

# **Global effects of EU Agenda 2000**

## Implications for the WTO negotiations and developing countries

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The Agenda 2000 policy package that was agreed at the European Summit in Berlin 26 March 1999 by the Council of Ministers of the European Union (EU) contains a package of new policy measures for the agricultural and rural policy in the EU for the period 2000-2006. The Agenda 2000 package continues the redirection of the Common Agriculture Policy from market price support towards income support. This paper discusses international trade implications of the Agenda 2000 reforms from two closely related perspectives. First, it is argued that it alleviates future problems with regard to the EU's fulfillment of existing GATT/Uruguay Round Agreement on Agriculture commitments on the reduction of export subsidies. Second, it is shown that this primarily internal reform package in itself has rather limited effects on Developing Countries. The main world market effects of Agenda 2000 are expected to occur in those markets where EU exporters face international competition, that is in the Grains, Beef and Dairy sectors. The research presented in this paper uses the Global Trade Analysis Project (GTAP) model of world trade in tandem with the Common Agricultural Policy Modeling and Accounting Tool (CAPMAT) of the EU.

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# 1. Introduction

At the European Summit in Berlin, 26 March 1999, the EU Heads of States reached agreement on the Agenda 2000 package, which contains reforms of the European Common Agricultural Policy. This paper discusses the Agenda 2000 reforms from two perspectives. First, we study whether and to what extent the reform package contributes to fulfillment of the EU's commitments on reduction of export subsidies made under the earlier GATT Uruguay Round Agreement on Agriculture. Second, we provide a quantitative assessment of world market effects arising from the Agenda 2000 reform, with a particular focus on the impact on developing countries.

The paper is structured as follows. Section 2 discusses the essentials of the European Union's Common Agricultural Policy, followed in section 3 by a summary of the Agenda 2000 reform package. Section 3 also provides some data on the degree to which the Uruguay Round Agreement on Agriculture export subsidy reduction commitments are binding for the EU, and it develops an analytical partial equilibrium framework. Sections 4 and 5 go beyond the theoretical partial equilibrium analysis and provide a numerical assessment of Agenda 2000 in a global applied general equilibrium setting. Two general equilibrium models are used in tandem: the CAPMAT model of EU agriculture and the GTAP model of global trade and production. Finally, section 6 concludes and gives some observations on the imminent next WTO round.

## 2. CAP essentials

The European Common Agricultural Policy (CAP) attempts to maintain stable, and virtually fixed, domestic prices. The insulation of EU markets from world markets can only be achieved by restricting imports. In the past, the main instruments to achieve this goal have been variable import levies that bridge the gap between varying world prices and fixed domestic prices. In addition, variable export subsidies have been used to enable excess supplies to be disposed on world markets and intervention buying is used to remove further excess supplies from the internal market. In addition to a system of administered prices, the CAP uses production control instruments to curtail overproduction which occurs under a regime of prices that are set too high.

The high domestic prices turned the EU from a net importer to a net exporter in many commodities. The corresponding move from import levies to export subsidies had severe negative consequences for the budget of the EU. The pressure to reduce the budgetary burden of the CAP policies and the pressure of the then imminent Uruguay Round led to the 1992 Mac Sharry reforms of the CAP. This policy reform implied a major re-orientation from market price support towards direct income support. To maintain income, compensation payments per hectare were given to farmers of arable crops. In order to reduce cereals output, the compensation payments for 'professional' farmers were made conditional on set aside of a portion of base arable area in 1991. In the livestock sector, compensation payments were based on the number of animals (headage payments). Virtually all the major agricultural sectors have become subject to ceilings, either on the amount of production (milk and sugar quota), or the crop area (cereals, oilseeds and protein crops), or the number of livestock eligible for direct payments (sheep and beef cattle). Notable exceptions to the practice of market interventions are pigs, poultry and horticultural products. Nevertheless, it is widely accepted that the shift from price support to income compensation in the Mac Sharry reforms paved the path for the Uruguay Round Agreement on Agriculture.

*Table 2.1 Summary of CAP commodity instruments*

Product	Institutional price	Production control
Wheat	X	area set aside
Coarse grain	X	area set aside
Oilseeds		area set aside
Sugar	X	production quota
Dairy	X	production quota (raw milk)
Beef	X	(fixed sum of total direct payments)



The conclusion of the Uruguay Round Agreement on Agriculture (URAA) in 1994 had a major impact on the EU's CAP policy, as domestic farm policies have become subject to international governance through the GATT. The set of rules established under the GATT limits the scope for domestic agricultural- and trade policies. Specifically, the agreement had implications in three areas: Market access, export competition and domestic support.

- Market access: conversion of all existing non-tariff barriers and unbound tariffs to bound tariffs (i.e. tariffication), which subsequently had to be reduced on average by 36% over a six year period, with a minimum of 15% for any tariff line.<sup>1</sup> Although this agreement would in principle improve market access to the EU, it has been widely noted that a considerable degree of 'dirty tariffication' (Ingco, 1995, IATRC, 1994) has occurred: countries were given a considerable discretion in the determination of their bound tariff rates, and by choice of base period prices and definition of internal prices they were able to set their final bound tariff rates at very high levels. The process of tariffication and reductions is considered to be unlikely to bind the CAP during the implementation period, as reduced tariffs will still be high enough to prevent imports of most commodities. (Tangermann, 1996). Tariffication did, however, restrict the leeway of EU CAP policies with respect to import barriers, and further reductions of binding import tariffs will put severe pressure on the price insulation policies of the CAP.<sup>2 3</sup> While the agreement to bind tariffs is certainly a step in the right direction, it did not in fact improve market access. Therefore, some additional import opportunities were to be granted for a share of domestic consumption (generally 3% rising to 5%). This minimum market access provision does not guarantee actual importation, but allows in-quota access at reduced tariff rates. Existing preferential trading agreements, such as sugar imports from ACP countries, are considered as contributing towards fulfilment of minimum market access commitment. The minimum market access commitment does not seem to affect the EU much.
- Export competition: limits on existing export subsidies are defined with respect to both a constraint on the value of export subsidy expenditures and a constraint on the volume of subsidised exports. A reduction in the value of export budget expenditures by 36% over 6 years, and a reduction on the volumes of subsidised export by 21% over 6 years has been agreed. Furthermore, no new export subsidies are allowed. Despite the fact that the value and volume of exports of the EU are linked to the pre-Mac Sharry reforms this part is expected to become the most compelling constraint on the future development of the CAP (Harvey, 1997). Continuing yield increases lead to an expansion of the EU's export potential, while the volume constraint declines gradually over the implementation period. Fulfilment of the subsidy budget

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<sup>1</sup> Additional duties (up to one-third of normal duties) are allowed if imports surge or if world prices fall below trigger price levels.

<sup>2</sup> A discussion on the extent of tariff bindings and statistics on import tariffs are provided in Finger et al. (1996).

<sup>3</sup> In fact not all tariffs are bound. For cereals and rice the height of import duties is determined in relation to a reference price, and therefore act de facto as a variable levy to bridge world-internal price gaps.

constraint is less under control, as the budget outlays depend on the gap between (variable) world prices and (fixed) domestic intervention prices. The reduction of intervention prices under the Mac Sharry reforms allowed the EU to meet the budget constraint relatively easily, and we will see later on that the Agenda 2000 reforms are expected to have a similar effect (Swinbank, 1997).

- Domestic support: The aggregate measure of support (AMS, including trade distorting measures) had to be reduced by 20% in 6 years. In the 'Peace Clause' agreement between the USA and the EU a 'green box' was defined for allowable non-trade distorting policies (e.g. R&D subsidies and extension workers). More important for the EU was the introduction of the 'blue box', in which policies-agreed as minimally distorting were exempt for countervailing measures. The new area and headage payments introduced under the reformed CAP were included in this box. Therefore, the reduction in the AMS was no problem for the EU because lower tariffs and export subsidies implied by the lower institutional price were included in the calculation of the AMS and the accompanying compensatory payment are not included. However, it has to be recognised that the Mac Sharry support payments are not fully decoupled from production and therefore do not qualify for the green box and remain on the agenda for the next round.

### 3. Agenda 2000 reforms

At the European Summit in Berlin 26 March 1999, the EU Heads of States reached agreement on the Agenda 2000 package, which contains reforms of the European Common Agricultural Policy. The Agenda 2000 reforms, which basically continue along the same lines as the earlier Mac Sharry reforms (1992), have been prompted by a combination of factors. First, the envisaged enlargement of the EU by a number of Central and East European Countries. Their relatively high share of agriculture in production would lead to unsustainable budget implications for the EU. In addition, given a large share of food in CEEC household expenditures, the current high EU food prices would bear severe consequences for households. Second, the anticipation of a new round of trade negotiations under auspices of the WTO is expected to generate the need for further adjustments in the CAP. Third, and foremost, without reforms, the EU would not be able to fulfil its earlier commitments made under the Uruguay round agreement. Specifically, surpluses in grains and beef have been expected to emerge, which could not be disposed on world markets without violation of the UR agreement.

