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These notes summarize recent research on global trade issues. They reflect solely the views of the authors, and do not necessarily reflect the views of the World Bank Group or its Executive Directors.

Trade Note 7

Domestic Support for Agriculture: Agricultural Policy Reform and Developing Countries

Introduction

Domestic agricultural support was classified in the Uruguay Round Agreement on Agriculture (URAA) with a complex system of “boxes” that ranked programs according to their effect on trade. Policies deemed as trade-distorting were put in the “amber box,” as measured by the “Aggregate Measurement of Support” (AMS), which consisted of direct subsidies and support due to the gap between a fixed world reference price and domestic support prices (figure 1). For developed (developing) countries, amber box support was subject to 20 (13) percent reduction by 2000 (2004). Figure 1 also describes 4 major categories of exemptions: *de minimis*, the blue and green boxes, and special treatment for developing countries.

Amber box subsidies that were below a *de minimis* standard—5 (10) percent of value of production in developed (developing) countries—were exempt in two separate categories: non-product-specific and product-specific subsidies. If either was over 5 percent in developed countries, for example, then the subsidy was counted in the amber box. For developing countries, a wider list of policies were exempt and all least-developed countries were exempt from any subsidy reduction commitments at all.

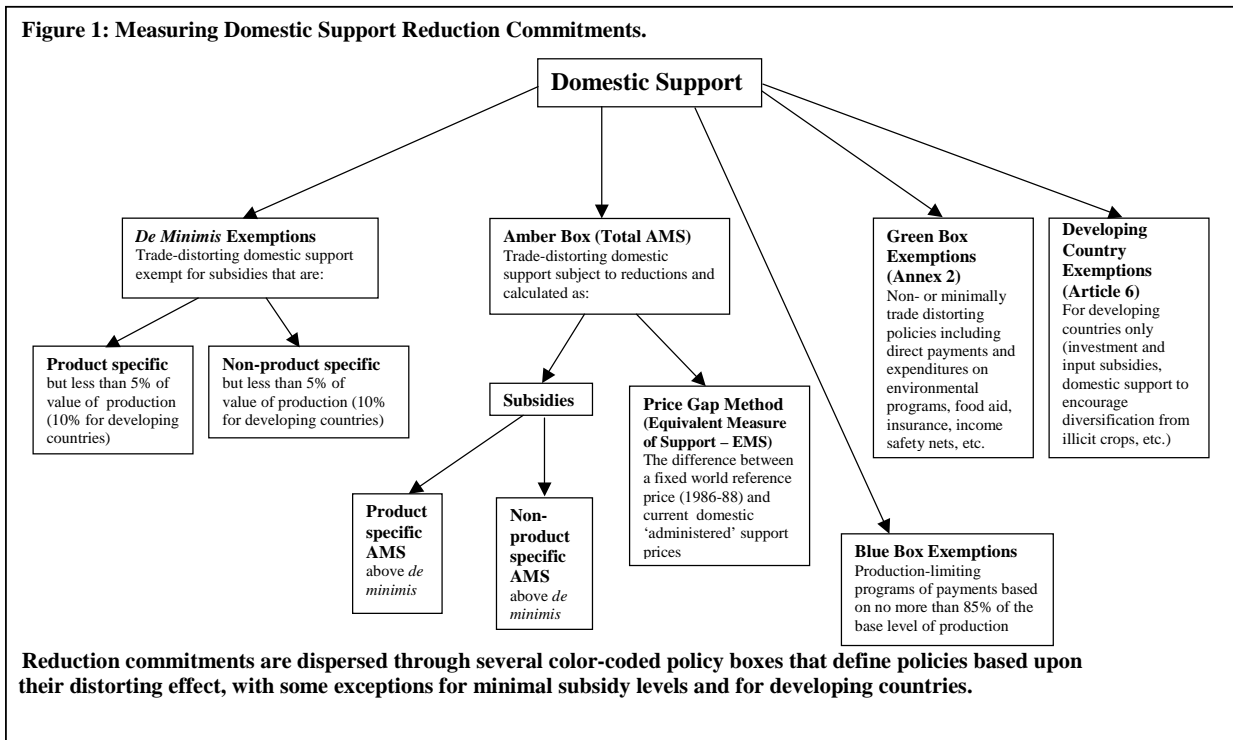
Domestic subsidies to farmers have increased substantially since 1986–88, but there has been a switch of support toward the green box, too. Nevertheless, there is evidence that high levels

