

Expanding 'Fortress Europe'

Implications of European Enlargement for Non-Member Regions

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1. INTRODUCTION

The enlargement of the European Union to include several Central and Eastern European countries (CEEC) has led to speculation concerning its impact specifically on non-members and more generally on the multilateral trading system and world trade. Might the European approach to regionalism lead to inward looking, discriminatory and protective trade and domestic policies? How might non-members be affected?

Some analysts consider that European integration to date has caused considerable trade diversion in agricultural products, with high levels of border protection creating the impression in the minds of some agricultural exporters of Europe as an impenetrable fortress. Recent discussions concerning enlargement of the Union through inclusion of several Central and Eastern European countries has raised these concerns once again. Previous enlargements of the European Union, in particular the accession of Spain and Portugal, led to prolonged negotiations with the United States over its access to the EU livestock feed market. The scale of the approaching enlargement will probably necessitate changes to the Common Agricultural Policy (CAP) that may well have implications for non-members. Furthermore, successful integration will fuel the interest of other countries in joining the European Union or other trade blocs.

Most non-members likely to be affected by European enlargement are members of the World Trade Organisation (WTO), and through this institution they may have some say in the

form of regional integration its members may undertake. If the degree of trade diversion from European enlargement was shown to be significant, non-members are likely to attempt to pressure the European Union for less discriminatory changes. At present the Committee for Regional Trade Arrangements within the WTO is examining the existing regional agreements with the aim of re-examining the rules governing this form of trade. As a major trade initiative, the likely impact of the upcoming enlargement of Europe may well influence WTO thinking on the rules for regional integration.

WTO members have, in the past, been particularly vocal about EU integration and its dubious consistency with the GATT rules governing world trade. Changes relating to the rules governing the formation of regional trading arrangements will enable other members to put pressure on the European Union to modify policies that have detrimental impacts on non-members. Identification of the particular markets where these potential negative effects are likely to occur is of interest and importance to members and non-members alike.

In spite of these issues, there are few studies that assess the economic impact on non-members. The purpose of this article is to provide a quantitative assessment of the possible impacts of European enlargement on output, trade flows and welfare of non-member regions. This is done by using the latest GTAP database (version 4) and a modified version of the standard GTAP model. Special attention is given to modelling the instruments of the CAP and the Agenda 2000 proposal. The focus is on the agricultural sector, as this is where the contentious issues arise.

The outline of the article is as follows. A description of the motivation and nature of eastward regional integration is presented first. The economic effects of enlargement and the concerns among the WTO members about preferential trade agreements are then discussed. The final part of the article presents the quantitative analysis undertaken, including two

scenarios; a baseline (1995-2005) followed by a scenario describing the economic effects of EU enlargement.

2. EAST TURNS WEST – THE NATURE AND HISTORY OF EU ENLARGEMENT

In December 1997, existing EU members invited the Czech Republic, Hungary, Poland, Estonia, Slovenia and Cyprus to initiate discussions on membership. Five other eastern European countries, Latvia, Lithuania, Bulgaria, Romania and Slovakia, were assigned a slower track for membership, pending the implementation of various economic, social, legal and political reforms. However, the struggle for an invitation had been going on for some time, as policy makers are concerned with a number of the economic and budgetary implications, including the necessary adjustments in the agricultural sectors¹.

Membership talks are likely to involve some hard bargaining, in particular over the Common Agricultural Policy². This includes discussions of the extension of current or reformed policies and instruments to new members, the financing of expenditures and the length of a possible transition period. This follows partly because there is a large discrepancy between current and potential members with regard to prevailing agricultural prices and subsidies.

Agriculture is relatively important in the CEEC in terms of arable land, contribution to GDP and employment. European enlargement would expand productive agricultural arable land in the European Union by 55 per cent in addition to the existing 77 million hectares in

¹ Czechoslovakia, Hungary and Poland signed Associate Agreements with the European Community in 1991. These are aimed at aligning policies in the candidate countries to EU standards, and in general preparing them for membership.

² Opening markets for textiles and steel are two other issues of major concern to some EU members.

the present EU. Much of the additional arable land would be capable of greatly enhanced production given an increase in the availability of inputs. CEEC agriculture currently contributes 8 per cent of national output and some 20 per cent of total employment compared to around 2 and 5.5 per cent respectively in the existing European Union. Enlargement would see a doubling of the existing agricultural labour force. Thus, the enlargement will challenge the continued subsidisation of the agricultural sectors. Finally, the CEEC also provides an additional market for EU exports although in the short term the addition of 105 million consumers would have a limited impact, as their spending power is only a third of the EU average.

The European Union has a comparatively highly protected agricultural sector that is relatively productive. By contrast, CEEC have a comparatively less protected yet relatively inefficient agricultural sector. The removal of trade impediments to the European market will not only enable CEEC producers to undercut their EU competitors, but will most probably lead to a significant increase in productivity as capital and technology flows eastward.

3. EUROPEAN ENLARGEMENT, POLICY CHANGES AND ECONOMIC EFFECTS

The terms of accession to the European Union are still the subject of discussion. Nonetheless, some general principles are clear. Integration is likely to involve the removal of border protection between the existing and new members, and border protection in the new member states will probably be set at the level of the current members. Typically, this will mean an increase in the rate of protection, which is in conflict with WTO provisions. Domestic policy will most likely involve compensatory payments at the same level as in the current EU fifteen. This includes payments for livestock and hectare premiums. Finally, the

new members are also likely to be constrained by quantitative restrictions such as set aside requirements and sugar and milk quotas.

The impact of the EU enlargement will depend on the trade patterns as well as the degree of distortion that exist at the time of accession. This, in turn, will depend on the price gap between the existing and new members as well as the magnitude of output and input subsidies extended to the new member countries. CAP reforms (Agenda 2000) will probably include price reductions for cereals and beef down to levels close to world prices supplemented by compensatory payments linked to arable land and the number of livestock. However, significant price gaps may remain for dairy products and sugar.

Introducing the CAP in its present form to the new members will increase agricultural food prices faced by both consumers and producers. This will be detrimental to the many low-income consumers that can hardly afford such price increases, especially on food products, which make up a substantial share of total consumption expenditures. West European agricultural producers will face increased competition from the new member countries and taxpayers in the old member states will have to finance the increased costs of output subsidies, hectare and livestock premiums and the costs of subsidising eastern European exports. These additional expenditures will be partially covered by import tariff revenues on imports from non-members and the GDP based payments by the Central and Eastern European countries.

a. The effects of regional integration on trade and welfare

Removing barriers to trade typically increases specialisation of production according to each region's comparative advantage and as a result trade is created. In general trade liberalisation leads to increased consumption as low cost foreign production replaces the more expensive domestic production. However, tariff revenues are also reduced and even if trade

liberalisation leads to global or regional gains, an individual country could lose on account of adverse income distribution effects arising from tariff revenue redistribution.

b. Trade creation and trade diversion

The economic impacts of the formation of trade blocs are traditionally analysed in terms of trade creation and diversion effects, concepts developed by Viner (1950). Trade creation occurs when imports from a new, efficient member replace inefficient local production. Trade diversion is defined as a shift of imports from an efficient to a less efficient source (and occurs for example when imports from a non-member country are replaced by imports from a new member).

Where trade liberalisation involves removing barriers to selected countries only, as occurs under a preferential trading agreement such as the European enlargement, trade diversion effects may to some extent offset the trade creation effects. This occurs when member countries displace tariff-ridden imports from non-member regions with tariff-free imports from other members, even though the replacing imports may be more expensive to produce. During the formation of the (then) European Common Market, for example, non-members were concerned that access of continental producers to the UK lamb and dairy market would divert imports from several low cost countries such as New Zealand. As a result, UK consumers could conceivably have benefited from lower prices if the UK had not entered the EU. For members, trade creation and trade diversion effects lead to an increase in trade. For non-members, the trade diversion effects may offset the trade creation effects, leaving them worse off than before the formation of the trade bloc. Many WTO members believe that this occurred following the formation of the European Economic Community (now European Union), and hence they are watchful of further developments.

Non-members may be directly affected in several ways by the formation or enlargement of a regional trading arrangement. Those currently exporting to member countries may lose their markets if other members are given preferential access. Thus, the trade diversion effect is that most feared by excluded countries. In the small country case or assuming commodities are perfect substitutes, there is no change in world prices and non-members are likely to lose from the diversion of trade to the extent that their exports are shut out of the enlarged European market. However, in the large country case or assuming imperfect substitutability, world prices may increase following the removal of high tariffs, offsetting to some extent the trade diversion effects. As a result, changes in trade flows are not a reliable indicator of the welfare effects of regional agreements. In addition, faster growth within the region may lead to an expansion of export markets, thereby improving the situation of non-members.

Of course, the traditional analysis of trade blocs in terms of trade creation and diversion effects is rather simplistic. It ignores the impacts on trans-national corporations, which have operations in countries inside and outside a trade bloc. Other effects that are disregarded are the effect of changes in terms of trade when purchases from outside the bloc are decreased and the dynamic effects which improve the productive capacity of the economy over time through increased competition, economies of scale or other factors. While general equilibrium modelling can incorporate some of these factors, others must remain as qualifications to the empirical estimates.

In summary, the overall welfare effect will depend on the balance between these various factors. The size and direction of effects on individual member countries will depend on factors such as the initial trade pattern and the extent and distribution of the reductions in trade barriers. Non-members are likely to be adversely affected by the formation of a discriminatory trade bloc through trade diversion effects, although increases in economic growth attributable to the trade bloc could increase demand for goods and services from all

countries, including non-members, in the long term. However, if border protection throughout the member countries were reduced to the lowest common denominator, non-member regions would typically benefit from such an enlargement.

c. Fortress Europe and the WTO

The WTO, being an institution representing 130 trading nations that sets and implements the rules governing international trade, is clearly concerned about the impact of regional or preferential trade agreements on the multilateral system. Regional or Preferential Trading Agreements refer to Free Trade Areas, Custom Unions and Common Markets, and they all fall within the purview of GATT Article XXIV. Proliferation of Preferential Trading Agreements is leading to a fragmentation of the rules, as many blocs have different sets of rules, such as numerous sets of preferential rules of origin (that differ between countries)³.

