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Abstract. The most recent EU notifications to the World Trade Organization regarding domestic support refer to the EU-15, i.e. before significant reforms of the direct payments as well as the reforms of the Mediterranean products, hops, sugar, etc. that took place after 2003. We estimate the actual level of domestic support, as measured by the WTO Aggregate Measure of Support (AMS), given the 2004 EU enlargement and the recent reforms of the Common Agricultural Policy (CAP). We then compare the different proposals for a new discipline on domestic support that were recently issued under the Doha Development Round and we assess the constraints imposed on the Common Agricultural Policy (CAP). The EU proposal prior to the 2005 Hong Kong WTO ministerial meeting was that the EU would cut its present AMS and Overall Trade Distorting Support (OTDS) ceilings by 70% in either case. We find that such a cut mainly consolidates under the WTO the significant changes made to EU domestic support policies since the conclusion of the Uruguay Round. However, there are some downside risks for the EU and much depends on the further negotiations on the details of the disciplines to be agreed (e.g. the base period for the OTDS reference). In addition, a 70% cut leave no freedom for counting some potentially controversial subsidies against the AMS if needed. Accession of Bulgarian and Romania will make the constraints more binding. The ability to meet the domestic support discipline of the EU offer relies on the assumption that its market access component will lead to a significant reduction in the remaining AMS (particularly important in the case of fruits and vegetables). Overall, the EU proposal regarding a cut in the AMS is binding, even though it requires rather minor and sectoral changes to the CAP. Proposals that beyond the EU 'Hong Kong' offer require reforming some common market organizations, but could be dealt with if the EU implemented a significant reform of the fruits and vegetables sector, that might give a larger degree of freedom regarding the AMS ceiling.

JEL classification. F13, Q17

Keywords: Common Agricultural Policy, World Trade Organization, Trade Negotiations.

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1. Introduction

Domestic support is one of the three "pillars" of the negotiations on agriculture under the Doha Development Agenda, the others being market access and export competition. Other important issues include the Special and Differential treatment (S&D) for developing countries and the cotton issue (Anania and Bureau 2005).

The Uruguay Round Agreement on Agriculture (URAA) established discipline regarding domestic support. The permitted Aggregated Measure of Support (AMS) represents a commitment on the maximum amount of trade distorting support that a country can provide through the so-called "Amber Box", calculated using conventions established in the URAA. Countries can provide up to the permitted level of support they agreed in the Uruguay Round, but the actual amount of support they provide may be less (IPC, 2005).

The Uruguay Round Agreement permits countries to provide "minimal" support to individual products and the agricultural sector as a whole through product and non-product specific *de minimis* provisions. As long as support under each of these provisions is less than 5% (10% for developing countries) of the value of production for that particular commodity (for product-specific *de minimis*) or the sector as a whole (for non-product specific *de minimis*), then none of that support counts against a country's Total AMS. If, however, support rises above 5% (10%), then all of that support counts towards the Total AMS. The Total AMS plus the *de minimis* allowances can be interpreted as the total level of trade distorting support each country is permitted under the WTO agreement (see Swinbank, 2005; IPC 2005 for details).

Other payments were exempted from most discipline under the URAA. They were, in particular exempted from reduction commitments. These payments are known as "Green Box" payments. Green Box policies, are "reasonably" decoupled from production. They include, for example, research extension, inspection, marketing and promotion, infrastructure, food security stocks, domestic food aid, crop insurance, income safety schemes, disaster payments retirement programs (if land is retired for a minimum of three years), set asides, structural adjustment programs, and "decoupled" income support, on the basis that they have "*no, or at most minimal*", effects on trade and on production.

Another exemption was agreed for support known as "Blue Box" policies. In the final 1994 Agreement, this translates into exempting from reduction commitments the support granted to "production limiting" programs if: *i)* such payments are based on fixed areas and yields; *ii)* such payments are made on 85 percent or less of the base level of production; *iii)* livestock payments are made on a fixed number of heads.

Proposal for a new discipline. The Doha Ministerial Declaration calls for "substantial reductions in trade-distorting domestic support" (WTO, 2001). This includes Amber Box and *de minimis* support, but discipline is also sought for Blue Box support.

The July 2004 Framework Agreement, or FA, specifies a substantial reduction in the Overall level of trade-distorting support (hereafter OTDS, defined as the sum of *de minimis* levels, Blue Box support, and the Total AMS) in developed countries. It also specifies that higher levels of permitted trade-distorting support will be subject to deeper cuts. As part of the overall reduction commitment, it foresees a substantial reduction in the Total AMS and permitted *de minimis* levels, and a capping of Blue Box support at 5% of the average value of total agricultural production for an historical period. S&D for developing countries could include longer implementation periods, lower reduction coefficients for all types of trade-distorting domestic support, and exemption from the discipline of payments designed to promote food security and agricultural and rural development (the "Development Box").

Prior to the 2005 Hong Kong Ministerial conference, a number of countries, or group of countries, including the EU and the US, put on the table some proposals in order to reach the objectives set out in the FA. The "agreement" reached in Hong Kong adds little to the FA. The Ministerial Declaration includes, as an Appendix, the synthesis made by the Chairman of the WTO Agricultural Committee prior to the Hong Kong meeting, which now serves as a discussion basis for future negotiations. In the present state of the negotiations, the G20 proposal on the one hand, and the US proposal on the other hand appear as bracketing the range for a possible agreement, at least as far as domestic support is concerned. Other proposals, such as the one by the G10 countries involve less constraint than the EU proposal, but they seem to fall outside the present set of possibilities for an agreement.

Box 1. Amber Box, *de minimis* and AMS

There are basically two categories of domestic support — support with no, or minimal, distortive effect on trade on the one hand (often referred to as "Green Box" measures) and trade-distorting support on the other hand (often referred to as "Amber Box" measures). For example, government provided agricultural research or training is considered to be of the former type, while government buying-in at a guaranteed price ("market price support") falls into the latter category. Under the Agreement on Agriculture, all domestic support in favour of agricultural producers is subject to rules.