of direct payments to farmers for some programs in the green box like those in the United States (US) and the European Union (EU) do in fact distort trade. In addition, countries have taken advantage of the complex set of rules outlined in figure 1 by repackaging subsidy programs and using loopholes to meet their support commitments. Therefore, the URAA has not properly defined, quantified, and hence has not reduced trade-distorting domestic support measures in many instances.

This note reviews the levels, composition and trends in domestic support across time, countries and policy categories. We then outline the problems with current disciplines on domestic support, and provide a synopsis of both the issues confronting negotiators and the options available to make rules and commitments more transparent and effective in reducing trade distortions.

The Structure of Domestic Support

Support to agricultural producers can be provided through (1) border measures which raise domestic prices and are thus financed by consumers (import tariffs and restrictions), (2) export subsidies, and (3) government subsidies to farmers that are financed by taxpayers. Since the former two are disciplined by parts of the URAA dealing with market access and export competition, ideally the part of the agreement disciplining domestic support should only deal with the third. However, the URAA includes some border protection in its measure of trade-distorting domestic support—the Aggregate Measurement of Support (AMS). This is also true of the



measures of agricultural support to producers used by the OECD—the Total Support Estimate (TSE) and the Producer Support Estimate (PSE), which differ in that the PSE includes only support that goes directly to farmers, while the TSE includes expenditures on general support services (research, extension, etc.) and consumer subsidies. Because of the other shortcomings of the AMS as a measure of support (see discussion below), the TSE and PSE are used here. The TSE in OECD countries averaged USD 315 billion (B) in 2000–02, with taxpayers paying 55 percent of the burden (table 1). The PSE averaged USD 234.7 B, of which 63 percent came from border measures. Major products that account for the bulk of the support are milk, meats, grains and sugar. Data show that several countries or regions have large shares of protection derived from border support, especially Japan and Turkey, while the US has the highest share of domestic support (table 1).

The PSE has remained fairly constant since 1986–88, but taxpayer-financed subsidies directly to farmers have increased significantly (table 2). The

breakdown in table 2 shows that payments based on output and input use are significant, representing USD 35 B in 2000–02, followed by area/animal payments, historical entitlements, and an “other” category of payments based on input constraints and overall farm income. From 1986–88 to 2000–02, domestic subsidies to farmers in the OECD increased 60 percent with “large” impact programs (output and input subsidies) increasing moderately

Table 1: Composition of Agricultural Support in OECD Countries 2000–2002, average USD Billion

Support Type	US	EU	Japan	Canada	Turkey	Mexico	OECD
Total Support (TSE)	93.5	103.8	60.2	5.6	7.9	8.7	315.0
Taxpayer Share	82%	53%	29%	64%	51%	39%	55%
Use							
Consumer & General	46.5	11.5	12.4	1.3	2.9	1.0	80.3
Producer Support (PSE)	47.0	92.3	47.8	4.3	5.0	7.7	234.7
% from Border Measures	35%	57%	90%	47%	76%	68%	63%
PSE by Commodity							
Milk	11.30	16.10	4.70	1.50	0.70	1.20	40.10
Meat (Beef and Pig)	2.00	25.10	3.50	0.60	0.80	0.40	36.70
Rice	0.90	0.25	16.50	nc	na	0.02	25.00
Wheat	4.00	9.00	0.90	0.40	0.20	0.20	15.30
Corn	6.80	2.40	nc	0.10	0.05	1.30	10.60
Other	22.00	39.45	22.20	1.70	3.25	4.58	107.00



compared to the substantial increases in so-called “smaller” impact programs. These include subsidies for land area and animal numbers; “decoupled” historical entitlements; and payments based on input use and overall farm income. In particular, payments on area planted and animal numbers have increased the most, followed by historical entitlements, which are decoupled payments based on historical production only.