Several Articles pertain to PTAs. In addition to Article XXIV of the GATT 1994 (relating to Customs Unions and free trade areas), of relevance are the Enabling Clause (limited to developing countries and permitting partial preferences) and the Generalised System of Preferences (GSP) arrangements (permitted via a grant of an exception to Article 1). Interpretation of these Articles is in dispute. Article XXIV requires that PTAs cover 'substantially all trade' and that trade must not 'on the whole' be more restrictive than previously. In particular, the 'substantially all trade' clause is weak. Many such agreements or interim agreements exclude agriculture, and it is open to interpretation whether trade restrictiveness refers to the impact on other members individually (implying that no trade diversion can occur) or collectively. Of the 134 arrangements notified to GATT/WTO as of June 1, 1995, 108 fell under Article XXIV.

³ In Bhagwati and Panagariya (1996) a complete list of Preferential Trading Areas reported to WTO is provided.

The Enabling Clause permits WTO members to extend preferential arrangements (such as the Lomé Convention) to developing countries, notwithstanding the provision for non-discriminatory treatment contained in Article I. It is not clear whether the Enabling Clause: (i) only applies to situations not covered by Article XXIV; (ii) affects how Article XXIV is applied; or (iii) is a complete alternative. Seventeen of the above-mentioned 134 arrangements fall under the Enabling Clause.

Finally, within the GSP, a waiver from the MFN Article 1 may be given for preferences granted by developed countries to developing countries. The same problems relate to this article as to the Enabling Clause. Nine of the above-mentioned 134 agreements fall under this category.

Lack of clarity in the interpretation of the rules has led to various ambiguities and exceptions in the formation of PTAs, and calls for reform have been on record for many years (WTO 1995). The Uruguay Round made little progress in tackling these various points, but the recent proliferation of PTAs has made the issue more important to WTO members and hence likely to be an important issue in future discussions.

Most discussion over regional integration centres on the requirement that ‘substantially all trade’ between the constituent countries shall be liberalised (GATT Article XXIV: 8). The debate hinges on whether ‘substantially’ refers to all sectors or most trade by value. The European Union takes the view that, as agriculture comprises a small proportion of total trade, its exclusion is not incompatible with WTO rules.

The European Union has difficulty with Article XXIV on a number of grounds. The entry of Austria, Sweden and Finland in January 1995 caused an automatic tariff increase on certain agricultural products. In addition, it also instigated some anti-dumping measures that did not

apply in these countries previously. The automatic extension of anti-dumping measures to the new member States is a concern to WTO members.⁴

Furthermore, the requirement that ‘substantially all trade’ between the constituent countries shall be liberalised is unlikely to be met in the required time frame in the EU agreements with countries such as Hungary, Poland, and the Czech and Slovak Republics. The European Union is required to provide a firm and steady expansion of duty free imports from these countries.

WTO members are also concerned about the EU's GSP scheme with its apparent bias against those countries that could expand trade the most. They are prevented from doing so through various graduation mechanisms (aimed ostensibly at helping the least developed countries). An additional concern is the inclusion of non-trade considerations, such as environment and labour clauses, as part of the special incentive regime to operate from 1998.

The European Union is on record as maintaining, during the WTO trade policy review process, that the EC Single Market process constitutes ‘open regionalism’, although the term is used here in a very specific context. The movement of regional integration beyond trade policy ‘might require a new look at certain aspects of Article XXIV of GATT which should reflect political realities’.⁵

However, the EU’s position on Article XXIV appears to be evolving. Previously, it was against reform because with the Lomé Convention and the extension of Europe, it was useful to be able to exclude agriculture. However, as agricultural issues are addressed or become less important, the European Union is likely to move towards supporting the rewriting of this regulation.

⁴ See http://www.wto.org/wto/Trade_Reviews/evec_wpf.html 26 July 1995.

⁵ WTO 1995 Op cit.

d. WTO obligations in practice

WTO regulations require that tariffs not be raised following the formation of a regional trading arrangement. In the absence of substantial rules of origin requirements, this implies that all members face pressure to assume a common tariff equal to that of the lowest country. Tariffs for some agricultural products in CEEC countries are quite low. If imports into these countries were freely re-exported to the existing EU members, the Common Agricultural Policy in its present form could not be sustained. Therefore, the European Union is likely to raise border protection in new member countries to existing levels, thereby causing obvious trade diversion, or at least trade suppression, as third countries are compelled to look for new markets for their exports.

One approach to this problem is to maintain existing border protection and impose rules of origin constraints, requiring that goods re-exported from one member country to another without duty must have been substantially produced or processed within the re-exporting country. Rules of origin typically require that 40-60 per cent of the value is added in the final country and implementing this in practice in an enlarged Europe is not that trivial. However, this would not comply with the ideas of the European Internal Market as well as the policy of having a common trade policy within the European Union.

4. MODELLING EUROPEAN ENLARGEMENT

Where there are significant interactions between sectors and between countries and regions, the impact of policy changes such as the enlargement of European union is best analysed using a global general equilibrium model. This type of analysis, where the trade barriers to particular countries only are reduced, requires also data on bilateral trade flows. One such model and database are found in the Global Trade Analysis Project (GTAP) (Hertel (1997) and McDougall *et al.* (1998)).

The GTAP model is a standard multi-region, static model that assumes perfectly competitive markets, constant returns to scale technology and a non-homothetic private demand system, where foreign trade is described according to an Armington specification. In its recent version the GTAP database is quite extensive in terms of country and commodity coverage. In particular, it features detailed disaggregation of the agricultural sector. It is well documented, widely used, and designed for static trade policy analysis such as this.

Like all models, general equilibrium models have their limitations. By their very size, they may lack the detail of sector-specific models. Many of the parameters have not been estimated specifically for the model, and such models are difficult to validate in the traditional sense. The static framework limits treatments of savings, capital accumulation and stockholding, and the dynamic gains from trade are beyond calculation. The macro side is also rather limited, precluding some of the effects of changes in interest rates and exchange rate that may follow liberalisation. Nonetheless, for the purpose of analysing world trade issues such as agricultural liberalisation and regional integration, the GTAP model and database remains one of the most respected approaches available.

In the following quantitative analysis of the European enlargements impact on non-member regions the GTAP database and a CAP specific version of the GTAP model is used⁶. To keep the model within computational limits and focused the database is aggregated to 16 countries and 19 commodities of which 10 are primary agricultural goods. The aggregation chosen

emphasises the attention given to the agricultural sector. Europe's most important trading partners have been represented explicitly in the aggregation, as indicated in Box 1. It should be remembered, however, that the specific aggregation chosen could hide potentially

⁶ For a presentation of the GTAP database and the standard model, see Hertel (1997) and McDougall (1998) and for the CAP specific version used in this paper, see Jensen, Frandsen and Bach (1998).

important trade diversion effects in specific commodities for individual non-member regions. There is thus a possible aggregation problem both with respect to the commodity and country aggregation. In the following analysis the GTAP model is used to run two simulation scenarios, a baseline scenario and a enlargement scenario.⁷

a. Baseline scenario

Before the simulation of European enlargement is undertaken, a baseline for the period 1995-2005 is constructed. The baseline provides a benchmark against which alternative scenarios can be compared. It features projections of the world economy plus incorporation of expected policy changes, including a full implementation of the Uruguay Round in all countries (see Box 2). Furthermore, the baseline reflects the effects of the proposed changes in the Common Agricultural Policy outlined in the Agenda 2000 proposal (see Box 3). As indicated by the European Commission the Agenda 2000 proposal is partly motivated by the future expansion of the Union and partly with a view to the new round of agricultural talks under the WTO and the negotiation of various bilateral trade agreements

Box 1. Regional aggregation		Commodity aggregation	
EU	European Union (15)	WHT	Wheat
CEEC	Central and Eastern European Countries ^a	CGN	Other grains
AUS	Australia	V_F	Vegetables, fruit and nuts

⁷ The model is solved using GEMPACK (Harrison and Pearson (1996)).

NZL	New Zealand	OSD	Oilseeds
JPN	Japan	C_B	Sugar cane and beet
ASE	ASEAN-6	OCR	Other crops
CHN	China	CTL	Bovine animals
OAS	Other Asia	OAP	Other animal products
USA	United States	RMK	Raw milk
CAM	Central America	WOL	Wool, silk-worm cocoons
SAM	South America	NAT	Resource extraction
FSU	Former Soviet Union	CMT	Bovine meat products
EFT	EFTA	OMT	Other meat products
MEA	Middle East and North Africa	MIL	Dairy products
SSA	Sub-Saharan Africa	SGR	Sugar
ROW	Rest of World	OFP	Other processed food products
		TEX	Textiles
		MAN	Manufactures
		SER	Services

Note: ^a Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic and Slovenia

Box 2. Agricultural policy assumptions shaping the baseline 1995-2005

- The Uruguay Round Agreement is implemented by comparing the tariff rates in the 1995 database with the post-Uruguay Round bindings. The applied duties (import tariffs and export subsidies) are reduced uniformly if the post Uruguay Round tariff rates are binding.

- If simulated values of export subsidies and export quantities exceeds scheduled commitments limiting subsidisation of agricultural products, export subsidy rates are reduced further so as to comply with the Uruguay Round Agreements limitation on subsidised exports.
- Minimum access requirements are not modelled explicitly. This is because the minimum access requirement do not constitute a minimum purchase agreement. They provide only the 'opportunity' to import under the advantages of preferential or suspended tariff. This 'opportunity' is provided given the reduced average effective tariff rates implemented in this study.
- Border taxes are all removed between the seven Central and Eastern European countries (preparation for joining the European Union).
- The CAP is reformed in accordance with the Agenda 2000 proposal, that is:
 1. To represent reductions in *intervention prices* for grains, milk and bovine meat, border protection rates are reduced to reflect corresponding cuts in market prices.
 2. *Compensatory payments* to arable crops and livestock are adjusted in accordance with the Agenda 2000 proposal.
 3. The *set-aside rate* for the reform crops is reduced from 14 percent in 1995 to zero by increasing the productivity of land appropriately.
 4. *New premiums* are given to dairy cattle in the form of an output subsidy to cattle (beef premium granted to dairy cows) and an output subsidy on raw milk.
 5. *The milk quota* is increased by 2 per cent in the period 1995-2005.
 6. *All direct payments* including the Agenda 2000 premiums are *deflated* by 2 per cent per year as these (maximum) budgetary outlays are fixed in nominal terms.