Domestic support measures that affect trade are subject to ceilings following the 1994 Agreement on Agriculture. However, under the *de minimis* provisions of the Agreement there is no requirement to reduce such trade-distorting domestic support in any year in which the aggregate value of the product-specific support does not exceed 5 per cent of the total value of production of the agricultural product in question. In addition, non-product specific support which is less than 5 per cent of the value of total agricultural production is also exempt from reduction. The 5 per cent threshold applies to developed countries whereas in the case of developing countries the *de minimis* ceiling is 10 per cent. Specific payments that were linked to quantities produced but subject to output controls were classified in the Blue Box.

The ceilings for trade distorting support (i.e. Amber Box expenditures with the exception of *de minimis* and Blue Box payments) are expressed in terms of an "Aggregate Measurement of Support" or AMS. The AMS includes all product-specific support and non-product-specific support in one single figure. Price support is generally measured by multiplying the gap between the applied administered price and a specified fixed external reference price ("world market price") by the quantity of production eligible to receive the administered price. For each product, the implicit subsidy of price support measures is added to other product-specific subsidies to arrive at a product-specific AMS which is then evaluated against the applicable *de minimis* threshold. Non-product-specific subsidies are calculated separately and, as in the former case, are included in the AMS only if they exceed the relevant *de minimis* level. Blue box payments are excluded from the AMS and were exempted from reduction during the Uruguay Round.

Source: WTO. For more information see:
http://www.wto.org/english/tratop_e/agric_e/ag_intro03_domestic_e.htm
or
http://www.tcd.ie/iiis/policycoherence/

2. EU domestic support in 2001 and the changes induced by recent reforms and enlargement

2.1. Domestic support in 2001

The question addressed in the rest of the paper is how binding are the different proposals on the table regarding domestic support, for the European Union? This requires first assessing the actual level of expenditures subject to WTO discipline, either under the Amber Box, the Blue Box and the OTDS.

Data for 2001/02, which was the last notification by the EU to the WTO on 28 October 2004, indicate that total EU support to agriculture amounted to some €83.7 billion euros, including €23.7 billion in Blue Box expenditures and €20.7 billion in Green Box expenditures. That is, the AMS, corresponding to Amber Box payments amounted to €39.3 billion. The AMS binding is €67.2 billion, i.e. 58% of the maximum allowed was actually used. The EU use of the *de minimis* provision was minor. Indeed, the sum of Amber Box payments was €40.3 billion, but €1 billion was not counted as an AMS under the *de minimis* clause. Without the *de minimis* clause, 60% of the AMS allowance would have been used.

The EU AMS includes four components.

- Direct payments to particular products, i.e. €2.4 billion. They include payments to tobacco (€952 million), to dried fodder (€317 million) and payments to other agricultural products.
- Market price support, i.e. €27.5 billion. A reference world price was set during the Uruguay Round for a variety of products (cereals, sugar, olive oil, beef, dairy). Market price support is estimated as the difference between the EU administrative price and this reference price.
- Some form of market support for products that are not directly supported by intervention or production aids. The support is therefore measured using the budget expenditure (the case of wine), or other *ad hoc* means. This includes support to fruits and vegetables, which now corresponds to a very significant share of the AMS. Support under these categories amounts to €9.8 billion.
- Payments to inputs, which are de facto counted as *de minimis*, for €0.6 billion euros.

Following the Agreement on Agriculture of the Uruguay Round, the AMS was reduced by 20% between 1995 and 2000. Because the initial MGS was largely constructed using reference prices for the 1986-1988 period, when world prices were low, and because the successive CAP reforms since 1992 have continuously brought intervention prices down, the EU has had no problem respecting its commitments. Roughly 40% of the AMS ceiling was therefore unused in 2001 (Table 1).

Table 1: AMS ceiling and actual, 1995-2001 (billion euro).

	1995	1996	1997	1998	1999	2000	2001
Ceiling	78.7	76.4	74.1	71.8	69.5	67.2	67.2
Actual AMS	50	51	50.2	46.7	47.9	43.6	39.2
% use	63.6	66.8	67.8	65	68.9	65	58.5

Source: Authors using WTO notifications

The first column of Table 2 (see below) provides the main components of the EU AMS in 2001. In order to fully understand the actual support behind these figures, the following must be kept in mind:

- The AMS was large in sectors that were not reformed in 2001, i.e. dairy, sugar and olive oil, where intervention prices were still kept at a very high level, in spite of the 1992 and 1999 reforms.
- The AMS for cereals shows the ambiguity of the calculation of the AMS. The intervention price used in the WTO notification corresponds to the price adopted after the Agenda 2000 reform (it has not changed under the 2003 reform). For example, the intervention price for soft wheat is 101.3 euros per ton. The average border price between 1999 and 2002 was 115.5 per ton, and the EU could export without subsidies. However, the reference price used in the WTO calculation is 86.5 euros per ton. Clearly, the reference period that was used provided a larger degree of freedom to the EU to set the AMS ceiling, but it has then made it more difficult for the EU to fulfill its commitments. This could be a problem in the future for the EU, with a smaller binding overhang between the actual AMS and the ceiling. This also shows that the AMS per se is no longer meaningful from an economic standpoint. Basically, the measure only makes sense relative to the AMS ceiling that was defined using similar conventions.
- The AMS for fruits and vegetables (€8.4 billions) accounted for 21% of the global AMS and represented 28% of the value of production of fruits and vegetables. However, support prices no longer exist (they were abolished in 1996[1]), and market support only relies on public

[1]. The Common Market Organization (CMO) for fruits and vegetables was set up in 1972. It included a support price for 11 fruits and 3 vegetables. It experienced considerable changes in 1996, when minimum prices were dismantled. The intervention includes purchase and disposal of surplus during temporary crises. However, the destruction of surplus has been practically inexistent for years, and the public purchase is limited to 3.5% of the value of production.

support for the destruction of surpluses, which has decreased steadily over time and is now limited to 4.5% of the value of production (a 2000 reform). The expenditures were less than €1.5 billion for the year 2001, far below the AMS level. As a matter of fact, the AMS is calculated using a higher bound of the price estimate, i.e. the price at the border to which custom duties are added, although there is a bit of a grey area regarding the quantities these duties were applied to.[2] The methodology used to calculate the fruits and vegetable AMS does not seem to rely on sound economic analysis. The methodology seems at odds with the methods used in other sectors. A reform of the fruits and vegetable sectors which would get rid of the system of entry prices, together with other technical adjustments, would reduce the level of EU AMS.