Although Agenda 2000 in itself implies only minor changes it continues the fundamental swing of European agricultural policy set in motion by the 1992 Mac Sharry policy reform: movement towards (lower) world prices, partly compensated by direct payments (blue box). Table 3.1 below summarises the policy measures for the most relevant products.<sup>1</sup>

*Table 3.1 Summary of Agenda 2000 reforms*

Product	Measure	Implementation
Cereals	15% price decrease	2000 minus 7.5%; 2001 minus 15% Compensation increases from € 54.34/ton to € 63.00/ton.
	Reduction of area set-aside	Compulsory set-aside from 15% to 10%, extraordinary set-aside abolished, voluntary set-aside maintained.
Oilseeds	A decrease of compensation payments	Compensation payments will be equal to those for cereals: a decrease from € 94.24/ton to € 63.00/ton.
Milk	15% price decrease	2005 minus 5%; 2006 minus 10%; 2007 minus 15%
Beef	1.5% increase of milk quota	Compensations for beef and milk price decreases In 3 years from 2005 onwards (0.5% a year).
	20% price decrease	2000 minus 6.7%; 2001 minus 13.3%; 2002 minus 20%. Compensations per head and slaughter premiums

<sup>1</sup> We leave aside other elements of the reform package that deal with integrated rural development, -as the second pillar of the CAP, and we leave aside environmental and farm employment policy measures. A complete description of the agricultural chapter of Agenda 2000 is found in European Commission CAP 2000 series of the DG-Agri (<http://europa.eu.int/comm/dg06/index.htm>).

For *cereals*, the agreement specifies a reduction of the intervention price by 15% (to be achieved in two steps by 2001/2002). The price decrease will be partially compensated through direct payments to farmers. This is achieved by area payments, which result from the multiplication of historic reference yields with fixed money amounts per tonne. The set-aside area is reduced from its Mac Sharry levels. Note that the policy measures do not differentiate between foodgrains and feedgrains, hence maintaining the practice of equalising the intervention price levels for both types of grains, whereas there is a clear price differential on international markets. For *oilseeds* and *protein crops*, which do not have a fixed intervention price, similar area payments continue to exist, but these payments are to be reduced over time. The compulsory set-aside of 10% of arable land is retained, and the compensation occurs according to identical rates for all arable crops. In addition, farmers can opt for voluntary set-aside. In the *dairy sector*, the intervention prices for skimmed milk powder and butter will be reduced by 15% in three steps from 2005/2006 onwards. The milk quota regime is extended to 2008, and the quota will be increased by 1.5% over three years in Member States from 2005/2006 onwards.<sup>1</sup> To compensate for the fall in dairy prices, farmers receive payments related to their historic quota holdings. Additional compensation is offered through 'national envelopes' allocated to member states to compensate dairy farmers. Note that part of the quota increase precedes the fall in intervention prices, which implies that existing problems with regard to meeting the URAA constraints on subsidised dairy exports will only be harder to meet.<sup>2</sup> The quota regime is due to be reviewed in 2003. The intervention price for *beef and veal* is to be reduced by 20% in three steps over the period 2000 - 2002. Compensatory premiums are related to the number of animals and there also are slaughter premiums. The total number of animals qualifying for special premium and suckler cow premium are limited to two (standard) livestock units per hectare. Additional premiums are granted if the number of livestock falls below 1.4 units per hectare.

Note that the sugar sector, which is of importance for ACP countries, has not been touched by the Agenda 2000 reforms.

### **3.1 The European Union's export subsidy commitments**

Despite the positive effects of the 1992 CAP reforms, which led to lower EU domestic guaranteed prices, there is still ample reason for concern. If the market situation of 1997/98 were repeated in the year 2000, then the volume of subsidised exports for 7 commodities (Poultry meat, Cheese, Eggs, Beef, Other milk products, Wine and Sugar) would be beyond their year 2000 GATT bounds, while the export subsidy budget would be exceeded for 4 commodities (Processed products, Other milk products, Sugar and Alcohol). figure 3.1 and figure 3.2 illustrate the urgency of reforms to fulfil the GATT commitments with

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<sup>1</sup> Except Italy, Greece, Spain, Ireland and Northern Ireland. For these countries, specific quota increases totalling 1.39 million tons are to be implemented in two unequal stages in 2000/01 and 2001/02 already. The two measures will lead at the end of the implementation period (over the next eight years) to a quota rise of approximately 2.4%.

<sup>2</sup> In fact in the second half of the year 1999 EU milk prices already declined significantly due to the impossibility to dispose surpluses at subsidised prices on world markets.

respect to the export subsidies. It is apparent that many products are exceeding, or are close to, their year 2000 GATT bounds.<sup>1</sup> These figures also reveal several other noteworthy phenomena. First, there is a large variability observed in both indicators. Both the volume and the value constraints have become less binding for a number of products, while other products have come dangerously close to the constraints, or are even exceeding it.<sup>2</sup> Dairy products (especially cheese, but not butter) and Beef products, are clearly among the group of products for which export subsidy constraints are a problem. While wheat and coarse grains have stayed clear of both constraints over the period considered, the volume of subsidised exports has been increasing. As far as the budget constraint is concerned, this is a consequence of a diminishing gap between world prices and EU prices. While cereals world prices been rather high, EU cereals prices had already declined substantially following the Mac Sharry reforms. It should also be noted that pig- and poultry meat, as well as fruit and vegetables are clearly reason for concern in terms of export subsidy commitments.

Second, the volume constraints seem generally to be more 'sticky' than the budget constraints. The value constraints display a larger variation which can be attributed to the fact that the size of the budget depends on both a volume component (the volume of exports) and a price component (the price differential between the EU and the international export markets). The price component is clearly more volatile. The volume component of exports subsidies declines at a much slower rate, if at all, which is explained by slower adjustments of production levels.

Third, while the sugar sector remains outside the Agenda 2000 reforms, the amount of subsidised exports and the subsidy budget have both been rising beyond their year 2000 commitment levels.

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<sup>1</sup> It should be noted that upto the year 2000 it was possible to carry over unused subsidies and exports of the previous year. In the year 2000 this is not possible anymore.

<sup>2</sup> Obviously, there are no reduction commitments with respect to processed products, but the value of subsidies is related to the subsidy content of the inputs used in processing.

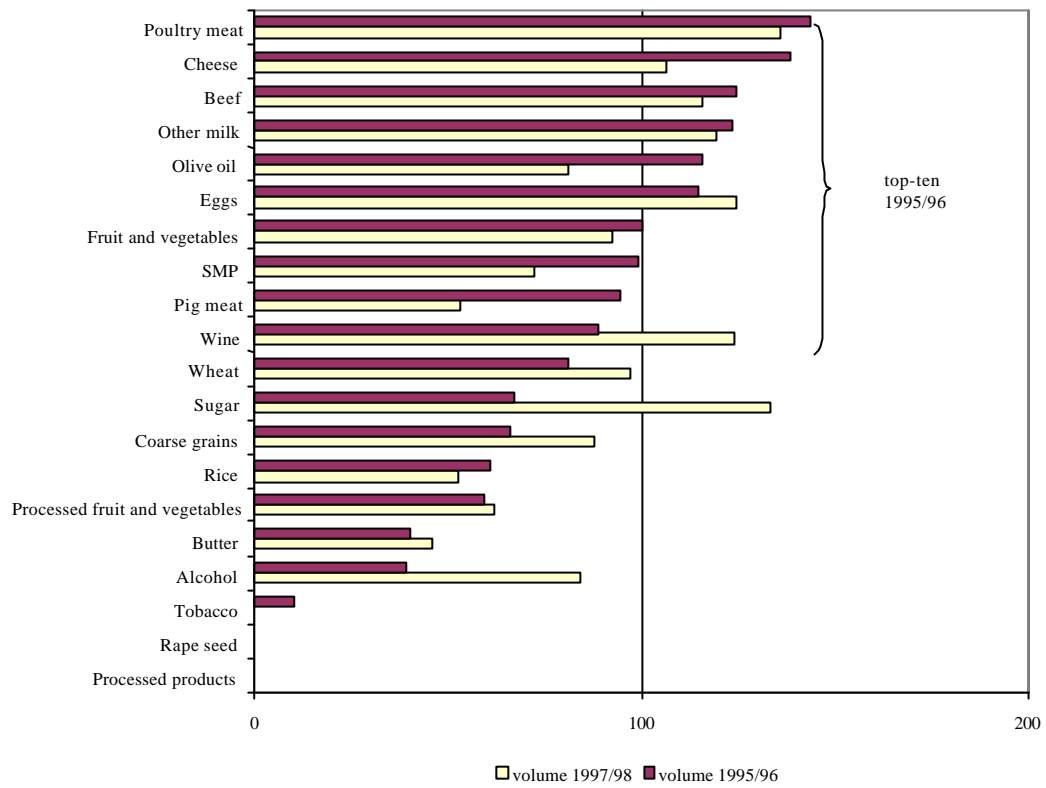


Figure 3.1 EU volume of subsidized exports 1995/96 and 1997/98 as ratio to WTO commitments in 2000  
 Source: WTO notifications.