Domestic subsidy programs for farmers include production-related expenditures that fall into the amber, blue, and green boxes, while expenditures on general services to agriculture fall only into the green box. Data in figure 2 show that the EU, US, and Japan have the bulk of the domestic support. Excepting the US, all regions shown in figure 2 have experienced a decline in both the measured total domestic support and green box expenditures. This occurred primarily because of abnormally low prices in the base period—which caused support to be abnormally high—and the way some of the border support is included in the AMS.

Economic Effects of Coupled Domestic Subsidies

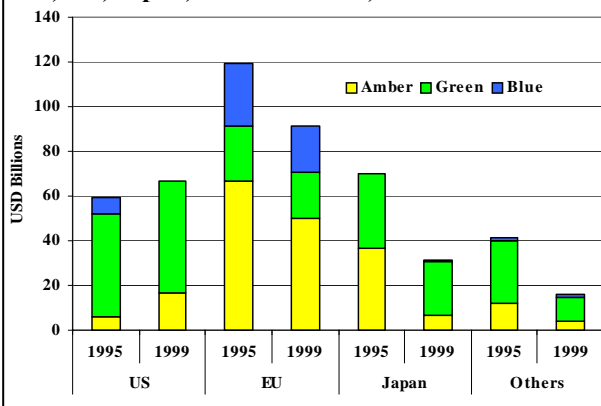
It is sometimes argued that domestic support is less trade-distorting than border protection because border protection reduces consumption in addition to protecting domestic producers. But in reality, the demand curve for primary farm products is very price inelastic compared to the supply curve, so the trade-distorting effects of domestic subsidies on output and inputs can be very significant, and close to that of import barriers. For example, the trade distortions of a subsidy on purchased inputs can be very high if the subsidy is a large proportion of total costs, if its supply curve is very price elastic relative to other inputs (like land), and if the elasticity of substitution between the inputs is high. These are indeed characteristics of much agricultural production. Hence, disciplines on domestic support, like those on border measures, are very important.

In terms of income transfer efficiency (the actual amount farmers receive from consumer and taxpayer transfers), no support policy linked to agricultural activity is efficient. At best, policies deliver less than half the monetary transfers as additional income to farm households. In the case of production subsidies, the share is only 1/4 or less; for input

Table 2: Composition of Agricultural Subsidies: 1986–88 to 2000–2002, USD Billion

Support Type	86-88	00-02	% Change
Producer Support Estimate (PSE)	240.9	234.7	-2.6%
Taxpayer-Financed Portion	54.7	87.8	60.5%
Large Impact			
Output Levels	12.5	14	12.0%
Input Use	20.3	21.1	3.9%
Smaller Impact			
Area/ Animal Headage	15.8	30.4	92.4%
Historical (decoupled)	0.5	12.2	2340.0%
Other	5.6	10.1	80.0%

Figure 2: Total Domestic Support Measures for the US, EU, Japan, and All Others, 1995–1999



subsidies it is less than 1/5. On average, only 25 percent of producer support actually finds its way into the producer's pocket.

The reasons why current policies fail to meet the stated goal of increasing farm income are:

- A large chunk of the money in the end goes to unintended beneficiaries, like input suppliers.
- World market prices are lowered due to distorted trade of all countries’ policies –this means support is self-defeating and makes it more difficult for each country to achieve their farm goals.
- Economic inefficiencies occur due to resource misallocation.
- Benefits are mostly capitalized into land values and hence do not necessarily go directly to farm households.
- Higher production induced by domestic support in developed countries significantly depresses



the prices received by farmers in developing countries.

In addition to the poor efficiency of current programs, there is a serious concern related to equity; benefits go overwhelmingly to large farms and corporations, not to small or family farms. Data compiled by the USDA on the income situation of farm households in the US suggests that farm subsidies are not reaching the households most in need. The reason for this is simple—when support is given through either an artificially high price (e.g., from import restrictions, export subsidies or direct payments per ton of production) or through input subsidies, the biggest beneficiaries are bound to be the biggest producers, who are also the biggest users of inputs.