- For processed fruits and vegetables (tomatoes, peaches), a payment is given to processors within the limit of a quota. However, this can hardly be considered as a price complement, since the price is set without public intervention between producers and processors (since 2001).[3] Again, changes in the questionable methodology used in the calculation of the AMS could also lead to a reduction in the level of Amber Box support.

As a side conclusion, a detailed examination of the methodology used for calculating the AMS in the cereals and fruits and vegetables sectors shows that the AMS shows little connection with the actual support provided to EU agriculture. The two main components of the AMS mainly result from political compromises regarding the setting of reference prices. The AMS was designed so as to prevent domestic measure to vary under the sole effect or world price or exchange rates variation. However, the AMS now compares virtual domestic prices to world prices that were relevant some 20 years ago. It is unclear what kind of economic support is now reflected by the AMS.[4]

A critical assessment of the concept of the AMS is outside the scope of this paper, but clearly, this indicator is becoming increasingly meaningless (see Hart and Beghin, 2006 on this issue).

2.2. The changes induced by the CAP reforms since 2001

There is no official estimate of the EU AMS after 2001. Relative to the 2001 benchmark, reforms under Agenda 2000, the 2003 reform of the CAP, and the different reforms that have taken place in 2004-2005 (olive oil, tobacco, cotton, hops) as well as the 2006 reform of the sugar sector have reduced the level of Amber Box support. Table 2 shows our estimates of the effect of these reforms on the AMS. Note that in these calculations, the only effect that was taken into account was the direct price effect. We did not account for the changes in production that might have taken place because of these reforms. These have so far been minor, but significant decreases in production are likely to take place in the future, after the full implementation of the single farm payments (grains, beef) and the price cut in dairy and sugar (Commission, 2005; Gohin, 2006; Gohin and Bureau, 2006). All these estimates are therefore rather crude and only intend to benchmark the level of the 2006 AMS. According to our analysis:

- The decoupling provisions under the 2003 reform mainly resulted in a shift of direct payments from the Blue Box to the Green Box, which will not affect the AMS. The AMS for grains

[2] The quantities that served for the calculation of the AMS seem to correspond to 40% of the production of apples, but only 20% of the production of tomatoes and apricots.

[3] Support for processed products has been criticized by Oxfam (2005) because they apply to products that compete with those that could be exported by developing countries.

[4] Butault (2004) shows that the AMS now shows very little connection with agricultural support measured by the Producer Support Estimates (PSE) calculated by the Organization for Economic Co-operation and Development. The PSE can be criticized because of particular assumptions, including those made for the measurement of market price support for dairy, or the classification of such or such payment as being "decoupled". However, because it has maintained a link with the actual world price and the actual economic conditions, the PSE reflects the present support relative to market conditions.

should experience little change. The ending of intervention in the rye sector reduces the AMS by roughly €210 millions. The 2003 reform led to significant price changes in the rice sector.

- Regarding beef, changes in intervention prices took place after the Agenda 2000. Starting July 1 2002, intervention has been replaced by incentives for private storage, intending to provide a safety net at a much lower level than the former intervention price. Payments to private storage will take place when the average market prices will be lower than 2290 euros per ton. Eventually, there will be public storage if the price of male bovines in a given region falls below 1560 euros per ton for two consecutive weeks. Our estimate is that this reform could lead to a decrease in the AMS by some €5.9 billion.
- The cut in the intervention price for butter and milk powder should result in a €1.86 billion decrease in the AMS, according to our estimates.
- The 2006 sugar reform should result in a €3 billion reduction in the AMS.
- The dismantling of the intervention price in the olive oil sector, and the elimination of the payments to tobacco and hops (now eligible to the single farm payment) should result in a decrease in the AMS of €2.68 billion (olive oil) and €1.88 billion (tobacco and hops).

Table 2. Estimates of changes in the AMS (EU-15) brought by the recent CAP reforms

	AMS 2001 Million €	Percentage	Future AMS Million €	Percentage	Change Million €
Grains	4 056	13.1%	3 866	24.9%	-190
Dairy	5 814	18.8%	3 951	25.5%	-1 863
Beef	9 709	31.4%	3 739	24.1%	-5 970
Olive	2 676	8.7%	0	0.0%	-2 676
Cotton, hops…	2 037	6.6%	159	1.0%	-1 878
Sugar	5 732	18.6%	2 917	18.8%	-2 815
Wine	892	2.9%	892	5.7%	0
Total	30 916	100%	15 524	100%	-15 392

Source: Estimates by J.P. Butault

In addition, some other aspects, including the "automatic" effect of a reduction in tariffs, would also affect the AMS.

- Although the fruits and vegetable sector has not been reformed, there are ongoing discussions, which could lead to shifting to a per hectare payment, in line with what was adopted in the dried fruit sector. Given the large level of AMS in this sector, this could lead to significant reductions in the overall AMS figure.
- If we assume that both the WTO negotiations and the Euro-Med negotiations will result in lowering tariffs, domestic prices will also go down. Under the assumption that the fruits and vegetables sector experiences tariff cuts similar to those indicated in the EU proposal in Hong Kong, the entry price would fall by some 30%. This would result in a decrease of the EU AMS by some €2.6 billion according to our (crude) estimates.

Table 3 gives the detail of our estimates of the effect of future reforms in the fruits and vegetable and wine sector, combined with the possible consequences of the EU offer on market access on the AMS for fruits and vegetables. Again, the EU offer is only taken as a benchmark, given that there is so far no agreement on the modalities of tariff reductions under the Doha round of negotiations.

Table 3. Estimates of changes in the AMS (EU-15) brought by the EU 'Hong Kong' offer on market access (offer dated October 28 2005).

