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The Effects of Alternative Proposals for Agricultural Export Subsidies in the Current WTO Round[*]

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The article is aimed at assessing the impact of reducing and/or eliminating EU export subsidies within the next WTO round. The Global Trade Analysis Project (GTAP) model and database are employed to study the effects of the two main proposals put forward on this matter by the EU and the U.S. Results of the simulations confirm the common knowledge that the elimination of EU export subsidies would bring about increases in prices, exports and production for several net exporters of agricultural products. At the same time, such effects are all relatively small in size, particularly the effects on trade, production and welfare, even under the more radical scenario that simulates the elimination of export subsidies. Despite the fact that some net importing countries would suffer from a more expensive import bill, benefits may arise for some of them in terms of incentives to substitute domestic production for imports. This is the case in the Mediterranean region, and to a lesser extent sub-Saharan Africa.

Keywords: Export competition, GTAP model, WTO negotiations

1. Introduction

Agriculture is the only sector in which export subsidisation is still frequent. With the Uruguay Round Agreement on Agriculture (URAA), countries that apply subsidies agreed to reduce both the volumes of subsidised exports and the related expenditures from their 1986-90 levels; between 1990 and 1999 the value of export subsidies decreased substantially. This decrease was not only the outcome of the URAA commitments, but also a consequence of market and policy conditions, which invited a less frequent use of export subsidies compared to the base period.

The debate on export competition was revamped with the Doha Round (Abare, 2001a; Abare, 2001b; Diao, Somwaru and Roe, 2001; OECD, 2000; Ruiz and De Gorter, 2000; Leetmaa, 2001; van Mejil and van Tongeren, 2001; Young, Abbott and Leetmaa, 2001; CAPRI, 2002; Elbehri and Leetmaa, 2002). A group of countries, lead by the United States and the Cairns Group, have proposed to eliminate export subsidies within the time frame of the application of the forthcoming agreement. The three major export subsidising jurisdictions – the EU, Japan and Switzerland – while recognizing the need for further discipline in this area, proposed a softer reduction path, to be applied also to what are referred to as "other forms of indirect and disguised export subsidisation", such as export credits, the operation of state trading enterprises (STEs), and food aid shipments (WTO, 2002b).

Altogether, export subsidisation raises a kind of "food price dilemma". Depressed world prices of agricultural commodities, originating *inter alia* from EU export subsidies, are deemed to be one of the causes of the displacement of farmers in importing countries. But export subsidies may be beneficial to consumers in these countries, since cheap food is available. To the extent to which there are vulnerable population groups in importing countries that are net food buyers, export subsidisation may be an advantage for those countries, at least in the short run. But in the long run importing countries may increase their dependency on food imports (von Braun, Wobst and Grote, 2002). Applied research results in this field tend to attribute an overall positive welfare effect to net exporting countries and an overall negative welfare effect to net importing ones, especially low-income countries (Anderson, 1999; Anderson et al., 2001). Traditional agricultural exporters are those more likely to benefit from a reduction of export subsidies (Bonët and Le Cacheux, 2002; Messerlin, 2002; Chau and De Gorter, 2000).

The aim of this article is to assess the impact of reducing and/or eliminating EU export subsidies within the next WTO round; the impact is assessed on the enlarged EU, on a group of selected countries, and on a group of countries located in Asia,

Africa and Latin America. The Global Trade Analysis Project (GTAP) model and database (Hertel, 1997) are employed to study the effects of the two main proposals put forward in the Doha Round concerning EU export subsidies. Within the limitations imposed by the available database, an attempt is made to improve the qualification of the frequently proposed divisions between winners and losers. Attention will be devoted to some of the effects on certain "nontraditional" agricultural exporters, which are also likely to be significantly affected by the reduction and/or the elimination of export subsidies.

The article is structured as follows. The immediately following section offers background on export subsidies by describing in more detail the products and markets involved and the evolution of this practice after the URAA. Section 3 reports the design of the scenarios adopted in the simulation. Section 4 reports the main results of the simulations, which are first described in more general terms and then qualified in more detail for each of the scenarios. Concluding remarks are contained in section 5. The technical annex contains the details of the simulations, focusing particularly on the modeling of the policy tool.