Box 3. Main elements of the Agenda 2000 Proposal for Agriculture

- **Cereals sector**

Intervention prices cut by 20 per cent

Uniform basic direct payment to grains, oilseeds, protein crops and set-aside: 66 ECU/t

Payments on top of the basic direct payment to protein crops: 6.5 ECU/t

The Blair House agreement imposed constraints on production area for oilseeds is eliminated

Compulsory set-aside retained, but the usual rate set at 0 per cent

- **Beef sector**

Intervention prices cut by 30 per cent

Direct payments to male animals increased to 310 ECU per bull and to 232 ECU

per steer

Premium to suckler cows increased to 215 ECU per cow

A new premium to dairy cows: 70 ECU per cow

Premiums include the so-called national envelopes

Ceilings on total national premium rights for male animals

- **The dairy sector**

Intervention prices for dairy products cut by 15 per cent

The quota regime is maintained until 2006

Total quota amount increase by 2 per cent

Introduction of a new premium to dairy cows – a base payment and an additional payment fixed at national level: 100 + 45 ECU per premium unit

Source: European Commission (1997).

The resulting baseline trade protection and domestic support are shown in Table 1 at the beginning (1995) and end of the baseline period (2005). In 1995 the EU sugar, beef and dairy sectors were heavily protected with tariff equivalents in some cases around 100 per cent. However, for crops only limited border protection was reported in 1995 - a year where world

market prices were particular high⁸. By contrast, the CEEC, on average, support their agricultural products much less and indeed tax exports of wheat and other grains. Sugar, other meat products and dairy products, however, receive some support.

It is evident from Table 1 that the structure of protection in the EU changes significantly over the period 1995 to 2005 as a result of the implementation of the Agenda 2000 proposal. This is because reductions in intervention prices are reduced by lowering border protection rates (import tariffs and export subsidies) for wheat, other grains, bovine animals, bovine meat products and dairy products. In the case of other grains this means that border protection rates are significantly reduced. Border protection for wheat is removed, and for processed bovine meat protection is reduced from 111 per cent in 1995 to 48 per cent in 2005 - a reduction that mirrors an intervention price cut of 30 per cent. For dairy products, border protection is reduced from 116 to 84 per cent reflecting the proposed price cut of 15 per cent. The proposed new premiums are introduced as increased output subsidies to cattle and milk producers and the higher arable land and livestock compensatory payments as input subsidies.

Table 1. Structure of protection, EU and CEEC, 1995 and 2005

	Output subsidies		Import tariff equivalent			Export subsidies		
	EU	CEEC	EU	EU	CEEC	EU	EU	CEEC
	1995 ^a	1995 ^b	1995	2005	1995 ^b	1995	2005	1995 ^b
Wheat	6.2	5.1	12.4	0.0	-17.9	12.4	0.0	-17.9

⁸One significant change from version 3 to 4 of the GTAP database has been significantly lower export protection rates for several commodities and regions, including the European Union. This is explained by a change in method applied (price comparisons as opposed to being based on reported export subsidy expenditures) and for several grains significantly higher world market prices in 1995. To obtain a better representation of the level of protection one approach would be to calculate the average level of protection over several years instead of one - in this case 1995.

Other grains	5.0	4.9	44.2	15.4	-15.3	44.2	15.4	-15.3
Vegetables, fruit, nuts	1.0	0.4	5.5	5.5	10.9	-1.0	-1.0	0.0
Oilseeds	8.9	6.0	0.0	0.0	3.8	0.0	0.0	3.8
Sugar cane and beet	-2.7	4.0	76.6	76.6	29.1	76.6	76.6	29.1
Other crops	-0.1	0.4	9.1	9.0	9.4	2.9	2.3	0.0
Bovine animals	10.5	6.1	111.2	47.7	2.3	111.2	47.7	2.3
Other animal products	9.0	5.2	0.8	0.6	8.2	18.7	10.4	33.8
Raw milk	8.9	5.9	-	-	-	-	-	-
Wool	24.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Resource extraction.	0.4	-2.4	0.2	0.1	1.2	-0.6	-0.6	0.0
Bovine meat products	0.6	7.6	111.2	47.8	2.3	111.2	47.8	2.3
Other meat products	0.7	7.5	18.7	18.7	33.8	18.7	15.7	33.8
Dairy products	1.0	0.2	116.3	83.9	20.5	116.3	83.9	20.5
Sugar	0.8	1.9	76.6	76.6	29.1	76.6	76.6	29.1
Other processed. food prod.	-7.4	1.3	9.3	9.3	16.8	-0.1	-0.1	0.2
Textiles	-1.7	0.5	7.9	8.1	8.6	-0.6	-0.6	0.0
Manufactures	-2.1	-0.4	3.5	2.9	8.1	-0.4	-0.4	0.0
Services	-2.3	-0.3	0.0	0.0	0.0	-0.6	-0.6	0.0

Note: ^a All output subsidy rates are the same in 2005 with the exception of bovine animals and raw milk, which are increased respectively to 28.2 and 16.2 per cent due to proposed new Agenda 2000 premiums.

^b All subsidy and tariff rates remain at their 1995 levels in 2005.

Source: The GTAP 4 database, Ingco (1995) and own calculations.

Export subsidy rates are also reduced for other crops, other animal products and other meat products in the European Union due to Uruguay Round commitments limiting budgetary outlays to export subsidies in 2005. The only other region where budgetary outlays to export subsidies were found to be binding was in EFTA (bovine animals and bovine meat products).

b. Enlargement scenario

The enlargement scenario in this paper analyses the economic effects of integrating the Central and Eastern European countries into the European Union's Common Agricultural Policy in the year 2005 in a world as shaped by the baseline scenario. This implies that all tariffs and export subsidies as well as non-tariff barriers between the EU and the CEEC are abolished and all sectors in the CEEC are given the same level of protection against third countries as found in the EU at the time of accession⁹. This leads to substantial increases in the CEEC agricultural protection rates against third country suppliers of cereals, sugar, bovine meat and dairy products. In the case of vegetables, fruit and nuts, oilseeds, other animal products, other meat products and other processed food products, the pre-enlargement border protection rates in the CEEC are above the EU-15 levels. Therefore, integrating the CEEC into the CAP leads to reductions in border protection rates for these products (see Table 1).

The enlargement scenario also extends the reformed (agenda 2000) CAP to the new member countries including the common financing of the agricultural policy (import tariffs and GDP contributions) and transfers from the EU-15 to pay for export subsidies, output subsidies, hectare and livestock premiums in the new member countries. The expansion of the CAP to the CEEC also implies that sugar and milk quotas are established on the basis of production levels prior to integration in 2005 in the CEEC.

5. RESULTS

⁹ It is debatable to what extent the new members should receive the same land and livestock premiums as the old members - these payments being compensatory payments for previous price reductions. Naturally, as the Agenda 2000 proposal has not been agreed upon and the exact conditions for European enlargement are not known, this scenario only illustrates possible consequences given the applied assumptions.

In the following the results from our quantitative analysis are presented, focusing on changes in trade flows between the EU, the CEEC and non-member regions, and the resulting global welfare changes caused by European enlargement.

a. The baseline, 1995-2005

The potential for trade diversion depends on the trade flows into the European Union and the CEEC from non-members that may be displaced when internal borders are removed and external border protection rates are synchronised. To gauge this it is necessary to examine trade flows before and after the time of accession. Because the European Union has a large and highly protected agricultural sector, it is trade flows into the European Union that are of most interest. The value of EU imports of agricultural products across regions in 1995 and in 2005 is shown in Figure 1 for the baseline scenario, (percentage change in production are shown in Appendix 1).

In 2005 agricultural imports are projected to equal some \$71 billion compared to \$73 billion in 1995. The major sources of agricultural products to the EU in 2005 are from South America (20 per cent of EU agricultural imports), Sub-Saharan Africa (16 per cent) and the USA (15 per cent). Much of this projected trade includes tropical products, such as coffee, cotton and rubber that the European Union currently neither produces nor protects to any significant degree. The largest agricultural imports into the European Union are within the categories of other processed food products, including feed-grain products, processed fruits

Figure 1. Origin of EU agricultural imports, 1995 and 2005, US\$ billion

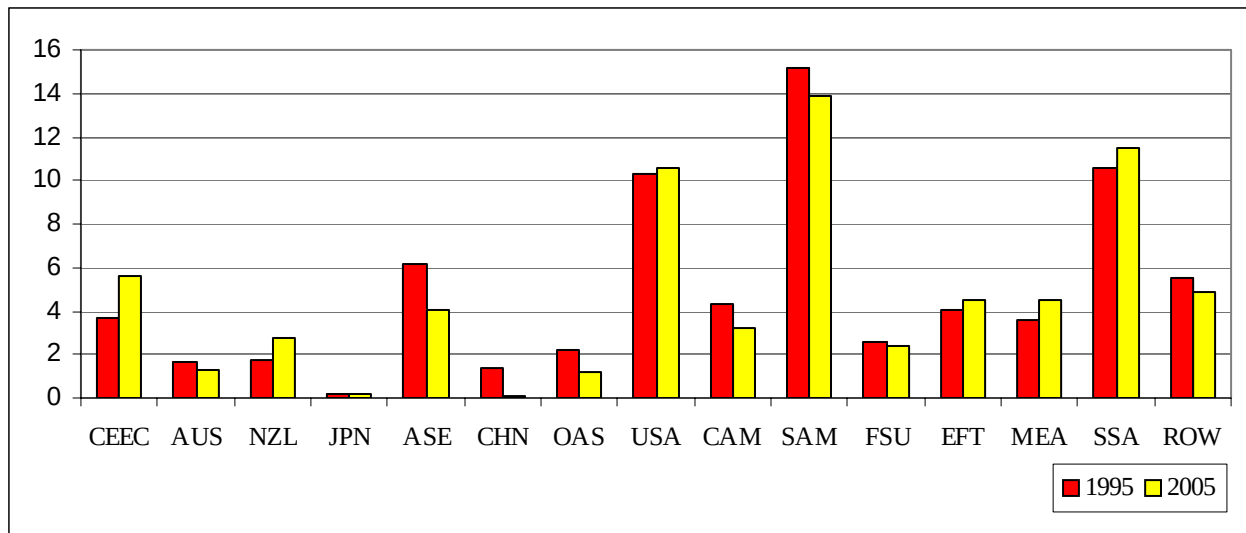
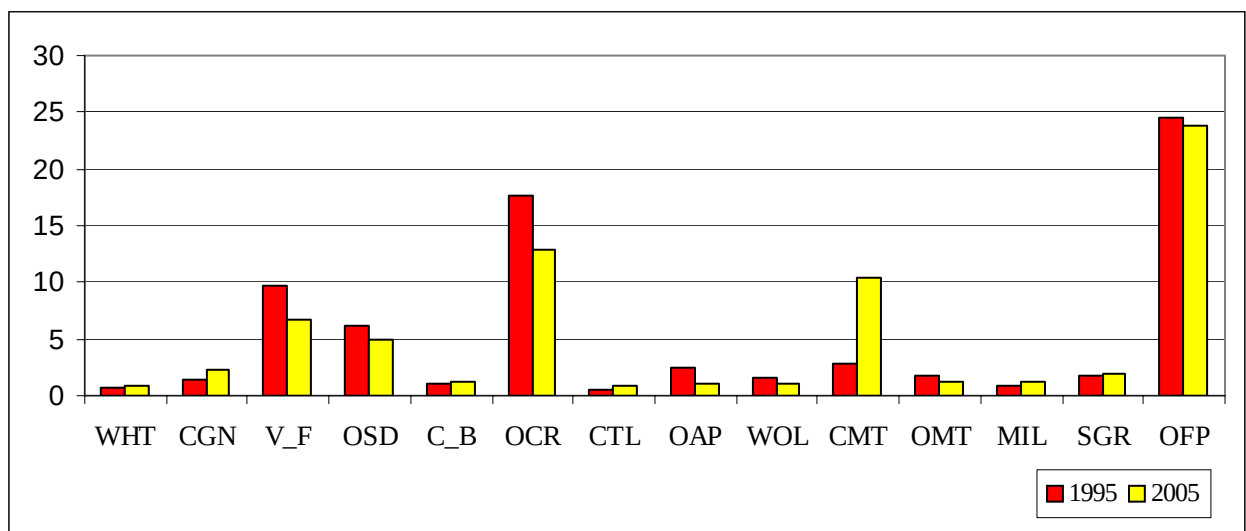