	AMS 2001 Million €	Percentage	Future AMS Million €	Percentage	Change Million €
Fruit	4629	11,8	3016	13,9	-1613
Including apples	*(2 060)*	*(5.2)*	*(1 442)*	*(6.7)*	*(-618)*
Vegetables	2 845		2 216		-629
Including tomatoes	*(1 944)*		*(1 361)*		*(-583)*
Processed fruits and vegetables	893		893		0
Total AMS 2006 including effect of EU offer on market access (including figures from Table 2)	**39 281**		**21 648**		**-17 633**
Total with a change in beef AMS calculationf	*(39281)*		*(17909)*		*(-21372)*

Source : Estimates by J.P. Butault

- For beef, the Agenda 2000 has led substituting a safety net (relying on aid to private storage) for the intervention price. The EU could change the calculation of the AMS and, following the methodology used in the wine sector, measure the AMS using the expenditures corresponding to the aid to private storage. Because the EU has become a net importer in beef, these expenses are likely to be small. The extra decrease in the AMS could amount to €3.7 billion, if the EU changed the way the AMS is calculated so as to match recent arrangements (these €3.7 billion are not counted in Table 2, nor in the bold line in Table 3 but are counted in the italicized bottom line of Table 3).
- The same provision could perhaps apply to the sugar sector as the intervention price is eliminated under the ongoing reform, even though the reform adopted by the Council still mentions a minimum price for sugar beet. This could lead to a further decrease in the AMS, given that the EU might become soon a net importer of sugar.

As a result the EU-15 AMS should range between €17.6 billion and €21.4 billion under the effect of the CAP reforms and the decrease in tariffs under the WTO market access provisions, provided that there is an agreement in Doha with significant market access provisions, and depending on whether the EU is allowed to revise the methodology for measuring the beef AMS.

2.3. The Blue Box and the impact of the recent reforms

The Blue Box was a category of considerable importance for the EU in 2001. Most of the EU direct payments, which had increased dramatically after the 1992 CAP reform, were counted by the EU as Blue Box payments. This was the case of the arable crop payments and the beef payments which resulted from the 1992 and 1999 CAP reforms.

In 2001, expenditures under the Blue Box amounted to €23.7 billion, including €18.1 billion for arable crops, €5 billion for beef, and €600 million for sheep meat (Table 4). This corresponded to roughly 9.7% of the value of production. In 2002, the implementation of the provisions of the Agenda 2000 reform should lead to an increase in the Blue Box due to larger beef premia, which compensate for reduction in (Amber Box) market price support.

Table 4: Blue Box payments, EU-15, and changes brought by the recent reforms

	Blue Box expenditures 2001, billion €	Blue Box expenditures after 2003 reform, billion €
Arable crops	18.1	1.8
Beef	5.0	1.7
Sheep	0,6	0.1
Others		1.2
Total	23.7	4.8

Source: authors' estimates

However, the 2003 reform should lead to a considerable decrease in Blue Box expenditure starting after 2006. Indeed, assuming that Single Farm Payments are eligible to the Green Box, a large share of the Blue Box expenditures will shift to the Green Box, even though the level of payments remains practically unchanged. Blue Box payments would now include the direct payments for which member states have chosen to maintain a link with land use (arable crops) or a reference based on the number of head of cattle (beef). Not all countries have used this flexibility in the same way. Using the information on the actual "recoupling" of some of the direct payments at the national level (Anciaux, 2005), we estimate that €3.6 billion, after modulation of the payments, will remain in the Blue Box (Table 4). This includes some €1.8 billion for arable crops, €1.7 billion for beef, and €0.1 billion for sheep. Some other payments resulting from the 2004 reforms (olive oil in particular) should add €1.2 billion to the Blue Box. Overall, Blue Box expenditure should amount to roughly €4,8 billion euros for the EU-15 in the future. This corresponds to 2% of the value of production in 2001.[5]

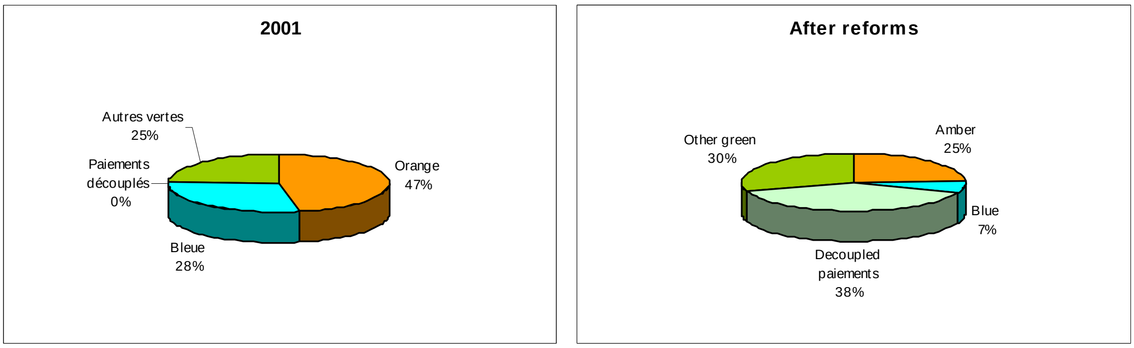
2.3. Changes in domestic support for the EU-15

The changes that have taken place in the CAP since 2001 should therefore lead to a change in the domestic support as measured under the WTO discipline. In 2001, Amber Box expenditures represented roughly 47% of EU-15 domestic support and Green Box payments 25% (Figure 1).

After the implementation of the 2003, 2004 and 2006 sugar reform, including the provisions on "recoupling" at the national level and modulation, decoupled payments, normally eligible for the Green Box (provided that their classification is not challenged by other WTO members), should now amount to €28.6 billion, i.e. 39% of all domestic support. Other Green Box expenditures represent 20% of the whole support. That is, Green Box expenditures as a whole should amount to roughly 60% of EU-15 domestic support. Assuming that the EU modifies the measurement of the beef AMS, Amber Box expenditures would now represent 25% of EU-15 support, and Blue Box expenditures 6%.