Data in figure 3 for US crop farmers indicate that large farms receive most of the payments. The largest farm size group representing 5 percent of all farms received 20 percent of payments, while the smallest size group representing 39 percent of all farms received only 10 percent of payments (see note 1 in figure 3). But notice that large farms derive a disproportionate share of their farm income

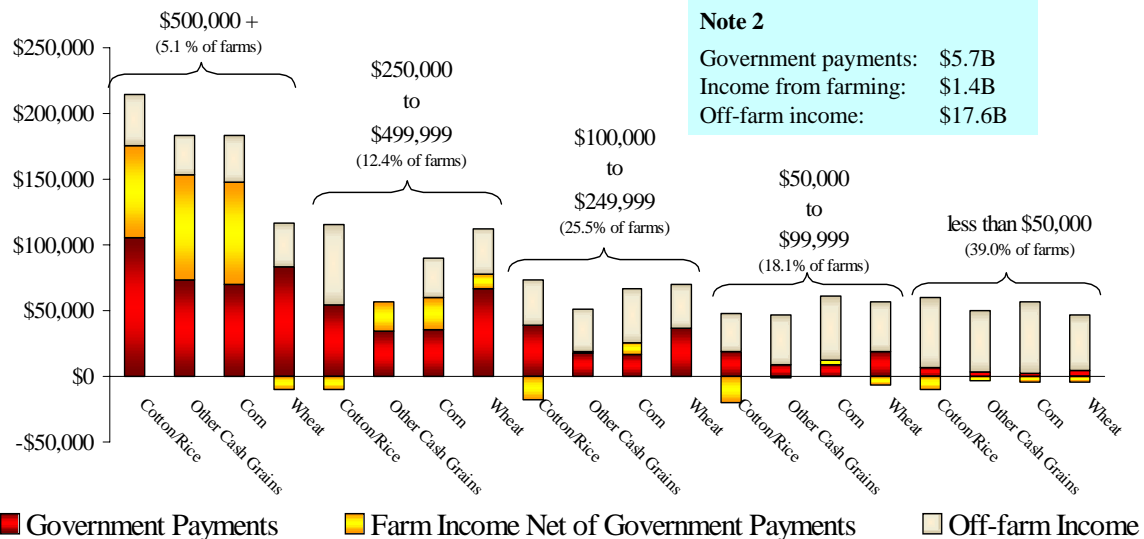
from government payments in total. The two largest groups received 48 percent of the government payments but generated only 23 percent of their total income from other sources. By contrast, the two smallest farm size groups received only 22 percent of the payments while earning 56 percent of total farm income from other activities. Or, considered from another perspective, the largest 5.1 percent of the farms derived over 48 percent of their income from government payments, while the smallest 39 percent derived only 8.9 percent of their income from this source.

Large farms make significant income from farming and so should not need taxpayer support as much as small farmers, yet the former receive by far the largest share of payments.

Total off-farm income is three times government payments while total income from farming in the market is only USD 1.4 B (see note 2 in figure 3)—government payments are over three times the total farm income from farming!

The unequal distribution of government payments is not limited to the US, as the data are robust across other countries too, although the data are not avail-

Figure 3: US Farm Household Income by Source and Income Group, 1998



Note 1

Sales class	> \$500,000	250K-499K	100K-249K	50K-99K	< 50,000
Payment share	21%	27%	30%	12%	10%
Income share	12%	11%	21%	17%	39%
Farm #s share	5%	12%	26%	18%	39%



able to examine this issue in as much detail as is reported for the US. A recent study showed that 7 percent of crop farmers in France received 77 percent of all direct payments.

Economic Effects of Decoupled Domestic Subsidies

The URAA defines decoupled payments as:

“Payments not related to the type or volume of production ... undertaken ... in any year after the base period ... nor on the price ... applying to any production undertaken ... after the base period”

A strict definition of decoupled subsidies is when payments are fixed and guaranteed and thus not influenced by *ex post* realizations of market conditions. Payments have to be financed by taxpayers and based on clearly-defined criteria (e.g., income, status as a producer or landowner, factor use, or production level).