Figure 2. EU imports of agricultural commodities, 1995 and 2005, US\$ billion



and vegetables, fish, bread and cakes, chocolate and sugar confectionery (34 per cent of total EU agricultural imports in 2005), other crops, including rice, plant based fibres, cotton, coffee, rubber (18 per cent) and bovine meat products (15 per cent), see Figure 2. In total EU's agricultural imports constitute 6.2 per cent of total imports into the European union in 2005 as compared to 8.3 per cent in 1995.

Figures 1 and 2 also illustrate the shift in the pattern of EU imports with third countries and across the individual commodities. Six regions, including the CEEC, increase their supply of agricultural commodities to the EU market measured in value terms, whereas the countries in Asia in particular, supply relatively less to the EU. This partly reflects on the one hand an increased export potential in the CEEC and on the other hand increased demand for agricultural commodities in Asia. Also, imports of other crops are reduced by almost \$5 billion from \$17.6 billion in 1995 to some \$12.9 billion in 2005. A similar pattern is seen for vegetables, fruits and nuts. The value of EU imports of bovine meat products increases significantly from around \$3 billion in 1995 to \$10 billion in 2005. (All these values are in 1995-dollars.) This is mainly explained by the reductions in the border protection of bovine meat in the EU (the Agenda 2000 proposal).

Figures 3 and 4 illustrate the corresponding levels and shifts in agricultural trade of the CEEC. Agricultural imports constitute 5.5 per cent of total imports in 2005 compared with 8.1 per cent in 1995. In 2005 agricultural imports are projected to equal \$7 billion compared with \$9 billion in 1995. The major import categories are other processed food products, other crops and vegetables fruit and nuts. Figure 3 clearly demonstrates the close trade links both in 1995 and 2005 between the Central and Eastern European countries and the European Union – \$4.2 billion in 2005 or 60 per cent of this region's agricultural imports in value terms are from the present EU members (59 per cent in 1995).

Figure 3. Origin of CEEC agricultural imports, 1995 and 2005, US\$ billion

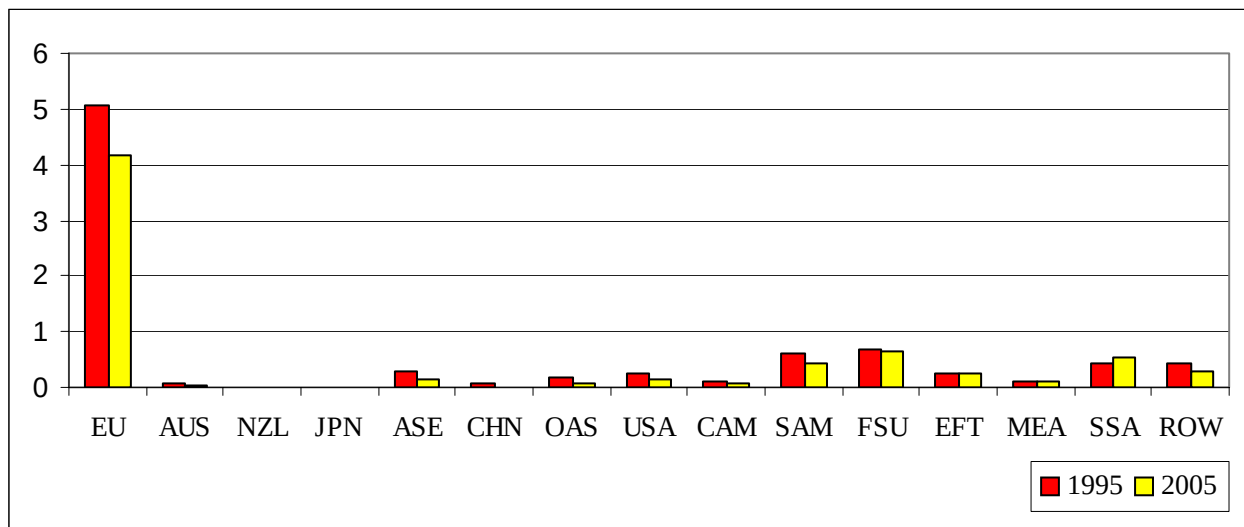
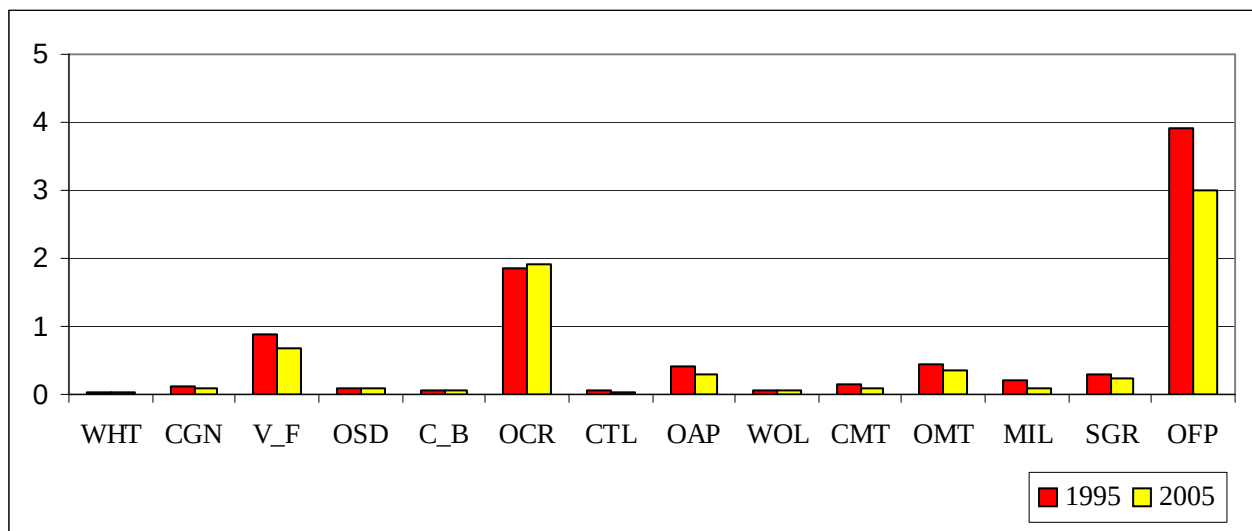


Figure 4. CEEC import of agricultural commodities, 1995 and 2005, US\$ billion



b. European enlargement, 2005

European integration leads to significant increases in agricultural production in the Central and Eastern European countries - wheat and other grains production increases by 68-85 per cent, at the expense of lower production of vegetable, fruit and nuts (-15 per cent) and other crops (-27 per cent). This shift in crop production reflects the significant arable land premiums extended to the so-called reform crops under the CAP. As a result land prices in central and eastern Europe increase on average by almost 190 per cent. Higher prices of other grains and lower levels of border protection adversely affect the production of other meat products by 20 per cent. The production of other processed foods in CEEC falls by 18 per cent as output subsidies are replaced by an output tax as applied in the 'old member countries'. Given the relatively high level of protection in the EU the production of bovine meat and dairy products in the CEEC increases by 56 and 22 per cent, respectively. Production of manufacturing products decreases by almost 2 per cent, although the production of services increases slightly by 0.02 per cent as labour released from other sectors is taken up¹⁰.

The enlargement only marginally affects the agricultural sectors in the EU-15. Land prices are almost unchanged, as is agricultural production. The productions of wheat, and other grains decline by 4 and 9 per cent respectively.¹¹ However, the production of 'vegetables, fruit, nuts', and 'other crops' increase by almost 3 and 1 per cent as production of these products fall in the CEEC. Livestock production is also affected marginally. Bovine animal

¹⁰ The percentage change in production and export quantities are found in Appendix 2.

¹¹ The system of intervention and guaranteed prices is not explicitly modelled in this paper but implicitly represented through the setting of border protection rates. We have chosen this strategy deliberately, as the main (sustainable) mechanism in the long run is border protection and not storage. By using this approach we illustrate to what extent and in which markets an increased competition from Central and Eastern European farmers potentially could affect future production in EU-15 if storage (intervention) and border protection rates are unchanged.

production falls by almost 6 per cent and bovine meat products by 2 per cent. The production of other meat products increases by almost 2 per cent and the production of milk and sugar is continually constrained by the quotas.

c. Non-member regions

Given the limited trade between the CEEC and non-member regions, it is trade between EU and non-member regions that is of most interest. In value terms, the three largest suppliers of agricultural products to the EU market in 2005 are the countries in South America (SAM), Sub-Saharan Africa (SSA) and the United States of America (USA), as illustrated in Figure 5. Before European enlargement, EU imports from these three regions amounted to almost \$14 billion, \$12 billion and \$11 billion (in constant 1995 dollars), respectively. However, the integration implies that the countries in central and eastern Europe significantly increase their exports to the EU market from nearly \$6 billion in 2005 to \$13 billion after enlargement. A large share of the increase is, however, explained by the higher export prices from the CEEC to EU within the now enlarged European Union. The lower value of EU imports from both SAM and the USA (and New Zealand) illustrates some trade diversion following the European enlargement, although the impact is slight. The value of imports from SAM and USA is reduced by less than \$0.5-1 billion each. The value of imports from the remaining regions is almost unchanged.