[5] Note however, that our estimation is much lower than the own Commission's estimates, and those (unpublished) made by French ministries. Some of the upper range estimates reach €7 billion for the EU-25 Blue box expenditures after the CAP reforms. Jensen and Yu (2005), provide some alternative figure for EU-15, although lower than our estimates. This is an area in which there is still some significant controversy.

Figure 1: Composition of EU-15 domestic support in 2001 and after the recent reforms



2.4. The consequences of EU enlargement

Since May 2004, the EU enlarged to 10 new members. The EU commitments to the WTO will now include former AMS commitments for the 10 member states, i.e. Poland, Hungary, Slovakia, the Czech Republic, Malta, Lithuania, Latvia, Estonia, Slovenia and Cyprus (Romania and Bulgaria are expected to join in 2007).

The CAP now applies to the 10 new members. The CAP direct payments will apply progressively over an implementation period ending in 2013. In 2004 new members only received direct payments that amounted to 30% of the levels that EU-15 members received. This percentage will increase each year so as to reach 100% in 2013, but these payments will normally be decoupled and therefore eligible for the Green Box. Assuming that these payments remain unchanged in spite of the review of the CAP scheduled for 2008, full implementation of the CAP would result, for the EU-10, in €4 billion in decoupled support (single farm payments). New member states will also receive aids for rural development, whose amount is still subject to uncertainties given the present budget negotiations between the European Parliament and the Council. These payments should fall in the Green Box category. That is, Green Box expenditures will be larger for EU-25.

However, the EU enlargement will result in a larger AMS, given the adoption of common market organizations by the new members. In order to assess the extra constraints for the EU as a whole, these extra Amber Box payments should be compared to the changes in the AMS ceiling resulting from the enlargement of the EU, which bring to the EU-25 their WTO commitments. Three countries (Estonia, Lithuania and Malta) do not have bound AMS ceilings. The AMS ceiling of Hungary needs to be modified in order to account for the large inflation and variation in exchange rates that took place before its adoption. Table 5 summarizes the changes that are likely to take place in the 10 member countries' AMS.

Overall, the enlargement adds €5.3 billion to the AMS ceiling, and only €1.5 billion of extra expenditure to the EU. The 10 new members only use 28% of their AMS commitments. The binding overhang brought by Poland is particularly large, since this country uses only €0.5 billion expenditure for a €3.7 billion ceiling.

We estimate that the extension of the CAP provisions to the 10 new members would result in an extra AMS of €3.8 billion (or €3.5 billion with a change in the calculation of the beef AMS). Assuming that, when fully phased in, the CAP provisions would replace present domestic payments, the 10 new member states would therefore bring additional binding overhang of roughly €1.2 to €1.5 billion to the EU, mainly because of the degree of freedom brought by Poland.

Note, however, that during the 2004-2013 transition period, new member states can provide support to farmers. These aids could fall into the Amber Box, and some of them in the Blue Box. We did not take these expenditures into account in Table 5. The level of expenditure involved is significant. In Estonia, for example, in 2005, these payments amounted to half of those provided by the EU budget (Single Farm Payment). Overall, these 'top up' payments amounted to roughly €0.6 billion in 2005 for the EU-10.

Table 5: AMS ceilings of the 10 new members, and future AMS expenditures (million euro)

	Notification 2001		CAP implementation						
	Ceiling	Expenditures	Grains	Sugar	Beef	Dairy	Fruits-vegetables	Total	Total minus ceiling
Cyprus	92	49	4	0	(2)	0	0	5	-87
Czech Republic	400	161	154	86	(52)	902	133	1274	874
Estonia	0	0	17	0	(6)	19	3	38	38
Hungary	748	618	219	77	(18)	15	95	406	-343
Latvia	43	0	23	13	(9)	9	3	48	5
Lithuania	0	0	59	20	(20)	20	9	109	109
Malta	0	0	0	0	0	0	4	4	4
Poland	3717	538	705	320	(154)	234	217	1477	-2241
Slovakia	234	174	58	40	(5)	22	15	134	-100
Slovenia	62	14	8	10	(20)	6	11	35	-27
EU-10	5296	1554	1246	566	(287)	1228	490	3529	-1767

Source : estimates by J.P. Butault, using WTO data

2.5. Future AMS and OTDS of the EU-25

In percentage terms, because the ratio of AMS expenditure to AMS ceilings (72%) is larger for the new members, the enlargement makes a reduction in AMS more constraining for the EU-25. Overall, if we take into account the effects of the 2003 and 2004 reforms, of the ongoing reforms (sugar), and the effects of the market access provisions of the EU offer in the fruits and vegetables sector, the full adoption of the CAP by the EU-10, the AMS for the EU-25 should range between €21.5 and 25.5 billion. The EU-25 ceiling should be €72.5 billion. That is, a reduction of the AMS ceiling of 65% should not impose extra constraints on the EU. A 70% cut in the AMS would not require major changes if a new discipline is adopted for the calculation of the beef AMS.

The impact of Bulgarian and Romanian accession, expected in 2007, would also need to be factored in. Bulgarian and Romanian accession will reduce the binding overhang of the EU. Bulgaria would bring a small AMS entitlement of €520 million but Romania has no entitlement. Direct payments to farmers in these countries using the simplified system would presumably qualify for the Green Box, but accession to the CAP's higher support prices would make use of some AMS entitlement. The effect of their accession will be to make the EU AMS ceiling more constraining.

Regarding Blue Box payments, note that estimates of different agencies, including the EU Commission and the French Ministry of Finances are significantly higher than ours (see foonote 5). One explanation is that, here, we consider that the 'top up' payments of the EU-10 are eliminated, i.e. we consider the situation after 2013. However, before this particular year, these payments, which are provided to farmers in new member states during the transition period, i.e. before the 'regular' CAP payments (now mostly in the Green Box) are fully phased in, could result in larger Blue Box support than our estimates. We also assume that the EU-10 will not use the flexibility for 'recoupling' payments that we consider as falling under the Single Farm Payment. Our figures can be seen as a low bound in the range of the various estimates.