2. Agricultural Export Subsidisation after the Uruguay Round

Commitments related to export supports within the URAA included the reduction of both the volume of subsidised exports and the value of government expenditure on export subsidies on an individual commodity basis. Reductions were calculated with respect to the base period (1986-90) and were due to be fulfilled over a six-year implementation period. Developed countries were due to reduce expenditures on subsidised exports by 36 percent and volumes of subsidised exports by 21 percent. Commitments for developing countries were one-third of those levels (OECD, 2000). Moreover, all countries had the opportunity to change the base period if subsidised exports for the average of years 1991 and 1992 exceeded the base period volume, and to use this average level as a starting point for reductions. In addition, a rollover mechanism allowed countries to exceed bound levels (both expenditures and volumes), and to carry over these shortfalls to the following year; the only year this was not allowed was the final year of the implementation period.

Export subsidisation is today a highly concentrated phenomenon. Twenty-five WTO member countries subscribed to reduction commitments in the URAA, but by the year 1999 the EU had become the single major user of export subsidies, accounting for 93 percent of global expenditures on such measures. In that same year, Norway and the United States together accounted for another 4 percent, followed by

Poland, the Czech Republic, Slovakia and Turkey, each with minor expenditure shares.

From a commodity point of view, before the URAA, export subsidisation was significant for cereals, dairy and beef. This pattern has now changed, since the subsidisation of cereals and beef decreased at a faster pace compared to subsidisation of dairy products and sugar. In 1998 dairy represented almost one-third of total export subsidy expenditures, followed by cereals (21 percent), sugar (13 percent) and beef (11 percent). In the same period the share of subsidised exports as a proportion of total export volumes declined, since subsidised exports decreased while total exports expanded (WTO, 2002a). This share is still relatively high in the EU, particularly for dairy products (38 percent) and coarse grains (17 percent) and to a lesser extent for wheat (14 percent). Although subsidised exports of sugar were reduced to 5 percent of total exports, they are still deemed to play a significant role in distorting world markets due to the wide share the EU holds in world exports[1] (Abare, 2001).

URAA commitments on export subsidisation have been the most difficult commitments for the EU to handle and have been virtually the only area in which compliance has placed serious constraints. Although there were differences among commodities, in general the most binding commitments were those on volumes. For dairy products, rice and poultry meat it was necessary to constrain subsidised exports in all years of the implementation period, while for fruit and vegetables commitments resulted in constraints only in the first three years. Bovine meat needed stronger support in 1996 and 1997 when, due to BSE, consumption dropped and surpluses had to be exported (INEA 2002).

Today, after the end of the implementation of the URAA, there are products that the EU manages to export without subsidies – e. g., fruit and vegetables, poultry meat, wine – while some others still require subsidisation. This is the case for those products that still enjoy a relatively strong domestic price support system, for example, dairy products. For these, further commitments to reduce export subsidisation may be relatively more problematic.

As mentioned, in the current WTO round two main positions have emerged with respect to export subsidies (WTO, 2002c). The first is shared by the United States, the Cairns Group and a large number of other countries.[2] These countries underlined the need to eliminate export subsidies within a relatively short time period; in particular, the Cairns Group proposes an immediate 50 percent reduction as a down payment, followed by a progressive reduction culminating in elimination in three years, or in six years for developing countries. A wider group of countries– mostly Latin American,

including Nicaragua and Peru, and Zimbabwe – shares the position of the Cairns Group but also asks for more flexibility to be allowed to developing countries.

Opposite to this approach, the position expressed by the EU, Japan and Switzerland recognizes that export subsidies need to be reduced and disciplined but proposes a far more moderate reduction path, defined on a product-specific basis. For each product, a bound export subsidy unit value would be taken into account and progressively reduced. As mentioned, an important further point made by this group of countries is that the same approach should be extended to those measures referred to as "other forms of indirect and disguised export subsidisation", notably export credits, the operation of STEs, and food aid shipments, including a relatively low grant element. More recently the EU tabled a comprehensive proposal which offered a 45 percent reduction in the total expenditure for export subsidies, based on bound export subsidy unit values, and a "substantial" reduction in the volumes, provided that the other forms of disguised export subsidisation are also taken into account (Frandsen et al., 2003).