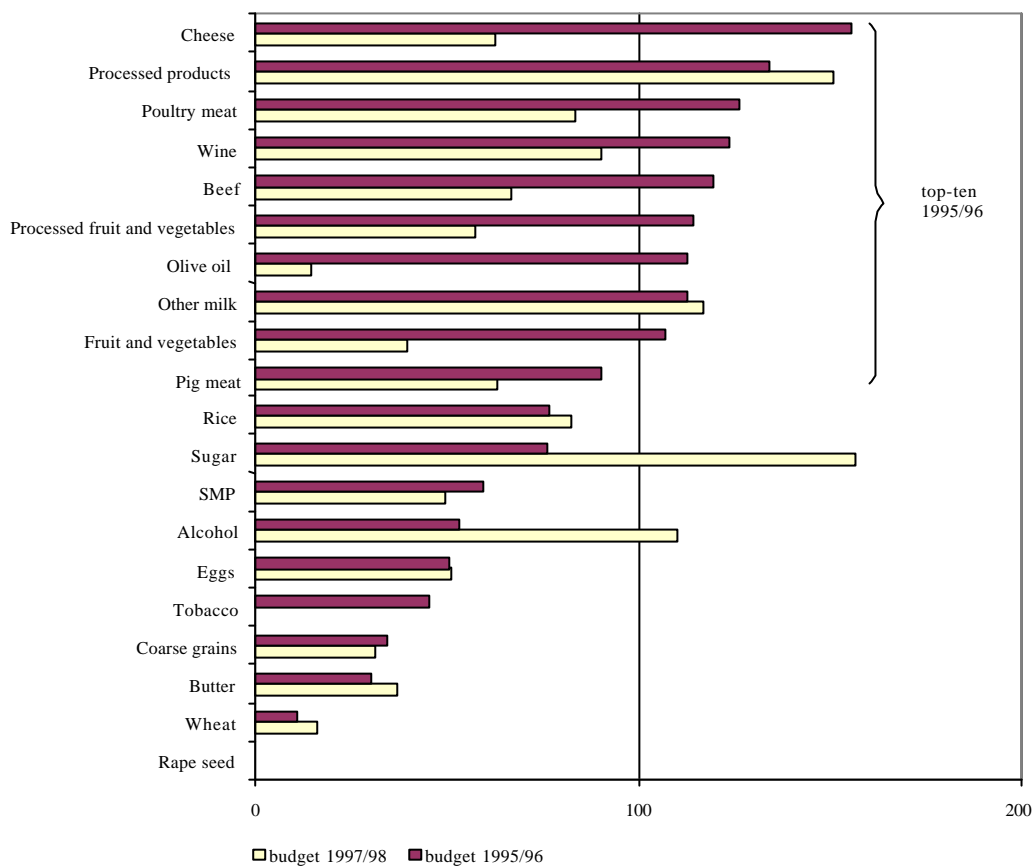


Figure 3.2 EU export subsidy budget 1995/96 and 1997/98 as ratio to WTO commitments in 2000  
Source: WTO notifications.

### 3.2 Some simple analytics of Agenda 2000 and GATT bounds on export subsidies

The Agenda 2000 reform package generates indirect effects on world markets, which will depend on a) the reaction of domestic demand to lower prices; b) the reaction of EU farmers to the policy package, and c) the reaction of world markets to changed net supply from the EU. We illustrate the influence of Agenda 2000 on the GATT bounds on export subsidies using a simplified analytical partial equilibrium framework.

We begin by illustrating the mechanism of a variable export subsidy to maintain a fixed domestic intervention price, in the case of the EU being a net exporter. We then proceed by analysing the effects of a reduction in intervention prices. In the left panel of figure 3.3 supply ( $S$ ) and demand ( $D$ ) on the EU market are shown. The intervention price  $p_i$  places a minimum price in the market (as long as GATT commitments are not binding). At

the intervention price  $p_i$ , EU supply  $Q_p$  exceeds domestic demand  $Q_c$ , which indicates that the EU is a net exporter of the particular commodity, and the amount of exports  $X$  equals the difference  $Q_p - Q_c$ .

The right panel shows the world market. The net trade, or excess supply, schedules for the EU (S-D, EU) and the excess demand schedule for the Rest of the World (S-D, RoW) are explicitly shown in this panel. Without the EU intervention price, the world market equilibrium price would be equal to  $p_e$ . However, with the intervention price in place, the excess supply curve for the EU becomes vertical at all price levels below  $p_i$ . In this case, the world market price becomes  $p_w$ , and the variable export subsidy equals  $p_i - p_w$  per unit to make up for the difference between the world market price and the domestic EU intervention price. The total amount of subsidies equals the grey area ( $X \times (p_i - p_w)$ ). The domestic economy is insulated from the world market as long as the demand from RoW intersects on the vertical part of the excess demand curve of EU. Demand- or supply shocks in the Rest of World affect the S-D, RoW curve, but this does not translate into price changes on the EU market. Also note that EU domestic shocks do not lead to price change on the domestic markets but have non-zero price effects on world markets.

The GATT-URAA commitment on export subsidies is introduced into the figure by placing a bound on the maximum export subsidy. For expositional convenience, the bound on export subsidies is introduced as a maximum subsidy per unit. This yields the line *S-D (-Max subsidy), EU* which denotes the excess supply schedule inclusive of the maximum allowable subsidy.<sup>1</sup> The excess supply curve for the EU therefore looks like abcde. Figure 3.3 depicts a situation where the GATT bound is not binding: the RoW excess demand schedule intersects with the vertical part of the EU excess supply schedule. If this bound is binding (intersection with S-D, RoW at the positively sloping *ab* part) then the EU market is not isolated anymore and domestic and foreign supply and demand shocks influence the EU market price.

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<sup>1</sup> In the URAA agreement bounds are placed on the export budget and export volume. In graphical terms this implies with regard to the volume reduction that the quantity exported,  $X$ , is bound to a maximum, which decreases over time (21% in 6 years) and with respect to the export budget this implies that there exists a maximum grey area, which decrease over time (36% in 6 years).



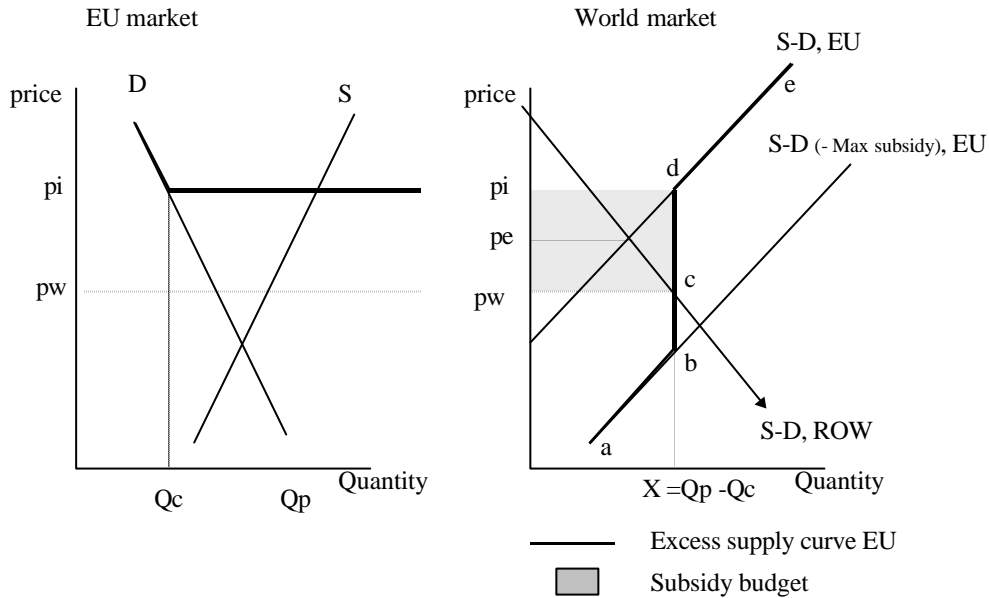


Figure 3.3 Price insulation, GATT bound on export subsidies not binding

In figure 3.4 the effects of the intervention price reduction of Agenda 2000 are shown. The lower internal price shifts the price line for the EU from  $pi$  to  $pi^*$ . The lower intervention price causes a decrease in production and increase in consumption, and therefore leads to lower net exports. The net-export curve for the EU shifts from  $abde$  to  $ab^*d^*e$  (above intervention price still original S-D, EU curve). The lower level of EU exports causes the world price to increase from  $pw$  to  $pw^*$ . The higher world price implies a deterioration of the terms of trade for food importing countries and a terms of trade improvement for food exporting countries.

Without a change in the world price the reduction in export subsidy would be equal to  $pi - pi^*$ . The higher world price reduces the subsidy with the difference between  $pw^* - pw$ . The unit subsidy reduces from  $pi - pw$  to  $pi^* - pw^*$ . The export volume reduces from  $X$  to  $X^*$  and the export subsidy budget is reduced to the smaller grey area  $pw^*c^*d^*pi^*$ . Therefore both GATT constraints become less binding. It can also be seen in figure 3.4 that with the old high intervention price the GATT constraint is much closer to become binding (intersection with S-D, RoW at lower part of vertical part of excess supply curve:  $bd$ ) than with the lower price  $pi^*$  (intersection with S-D, RoW in upper part of  $b^*d^*$ ).