3. How constraining are the different WTO proposals?

2.1. Proposals on modalities on domestic support

The 2004 Framework Agreement (hereafter FA) sets guidelines for future discipline regarding domestic support. These guidelines should be used for setting more precise "modalities", should an agreement on the agricultural aspects of the Doha negotiations be reached. The FA states that, with a view to achieving the substantial reductions mentioned in the 2001 Doha declaration, the negotiations on domestic support pillar will ensure the following:

- There will be a strong element of harmonization in the reductions made by developed Members. Specifically, higher levels of permitted trade-distorting domestic support will be subject to deeper cuts.
- Each such Member will make a substantial reduction in the OTDS from bound levels.
- As well as this overall commitment, Final Bound Total AMS and permitted *de minimis* levels will be subject to substantial reductions and, in the case of the Blue Box, will be capped in order to ensure results that are coherent with the long-term reform objective. Any clarification or development of rules and conditions to govern trade distorting support will take this into account.

The FA modifies the criteria defining the Blue Box, and expands the range of eligibility for payments (the main consequence could be to make US contracyclical payments eligible, see IPC 2005). The FA also states that Green Box criteria will be reviewed and clarified with a view to ensuring that Green Box measures have no, or at most minimal, trade-distorting effects or effects on production.

The EU tabled an offer for agricultural modalities under the ongoing Doha round of negotiations on October 28 2005 (Commission 2005b). The EU proposal includes a three band reduction in trade distorting support measured by the AMS, and a three band reduction in OTDS. The EU agrees to be in the top band for both indicators and would offer a reduction of 70% in its AMS ceiling and a reduction of 70% in its OTDS. The EU offer is conditional on other members being equally ambitious on all aspects of their proposals and respecting the parameters laid down, and agreed, in the FA.

Regarding the specific provisions for the Blue Box, the EU has recently suggested that the existing 5% ceiling should be maintained "*to facilitate future reform efforts*" (Commission 2005c). In the same document, the EU put forward the idea of a 80% cut of the present maximum amount of *de minimis* payment. That is, the *de minimis* ceiling would be reduced to 1% of the value of production (from 5% of the value of production presently).

The US tabled an offer for agricultural modalities on October 10 2005. On domestic support, the US proposal includes a cut of the the EU Amber Box bound by 83%. The proposal would also involve 75% reduction in OTDS for the EU (53% reduction for the US). The US proposal also includes capping the Blue Box at 2.5% of value of production; cutting *de minimis* exemptions to 2.5% of value of production; maintaining Green Box criteria without caps; and establishing a new peace clause to protect domestic supports against WTO litigation.

The G20 group, which includes large players such as Brazil, India and Mexico, also tabled a proposal (dated 12 October 2005), which was presented by Brazil to the WTO's Trade Negotiations Committee on 13 October. On overall trade-distorting domestic support, the G-20 said the July Framework indicates that the overall cut constitutes the central element of the pillar to which all other elements of domestic support - AMS, Blue Box and *de minimis* - should adjust. With that, the FA would provide for an overall restriction to the level of subsidies independent from how it is classified under the different boxes and would allow for the fulfillment of the objective of bringing down levels of applied trade-distorting domestic support. The G20 proposed that for developed countries there should be three bands for OTDS. The EU would therefore be subject to a 80% reduction in its OTDS.

The G10, a group of countries including Japan, Norway and Korea, which tend to provide large support to their farm sector, tabled its proposal on domestic support on January 25 2006. On OTDS, the G10 proposes a reduction by 75% in the highest band, where the EU would stand, as well as 65% in the middle band and 45% in the lowest band. The G10 proposes reductions in AMS by 70% in the highest band (where the EU would stand). The caps of product-specific AMS at their respective average levels should as a rule be calculated as the arithmetic mean of the notified levels during the UR implementation period, excluding the highest and lowest entries. Where product-specific support has been introduced within a Member's Total AMS only after the UR implementation period, this methodology should be adapted to more recent years, as appropriate. In other cases the caps should be "expressed as X% of the production value of each product". The G10 proposes "substantial reductions in *de minimis* domestic support for developed countries" and no further discipline on the Blue Box than what is stated in the FA.

Recent progress in the negotiations have led to informal offers to go beyond what was tabled in Hong Kong regarding cuts in domestic support. However, since there has no been any official move from the EU, we stick to the October 2005 proposals. In the next section, we focus on the effect of the EU proposal on the EU domestic support.

3.2. Proposed domestic support discipline for the EU

The AMS. According to our calculations, the actual rate of utilization of the EU-25 AMS will be roughly 35%, and could fall to 30% with a change in the calculation of the beef AMS, under the assumption that future reforms in the fruits and vegetable sector lead to a significant decrease in the AMS for these products. That is, any cut in the EU AMS above 70% will require deeper reforms. The margin for manœuvre in this area would be limited for the EU, since most of the remaining AMS would be in the fruits and vegetable sector, where we already assume that significant cuts will take place. In addition, the enlargement to take in Romania and Bulgaria will reduce the degrees of freedom that exist for the EU-25.

The G20 and US proposals, which propose larger cuts in the AMS, would require a significant cut in the intervention price of cereals, and the elimination of the remaining regulation in the fruits and vegetable sector.

Note that even under the EU offer, the EU would also have little freedom left for counting some potentially controversial subsidies against the AMS if needed. Some non-governmental organizations argue that there are subsidies (presently not counted under the AMS by the EU) that could be challenged. They include payments to processed tomato paste and processed tomatoes; canned fruits (peaches and pears); citrus juice; wine (Oxfam 2005). Most law specialists tend to agree with the fact that these subsidies could be very easily challenged (Anderson 2006). It might be necessary, in the future, for the EU to count such subsidies under the Amber Box.[6] There could also be a need to include in future AMS some national subsidies including fuel tax rebates and subsidized interest loans (Berthelot, 2005).

The Blue Box. The EU suggests that the existing 5% ceiling should be maintained. After EU reforms, we estimate that Blue Box expenditures would amount to less than 2% of the value of production for the EU. That is, the ceiling proposed by the US (2.5% of the value of production) would not impose a significant constraint to the EU according to our figures. However, let us remember that our estimates are in the lower range of the literature, since they rely on particular assumptions on future payments to farmers in the new member countries.