The *First Draft of Modalities for the Further Commitments* (WTO 2003), presented last February by Stuart Harbinson, chair of the special session of the Committee on Agriculture, attempted a compromise among these positions. The text on export subsidies proposed that

1. developed countries select a portion of the products whose exports are subsidised – corresponding to the 50 percent of the expenditure on subsidies bound in the URAA commitments, i.e., to the level achieved in year 2001 – and phase these out within five years by implementing a minimum 30 percent per year reduction in both volumes of and expenditure on subsidised exports; and

2. developed countries reduce the remaining 50 percent within nine years, with a minimum 25 percent per year reduction in both volumes of and expenditure on subsidised exports.

Developing countries are requested to follow a conceptually similar path, in which the first 50 percent must be phased out in ten years with a minimum 25 percent per year reduction, and the remaining must be phased out in twelve years with a minimum 20 percent per year reduction. By computing subsequent percentage changes, it is evident that for the EU this proposal is likely to imply a strong down payment in the first and the last of the five years of the implementation period.

Although the reduction path envisaged in the above text is not as strong as the one proposed by the Cairns Group, it still leads to the phasing out of all export subsidies

within a few years, with the special provision allowing more flexibility for developing countries.

The *First Draft of Modalities* text on export competition also includes provisions aimed at addressing other forms of "disguised export subsidisation", i.e., export credits, food aid and STEs, as well as provisions to limit export restrictions and special and differential treatment. With respect to the first three issues, the text defines a set of value ranges and conditions in terms of the major characteristics of a credit, a food aid shipment and the operation of an STE that would characterize any of these as being *not* a disguised form of export subsidisation. These conditions include, for export credits, the definition of the relevant type of export financing, ranging from maximum repayment terms, to minimum cash payment required, to interest rates. Concerning food aid the conditions require the use of grants rather than repayable long-term loans, the use of financial provisions in bilateral programme food aid, and the setting in motion of emergency operations only after an appeal to the UN Specialised Agencies. Concerning STEs, the aim is to identify and prevent the danger that such agencies may exert market power and disrupt competition in agricultural world markets. In other words, on these three matters, given the difficulties of proposing a discipline based on quantitative terms, a more qualitative approach was attempted.

It is clear that the Harbinson hypothesis on export subsidies is likely to have a relatively strong impact on EU markets, especially those for cereals, dairy products and sugar. It was probably for this reason that the proposal was substantially rejected by the EU Commission. A few days after the Harbinson text was released, Commissioner Franz Fishler stated that it contained an unbalanced compromise on export competition, i.e., the elimination of export subsidies against substantial remaining "loopholes" with respect to the discipline of export credits and food aid. He clearly pointed out that while the EU respected the commitments undertaken to reduce export subsidisation, commitments on export credits were not respected, especially by the United States (European Commission, 2003; Agra Europe, 2003a).

As the Cancún Ministerial Meeting approached, the debate was revamped on August 13th by the submission of a European Union–United States joint initiative, which drafted a new framework for modalities. Although no figures were reported, that document highlighted the political willingness of both parties to find a viable compromise to ease progress in the global negotiations (ICTSD-IISD, 2003). The proposals made in the joint initiative were quite different from both the EU and U.S. initial proposals, and from the Harbinson draft. The joint initiative was followed by reactions and comments from several countries, and by one more agreement proposal

put forward by a group of 21 developing countries that later became known as the G-22 group.[3]

On export competition the EU-U.S. joint initiative was quite generic and conservative, while the G-22 proposal envisaged more far-reaching reform. The G-22 was asking for the elimination of export subsidies for an unspecified group of products of special interest for developing countries, while envisaging a more complete reduction of export subsidies further in the future. These various texts, however, have not been discussed further, as conflicting interests clearly emerged in the Cancún Ministerial Meeting; no agreement was reached and the negotiations collapsed over the so-called Singapore issues.

Given this situation, it is hard to predict what the final compromise could be on this point. From an internal perspective it appears highly unlikely that the EU will be able to accept a compromise that would put additional pressure on the CAP reform process that is being implemented, and which required a delicate compromise among the EU member countries.