Figure 5. Enlargement: Value of EU agricultural import across regions, US\$ billion

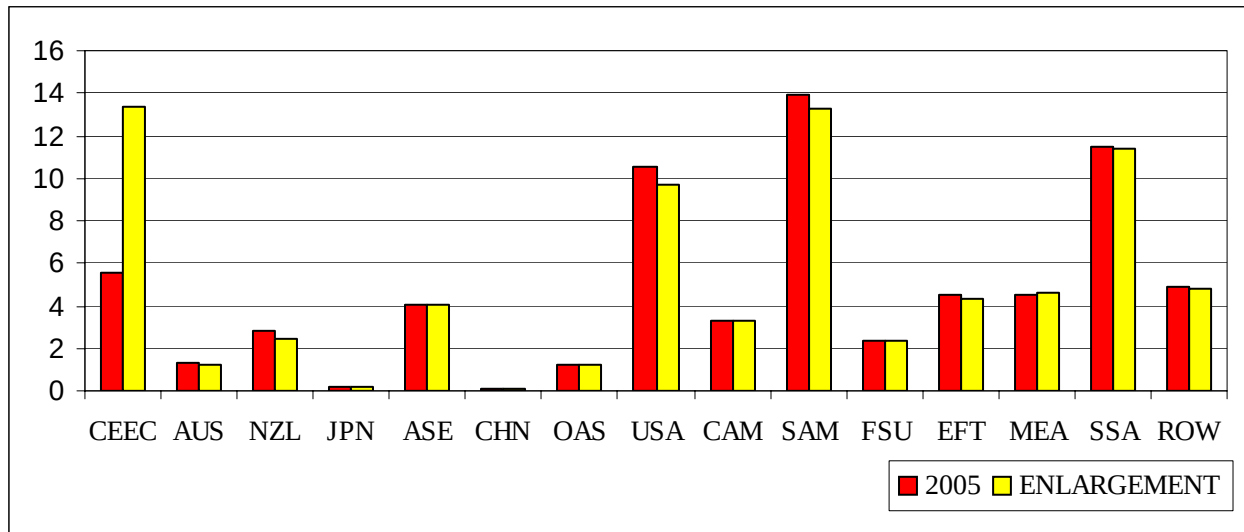
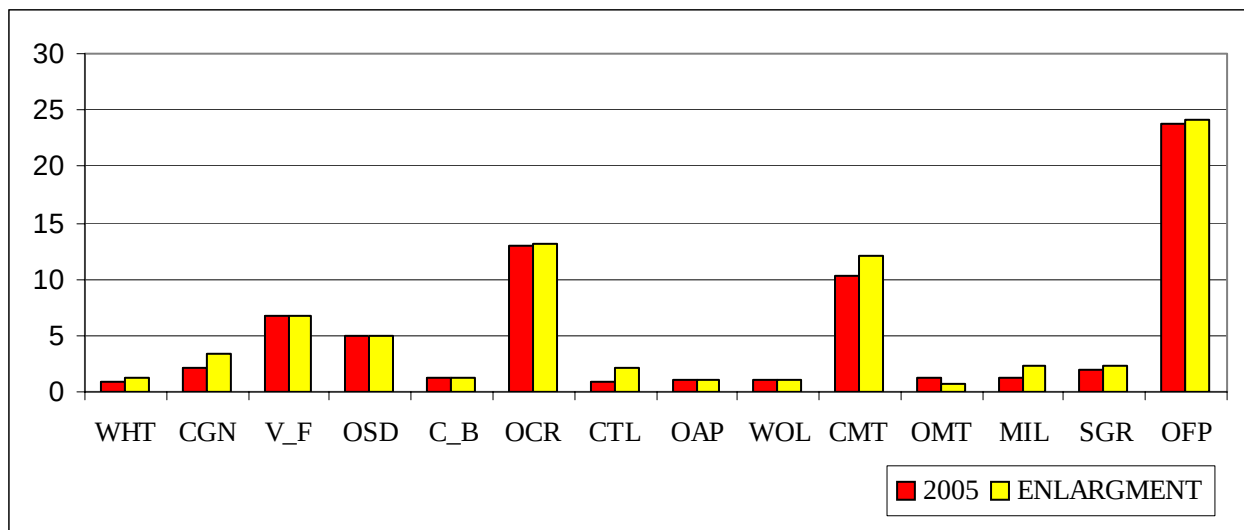


Figure 6. Enlargement: Value of EU imports of agricultural commodities, US\$ billion



The composition of EU imports is almost unchanged as a consequence of the enlargement, see Figure 6. Imports of other processed food products remains the most important agricultural import commodity – with imports of around \$24 billion. In summary, EU imports of the individual agricultural commodities are almost unaffected by the integration of the Central and Eastern European countries. However, the new members of the European Union now supply a larger share of most agricultural imports. Nevertheless, the total value of EU agricultural imports increases by \$5.8 billion following European integration of which a large share is explained by the higher import prices paid to imports from the new member countries.

To illustrate the quantitative effects of enlargement on the most important trading partners of the European Union excluding the new member countries, Table 2 illustrates the initial import values from the USA and SAM prior to enlargement. The most important commodities are other processed food products, bovine meat products, oilseeds, other grains and other crops. Following integration, imports of other grains, bovine animals, bovine meat and dairy products, among others, decrease significantly. However, imports of a few other agricultural commodities increase. For example, the imports of vegetables, fruit and nuts, other crops and other meat products increase by 2-5 per cent as the sourcing of EU imports shifts from the new member countries to other regions such as the US and SAM.

In value terms, these significant trade impacts translate into some noticeable losses (or gains), as shown in the last two columns in Table 2. In total the USA and SAM values of agricultural exports to the EU decline by \$840 million and \$583 million. The total value of EU imports from the USA falls by \$1.9 billion of which the value of manufacturing exports to the EU is reduced by \$1.1 billion. Total EU imports from South America decline by \$710 million following European integration.

Table 2. Enlargement: EU imports of agricultural products from the USA and SAM

	Import value 2005,		Change in import		Change in import	
	\$m		quantity, %		value, \$m	
	USA	SAM	USA	SAM	USA	SAM
Wheat	216	3	-8.2	-10.6	-19	0
Other grains	1559	176	-26.1	-26.8	-412	-47
Vegetables, fruits, nuts	703	894	4.7	3.6	31	31
Oilseeds	2316	1095	1.0	0.2	15	-1
Sugar cane and beet	0	180	1.9	0.0	0	-1
Other crops	648	2303	3.2	2.0	18	41
Bovine animals	222	1	-54	-53.7	-120	0
Other animal products	84	32	3.8	3.7	3	1
Wool	3	56	-0.1	0.8	0	0
Bovine meat products	2254	3945	-14.7	-14.8	-337	-595
Other meat products	54	135	4.3	4.1	2	5
Dairy products	40	1	-16.5	-16.6	-7	0
Sugar	27	269	-2.5	-2.4	-1	-7
Other proc. food prod.	2405	4797	-0.5	-0.1	-13	-10
Total trade	10531	13887	-	-	-840	-583

The impact of the described changes in trade between the European Union and non-member regions lead to only minor production changes in most non-member regions, see Appendix 2. For the USA the impact on agricultural production ranges from an increase of 0.6 per cent for other animal products to a decline of 2.2 per cent for wheat production.

d. Welfare effects

The welfare impact of European enlargement is presented in Table 3. The aggregate welfare effect, measured as the change in the equivalent variation, is decomposed into its major components¹², namely: allocative efficiency changes, terms of trade effects, changes caused by inter-regional transfers (only for Europe) and a residual effect due to non-homotheticity of preferences.

European enlargement and the extension of the CAP to the CEEC cause only minor welfare losses in some non-member regions. In fact, Japan, China, the countries in Central America, EFTA, the Middle East and North Africa and Sub Saharan Africa enjoy minor gains. These gains and losses correspond to less than 0.11 per cent of welfare in each region at the time of accession (2005). In total, global welfare increases by \$0.5 billion with a total gain in non-member regions of \$0.4 billion and a European gain of \$0.1 billion (constant 1995 dollars). For the European countries the welfare impact is more significant. The CEEC obtain an overall gain of 4.6 per cent, while the old member countries are burdened with the extension of the CAP, although the loss of welfare is limited to 0.2 per cent¹³.

¹² A more detailed derivation of the decomposition equations can be found in Huff and Hertel (1996).

¹³ These welfare indicators do not include an extension of the structural funds support to the new member countries as the focus of the study primarily has been on the extension of the Common Agricultural Policy. For a detailed explanation of the European results see Jensen, Frandsen and Bach (1998).

Table 3. Enlargement: Decomposition of welfare effects, US\$ million

	% change in welfare	Welfare change	Allocative efficiency	Terms of trade	Transfers	Residual effect
EU	-0.19	-15697	1006	-1221	-15717	236
CEEC	4.64	15827	-37	1333	15044	-514
Total EU + CEEC	-	130	969	112	-673	-278
Australia	-0.01	-40	6	-41	0	-5
New Zealand	-0.11	-70	-1	-73	0	4
Japan	0.01	301	150	127	0	24
South Asia	-0.00	-22	54	-57	0	-20
China	0.00	34	-52	28	0	59
Other Asia	-0.00	-56	12	-17	0	-51
USA	-0.00	-64	218	-189	0	-93
Central America	0.00	16	5	11	0	0
South America	-0.01	-94	11	-55	0	-50
Former Soviet Union	-0.03	-133	-43	-114	0	24
EFTA	0.04	192	133	67	0	-7
Middle East and North Africa	0.05	389	130	224	0	35
Sub Saharan Africa	0.00	7	38	-28	0	-3
Rest of World	-0.00	-48	26	-75	0	1
Total other regions	-	412	687	-192	0	-82
Total World	-	542	1655	-80	-673	-360

For most non-member regions the major factor causing a decline in regional welfare is the negative terms of trade effect. European enlargement influences world market prices with positive and negative effects in other regions depending on their net trade position. Table 4 illustrates the simulated changes in world market prices. Prices of cereals and dairy products decline in response to the significant increases in production in the CEEC. Extension of protective CAP policies eastwards raises cereal and dairy production and leads to a reduction in world wheat prices by 1.7 per cent and dairy product prices by 0.3 per cent. However, world market prices of meat products and sugar increase by roughly 1 per cent, as resources are shifted out of these sectors in either the CEEC or the EU.