Given the small latitude remaining for the EU to cope with sectoral crises (historically dealt with, in the EU, by supporting market prices by subsidized exports) in the EU offer, it is likely that one objective of the EU is to maintain the possibility of raising sectoral subsidies under the Blue Box.

Note that Brink (2005) raises the question of the reference that should be used regarding production. For the EU, given the decrease in agricultural production that is forecasted by most authors after the full implementation of the 2003 reform, the constraint would be more binding if the current value of production was used as a reference, rather than a past reference.

De minimis support. Unlike the US, the EU has not made a large use of the *de minimis* clause in its notification of domestic support. *De minimis* expenditures represented €1 billion for the EU-15 in 2001. Recently, the EU has proposed a 80% cut of the present maximum amount of *de minimis* payments. This would result in capping de minimis support at 1% of the value of production (Commission 2005c). This would lead to a much lower ceiling for de minimis payments than the US (50% cut, i.e. a ceiling of 2.5% of the value of production). The G20 proposes to end the *de minimis* clause, or at least to include *de minimis* expenditures in the OTDS ceiling.

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[6] Note however that because these subsidies would be easily challenged under the Subsidies and Countervailing Measures Agreement, in particular because of local content clauses, it might simply be useless to shelter them from a challenge under a possible Agricultural Agreement by including them in the Amber Box. See Andersen (2006) and Sumner (2006).

The level of *de minimis* ceiling under the EU proposal seems low. However, even this low ceiling would make a considerable difference to the constraints faced by the EU (compared to the absence of *de minimis* payments). Indeed, under the EU proposal, the *de minimis* provision would leave the possibility for roughly €3 billion of payments. These payments could be used to face crises such as the difficult market situations that have taken place recently, following the Bovine Spongiform Encephalopathy or the avian flu outbursts. The EU would have little margin left for facing such crises under the G20 proposal (except, obviously, through fully decoupled ex post compensations).

More generally, a significant degree of freedom on *de minimis* payments (such as the ceiling proposed by the US) would make the management of crises less problematic. This could encourage the EU to accept some cuts in the AMS exceeding 70%. Indeed larger cuts would require ending some intervention mechanisms and would leave sectors vulnerable to a particular crisis of dramatic exchange rate fluctuation.

Product specific support. The provision in the Framework Agreement for product specific constraints could be a problem for the fruits and vegetable sector, including the processed ones. In the future, fruits and vegetable will represent a large share (28%) of the EU-25 AMS. The various proposals do not include details on the calculation of the product-specific AMS caps. Nor does the Framework Agreement.[7] However, it is likely that the product specific AMS cap will be an issue for the fruits and vegetable sector, in particular the apple and tomatoes sectors if these caps are product specific rather than sector-specific.

The Overall Trade Distorting Support includes the AMS, Blue Box payments and *de minimis* expenditures. For the EU, a constraint on the OTDS is more binding than a constraint on the AMS, since the use of past Blue Box payments would not make it possible to count all past "binding overhang" against the decrease in domestic support.

However, discipline on OTDS raises potentially controversial calculations since there was no Blue Box ceiling that could be used as a reference.[8] Some authors believe that the FA should be interpreted such that the highest level of Blue Box expenditures should be used as a reference for the Blue Box component of the OTDS reference. However, such an interpretation raises questions regarding the reference that should be used for the US, which did not use Blue Box payments in the past. It seems that discussions have led to use the FA ceiling for the Blue Box, i.e. 5% of the value of production, as a reference in the calculation of the OTDS ceiling (it is unclear whether this would be the historical or current production, but this is unlikely to make a large difference).

Regarding the *de minimis* component of the OTDS, one can also assume that the 5% of the value of current production would be used. That is, the OTDS ceiling would be the AMS ceiling plus 10% of the value of production. For the EU, taking 2001 as a reference, the OTDS ceiling would be roughly €100 billion.[9]

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[7] The Framework Agreement specifies that the product-specific AMS "*will be capped at their respective average levels according to a methodology to be agreed*" and that "*substantial reductions in Final Bound Total AMS will result in reductions of some product-specific support*". The choice of the base period could be important for the product specific support constraints. The EU proposal states that "*the basis for the calculation of the ceilings should be the whole implementation period*"..

[8] The Framework Agreement states that "*The overall base level of all trade-distorting domestic support, as measured by the Final Bound Total AMS plus permitted de minimis level and the level agreed in paragraph 8 below for Blue Box payments, will be reduced according to a tiered formula*" and that "*The base for measuring the Blue Box component will be the higher of existing Blue Box payments during a recent representative period to be agreed and the cap established in paragraph 15 below*". Paragraph 15 of the Framework Agreement states that "*Blue Box support will not exceed 5% of a Member's average total value of agricultural production during an historical period. The historical period will be established in the negotiations*". The various offers do not specify a particular reference period for the calculation of OTDS, but on other issues, the EU offer suggests that "*the basis for the calculation of the ceilings should be the whole implementation period*".

[9] We estimate the AMS ceiling at € 72.4 billion for the EU-25 and the ten percent of production to €27.7 billion, should a historical basis be used. Under alternative interpretation of the FA provisions, the reference would be different. Assuming for example that the Blue box ceiling was based on the highest recent notification, for the

The degree of constraint imposed by the discipline on OTDS would depend on the provisions adopted separately on the three components of the OTDS (i.e. the provisions adopted on the AMS, those on the *de minimis* expenditure, and those on the Blue Box).

Under the EU proposal that the AMS is cut by 70%, for example, the Blue Box capped at 2.5% of the value of production, and that *de minimis* ceilings are cut by 80%. The respective amounts of maximum expenditures resulting from such a discipline would be €21.7 billion (AMS), €6.9 billion (Blue Box) and €2.8 billion (*de minimis*) for the EU. Under these assumption, we estimate that the OTDS discipline would become binding above a 69% cut in the OTDS ceiling.