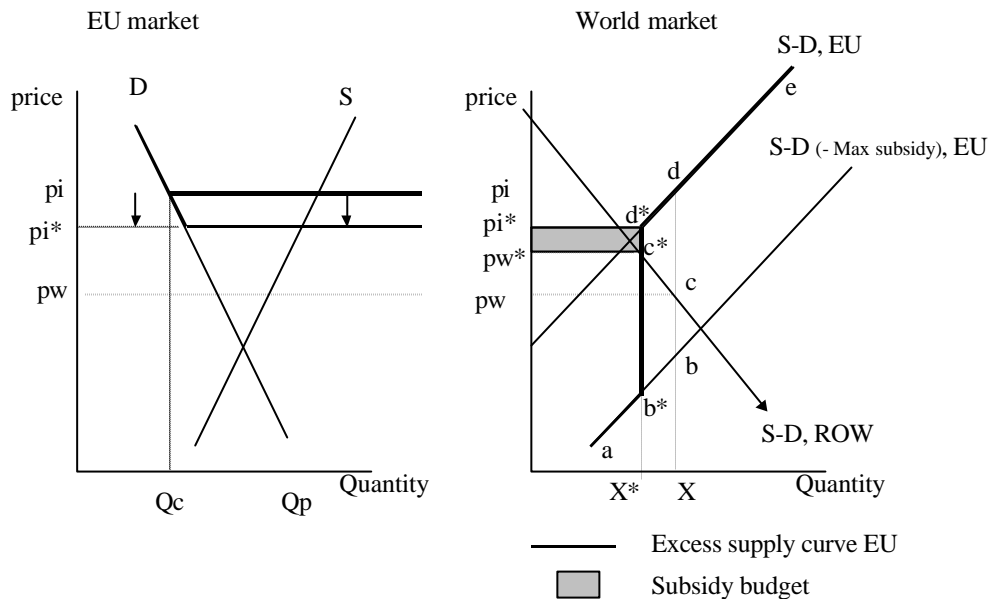


Figure 3.4 Price insulation: Agenda 2000 and GATT bounds on export subsidies

The set-aside obligations and area payments complicate the picture slightly, because the net effect on the EU supply response is ambiguous. Area payments dampen the supply response that follows a decrease in the institutional price. The supply curve becomes less elastic (Swinbank, 1997), and the reduction in production is less than without such payments. An increase in area set-aside obligation, however, shifts the supply curve to the left and implies a reduction in production at each price level. The converse shift would occur if set-aside obligations were reduced, which is the policy that is actually followed for grains (see, table 3.1). The combined effect on production is indeterminate. In figure 3.4 we implicitly assume that the net effect is to leave the supply function unaltered. This is certainly a drastic assumption, which is only made to simplify the graphical exposition. It is straightforward to introduce the effects of set-aside and area payments on the EU supply schedule into figure 3.4. However, it is much more difficult to ascertain empirically the degree of decoupling of these measures.

The above partial equilibrium framework does not permit us to analyse yet another effect that is likely to play a role: resource shifts between alternative activities. For example, the changes in the relative profitability of land may induce shifts between alternative cropping and livestock uses.

This simplified analysis shows that changes in the world price play a crucial role for the GATT bound to become binding or not. Models to investigate the impact of policy reforms or supply or demand shocks on GATT constraints should therefore treat world price endogenously. Furthermore, when the GATT constraint becomes binding the world price and the maximum export subsidy determine the internal market price in the EU, which in turn determine domestic production and consumption.

## 4. Does Agenda 2000 solve existing problems in the medium run?

In this section we obtain a quantitative assessment of the effects of the Agenda 2000 policy package on EU exports and on the bindings of GATT commitments regarding subsidised exports and the export subsidy budget. While section 3.2 discussed a partial equilibrium analytical framework, our numerical estimates are based on a modified version of the general equilibrium model of the Global Trade Analysis Project (GTAP) model (Hertel 1997), in conjunction with results from an econometrically estimated general equilibrium model for the EU agricultural sector, Common Agricultural Policy Modelling and Accounting Tool (CAPMAT).

CAPMAT focuses on agriculture in the EU 15 member states and treats world market developments as exogenous, whereas GTAP covers trade between all regions in the world, the EU 15 being one of the regions distinguished. In our numerical analysis with GTAP we divided the world into 17 regions and 17 traded commodities, see Appendix 2 for the regional and commodity aggregation. Contrary to GTAP, the agriculture focussed CAPMAT takes detailed account of the CAP policy instruments, and yields detailed supply responses to CAP policy changes<sup>1</sup>. This latter feature is the main reason to use simulation results on agricultural production from CAPMAT in conjunction with the GTAP global trade model. Another important reason is that results from CAPMAT have also been used by the European Commission in assessing the Agenda 2000 policy proposals (European Commission, 1998), hence our results should be in accordance with the expectations of the Commission. The linkage between these two models enables us to trace induced effects of Agenda 2000 through world markets and third countries. See Appendix 2 for a description of the modelling assumptions.

Figure 4.1 shows simulated Agenda 2000 effects on output and export volumes of agricultural products in the EU15. The output results for cereals, beef and raw milk (not shown in figure 4.1, because raw milk is not traded internationally) are derived from a CAPMAT simulation which incorporates the full Agenda 2000 compromise package. All other results, are generated by the GTAP model. Especially noteworthy are the expected positive output effects for Grains and livestock products. This positive output effect runs counter to the intuition from the partial equilibrium model of section 3.2. How can this be explained?

The key to understanding the positive output effects of Agenda 2000 is the income compensation to farmers which is linked to land (or livestock), and does not induce a drop, but rather an expansion, of production. Grain output is expected to grow due to an increase in cropped area. First, the policy package reduces compulsory area set-aside and, second a shift of pasture grass land into Grains production is expected due to a decline of relative profitability of pasture land. In Feedgrains, another factor acting in favour of expansion is increased domestic demand as the reduced feedgrain prices induce a shift away from inter-

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<sup>1</sup> CAPMAT is an extension of the ECAM model, see Folmer et al. (1995).

nationally traded feedgrain substitutes, such as manioc and soya. The dairy sector expansion follows the increase of production quota for raw milk, despite the drop in prices. The increased grains production coincides with lower domestic process, which reduces input costs for the livestock sectors. This, in combination with compensation payments linked to the number of animals, does create a disincentive to reduce output. In terms of figure 3.4, the domestic supply curve shifts to the right.

The simulated effects on EU export volumes incorporate the full general equilibrium effects relative to the 1995 base. That is, world prices, trade flows and production levels (for all 17 commodities in all regions outside the EU and production levels other than Agenda 2000 commodities inside the EU) are endogenously determined by the model. It is seen that the Agenda 2000 effect on EU export volumes is actually positive for most products except for Feedgrains, Oilseeds, Other Crops (mainly fruit & vegetables) and Beef. The negative export growth in Feedgrains and beef corresponds to the mechanisms outlined in section 3.2: the decline in internal prices stimulates domestic consumption, which reduces EU's export supply. The decrease in Other Crops exports coincides with slight output decline in this sector, which stems from a reduced domestic demand in combination with higher input costs which translate into higher export prices. Results for Beef show a dramatic decline in export volume. However, large swings in trade volumes have not been uncommon in this market, and we may note that our results for Cereals and Beef are roughly in accordance with detailed partial equilibrium studies of Agenda 2000, see Jongeneel (2000).<sup>1</sup>

Figure 4.2 shows the estimated effects on the GATT export subsidy commitments, both in volume terms and in budget terms. The figure shows the simulated change in the ratio of the subsidised export volumes and export subsidy budget with respect to their year 2000 commitment levels.<sup>2</sup> A comparison with figure 3.2 reveals that the Agenda 2000 package is expected to almost eliminate the need for export subsidies in the Grains and Beef sectors, hence achieving one of the goals of this CAP reform. In the dairy sector, export subsidies will remain on the agenda.<sup>3</sup> There is also some reason for concern in the Other Meat section (mainly pig and poultry meat), since for these products the export subsidies commitments are binding.

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<sup>1</sup> EU beef and veal exports to third countries have declined some 16% between 1990 and 1998 from 762,000 t to 644,000 Mt. Excluding exports to the Former Soviet Union, this decline would have been 37%. (data from Productschap voor Vee, Vlees en Eieren (PVE); 1999).

<sup>2</sup> This indicator is calculated as  $\frac{\text{simulated level}}{\text{commitment 2000}} - \frac{\text{actual level 1995}}{\text{commitment 2000}}$

<sup>3</sup> It should be noted that the simulation exercise only assumed an increase in production quota for raw milk, and did not specify a fixed intervention price. This leads in the GTAP model to a simulated price change for raw milk of about -10%, or about 2/3 of the proposed decrease of EU intervention prices. This shows that the scheduled review of the EU dairy policy in 2003 is certainly worthwhile.