The terms of trade effect, shown earlier in Table 3, represents the impact of changes in world prices on welfare in each region, conditional on the allocation of resources before enlargement. This effect is negative for all regions, with the exception of Japan, China, Central America, EFTA and the Middle East and North Africa. The terms of trade in any given region can be decomposed into 3 separate parts:

- 1) One owing to the interaction of net trade shares with average world price changes (comparison of world market price of a given commodity relative to an aggregated world price index of all commodities);
- 2) Another owing to changes in region-specific export prices (comparison of a region-specific export price with the world price); and finally
- 3) One owing to changes in region-specific import prices (comparison of a region-specific import price with the world price).

The interaction of these three effects determines the region-specific terms of trade effect, bearing in mind that region-specific export and import prices will differ from the aggregate

world prices, such as those reported in Table 4. This is because commodities produced in different countries are not homogeneous.

Table 4. Enlargement: Percentage change in world export prices by commodity

Aggregate export price		Aggregate export price	
Wheat	-1.7	Resource extraction	-0.0
Other grains	-1.5	Bovine meat products	1.3
Vegetables, fruit, nuts	0.2	Other meat products	0.9
Oilseeds	-0.4	Dairy products	-0.3
Sugar cane and beet	-0.1	Sugar	1.3
Other crops	-0.2	Other processed food products	0.1
Bovine animals	4.5	Textiles	-0.0
Other animal products	0.0	Manufactures	-0.0
Wool	-0.5	Services	-0.0

In Table 5 the terms of trade effects are decomposed into these three components for the two regions, Middle East and North Africa and the USA. As an example, the decline in the world price of wheat relative to the general world price level (first column) contributes negatively to the USA terms of trade effect as the USA is a net exporter of wheat. In the case of the Middle East and North Africa this decline contributes positively as they are net importers. Taking into account all effects, US primary agricultural industries loose \$151 million due to declining world market prices caused by the integration of the Central and Eastern European countries. The countries in the Middle East and North Africa gain \$194 billion – this region being a net importer of primary agricultural products. In total, the US terms of trade effects amount to a loss of \$189 million while for the Middle East and North Africa the terms of trade effect amount to a gain of \$224 million in constant 1995 dollars

Next, consider the allocative efficiency effects shown in Table 3. These are the changes in the efficiency of resource use. As demonstrated in Huff and Hertel (1996), these changes in efficiency are the product of distortions in individual markets and changes in the quantity of each commodity transacted under that given tax or subsidy. Countries with relatively low distortions, such as Australia, experience minimal efficiency gains, whereas in countries with sizeable distortions, such as Japan or the USA, the gain from being shut out of EU markets are more substantial. In the case of the USA, allocative efficiency gains amount to \$218 million. This is caused by lower world market prices on wheat, other grains and dairy products, reducing the domestic production of these commodities. As these products receive subsidies – for example subsidised dairy exports - a shift of resources out of these industries lead to efficiency gains. In the case of China and Former Soviet Union, changes in world market opportunities lead to flows of resources into more protected domestic industries,

reducing the overall efficiencies of these economies. Finally, the most sizeable efficiency gains accrue to

Table 5. Enlargement: Decomposing the terms of trade effect for the USA and the countries in the Middle East and North Africa, US\$ million

	USA				MEA			
	pworld	pexport	pimport	Total	pworld	pexport	pimport	Total
Wheat	-93	60	-1	-34	44	1	66	111
Cereal grains	-147	93	-1	-54	20	0	44	65
Vegetables, fruit, nuts	3	-19	6	-10	1	-8	3	-4
Oilseeds	-18	1	0	-17	1	0	0	1
Sugar cane, and beet	0	0	0	1	1	0	1	2
Other crops	-6	-21	-1	-28	1	-3	-1	-4
Bovine animals	-3	-18	22	1	-31	-6	63	26
Other animal products	2	-12	0	-10	0	-2	0	-3
Wool	0	0	0	0	0	0	0	0
Total primary agriculture	-262	84	25	-151	37	-18	176	194
Bovine meat products	73	-97	8	-16	-9	0	15	5
Other meat products	22	-31	2	-7	-8	-1	9	0
Dairy products	-2	1	8	6	3	0	33	37
Sugar	-3	-4	7	0	-25	-1	29	3
Other processed food prod.	5	-28	22	-1	-8	-13	19	-2
Total food processing	95	-159	47	-18	-47	-15	105	43
Other sectors	18	-17	-20	-21	10	0	-23	-12
Total	-150	-92	53	-189	0	-34	259	224

the EU, as expected, as competition from CEEC leads to a flow of resources out of the bloated cereals and cattle sectors.

6. ARE THE RESULTS ROBUST?

To evaluate the robustness of the results in the enlargement-scenario two relatively simple sensitivity analyses are undertaken. Table 6 presents the percentage change in production in four regions EU, CEEC, USA and South America. The first column for each of the four regions display the supply response in the enlargement scenario (S1) as presented above. The second column displays the supply response if trade elasticities are reduced by 50 per cent. The third column displays the impact on production if hectare and livestock premiums are not extended to the CEEC.

It is evident from the table, that the assumptions with respect to trade elasticities and the level of compensatory payments given to the CEEC, determine in particular the domestic production response. While the US wheat supply, for example, declines by around 2 per cent in the enlargement scenario (S1), the fall is reduced to 0.9 per cent in the case where no hectare premiums are given to arable land in the CEEC (SA2). This is because when compensatory payments are not extended to the CEEC, wheat and other grain production 'only' increase by 25-30 percent compared to 65-85 percent in scenario S1. In the case of bovine animals and bovine meat products, production increases in the CEEC when compensatory payments are not extended compared to scenario S1. This causes relatively larger declines in bovine animals and bovine meat products in the USA and SAM in scenario SA2 compared to S1.

Table 6. Enlargement: Sensitivity analysis, percentage change in output

	EU			CEEC			USA			SAM		
	S1	SA1	SA2	S1	SA1	SA2	S1	SA1	SA2	S1	SA1	SA2
Wheat	-4.2	-2.7	-1.6	67.7	48.4	25.2	-2.2	-1.6	-0.9	-0.5	-0.2	-0.2
Other grains	-8.9	-4.4	-3.7	84.5	47.9	29.8	-1.4	-0.8	-0.8	-0.9	-0.5	-0.4
Vegetables, fruit, nuts	2.8	1.3	0.8	-15.4	-8.0	-5.5	0.5	0.2	0.2	0.1	0.1	0.1
Oilseeds	-0.2	-0.1	0.7	-0.7	0.6	-16.5	0.2	0.0	0.5	0.0	0.0	0.3
Sugar cane and beet	0.0	0.0	0.0	-1.3	-0.5	0.0	0.2	0.1	0.1	0.0	0.0	0.0
Other crops	1.0	0.8	0.7	-26.5	-17.7	-12.8	0.5	0.2	0.2	0.1	0.1	0.1
Bovine animals	-6.3	-5.2	-7.3	70.0	48.9	81.8	-0.8	-0.5	-1.1	-1.1	-0.6	-1.2
Other animal products	1.2	0.9	0.8	-23.3	-15.4	-17.8	0.6	0.3	0.3	0.0	0.0	0.0
Raw milk	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	-0.4	-0.6	-0.4	-0.3	-0.4
Wool	0.0	0.3	-2.5	-2.4	-1.1	24.0	-0.8	-0.3	-1.8	-0.1	-0.1	-0.3
Resource extraction	0.0	0.0	0.0	1.1	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Bovine meat products	-1.8	-0.6	-2.2	56.0	28.0	66.7	-0.6	-0.3	-0.8	-1.5	-0.8	-1.8
Other meat products	1.9	1.2	1.5	-19.9	-12.9	-15.9	0.4	0.2	0.3	0.1	0.0	0.1
Dairy products	0.2	0.1	0.2	22.4	18.7	24.8	-0.5	-0.4	-0.6	-0.6	-0.4	-0.7
Sugar	-0.3	-0.1	-0.3	2.1	1.0	3.2	0.0	0.0	-0.1	-0.1	0.0	0.0
Other proc. food prod.	1.4	0.6	1.3	-18.4	-8.1	-18.0	0.0	0.0	0.0	0.1	0.0	0.1
Textiles	1.2	0.9	0.7	8.5	2.9	11.7	-0.2	-0.1	-0.2	-0.1	0.0	-0.1
Manufactures	0.1	0.2	-0.1	-1.4	-2.0	0.8	0.0	0.0	0.0	0.1	0.0	0.1
Services	-0.1	-0.1	0.0	0.0	0.1	-1.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: S1: Enlargement scenario as presented in this paper

SA1: A 50 per cent reduction in the trade elasticities

SA2: No transfer of hectare or livestock premiums to CEEC

The overall impression from the analysis is that the impact on production in regions outside Europe is rather small, irrespectively of different assumptions.¹⁴ Table 7 displays the percentage change in regional welfare in the enlargement scenario (S1) and the two alternative scenarios. The results clearly indicate that changing the assumptions, as outlined in the two scenarios, does not undermine the main result that welfare changes following European integration are relatively insignificant in non-member regions.

However, agricultural trade makes a relatively small contribution to national welfare in many countries, and although per capita utility measures are useful for comparative purposes, political ramifications are more likely to depend on sectoral effects, in particular the loss of export markets. These are significant in some instances, for example, US coarse grain exports to the current EU. Although sensitive to some of the important parameters, the overall conclusion that the results are relatively robust holds for these more highly-leveraged variables.

¹⁴ In an earlier version of the paper three alternative sensitivity analysis were undertaken, which also supported the conclusion that the impact on production in regions outside Europe is rather small (Frandsen *et al.* 1998). The alternative sensitivity analysis undertaken were: i) An increase in the elasticity of substitution between primary factors, ii) no projection of the database but enlargement of the EU in 1995 (no growth and no reductions in border protection as outlined in the Uruguay Round agreement and no Agenda 2000 proposal), iii)

Table 7. Enlargement: Sensitivity analysis: Welfare changes, per cent and US\$ million.

	S1		SA1		SA2	
	Change in	Welfare	Change in	Welfare	Change in	Welfare
	welfare	change	welfare	change	welfare	change
	%	\$m	%	\$m	%	\$m
EU	-0.19	-15697	-0.19	-16014	-0.03	-2400
CEEC	4.64	15827	4.14	14129	1.51	5157
Australia	-0.01	-40	-0.01	-28	-0.01	-48
New Zealand	-0.11	-70	-0.13	-88	-0.12	-82
Japan	0.01	301	0.01	342	0.01	317
South Asia	-0.00	-22	0.00	15	-0.00	-37
China	0.00	34	0.01	87	-0.00	-40
Other Asia	-0.00	-56	-0.00	-10	-0.00	-79
USA	-0.00	-64	0.00	15	0.00	15
Central America	0.00	16	0.01	30	0.00	2
South America	-0.01	-94	-0.00	-30	-0.01	-103
Former Soviet Union	-0.03	-133	-0.03	-151	-0.03	-135
EFTA	0.04	192	0.04	190	0.03	155
Middle East and North Africa	0.05	389	0.07	500	0.02	174
Sub-Saharan Africa	0.00	7	0.01	27	-0.01	-28
Rest of World	-0.00	-48	-0.00	-5	-0.00	-26

Note: See Table 6.

no projection of the database as above, but it is assumed that the EU protection levels prior to integration correspond to the pre-Uruguay Round base rates.