3. The Scenarios

The exercise presented consists of simulations of four scenarios (table 1). The first two (A and B) constitute counter-factual experiments run on the 1997 baseline with no modifications; they are meant to indicate in what respect that baseline would have been different with 1) a 45 percent reduction in EU expenditures on export subsidies, as proposed by the EU itself, and 2) a total elimination of export subsidies, as proposed in essence by the United States and the Cairns Group. Given that the model is comparatively static, the proposal calling for the phasing out of export subsidies within the time frame of the agreement has been approximated with the full elimination of export subsidies.

Scenarios C and D are similar experiments, run on a more realistic baseline. The 1997 database was updated by shocking, first, the GDP, the labour force, total factor productivity and population, whose changes between 1997 and 2010 are reported as projections. Moreover, a set of policy shocks was introduced, accounting for the most important policy changes that have occurred so far and those that will most likely occur within the implementation period of the next WTO agreement. Emphasis has been put, in this context, on EU policies, since this is the jurisdiction for which export subsidies are by far most important. In particular, the following factors were considered:

- Agenda 2000,
- the mid-term review (MTR) of the CAP,

- EU enlargement to include the Central and Eastern European Countries (CEECs), and
- the Everything But Arms (EBA) agreement, which is due to come into effect in 2009.

Table 1 Scenarios Simulated

Scenario	Baseline on which scenario is run	Experiment
A	1997, database version 5	45% reduction in expenditures on export subsidies
B	1997, database version 5	elimination of export subsidies
C	2010, updated database	45% reduction in expenditures on export subsidies
D	2010, updated database	elimination of export subsidies

The Harbinson text was not considered in the simulation, for two reasons. First, one key point of the proposal allows allocation of commitments over a set of products accounting for 50 percent of the total expenditure on export subsidies. It is not a straightforward matter to identify a criterion for selecting the products that governments will exclude from the reduction commitments. Second, given the reactions from the EU, it is hard to assign a high probability of success to the Harbinson compromise.

4. Results

Results obtained with the 1997 baseline (scenarios A and B) are similar to those obtained with the 2010 baseline (C and D), but changes are generally smaller in size. This is the case especially for supply response, and for market price and welfare changes. The largest variations obtained in the last two experiments are most probably the outcome of the modifications in the policy setting arising from the introduction of Agenda 2000 and the MTR in building the 2010 baseline.

Aside from this difference, in general both price and supply responses appear to be rather small in all four scenarios, ranging from few percentage points up to a maximum of 10 to 15 percent in a few cases. Equally small in size are the welfare changes, ranging from 0.01 percent of GDP for developed countries such as the EU and the United States, to 0.2 percent for sub-Saharan African countries, to 0.8 percent for Brazil and Argentina.

On the 2010 baseline, the 45 percent reduction in export subsidy expenditures proposed by the EU results in a price reduction in both the EU and the CEECs, whereas a price increase occurs in the rest of the world. Despite the order of magnitude remaining within the mentioned range, changes appear relatively wider compared to the same experiment run on the 1997 baseline, probably due to the CAP reform process, which may increase the degree of both market orientation of European agriculture, especially through the reduction of intervention prices, and related border protection. Production patterns seem to adjust accordingly, reflecting more closely the comparative advantages of some net exporting countries. For dairy products and meats, supply increases, particularly in Australia and New Zealand; for raw and processed sugar, this is particularly the case in Brazil and in the "rest of the Cairns group"; for cereals in general, production increases, especially in Canada; and for coarse grains, particularly in Argentina.

By the same token, price increases that appear in the simulation of the EU proposal seem to imply improvements in the trade balances of major exporting countries and to consolidate leading positions, particularly of Brazil in the sugar market and Australia and New Zealand in the dairy market. Moreover, production expands in some importing countries as well: this is the case for meats in India, for raw milk in the sub-Saharan African region, and for meats, sugar and dairy products in the Mediterranean area.

The simulations of the U.S.–Cairns Group proposal – scenarios B and D, run on the 1997 and 2010 baselines respectively – appear to drive the main economic variables in the same directions as those for the EU proposal, but the changes are generally larger in size, especially for some countries and products. To some extent the similarity may be the outcome of the modeling of export subsidies; as mentioned, what it is not possible to include of the EU proposal is the room left to manoeuvre in the implementation, i.e., by deciding how to reallocate the required cuts in expenditure.