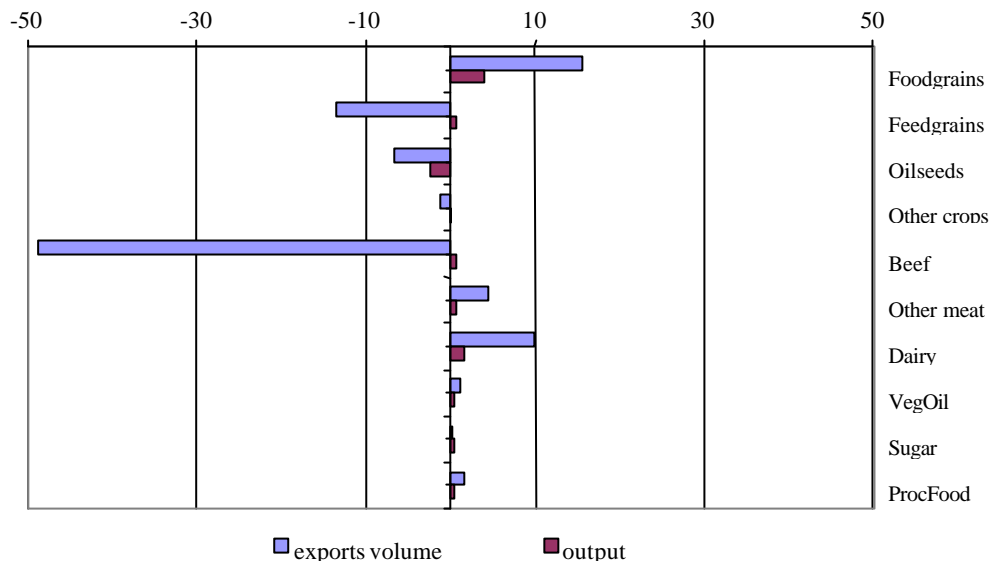


Figure 4.1 Percentage change of EU15 output and export volumes  
Agenda 2000 counterfactual simulations

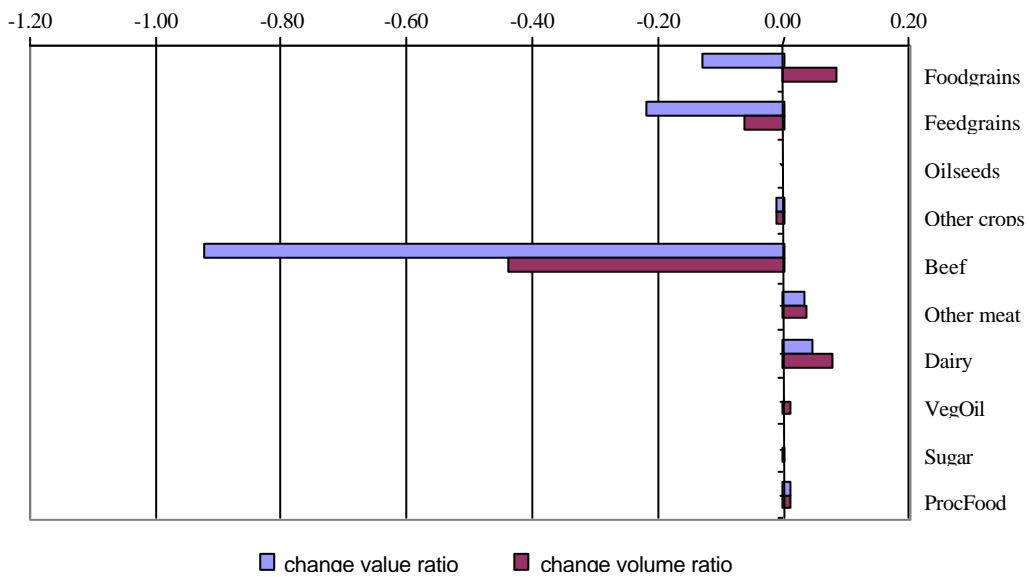


Figure 4.2 Change in ratio of EU export subsidy commitments 2000

Simulated effects on export subsidies are contingent on assumptions on world price developments. Since the base year 1995 witnessed high international cereals prices, the export subsidy commitment was not constraining the CAP. However, low world market prices (as in 1998/99) immediately put an upward pressure on the export subsidy budget, even if the Agenda 2000 package has been implemented. This is illustrated by conducting another experiment where, a cereals bumper harvest in North America and Latin America is simulated to occur, which leads to a drop in world prices. It is assumed here that North American and Latin American output of food- and feed grains increases by 10% due to favourable conditions that affect total factor productivity. The EU is assumed to effectively restrain output according to the Agenda 2000 targets, maintains its intervention price levels, and keeps a variable export subsidy to bridge the gap between world prices and domestic intervention prices. It is seen from table 4.1 that this event would lead to an additional € 160 mln. (1bln. - 0.84bln) or equivalently US\$ 200 mln. export subsidies if it occurs after Agenda 2000 is fully implemented, and a slightly higher € 390 mln. (1bln - 0.61 bln), or US\$ 500 mln., if it occurred after only 75% of the price cuts of Agenda 2000 have been effectuated. Although the drop in cereals world prices following the favourable harvest is of the same magnitude in both cases, the additional budget burden for the EU is higher if the price reductions of Agenda 2000 have not been fully implemented.

Table 4.1 Changes relative to 1995 base (%) under alternative scenarios

		Foodgrains	Feedgrains
Full Agenda 2000	World price index	-0.4	0.5
	Export subsidy budget (Change total export subsidy budget all agri-food comm. €-1bln (US\$ -1.3 bln)	-100	-64
Bumper harvest North- & Latin America after full implementation of Agenda 2000	World price index	-3	-8
	Export subsidy budget (Change total export subsidy budget all agri-food comm. € -0.84 bln. (US\$ -1.1 Bln)	-38	-33
Bumper harvest North- & Latin America after 75% implementation of Agenda 2000	World price index	-3	-8
	Export subsidy budget (Total export subsidy budget all agri-food comm. € -0.61 bln. (US\$ -0.8 bln)	-11	-17

## 5. Effects on developing countries: a quantitative assessment

Effects of a domestic policy reform like Agenda 2000 are transmitted to third countries through the international trading system, and the degree to which individual countries may be affected depends on their participation in international trade. It is apparent from figure 5.1, which pictures regional export shares in world markets, that international trade in grain crops is dominated by a 3 large exporters, notably North America, EU15 and Australia & New Zealand. North America is the largest exporter of Oilseeds, followed by Latin America. Only the trade of Fruit & vegetables sees a significant participation by developing regions, with Latin America, Southern Africa, Indonesia and Other south East Asia being relatively large exporters.

The trade in Beef is clearly dominated by Australia & New Zealand and North America, both with export shares greater than 30%. The EU15 ranked 4<sup>th</sup> in 1995, after Latin America. For dairy the picture is different, with a 51% export share of the EU15, followed by Australia & New Zealand with 27%. While the 'big four' exporters are also contributing large shares of trade in processed food products, the participation of Asian regions, and to some extent Southern Africa, is not negligible.

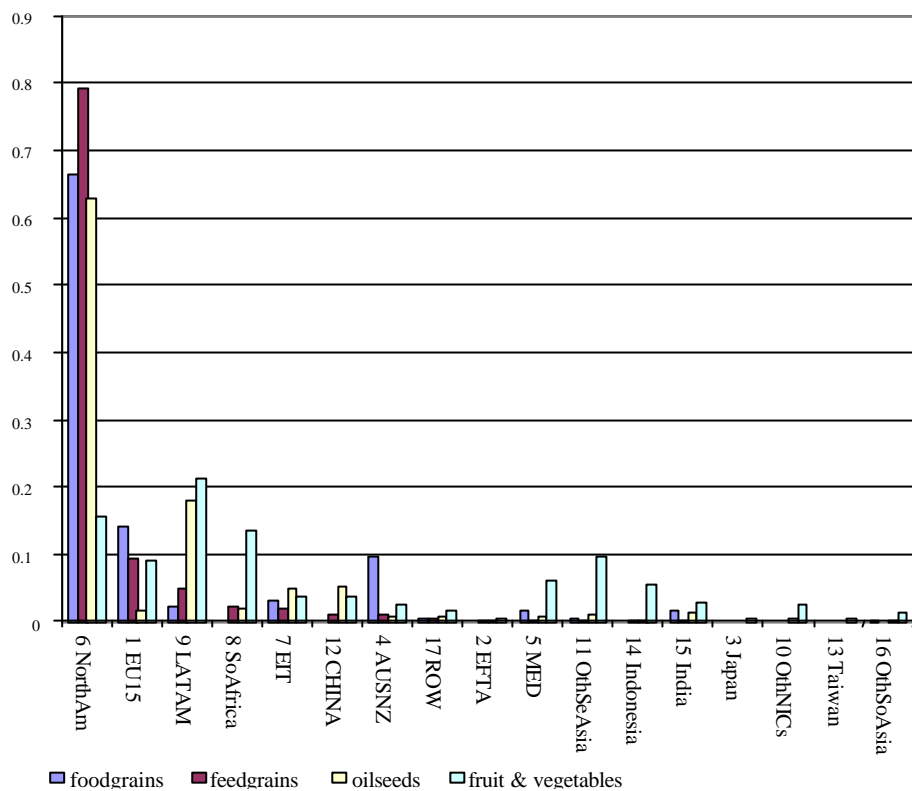


Figure 5.1 Shares exports in world exports, crops, 1995, f.o.b. excluding intra-regional trade  
 Source: GTAP v.4.



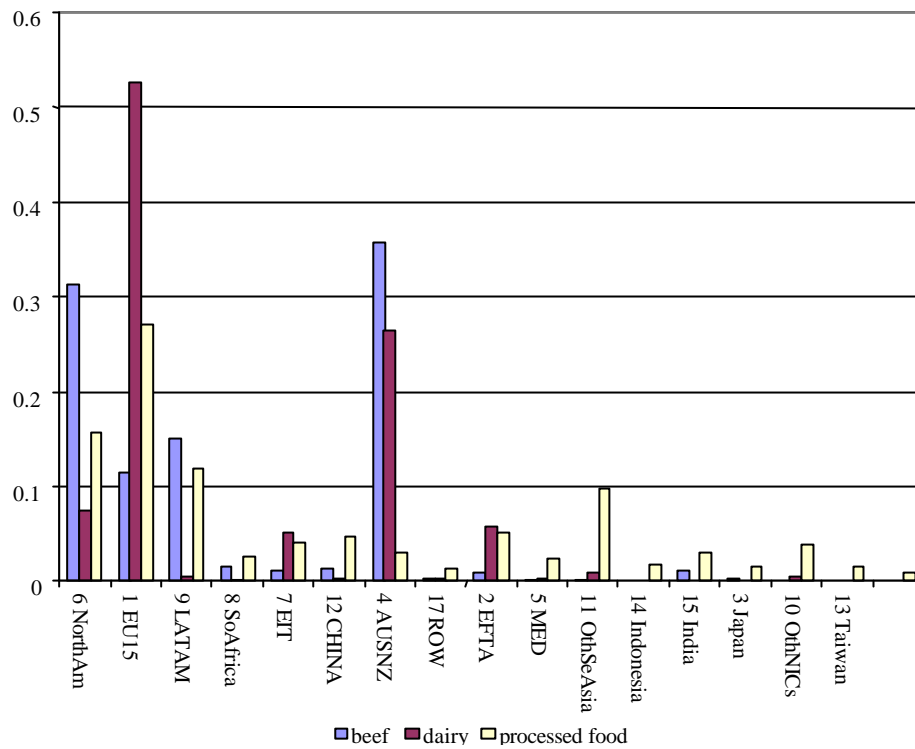


Figure 5.2 Shares exports in world exports, non-crops, 1995, f.o.b. Excluding intra-regional trade  
Source: GTAP v.4.