Under the G20 proposal, the OTDS constraint would be a significant problem for the EU. It is likely that the OTDS will be more binding that the constraints on the separate components because of the large level of Blue Box expenditures in the past. [10] Note also that there is a large degree of uncertainty on the actual discipline about the references that can be used for the calculation of the OTDS. Here, we assumed that the modalities will provide more degrees of freedom to the EU than might actually be the case. If another reference than the implementation period of the URAA is agreed upon, the OTDS provisions of the EU offer could be much more constraining for the EU.

Finally, on OTDS again, the Framework Agreement states that "*As the first installment of the overall cut, in the first year and throughout the implementation period, the sum of all trade-distorting support will not exceed 80 per cent of the sum of Final Bound Total AMS plus permitted de minimis plus the Blue Box*" (capped at 5% of a Member's average total value of agricultural production during an historical period). Calculations by Swinbank (2005) suggest that there should be no particular constraints imposed on the EU by this requirement.

Green Box. The 2005 Hong Kong declaration, or at least the appendix on agriculture, which includes the stocktaking by Chairman Falconer, does not show any major progress on tightening the discipline on "Green Box" expenditures as stated in the FA.[11]

Some developing countries, backed by non governmental organizations such as Oxfam, argue that decoupling is only a cosmetic revamping of support which remains at the same level (Watkins, 2004; Oxfam 2005). They press for a significant revision of the criteria for eligibility of payments to the Green Box.

The fact is that there is little compelling work on what should be the criteria for a tighter discipline on Green Box payments. Several studies claim that the present direct payments have little impact on production (Abler and Blandford , 2005; Goodwin and Mishra 2006). However, other econometric work suggests that even decoupled payments have large indirect impacts on production (Key et al 2005). The overall linkage of the payment to the quantities produced is unclear. More generally, payments are only truly "decoupled" if the capital market is perfect, and if private consumption decisions are separable from the production side of the household. Several studies show that giving a sum of money to a farmer, even unconditionally, necessarily influences the amount produced (Chavas and Holt 1990; Sumner 2003, 2005). In reducing the risk of insolvency, even decoupled payments encourage higher production or riskier cultivation. There is often an implicit anticipation that cultivated areas will be used as a reference in the next reform which keeps land in cultivation. Overall, it is unlikely that the €35 billion of EU direct aid, and some US$30 billion of US payments are neutral on the world market.

EU 25, the reference for OTDS would be roughly 96.2 billion euro (given the wording of the FA, it is unclear whether the "permitted *de minimis* level" could be counted if the *de minimis* payments were not used).

[10] Note, however that the Framework Agreement states that "*In cases where a Member has placed an exceptionally large percentage of its trade-distorting support in the Blue Box, some flexibility will be provided on a basis to be agreed to ensure that such a Member is not called upon to make a wholly disproportionate cuts*".

[11] the FA states that *"Green Box criteria will be reviewed and clarified with a view to ensuring that Green Box measures have no, or at most minimal, trade-distorting effects or effects on production. Such a review and clarification will need to ensure that the basic concepts, principles and effectiveness of the Green Box remain and take due account of non-trade concerns".*

The WTO jurisprudence in the cotton (Brazil-United States) case suggests that the single farm payment could be challenged as being incompatible with the Green Box eligibility criteria. Because of some restrictions introduced in order benefit from payments, some US subsidies were considered as market distorting. It remains to be seen whether the EU conditions about maintaining land in good agricultural conditions, or the restrictions regarding the planting of certain horticultural crops or protecting the area under pasture, could allow third countries to challenge the exemptions of the SFP from reduction commitments, i.e. its exclusion from the AMS (EU farmers have flexibility as to what they can produce but with the exception of explicitly excluded commodities such as fruits and vegetables).

4. Conclusion

As far as the EU is concerned, the Uruguay Round Agreement on Agriculture (URAA) limits on domestic support have not been a binding constraint on the CAP. However, depending on the modalities that would be adopted in a Doha agreement on agriculture, the WTO discipline could impose significant constraints on the CAP. This is particularly the case under the US and G20 proposals in Hong Kong.

We measured the actual AMS and Overall Total Domestic Support (OTDS) given the 2004 EU enlargement and the recent reforms of the CAP. We then assess the constraints imposed on the CAP under the EU, US and G20 proposals.

Under the EU proposal, the changes required in the CAP should not go much beyond those implied by the other pillars of the EU offer. Basically, the EU offer recognizes that the EU has made significant changes to its domestic support policies since the conclusion of the Uruguay Round. However, the ability to meet even the domestic support discipline of the EU offer assumes that the market access offer will lead to a significant reduction in the remaining AMS (particularly important in the case of fruits and vegetables). That is, one cannot say that the discipline would not be constraining *per se*. The base period decided for the ODTS reference level and product-specific AMS caps will be very important. Accession of Bulgaria and Romania will make the constraints more binding.

Under the US and G20 proposal, the cut in AMS and OTDS would impose larger constraints on the remaining domestic support. This would require a significant cut in the intervention price of cereals and dairy products, and the elimination of all public intervention in the fruit and vegetable sectors. The cut in OTDS would be particularly constraining under the G20 proposal.

The US proposal would however provide a significant degree of freedom thanks to the *de minimis* provisions. This would not be the case under the G20 proposal, even though it imposes a smaller cut on the AMS than the US proposal. Even the small amount of *de minimis* payments maintained under the EU proposal could provide the necessary safety valve for managing short term crises, in cases where payments should be targeted to a particular production and where decoupled payments are seen as not adapted (e.g. sanitary crises where maintaining the production capacity is seen as desirable). Under the G20 proposal, the EU would no longer have any flexibility for managing this type of market crisis.

As a final comment, the examination of the expenditures that remain counted under the AMS in the EU (mainly grains and fruits and vegetables) shows that the AMS calculation no longer corresponds to any meaningful measure of support. The changes in EU policies, and the reliance on a world price observed some 20 years ago as a reference have led to a complete disconnection of what is measured and the actual support provided to EU farmers. Clearly, the objective of reducing the AMS should be seen as a useful political target, but the AMS per se has no longer any meaning.

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