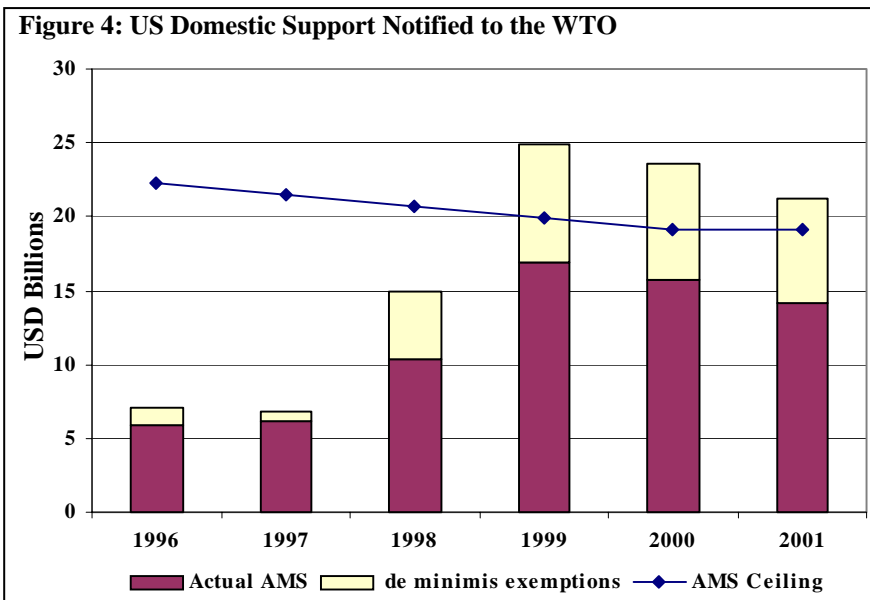
The objective of decoupled subsidies is to increase farm income without distorting current or future production (including input use). But there is a serious question about how effective the green box or so-called “decoupled” payments have been in meeting this objective. To analyze this, we briefly describe the experience in the US, EU, and Mexico.

The Experience of the US

The 1996 Farm Bill decoupled direct payments to crop farmers in the US, at least in principle. Planting was not required and payments were based on historical land use. But multi-billion dollar emergency market loss assistance averaging USD 8.6 B per year was disbursed from 1998 through 2001. This and the 2002 Farm Bill undermined the positive effects of the 1996 legislation. The 2002 Farm Bill allowed base acres and payment yields to be updated, and new crops were added to the support program. This is

inconsistent with the URAA’s definition of decoupling, yet the US notified the WTO that these subsidies are to be in the green box. The 2002 Farm Bill also added a new decoupling scheme where payments vary with price but not quantity in that payments were made on a fixed base area. To comply with their WTO commitments on domestic subsidies, the US deemed these outlays as trade-distorting but as non-product specific—a loophole in the URAA. Furthermore, coupled support prices were increased and new crops were added to the coupled programs. Clearly, this is retreating from trade liberalization, and poses grave implications for the WTO’s rules on decoupled domestic subsidies.

The trend in US domestic subsidy commitments is illustrated in figure 4. Total subsidies were well below the AMS ceiling in the earlier years but by now have surpassed it. The only way the US was able to meet its commitments was to declare emergency market loss assistance payments as non-product specific support, even though payments were based on each commodities’ base acres and payment yields. Now payment varies with each commodity’s market price in the new counter-cyclical program that replaced the emergency payments in the 2002 Farm Bill. This is somewhat of an arbitrary classification and exemplifies how domestic support commitments can become an exercise in repackaging policies and exploiting loopholes for any country.