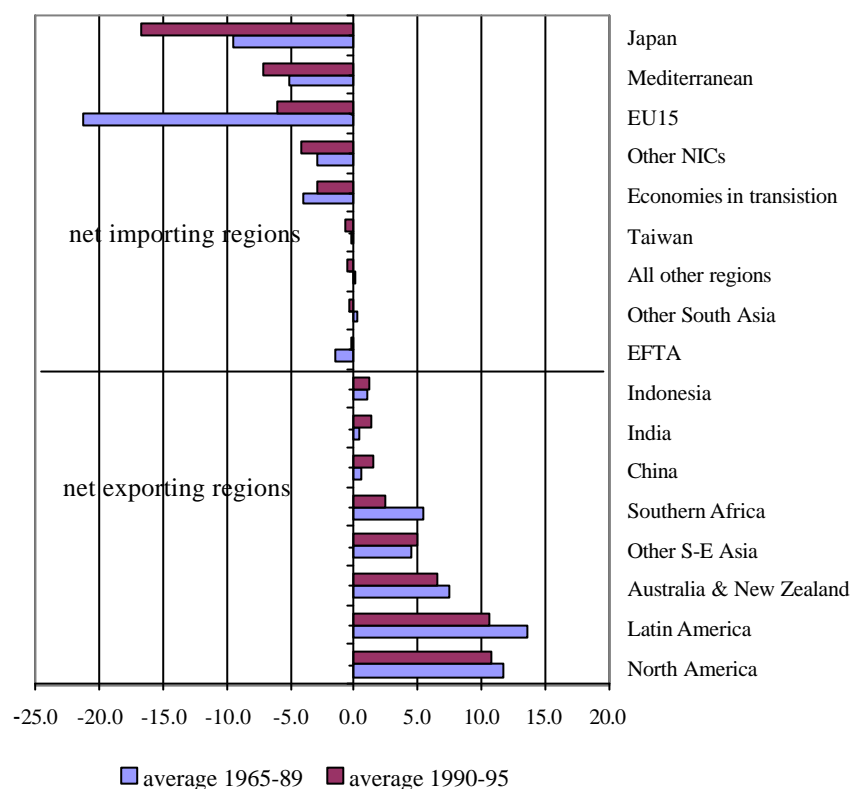


Figure 5.3 Agri-food trade balance (X-M) as % of global Agri-food exports (X), (f.o.b., external trade only)

Source: GTAP v.4.

The EU15 has obviously become a relatively large food exporting region, but it is also a large importer of food products. Contrary to the EU's main competitors in export markets (Australia & New Zealand, Latin America and North America) the EU15 has always been a net importer of agricultural products, and continued to be so during the 1990s. Figure 5.3 shows the net agriculture trade balance as percentage of global Agri-food exports. This figure also reveals that the difference between EU exports and imports has been shrinking over time. Under the CAP, the EU turned into a net exporter of key commodities, especially grains, beef and dairy products. The base year 1995 is too early to judge whether the 1992 Mac Sharry reforms have reversed that trend.

Because of its limited scope, the Agenda 2000 reforms will have only a mild impact on the food trade position of third countries.

Figure 5.4 shows the simulated effects on the Agri-food trade balance versus its 1995 base level. The impact of Agenda 2000 on world trade volumes is negligible, but some changes in the composition of trade flows can occur. The net trade position of Asian and

African regions is hardly affected, but a decline of net exports of the EU's main competitors in export markets is simulated to occur. This is a consequence of increased EU exports of foodgrains and dairy, combined with a decline of foodgrain imports into the EU. Table 5.1 decomposes the change in the agri-food trade balance into commodity groups. Note that the value of net foodgrain imports, which is of major concern to developing countries, are simulated to rise in almost all developing regions. It is incorrect to interpret changes in trade balances as income effects, but foreign exchange earnings are important for Developing Countries. In that regard it is important to note that changes in the agri-food trade balance in one direction may be compensated by increased net export earnings of manufacturing industries in the opposite direction. This reflects changes in the value and composition of a region's export package following changes in terms of trade.

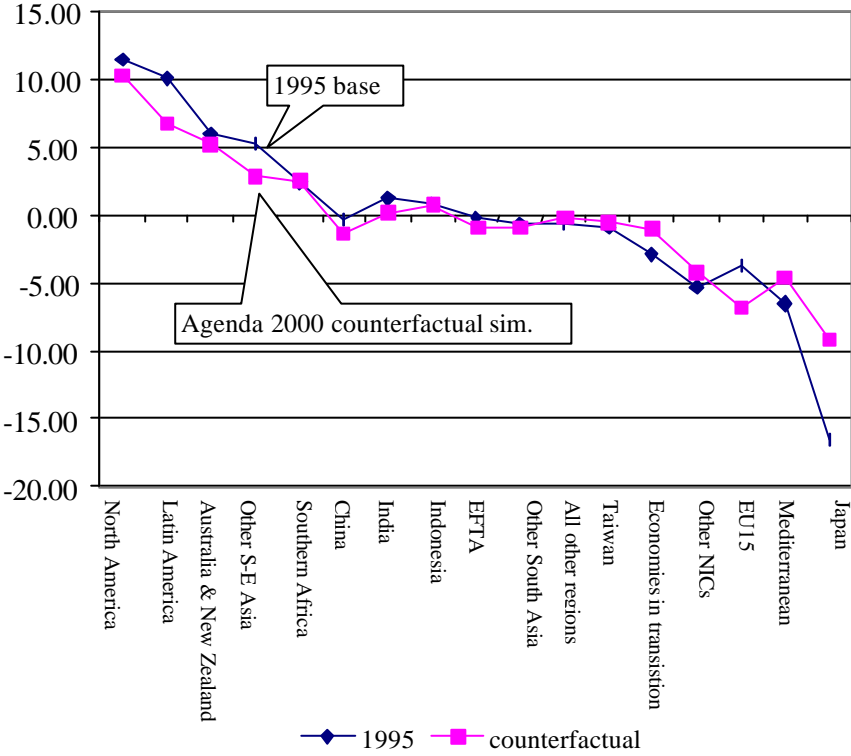


Figure 5.4 Agri-food trade balance (X-M) as % of global Agri-food exports (X), (f.o.b., external trade only). Base 1995 and Agenda 2000 counterfactual

Table 5.1 Trade balance effects

*Change in trade balance (1995 US\$ m), Agenda 2000 counterfactual simulations, excl. intra-trade*

	1	2	3	4	5	6	7	8	9	10	11
	Total agri-culture	Food-grains	Feed-grains	Other primary crops & livestock	Diary	Beef & Meat products	Other processed	Other traded commodities	Change total trade balance (col. 1 +8)	Share of agri-food in total merchandise exports 1995 (%)	Share of agri-food in total merchandise imports 1995 (%)
Japan	-25,984	-972	-2,725	-11,922	-786	-9,083	-21,788	115,025	89,041	0.1	16.0
EU15	-19,362	1,434	5	-25,660	4,965	495	8,389	54,175	34,814	3.6	10.1
MED	-12,879	-3,351	-1,702	-1,725	-1,979	-1,875	-8,653	7,011	-5,869	3.2	14.9
OthNICs	-11,891	-489	-1,337	-6,726	-549	-2,093	-4,083	-30,202	-42,093	1.1	7.2
OthSoAsia	-3,654	-1,845	-914	65	-21	967	286	51,416	47,762	3.2	6.0
EIT	-2,903	-83	60	-282	-421	-1,860	-5,975	13,333	10,431	5.2	15.2
EFTA	-2,372	-52	-55	-2,081	141	-386	1,739	16,200	13,829	1.2	6.4
India	-2,372	-795	-18	-157	-170	-124	-735	-5,102	-7,474	6.5	18.7
CHINA	-1,597	-169	-786	-1,677	-263	1,373	-1,058	27,781	26,184	2.0	7.5
ROW	-373	-42	-52	702	-338	-549	-1,305	-12,959	-13,332	7.9	14.1
Indonesia	693	184	9	786	-13	66	2,529	-3,691	-2,998	8.4	7.0
Taiwan	2,407	-608	-107	2,094	-195	259	1,152	2,707	5,114	10.9	11.2
SoAfrica	7,510	-764	10	9,563	-468	-419	-409	-7,936	-426	16.6	11.5
OthSeAsia	8,371	-679	-405	4,999	-1,037	1,071	11,444	-31,320	-22,950	9.1	8.3
AUSNZ	15,134	1,214	56	6,723	2,525	4,699	2,464	-24,334	-9,200	28.2	4.5
LATAM	19,664	-1,077	-310	17,361	-1,122	2,253	14,184	-51,449	-31,785	20.4	8.1
NorthAm	29,608	8,094	8,271	7,940	-270	5,207	1,817	-120,657	-91,049	10.3	5.2