7. SOME QUALIFICATIONS

The likely sectoral and regional impacts of European enlargement have been estimated in this study and the welfare effects were found to be relatively insignificant and robust.

There is a concern relating to the extent to which the Central and Eastern European countries and the EU will change their trade pattern in the period prior to integration. The approach taken in modelling foreign trade in this analysis is the Armington specification. If the EU and the CEEC do not trade in a given commodity with non-member regions in the base year (1995), the specification will not allow trade to develop. Therefore, in some respects, the initial 1995 base period data is crucial for the result derived from this analysis. However, trade statistics since 1989 indicate large increases in trade between the existing and the new member countries indicating a major reorientation of Central and Eastern European trade flows in favour of the countries of the European Union.

Another concern relates to the level of aggregation. The analysis seems to suggest that the scope for trade diversion would not be as great as some have feared. However, these data do not, of course, tell the full story. First of all, some countries have preferential access to the EU market, facing tariff equivalents that are lower than the general rates facing most countries shown in Table 1. The individual ACP countries may lose from trade diversion, yet the regional aggregation employed here does not reveal this.

Border protection rates on 'other crops' and 'other processed food products' vary considerably across the regions, although this may reflect the diverse nature of the products being aggregated. Nonetheless, countries with preferential access may face greater competition following EU enlargement, heightening the potential for trade diversion. The

second consideration is that some individual crops within the aggregation used here may be adversely affected to a much greater extent than the data suggest.

Finally, as noted earlier, general equilibrium models have their limitations, and it serves well to be reminded of these when contemplating the implications of the simulation results. Trade gains from liberalisation in static GE models are notoriously low, perhaps because dynamic efficiency gains are not captured. In this case, where the projections are quite distant (2005), and rely on uncertain policy changes not yet implemented, the scope for error is increased. Finally, in 10 years time changes in market structures and technology may have altered the supply responses and substitution parameters on which much of this analysis is based.

In spite of these limitations, the results appear relatively robust and provide a basis for concluding that trade diversion from European enlargement may well be less than some may have anticipated.

8. IMPLICATIONS AND CONCLUDING COMMENTS

This analysis has sought to evaluate the impacts of European enlargement on non-member regions using the GTAP database version 4 and a CAP specific version of the GTAP model. Efforts were especially put into the construction of a baseline to 2005 capturing the effects of the Uruguay Round and the EU Agenda 2000 proposal - a proposal envisaged to prepare the European Union for an enlargement of the Community to the East.

The major conclusion derived from the simulations presented in this paper is that the risk of extensive trade diversion is not as great as many had feared. It is primarily the old member countries that would have to pay the additional costs of an extension of the Common Agricultural Policy. However, accounting for less than 0.2 per cent of national welfare, these

costs are tolerable. The gains that will accrue to new members are significant at around 4 per cent of GDP. Among non-members, estimated welfare losses in Australia, Asia, the USA, South America, the Former Soviet Union and the Rest of the World amount to less than 0.03 per cent, while in New Zealand welfare declines by 0.11 per cent. Indeed, some non-members gain.

It is tempting to conclude that European enlargement is mainly a European matter with only minimal effects on non-member regions. However, several non-members may not see it this way. First of all, some sectors in some countries will be significantly affected. For example, US exports of other grains, bovine animals, bovine meat products and dairy products to the EU are estimated to decline somewhat. Similarly, some South American sectors are expected to be affected. As it is the US that has been pressing hard for European agricultural reform within the WTO, these trade diversions are likely to motivate continued pressure from US negotiators and their sympathisers.

A second group of countries concerned about European integration is the group of so-called ACP countries, former colonial countries that are party to the Lomé Convention. These countries have had preferential access to European Union markets. The rates are under review and are likely to be changed in the near future. These developing countries would be concerned that their preferential access would be diluted or removed and handed to Central and Eastern European countries.

Finally, many WTO members, apart from the US, are pressing for European agricultural liberalisation. Depending upon the exact conditions related to the enlargement process, European regional integration might not be consistent with current WTO regulations. The EU has been able to ignore this in the past, thanks to some ambiguity in interpreting the regulations and poor enforcement. However, revisions to WTO regulations may preclude such inconsistencies in the future. If so, this may mean that existing border protection levels in the

individual Central and Eastern European countries cannot be raised to match existing EU levels. In such a case, rules of origin would be necessary to prevent CEEC imports from flooding the EU, which hardly can be said to be consistent with the idea of the internal market.

A related concern is the scope for the Central and Eastern European countries to actually increase agricultural protection - as several of the countries did sign the Uruguay Round Agreement. This implies that they agreed to decrease or, for those countries with very low protection rates, not to increase protection. In this respect some WTO member countries can be expected to resist an enlargement such as the one analysed in this paper in spite of the absence of significant trade diversion effects.

Nonetheless, the estimated relatively modest adverse impacts on non-member regions will assist European integration. The beneficial impacts on the new members will also encourage other potential members of the EU, and will stimulate the formation and expansion of trade blocs elsewhere. Finally, it should be remembered that this analysis has been limited to the evaluation of an European enlargement given the continuation of the CAP. No attempt has been made to evaluate the significant economic gains that would accrue world wide and in Europe if the Common Agricultural Policy was abolished.

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Appendix 1 Baseline results

Table A1

Baseline: Percentage change in production, 1995 to 2005

	EU	CEEC	AUS	NZL	JPN	ASE	CHN	OAS	USA	CAM	SAM	FSU	EFT	MEA	SSA	ROW
Land	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unskilled labour	-1.7	3.8	4.9	4.9	-4.9	19.6	8.8	12.1	10.1	18.8	18.8	3.8	4.9	31.2	35.0	26.9
Skilled labour	29.3	68.6	66.0	66.0	32.2	66.8	39.8	49.6	38.8	48.7	48.7	68.6	66.0	69.2	62.1	32.1
Capital	39.7	76.8	44.0	39.2	39.9	56.3	179.6	83.2	33.2	57.6	55.4	29.1	40.4	60.0	29.7	40.1
Natural resources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	12.6	33.0	68.3	23.8	-88.3	-10.3	-30.6	17.0	41.6	31.1	21.7	30.2	-47.5	52.0	43.3	66.6
Other grains	-9.0	24.2	39.5	25.0	-87.1	-11.1	-18.3	15.8	20.7	20.0	24.1	31.2	-24.0	50.7	55.5	33.1
Vegetables, fruit, nuts	16.2	27.5	27.1	29.8	13.8	32.5	51.7	24.5	16.7	24.9	31.6	21.9	45.2	49.2	40.7	25.0
Oilseeds	33.7	38.8	21.6	29.7	28.1	27.1	0.8	31.5	23.5	26.6	24.4	49.6	21.6	63.0	36.7	42.4
Sugar cane and beet	0.0	45.6	44.9	199.2	-44.4	28.9	-47.7	32.2	13.8	42.3	36.7	38.6	-3.3	56.9	42.3	29.0
Other crops	34.1	46.0	29.7	64.2	15.2	22.3	9.6	23.9	37.4	26.1	28.9	67.9	101.4	83.1	58.1	26.4
Bovine animals	-16.3	44.5	8.5	25.0	12.5	23.2	85.9	36.1	19.5	21.5	32.0	25.3	20.1	52.6	49.3	21.2
Other animal products	15.7	29.1	61.2	-76.1	23.8	42.2	51.3	31.5	38.7	30.8	27.9	135.7	41.7	53.5	42.6	43.5
Raw milk	2.0	21.1	-7.9	41.4	2.1	27.3	65.9	38.7	18.2	35.6	25.2	24.8	-58.9	47.8	37.2	26.1
Wool	155.9	42.3	29.8	72.9	114.9	62.0	-37.4	23.2	165.7	48.1	31.0	93.2	122.4	84.8	55.6	30.3
Resource extraction	17.5	34.6	36.2	25.0	14.3	43.5	96.1	40.3	21.5	40.8	27.8	21.4	27.4	41.0	29.3	26.9
Bovine meat products	-12.5	44.4	4.0	36.9	11.6	39.6	71.4	40.8	30.3	29.3	40.3	17.7	22.6	55.4	59.9	28.1
Other meat products	13.7	29.8	20.1	-70.5	21.8	48.6	58.1	37.0	16.6	32.4	32.3	5.4	17.3	52.0	41.4	25.9
Dairy products	6.9	48.4	-8.5	52.3	-1.1	32.3	53.6	36.4	20.8	43.2	31.3	33.7	-62.8	61.5	57.1	27.1
Sugar	8.5	47.9	29.5	19.0	-10.5	41.2	47.4	44.4	15.8	47.9	37.6	17.0	-5.1	48.9	35.4	30.0
Other proc. food prod.	14.7	34.7	22.7	17.1	13.2	40.6	45.6	38.2	18.8	42.7	37.0	14.7	16.5	56.4	32.8	28.6
Textiles	7.3	46.5	28.2	47.0	14.3	66.8	64.2	69.5	8.7	47.1	45.7	13.7	7.5	126.2	30.6	33.7
Manufactures	20.3	46.9	25.3	22.3	25.1	57.1	137.6	54.2	24.5	53.9	44.9	14.5	36.6	62.0	25.5	29.9
Services	23.9	45.5	38.2	33.1	20.9	56.2	112.8	60.4	28.9	60.0	55.8	18.2	32.0	48.9	41.1	37.7
Capital goods	36.2	42.2	45.0	37.4	21.1	74.7	155.7	96.2	44.7	83.9	86.5	-25.6	23.6	-44.1	38.3	43.8