The Experience of the EU

Current EU compensatory payments are blue box but recent policy changes have mandated that at least part of these payments in the future are to be decoupled and unrelated to current production. Current blue box policies in the EU are trade-distorting relative to that of “decoupled” taxpayer financed programs, like historical entitlements. Although area payments for cereals are restricted to a base level of hectares, this program is coupled in (i.e., influences) the farmer’s decision on how much land to plant. This holds true not only because farmers are obligated to produce cereals on the base acres to receive the payments, but also because area payments in the EU are made on an aggregate fixed area base that is set at the national or regional level. Individual farmers do not have a base area—just eligible acres for which they receive payments and have area set-asides. If the regional base area is exceeded, the per-unit subsidy is prorated downwards proportionately for all farmers. Because the prorating occurs on the total area planted *ex post*, farmers have an incentive to overplant in order to maximize their share of the fixed budget outlays, or to defend against share erosion due to overplanting by other producers. This means that the area payments are fully coupled in plantings because an individual farmer is not penalized for his own decision to overplant. Area payments with a national base area are therefore not a limit on total acres planted.

For EU cattle, the headage payments that are under “production limiting” arrangements are anything but production limiting because (1) farmers are allowed to keep more cattle than are eligible for payments, so there is no absolute production control, and (2) the number of animals eligible is not limited to numbers on farms prior to the payments being instituted in 1992. Where numbers of animals were below the maximum that could be claimed per farm, farmers have had an incentive to expand their stock of animals up to the limits on which payments are made. As such, the incentives in the program have been to encourage expansion of animal numbers initially and then to lock production in at around the levels that are consistent with the maximum number of animals that is eligible for payments. Those numbers reflect the very high levels of support for several decades as well as the incentives inherent in the headage payments.

The Experience of Mexico

Although Mexico has experienced some problems with their decoupling program like the US and the EU, there have been some advantages that should be noted.

Mexico’s move to decoupled programs after the early 1990s introduced historical base payments like the US except that there is a time limit and there is no updating of base acres and payment yields. The income distribution among farmers improved somewhat because of the design of the decoupled payment scheme including:

- Minimum payment of 1 hectare (1.9 million farmers or 30 percent of total number of farmers have less than one hectare).
- Maximum payment on 100 hectares.
- Land titles were required so land reforms were instituted, allowing land rentals, private investments and an overall increase in efficiency.
- Furthermore, small farms did not benefit from the old support prices that the decoupled program replaced since many farmers (especially with small land holdings) were net buyers; sold at distressed prices at harvest (and bought later in the year at higher prices); and were not integrated with the market in the first place so price supports were not effective.

The experience for all three countries shows that less than ideal decoupled programs still distort trade, especially when large sums of monies are involved, because of:

Fixed cost effects – allow farmers to effectively cross-subsidize production through their effects on farmers’ ability to cover fixed and/or variable costs.

Risk reduction and wealth effects – agricultural production is characterized by a high degree of uncertainty; therefore direct payments may affect a risk-averse farmer’s production decision by either mitigating the farmer’s response to risk or reducing the amount of risk.

Expectations – about future policies and dynamic consideration. Producers will develop expectations of future assistance based on past government actions, thereby affecting current production decisions.



Imperfect input markets – direct payments can affect farmers' investment and exit decisions if there are constraints facing them in capital and labor markets. Direct payments allow banks to make loans that they otherwise would not and also allow farmers with specialized skills to stay in agriculture.

Why is Decoupling Important?

For countries reforming their agricultural support systems, the importance of truly decoupled support is that it can:

- Provide more transparency.
- Reduce trade distortions significantly.
- Result in world price increases.
- Improve agricultural incomes and export earnings for developing countries.
- Target farm income across farm sizes, regions and sectors more effectively.
- Allow farm income goals to be achieved simultaneously and with lower costs.

Because of the adverse effects that OECD support policies have on world prices and market opportunities for farmers in developing countries, and the huge importance of agriculture to their economies, the low-and middle-income countries have a special interest in reforms that will reduce the trade-distorting effects of these policies.

How to Design an Ideal Decoupling Scheme

Countries beginning the switch from a coupled to a decoupled program are undertaking a significant step in the right direction of trade liberalization. Ideally, governments would give a one-time unconditional payment, a subsidy buy-out, to all engaged in farming or deemed in need of compensation as an annuity (bond) that is non-transferable to the farmer's successors, and non-renewable. However, the decoupling experience shows that there can be problems in both the design of programs and in their implementation.