Table 5.2 Output effects developing regions

	Food-grains	Other crops	Milk and Dairy	Beef	Other Livestock prod.	Processed including veg. Oil and sugar
Mediterranean	-0.5	0.1	-1.3	2.3	-0.3	-0.1
Economies in Transition	-0.9	0.1	-1.2	2.3	-0.5	-0.1
Southern Africa	-0.2	0.1	-0.7	1.2	-0.3	-0.2
Latin America	-0.3	0.1	-0.7	0.1	-0.2	-0.1
Other NIC	-0.1	0.0	-1.4	0.1	-0.1	0.0
Other S-E Asia	-0.2	0.1	-7.0	0.4	-0.5	-0.1
China	-0.1	0.0	-0.2	2.4	-0.1	0.0
Taiwan	-0.1	0.0	-3.6	0.0	-0.5	-0.1
Indonesia	0.0	0.0	-2.3	0.0	-0.3	0.0
India	-0.1	0.0	0.0	12.4 a)	-1.6	-0.1
Other South Asia	-0.1	0.0	-0.1	0.2	-0.2	-0.1
WORLD	0.1	0.1	0.9	1.2	0.1	0.1

Source: Model simulations, author's calculations.

a) This rather high growth figure for India is somewhat misleading: the recorded base value of beef production is a mere US\$ 143 mln., the simulated equilibrium output after the Agenda 2000 amounts to a still small US\$ 160 mln.

Turning to output effects, we observe from table 5.2 that Crop output levels in Developing regions are hardly affected. Milk and dairy production increases world-wide, but this is entirely taking place within the EU, and displaces production in other regions. In the Beef sector, on the other hand, developing regions are sharing in the slight expansion of global production, which follows the steep drop in subsidised EU beef exports. The Dairy and Beef sectors are also the only commodity groups for which notable changes in world prices are simulated to occur. -1.8% and +7.6% respectively.

Although output changes in processed food products are rather small, some additional comments are necessary: The EU producers of processed food products witness lower domestic input prices as a consequence of dropping internal prices for CAP commodities. This translates into lower cost and lower supply prices of processed food products within the EU. As a consequence, the simulation results show a slight drop in imports of processed foods and slight increase of EU's export market share.<sup>1</sup> This may be a reason for some concern as regards implications for nascent Developing Country food processing sectors.

<sup>1</sup> There is one caveat here: export subsidies for processed food products are related to the primary agricultural products content. This is not captured in the model application. In practice this procedure implies that the input cost for processing might not decline as sharply as predicted by our model. Thanks are due to Stefan Tangermann for bringing this point to our attention.

## 6. Conclusions and some implications for the next WTO round

This paper shows that Agenda 2000 in itself has rather limited effects on Developing countries. As far as international trade is concerned, the main effects of Agenda 2000 are expected to occur in those markets where EU exporters face international competition from its main competitors, i.e. North American Grains and Beef, Dairy and Beef from Australia & New Zealand. These major competitors of the EU are not likely to strive for improved market access, as demand on EU markets is hardly growing for their supplies, rather these countries will attempt to level the export market playing field and insist on further reductions of export subsidies. As far as export competition is concerned, this paper shows that the Agenda 2000 package certainly continues the move in the direction of further liberalisation, with EU and world prices of main export products moving closer towards each other.

Agenda 2000 is a small step, which is mainly directed towards alleviating future problems with regard to EU enlargement and fulfilment of existing URAA commitments. At the same time, Agenda 2000 sets the stage for the imminent WTO negotiations. In this context it can be regarded as a modest opening bid which leaves some room for further concessions.

Being a domestic internal reform package, Agenda 2000 has not changed the market access rules. Further improvements in the area of access to agri-food markets is in the interest of Developing Countries, especially in fruit & vegetables and processed agricultural products. In these areas a variety of import protection measures exist in all OECD countries, and the EU is no exception. Tariff peaks, tariff escalation and specific duties still abound, see for example Wainio et al. (1999). In this regard, it would be desirable for Developing countries to see generic reductions in tariff rates, rather than entering into cumbersome discussions on Tariff Rate Quota (TRQs). Whether the discussion is on expanding the quota, reducing in-quota or out-of quota tariffs, or any mix between those options, a TRQ gives always rise to rent seeking behaviour and implies an inefficient allocation of resources. Depending on the implementation mechanism substantial quota rents can be earned by agents in the importing or exporting country (see for example Abbott and Morse (1999), Elbheri et al. (1999)). The erosion of such rents gives rise to distribution issues which may lead to some resistance, also within the Developing countries concerned.

A special place has the discussion on multifunctionality of agriculture. The multifunctionality concept entails rewarding additional services obtained from agriculture as joint outputs, and payments for negative externalities, such as environmental damages. Multifunctionality payments should qualify for the Green Box, as they are rewards for services. Such measures contribute to maintaining rural incomes, but are minimally trade distorting as they reduce dependence on price support. Although the precise implementation of the multifunctionality concept is not yet clear, its introduction may reduce domestic opposition within EU agriculture to further trade liberalisation.

A final remark on the issue of European Enlargement with new Central and East European member states, which we have not previously touched upon in this paper. Agenda 2000 is considered to be the basis for enlargement negotiations. The Agenda 2000 price reduction will reduce the price gap between EU and CEEC, and hence will facilitate accession to some extent. Enlargement can be a costly exercise as CEEC farmers are to become eligible for area and headage premiums as well as structural funds, see for example Jensen et al. (1998). In the short run, enlargement offers opportunities to dispose excess supplies from the West to CEECs, hence reducing the budgetary burden on export subsidies. Enlargement could very well have relevant side effects for Developing countries. Farm output in Eastern Europe is likely to expand, due to improved technologies, improved access to inputs and credits and improved management. Some land based EU farm activities are already relocating and expanding to the East where land prices are low. As a result the enlarged EU will continue to be major exporter of traditional agricultural products.





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## Appendix 1 Destination of European Beef exports

Subsidised Beef exports have been of particular concern to developing countries, especially African countries, as these exports have been distorting local markets. The largest part of EU Beef exports is sold to Eastern Europe, Northern Africa (Egypt and Algeria) and the Middle East (Saudi Arabia and Iran). Exports to Other African destinations is rather limited, and has witnessed a considerable decline since the decrease of export subsidies in the early 1990s.

*Table A1.1 EU-exports of beef and veal to major destinations in 1990 en 1998 (x 1.000 kg)*

	1990	1998
<i>Total EU exports (external trade only)</i>	762,000	644,000
Of which to:		
Russia	138,718 a)	251,789
Egypt	102,778	137,543
Saudi-Arabia	36,909	36,379
Iran	124,345	32,177
Algeria	9,965	21,628
<i>West Africa</i>	40,502	3,315
<i>Middle Africa</i>	28,148	9,325
<i>Southern Africa</i>	14,560	9,200

Source: Dutch Producer Association for livestock, meat and eggs (PVE), 1999.

a) former Soviet Union.

## Appendix 2 Modelling assumptions

The modelling method used in this paper uses two general equilibrium models in tandem. We use the Common Agricultural Policy Modelling and Accounting Tool, CAPMAT, of the EU to generate supply responses for commodities that are directly affected by Agenda 2000, and we then use the Global Trade Analysis Project, GTAP, model of global trade to calculate equilibrium responses of countries outside the EU.

This combination of a dedicated agricultural model for the EU with a broader global trade model has some appeal in terms of capturing EU farmer's reactions to policy changes in more detail than would be possible with a global trade model alone. The approach is not without problems however. First, the CAPMAT model is a recursive dynamic model with lagged adjustments and GTAP is a comparative static model. In the final year of the CAPMAT simulations (2010) all equilibrium adjustments to the policy change can be assumed to have materialised and the model is settled into a new equilibrium (*ceteris paribus* exogenous assumptions on, for example, world price developments). Hence, we feel confident in using the supply responses as described and feed them exogenously into GTAP. Our GTAP simulations do not produce a time path, but take us in one step from the initial 1995 equilibrium to the new one. Calculation of a baseline projection and a Agenda 2000 time path projection is an obvious area of improvement. However do not expect major new insights to be obtained from such an approach. For the basic mechanisms are already captured in our comparative static calculations. Second, we do not feed back the GTAP generated world price changes into CAPMAT. This does not seem to be major problem for the current application however, as a) world price changes are rather small, and b) intervention prices for CAP commodities are fixed regardless implied world price changes.

The CAPMAT model is an extension of the ECAM model (see Folmer et al.) and focuses on the EU agricultural sector while treating the rest of the economy in a more aggregate way. CAPMAT incorporates the CAP rules in great detail and simulates farmer's behavioural response to policy changes. The model distinguishes over 40 activities and links 14 national models. The model is recursive dynamic and is simulated unto the year 2010. For the present paper we derived equilibrium supply responses for Foodgrains, Feedgrains and Beef from the CAPMAT results, which are then exogenously plugged in to GTAP. Supply responses are derived by comparing the outcomes for 2010 of the CAPMAT reference scenario with the Agenda 2000 scenario outcomes in 2010. The Agenda 2000 calculations are more fully described in European Commission (1998) and Keyzer and Merbis (1999).