Appendix 2: Results from the EU enlargement

Table A2

Enlargement: Percentage change in production

	EU	CEEC	AUS	NZL	JPN	ASE	CHN	OAS	USA	CAM	SAM	FSU	EFT	MEA	SSA	ROW
Wheat	-4.2	67.7	-1.0	-1.9	-2.3	-1.7	-0.7	-0.2	-2.2	-1.8	-0.5	-9.8	-6.4	-2.9	-0.9	-2.2
Other grains	-8.9	84.5	-0.8	-2.9	-2.0	-0.3	-0.5	-0.2	-1.4	-0.2	-0.9	-8.7	-14.9	-2.6	-1.3	-2.5
Vegetables, fruit, nuts	2.8	-15.4	0.2	2.2	0.0	0.0	0.0	0.1	0.5	0.0	0.1	1.6	0.3	0.9	0.3	0.5
Oilseeds	-0.2	-0.7	-0.2	-1.4	-0.4	-0.1	-0.1	-0.1	0.2	-0.5	0.0	1.2	-1.2	0.4	-0.2	0.0
Sugar cane and beet	0.0	-1.3	0.5	0.4	-0.4	-0.1	-0.1	-0.1	0.2	-0.2	0.0	0.9	-0.1	0.4	-0.1	0.2
Other crops	1.0	-26.5	0.2	2.8	-0.1	0.0	-0.1	0.0	0.5	0.0	0.1	-0.2	7.1	0.8	0.0	0.4
Bovine animals	-6.3	70.0	-1.3	-2.3	-0.3	-0.2	0.0	-0.1	-0.8	-0.3	-1.1	-2.8	-7.3	-1.8	-1.7	-1.3
Other animal products	1.2	-23.3	0.5	2.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	2.6	1.0	0.7	-0.2	0.8
Raw milk	0.0	0.0	-1.7	-3.8	-0.6	-2.8	-0.1	-0.1	-0.5	-0.5	-0.4	-1.9	-3.0	-0.6	-0.2	-0.4
Wool	0.0	-2.4	-0.3	0.8	-1.4	-0.9	-0.7	-0.6	-0.8	-0.1	-0.1	1.1	-2.5	-0.4	-0.7	-0.3
Resource extraction	0.0	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bovine meat products	-1.8	56.0	-1.2	-6.3	-0.3	-0.1	-0.9	-0.1	-0.6	-0.2	-1.5	-2.1	-1.8	-0.1	-2.2	-0.5
Other meat products	1.9	-19.9	0.1	-1.0	0.0	0.2	0.0	0.1	0.4	0.0	0.1	2.8	0.9	0.4	0.2	1.6
Dairy products	0.2	22.4	-1.9	-4.6	-0.8	-3.4	-0.3	-0.7	-0.5	-0.8	-0.6	-2.7	-3.9	-2.0	-2.5	-0.8
Sugar	-0.3	2.1	-0.2	-0.1	0.0	0.0	0.1	0.0	0.0	-0.5	-0.1	0.3	0.0	0.3	-0.2	0.0
Other proc. food prod.	1.4	-18.4	0.0	0.6	0.0	0.1	0.1	0.1	0.0	0.0	0.1	1.7	2.0	0.6	0.0	0.8
Textiles	1.2	8.5	-0.1	2.0	-0.1	-1.9	-0.5	-0.7	-0.2	-0.2	-0.1	-0.6	-0.8	-0.8	-0.5	-1.7
Manufactures	0.1	-1.4	0.1	0.7	0.0	0.1	0.0	0.1	0.0	0.0	0.1	-0.1	-0.2	0.1	0.1	0.0
Services	-0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Capital goods	0.3	-16.8	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.8	0.1	0.1

Table A3
Enlargement: Percentage change in quantity of exports to European Union

	EU	CEEC	AUS	NZL	JPN	ASE	CHN	OAS	USA	CAM	SAM	FSU	EFT	MEA	SSA	ROW
Wheat	-9.5	329.4	-8.9	-6.3	0.0	0.0	-10.7	-11.3	-8.2	-9.4	-10.6	8.3	-11.3	-6.3	-10.8	-7.3
Other grains	-26.4	1009.8	-26.4	-23.2	-28.8	-27.5	-27.5	-27.7	-26.1	-28.0	-26.8	-14.1	-25.2	-24.0	-27.8	-23.8
Vegetables, fruit, nuts	0.6	-67.7	4.6	7.2	2.2	3.4	3.4	3.3	4.7	3.2	3.6	4.5	-1.5	4.7	3.0	3.6
Oilseeds	-1.1	24.7	1.1	5.2	-1.2	-0.5	-0.5	-0.1	1.0	0.3	0.2	1.9	-3.5	1.6	-0.3	0.1
Sugar cane and beet	1.4	-36.2	0.5	0.0	-1.5	-0.2	-0.6	-0.2	1.9	-0.1	0.0	2.1	-4.8	1.7	-0.1	0.6
Other crops	-0.6	-23.9	2.8	5.5	0.4	1.7	1.7	1.7	3.2	1.5	2.0	8.0	-13.4	3.2	1.7	1.9
Bovine animals	-37.1	160.5	-53.7	-52.1	-55.7	-54.7	0.0	-55.1	-54.0	-54.9	-53.7	-49.6	-53.6	-52.6	-54.1	-52.6
Other animal products	2.4	-98.4	4.3	6.5	1.6	2.8	3.3	3.0	3.8	2.9	3.7	4.2	-0.1	6.6	3.6	3.1
Raw milk	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wool	0.1	-23.4	1.4	4.5	-1.0	0.4	0.4	0.3	-0.1	-0.7	0.8	2.9	-2.3	1.3	0.2	2.2
Resource extraction	-0.2	12.5	-0.1	-0.6	-0.1	-0.3	-0.4	-0.2	0.0	0.0	0.0	0.6	0.0	-0.3	-0.1	-0.1
Bovine meat products	-8.5	342.1	-15.2	-13.9	-16.2	-15.8	-16.2	-15.8	-14.7	-16.0	-14.8	-10.5	-16.3	-14.3	-15.1	-14.1
Other meat products	4.4	-86.8	4.8	6.7	3.2	3.9	4.3	3.9	4.3	3.8	4.1	3.2	2.4	5.6	4.7	3.8
Dairy products	-2.9	135.3	-15.6	-12.3	-17.2	-12.7	-16.3	-16.7	-16.5	-16.6	-16.6	-14.2	-16.9	-15.0	-16.7	-16.5
Sugar	-2.4	133.2	-2.9	-1.8	-2.7	-2.9	-2.2	-3.1	-2.5	-2.8	-2.4	-1.2	-4.4	-1.4	-2.8	-2.7
Other proc. food prod.	0.1	15.7	-0.2	1.2	-0.8	0.0	0.3	0.3	-0.5	-0.4	-0.1	1.8	-1.1	2.0	-0.1	0.4
Textiles	-4.7	105.0	-4.3	-0.6	-5.4	-4.9	-4.4	-4.8	-5.1	-5.2	-4.8	-4.7	-5.7	-3.8	-4.6	-4.8
Manufactures	-1.2	55.0	-0.7	0.9	-1.1	-0.7	-0.6	-0.8	-0.9	-0.9	-0.6	-0.7	-1.3	-0.9	-0.6	-0.7
Services	-0.2	0.1	0.4	1.8	0.1	0.4	0.5	0.4	0.2	0.2	0.4	0.3	-0.1	0.3	0.5	0.4

Table A4

Enlargement: Percentage change in quantity of exports from European Union

	EU	CEEC	AUS	NZL	JPN	ASE	CHN	OAS	USA	CAM	SAM	FSU	EFT	MEA	SSA	ROW
Wheat	-9.5	-80.7	0.0	-4.2	0.0	-2.9	-0.8	-0.1	-2.5	-3.0	0.2	-48.7	-18.9	-18.9	-8.8	-41.1
Other grains	-26.4	-91.6	-0.6	-4.3	-0.8	0.2	-0.3	-0.9	-4.2	0.2	-0.3	-72.0	-48.7	-20.4	-1.1	-36.6
Vegetables, fruit, nuts	0.6	317.7	-3.9	-4.8	-1.4	-2.9	-2.8	-2.4	-3.2	-3.1	-2.8	4.5	1.5	-3.1	-2.1	-2.2
Oilseeds	-1.1	-27.0	-2.1	-5.8	-1.7	-1.4	-1.2	-1.8	-1.7	-2.9	-1.3	-2.4	-4.1	-1.8	-1.9	-1.8
Sugar cane and beet	1.4	31.5	0.9	-0.8	1.6	1.1	1.6	1.5	1.0	1.3	1.2	0.7	3.4	1.2	1.3	2.8
Other crops	-0.6	107.2	-2.1	-4.4	-2.2	-2.8	-3.1	-2.8	-2.3	-2.6	-2.5	-2.7	1.1	-1.8	-2.4	-2.5
Bovine animals	-37.1	-47.8	30.5	24.9	31.6	34.4	26.4	31.7	32.1	32.6	31.2	9.9	7.9	8.4	28.5	0.8
Other animal products	2.4	5.0	-2.0	-4.3	2.3	-0.2	-0.8	-0.8	-0.5	-0.9	-0.3	5.9	3.5	0.4	-1.4	2.4
Raw milk	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wool	0.1	14.1	-2.6	-3.1	-1.4	-2.5	-2.1	-1.8	-1.9	-0.1	-0.6	0.0	-0.5	-2.2	-1.9	-0.9
Resource extraction	-0.2	20.3	0.0	0.8	-0.1	0.1	0.1	0.0	-0.2	-0.2	-0.1	-1.1	-0.3	0.1	-0.1	-0.1
Bovine meat products	-8.5	-52.5	6.4	4.5	7.1	7.6	7.6	6.6	6.9	7.7	6.6	-14.9	6.5	4.7	6.0	2.8
Other meat products	4.4	220.3	-0.1	-2.3	0.7	0.5	0.3	0.2	2.9	0.4	0.3	10.9	8.5	0.1	0.6	11.4
Dairy products	-2.9	-25.7	3.6	11.2	11.2	0.2	13.3	11.1	3.5	9.9	11.4	-1.0	6.3	3.6	7.0	2.4
Sugar	-2.4	-10.5	0.1	-0.3	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.2	0.4	-0.6	0.1	-0.5
Other proc. food prod.	0.1	329.0	0.3	-0.5	0.5	0.2	0.0	0.0	0.5	0.5	0.3	6.2	4.6	-0.6	0.1	1.9
Textiles	-4.7	122.1	-0.2	-1.0	0.2	-0.8	-0.2	-0.2	0.2	0.3	0.1	0.9	0.4	-0.6	-0.2	-0.1
Manufactures	-1.2	46.3	-0.3	-0.7	-0.2	-0.3	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	-0.1	0.0	-0.3	-0.3
Services	-0.2	4.6	-0.4	-1.1	-0.3	-0.3	-0.4	-0.3	-0.3	-0.1	-0.4	-0.3	-0.1	-0.2	-0.4	-0.4