The experience so far indicates that with anything short of an ideal decoupling scheme, some distor-

tions will continue. However, features that will increase the effectiveness of a slightly less than ideal decoupling scheme include:

- Make payment program transitory and for adjustment purposes only.
- Require no constraints on input use.
- Implement credible and time consistent policies with no changes in the eligibility rules, payments or eligible sectors or farmers.
- Discontinue all other coupled programs.
- Bind payments and time frame in the WTO to prevent backsliding.

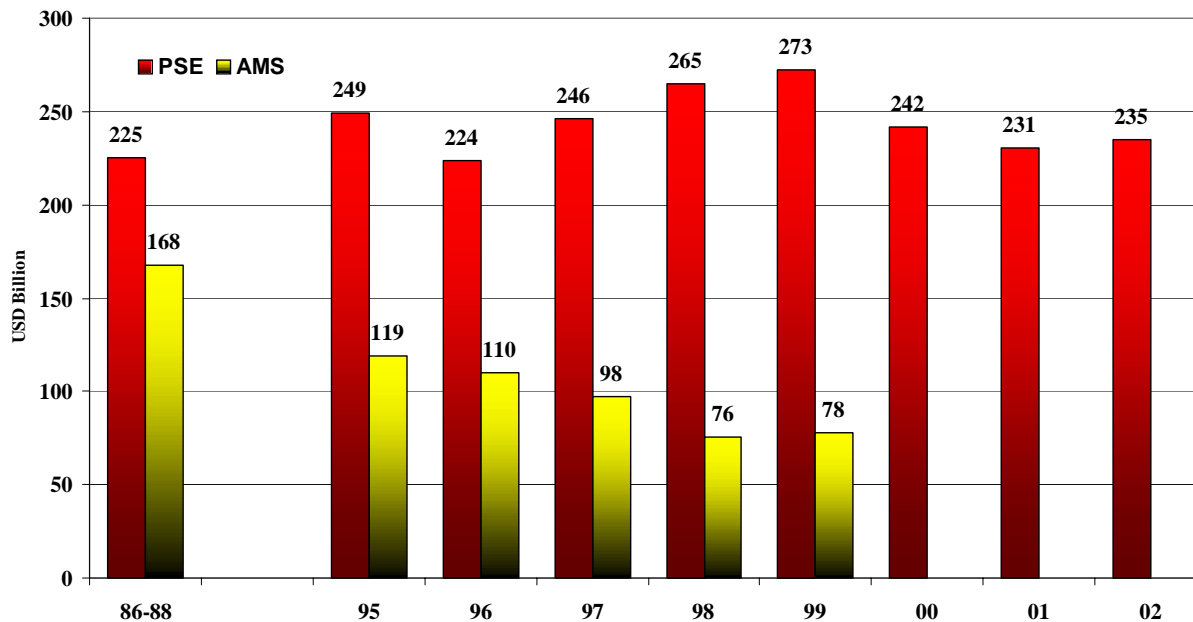
Problems with the AMS

The aggregation of all policies and commodity sectors (including sector wide policies) into a single AMS has limited the effectiveness of amber box policy reduction commitments. Countries have flexibility not to reduce support in some sectors and even offset reductions in some sectors by increasing support in others. Furthermore, the baseline AMS is overestimated because it includes blue box support but this support is not measured in the AMS reduction requirements. Meanwhile, the *de minimis* provisions create the potential for the continued support of commodity production at high levels. Countries have been able to get around the AMS commitment by simply not reporting an administered price. Others have chosen export levels rather than domestic production by which to multiply the price gap in the AMS computation.

Finally, as shown in figure 1, the AMS includes a price gap component that is the difference between the domestic "administered" support price and a fixed world reference price. This is not a measure of domestic support at all and is a very imperfect measure of border protection because it is not based on current actual domestic and world prices. For all these reasons, the AMS is a misleading indicator of domestic support. It arbitrarily penalizes some countries when policy reforms are undertaken and it favors others when they are not, depending on how programs are designed.