The CAPMAT reference scenario assumed:

- exogenous world price projections: export prices wheat, sugar protein feeds, carbohydrates and dairy drop until 2000 and then start increasing. After 2000 export prices of coarse grains, rice, vegetable oils, beef and mutton remain relatively depressed.

Export prices for other crops, such as vegetables and wine remain constant in real terms;

- decrease in agricultural land by 5.6% until 2010;
- policy: present CAP regulations are assumed to hold. Intervention prices and premiums are constant in nominal (€) terms, implying a decline in real terms due to inflation. Set-aside rates, dairy and sugar quota are assumed constant.

The CAPMAT Agenda 2000 scenario assumed:

- decrease of intervention prices according to the Agenda 2000 Berlin agreement;
- adjustments of set-aside and compensation payments according to Agenda 2000;
- increase in total milk quota by 2.39%, differentiated across member states;
- stabilisation rules, which limit the total budget outlays in nominal terms;
- national envelopes at the discretion of member-states to top payments on bovine animals and dairy cows, treated as direct lump-sum payments);
- decrease in intervention prices is fully reflected in domestic EU market prices, hence the market price for CAP commodities equals the intervention price.

A modified version of the GTAP model of global trade and production is used calculate global effects of the Agenda 2000 package. For a description of the standard GTAP model and its version 4 database see respectively Hertel (1997) and McDougall et al. (1999).

1. we aggregated the GTAP database into 17 regions and 17 commodities (see below).
2. we introduced fixed intervention prices (fixed ratio of market price to consumer price index) for foodgrains, feedgrains and beef. Changes in intervention prices are assumed to be fully reflected in market prices, such that the market price equals the intervention price. This assumption, which is also maintained in the CAPMAT simulations, is justified by empirical observations regarding the lagged adjustment of market prices to administered intervention prices in the EU. See for example, European Commission (1997, p.36).
3. a variable ad valorem export subsidy buffers the difference between world market prices and fixed intervention prices.
4. for foodgrains, feedgrains and beef we assume exogenous output changes. These are derived from CAPMAT simulations, as described above. In particular we have the following supply elasticities (percentage change output over percentage change in intervention price): foodgrains -0.27, feedgrains -0.05 and beef -0.04.
5. output of raw milk is exogenous and assumed to follow the overall quota increase.
6. an endogenous change in rents assures that the zero-profit condition is fulfilled under fixed output levels. This assumption is valid as long as the change in rents only diminishes (but does not turn negative) existing rents earned on CAP commodities.
7. for oilseeds, which do not have an intervention price, we assume a decrease of area compensation payments, implemented as an increase of (ad valorem) taxes on land.
8. Additional equations are introduced to calculate the export subsidy budget outlays.

The Agenda 2000 simulations make the following assumptions on policy shocks:

1. Intervention prices: foodgrains -15%, feedgrains -15%, beef -20%.
2. Milk quota: +1.5%.
3. Area compensation oilseeds: tax on land +33% (this tax level achieves an income decrease comparable to the decrease in hectare compensation of Agenda 2000).
4. All other taxes and exogenous variables are assumed to stay at their 1995 base levels.

The model is solved using the GEMPACK package. As the actual decreases in intervention prices are quite substantial, the model is solved in several steps which breaks the total price decreases in to substeps.

We used an automated aggregation procedure, called GTAPAGG and supplied with the GTAP database, to generate the regional and sectoral aggregation used in this paper.

The sectoral aggregation maximises agricultural detail.

The 17 sectors are:

1.	Foodgrains	&	Wheat & Rice
2.	Feedgrains	&	Feedgrains
3.	Oilseeds	&	Oilseeds
4.	SugCB	&	Sugar cane, sugar beet
5.	O thcrop	&	Other crops
6.	Rmilk	&	Raw milk
7.	Lfstk	&	Livestock
8.	Beef	&	Beef
9.	OthMeat	&	Other meat
10.	Dairy	&	dairy products
11.	VegOil	&	vegetable oils and fats
12.	Sugar	&	Sugar
13.	ProcFood	&	Processed food
14.	Extract	&	Natural res & extraction
15.	Tex	&	Textiles and wearing
16.	Manu	&	Manufacturing
17.	Svces	&	Services

!

original GTAP v4 sector			new sector
pdr	Paddy rice	&	Foodgrains
wht	Wheat	&	Foodgrains
gro	Cereal grains nec	&	Feedgrains
v_f	Vegetables, fruit, nuts	&	Othcrop
osd	Oil seeds	&	Oilseeds
c_b	Sugar cane, sugar beet	&	SugCB
pfb	Plant-based fibers	&	Othcrop
ocr	Crops nec	&	Othcrop
ctl	Bovine cattle, sheep and goats	&	Lfstk

oap	Animal products nec	&	Lfstk
rmk	Raw milk	&	Rmilk
wol	Wool silk-worm cocoons	&	Lfstk
fo	Forestry	&	Extract
fsh	Fishing	&	Extract
col	Coal	&	Extract
oil	Oil	&	Extract
gas	Gas	&	Extract
omn	Minerals nec	&	Extract
cmt	Bovine cattle, sheep and goat,	&	Beef
omt	Meat products nec	&	OthMeat
vol	Vegetable oils and fats	&	VegOil
mil	Dairy products	&	Dairy
pcr	Processed rice	&	ProcFood
sgr	Sugar	&	Sugar
ofd	Food products nec	&	ProcFood
b_t	Beverages and tobacco products	&	ProcFood
tex	Textiles	&	Tex
wap	Wearing apparel	&	Tex
lea	Leather products	&	Tex
lum	Wood products	&	Manu
ppp	Paper products, publishing	&	Manu
p_c	Petroleum, coal products	&	Manu
crp	Chemical, rubber, plastic prod	&	Manu
nmm	Mineral products nec	&	Manu
i_s	Ferrous metals	&	Manu
nfm	Metals nec	&	Manu
fmp	Metal products	&	Manu
mvh	Motor vehicles and parts	&	Manu
otn	Transport equipment nec	&	Manu
ele	Electronic equipment	&	Manu
ome	Machinery and equipment nec	&	Manu
omf	Manufactures nec	&	Manu
ely	Electricity	&	Manu
gdt	Gas manufacture, distribution	&	Manu
wtr	Water	&	Manu
cns	Construction	&	Manu
t_t	Trade, transport	&	Svces
osp	Financial, business, recreatio	&	Svces
osg	Public admin and defence, educ	&	Svces
dwe	Dwellings	&	Svces
!			

The regional aggregation attempts to distinguish the main trading partners of the EU and major developing regions.

The 17 regions are:

1.	EU15	&	EU15
2.	EFTA	&	EFTA
3.	Japan	&	Japan
4.	AUSNZ	&	Australia & New Zealand
5.	MED	&	Mediterranean & North Africa
6.	NorthAm	&	USA & Canada
7.	EIT	&	Economies in transition
8.	SoAfrica	&	Southern Africa
9.	LATAM	&	Latin America
10.	OthNICs	&	Other NICs
11.	OthSeAsia	&	Other South East Asia
12.	CHINA	&	PR China
13.	Taiwan	&	Taiwan
14.	Indonesia	&	Indonesia
15.	India	&	India
16.	OthSoAsia	&	Other South Asia
17.	ROW	&	All other regions

original GTAP v4 region

AUS	Australia	&	new region	AUSNZ
NZL	New Zealand	&		AUSNZ
JPN	Japan	&		Japan
KOR	Republic of Korea	&		OthNICs
IDN	Indonesia	&		Indonesia
MYS	Malaysia	&		OthSeAsia
PHL	Philippines	&		OthSeAsia
SGP	Singapore	&		OthNICs
THA	Thailand	&		OthSeAsia
VNM	Viet Nam	&		OthSeAsia
CHN	China	&		CHINA
HKG	Hong Kong	&		OthNICs
TWN	Taiwan	&		Taiwan
IND	India	&		India
LKA	Sri Lanka	&		OthSoAsia
RAS	Rest of South Asia	&		OthSoAsia
CAN	Canada	&		NorthAm
USA	United States of America	&		NorthAm
MEX	Mexico	&		NorthAm
CAM	Central America and Caribbean	&		LATAM
VEN	Venezuela	&		LATAM
COL	Colombia	&		LATAM
RAP	Rest of Andean Pact	&		LATAM
ARG	Argentina	&		LATAM



BRA	Brazil	&	LATAM
CHL	Chile	&	LATAM
URY	Uruguay	&	LATAM
RSM	Rest of South America	&	LATAM
GBR	United Kingdom	&	EU15
DEU	Germany	&	EU15
DNK	Denmark	&	EU15
SWE	Sweden	&	EU15
FIN	Finland	&	EU15
REU	Rest of European Union	&	EU15
EFT	European Free Trade Area	&	EFTA
CEA	Central European Associates	&	EIT
FSU	Former Soviet Union	&	EIT
TUR	Turkey	&	MED
RME	Rest of Middle East	&	MED
MAR	Morocco	&	MED
RNF	Rest of North Africa	&	MED
SAF	South African Customs Union	&	SoAfrica
RSA	Rest of Southern Africa	&	SoAfrica
RSS	Rest of Sub Saharan Africa	&	SoAfrica
ROW	Rest of World	&	ROW