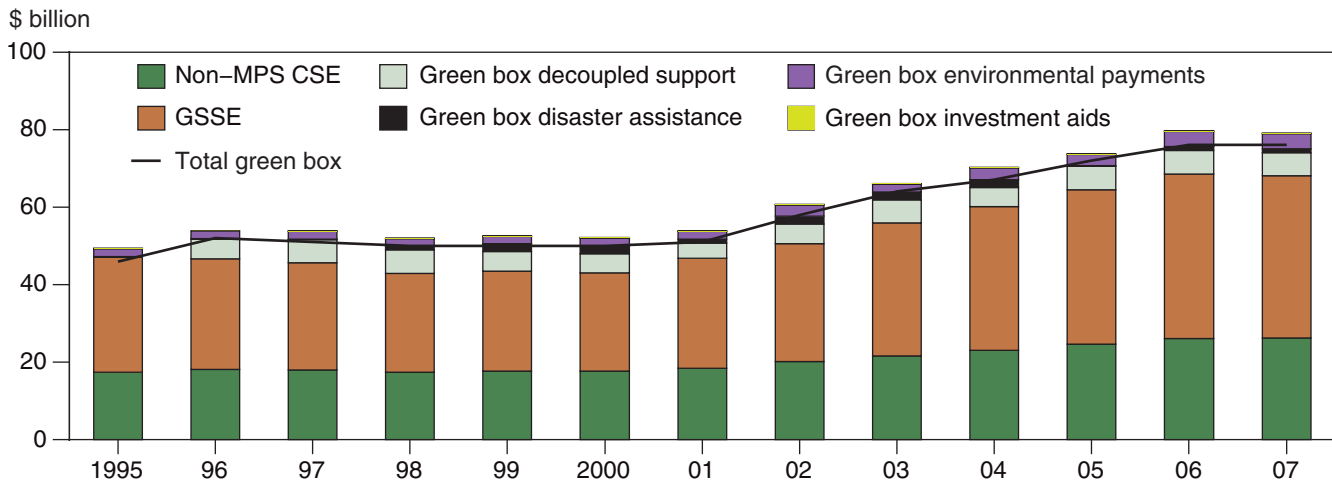
Source: ERS, using data from OECD PSE/CSE database and ERS U.S. WTO domestic support dataset.

Using the WTO and OECD Measures of Support

Despite many similarities between the WTO and OECD systems for measuring domestic agricultural support, using one system to understand the other or to translate a country's policies from one to the other is not straightforward. Because of the divergent purposes and development of the two systems, key differences in classification and methodologies create significant variations in the measures produced. In some cases, it may be possible to work carefully from one system to the other to estimate a domestic support measure, either to recreate a missing year of data or to develop some different configurations of domestic support totals that might combine programs and categories of support from both systems. However, translations across systems may not be possible or even appropriate given the potential for misleading results.

Individual programs that make up the WTO domestic support notifications and OECD monitoring and evaluation reports are, in most cases, referred to by the same program names. For measures that do not vary according to the internal rules of the reporting systems, it is possible to locate and transfer the data on those programs and their expenditures from one system to the other. For some programs, the process simply involves identifying a single program designation in both reporting systems. For others, it requires locating split components of the program and recreating the total for transfer to the other system. Some examples of different types of U.S. agricultural policies and their placement in the two systems illustrate what can be involved (table 5).

Table 5
Examples of OECD and WTO classification of U.S. programs

U.S. program	Classification	
	WTO	**OECD**
Commodity programs		
Marketing Assistance Loan Program	AMS, product-specific support	PSE, support based on commodity output (output payments)
Countercyclical payments	AMS, nonproduct-specific support	PSE, A/An/R/I (non-current, production not required)
Environmental programs		
Conservation Technical Assistance	Green box, general services	PSE, payments based on input use (onfarm services)
Environmental Quality Incentives Program	Green box, environmental payments	PSE, payments based on input use (fixed capital formation)
Conservation Reserve Program	Green box, environmental payments	PSE, payments based on non-commodity criteria (long-term resource retirement)
Other U.S. programs		
Food Stamp Program	Green box, domestic food aid	CSE, transfers from consumers to tax-payers (noncommodity-specific); GSSE, marketing and promotion (domestic food assistance programs)
Renewable Energy Program	Green box, general services	GSSE, infrastructure

Source: Economic Research Service, USDA, based on U.S. WTO domestic support notifications and OECD PSE/CSE database.

Yet even when it is relatively easy to identify and translate programs from one measurement system to the other, a comprehensive understanding of an individual country's policies and programs is needed to identify individual programs within each classification category and apply them appropriately in the other system. Moreover, the process is only possible for countries whose WTO notifications and OECD monitoring and evaluation data are reported transparently enough to identify these individual programs. Most importantly, some measures, such as MPS and other uniquely calculated indicators, cannot be directly translated from one system to the other and must be estimated for each system according to its own internal requirements to provide consistent and accurate measures.

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