Figure 5 Trends in Aggregate Measurement of Support (AMS) Compared to the Producer Support Estimate (PSE) 1986–88 to 1999, in USD Billion



Source: de Gorter, Ingco, and Ignacio in *Agriculture and the WTO: Creating a Trading System for Development*

Furthermore, figure 5 shows how the trend in the AMS is negative, yet total PSE is trending upwards. For some countries, the data show the AMS to be greater than the PSE, which in principle should not be possible. AMS reduction commitments would have a maximum effect if future trade negotiations were able to focus on amber box policies that are truly domestic support policies and that are not conflated with market access or export subsidy policies.

The Expiration of the Peace Clause and Domestic Subsidies

The "Peace Clause" (Article 13 of the URAA) precludes most WTO dispute settlement challenges against a country in compliance with the URAA, but ends after 2003. Many agricultural subsidies, which have hitherto been sheltered from the application of several WTO provisions on subsidies, will then be vulnerable to legal challenge under Article XVI of GATT 1994, Articles 6.3(a)–(c) and 6.4 of the WTO Agreement on Subsidies and Countervailing Measures or with claims of nullification or impairment. All countries including non-subsidizing developing countries will then be able to bargain using dispute settlement panels (or direct negotia-

tions) to contest the compatibility of domestic farm policies with these stricter disciplines. These options are already used for these purposes in non-agricultural sectors in the WTO. The remedy would require compensation, elimination of the subsidy or reduction of its adverse effects.

The various subsidy provisions of the WTO, therefore, represent potentially powerful disciplines on agricultural subsidies. Although amber and blue box policies are not entirely immune even while the Peace Clause is in effect, the expectation that countervailing duties and Article XVI will become more applicable may be reflected in recent WTO disputes over Canadian dairy policy, US cotton subsidies, and the EU sugar regime.

Suggestions for New Rules and Commitments

Effective and balanced domestic support reductions will require major changes in the current methods of measurement and classification, as well as strong commitments to reduce trade-distorting support. Countries can now circumvent their commitments quite easily, and the AMS is a poor definition of domestic support. There is also a great deal of "wa-



ter” in current ceilings for support; that is, most countries’ measured AMS is below their current ceilings. This is evident from figure 4 for the US, but is also true of most other countries.

The following options should be considered:

1. Implement support reduction commitments on a policy type and commodity sector basis, rather than based on a single AMS for all policies and sectors. This will minimize the flexibility for avoiding reductions in support. Perhaps introduce a per-unit support subsidy reduction commitment by sector along the lines of a tariff to make reductions more effective.
2. Distinguish direct income payments to farmers in the green box from public good expenditures, and report the former as part of a new amber box.
3. Abandon the concepts of the AMS and blue box and replace them with a new (“flashing”?) amber box that reports only domestic subsidies that distort trade (and that are not conflated with border protection). This will include only the taxpayer financed portion of the current AMS plus the blue box, both product-specific and non-product-specific *de minimis*, and direct farm income payments under the current green box.
4. Require a substantial cut in the amber box subsidies such as a maximum of 5 percent of the value of production at world prices as suggested in some proposals, with a commitment to extend that ceiling to each individual commodity sector in the future. This will help overcome the problem of an artificially high base level of the previous AMS, and will wring out some of the “water” in current commitment ceilings.
5. Maintain the green box for expenditures that provide for public goods or prevent negative externalities, but provide tighter definitions of programs listed in URAA Annex 2 as truly non- or minimally trade-distorting (For example, crop insurance programs are found to be very trade-distorting, but are currently green box, and tax concessions are not even considered support). Strict rules, definitions, and monitoring arrangements are required. In recognition of the fact that even these newly defined green box expenditures are likely to have some effect on production (and therefore on trade), these should be capped at 5 percent of the total value of agricultural production, as measured at world prices, or current levels of expenditures on the measures included in the new green box, whichever is lower.
6. Abandon the “Peace Clause.” This will allow the maximum the use of WTO rules on domestic subsidies to discipline domestic support.

This note is based on “Domestic Support: Economics and Policy Instruments,” by Harry de Gorter, Merlinda Ingco, and Laura Ignacio in *Agriculture and the WTO: Creating a Trading System for Development*.

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