The U.S.–Cairns Group proposal, however, compared to the EU proposal, implies higher production increases for the products that are currently most supported by the CAP; this is the case especially for sugar, meats, cereals and oilseeds. The enlarged EU experiences supply reductions for all these products, while increases take place in other countries, particularly Latin America, the "rest of the Cairns Group" and sub-Saharan Africa.

Market price reductions under the U.S.–Cairns Group proposal appear both in the enlarged EU and in many other exporting countries, such as the United States, Canada, and the "rest of the Cairns Group", and also in other regions and countries

such as India, the Mediterranean region, sub-Saharan Africa, and China. While for the EU this result can be expected – as the outcome of an excess supply arising in the domestic market – for the non-European exporters this price decrease appears more puzzling. Possible explanations could be either that supplies increase faster than local consumption or that some of these countries' exports suffer from the relatively higher competitiveness of other exporters emerging in world markets after the removal of the EU export subsidies. This may be the case for the United States, Canada, and the "rest of the Cairns Group", whose exports may be displaced, mainly by those of Australia and New Zealand, Brazil, and Argentina. Price decreases in the other countries appear even more puzzling. A possible explanation is that in these regions the price increase raises domestic availability at a faster rate compared to consumption growth, thus determining a price reduction. For the Mediterranean countries this may be consistent with the evidence of increasing production in some typically imported commodities.

In general terms, the major net beneficiaries from this more radical scenario in which EU export subsidies are eliminated are countries like Australia and New Zealand, Brazil, Argentina and China; however, substantial welfare gains arise also for the enlarged EU and the CEECs, mainly due to improvement in their domestic resource allocation. While the first result is consistent with the requests for the elimination of export subsidies expressed by the countries involved, the opposite is true for the enlarged EU, since the welfare benefits foreseen arise mostly from economic adjustment and improved intersectoral resource allocation that would not benefit farmers as a group, at least over the medium term.

4.1 Scenario A: 45 Percent Reduction of Export Subsidy Expenditures on the 1997 Baseline

This scenario implies a fall in the European production of all commodities whose exports are subsidised by the EU, while production of the same commodities increases in many other countries. Among commodities, major changes can be observed for dairy products, sugar and meat products.

For dairy, production increases mostly in the countries of the Cairns group, particularly in Australia and New Zealand, and in Canada (table 2). A relatively high percentage increase also takes place in sub-Saharan Africa, in the Mediterranean countries and in China. A contraction is observed in the EU raw sugar supply, while an increase takes place in the producing countries of the Southern Hemisphere, mainly in Brazil, and India, but also in the Mediterranean countries, China and the Sub-Saharan region. A similar pattern applies to paddy rice production, which shifts from the EU and the United States toward more southern countries and regions. Production

of cereals and meat products also shifts from the EU to other countries, but these changes are generally small in size. It is interesting to note, however, that cereal production increases in several net importing areas, for example, the Mediterranean countries and sub-Saharan Africa, as an effect of higher market prices.

Supply adjustments are accompanied by a generalised price increase, taking place particularly for dairy in Australia and New Zealand, and for coarse grains, cattle and meat products most notably in Argentina, Canada, and Brazil (table 3).

An improvement would also take place in the trade balances for more than one major exporter. This is the case especially for Australia and New Zealand, the United States, Canada, the Mediterranean countries and the "rest of the Cairns Group", especially for dairy products (table 4). Brazil shows a major improvement in its sugar exports, together with the Mediterranean countries, Australia and New Zealand, the "rest of the Cairns Group", sub-Saharan Africa and China.

Significant improvements in the trade balances for meat and cereals are also shown for the United States, Australia and New Zealand, the Mediterranean countries, the "rest of the Cairns Group", Canada and Argentina. At the same time, the EU, Japan, Brazil and the CEECs become more dependent on wheat imports; Japan and the EU become more dependent on imports of coarse grains.

This scenario brings about welfare improvements for several countries and regions, but the total effect is negative, albeit small in size (table 5). The gains of Australia and New Zealand, Brazil, and Argentina are mostly due to more favourable terms of trade, while for the EU there is a significant welfare improvement arising from improved resource allocation. Negative welfare effects are felt in some net food importing areas, such as the Mediterranean, Japan and sub-Saharan Africa; the CEECs, the United States, Canada and China also feel these effects, due to both a less appropriate resource allocation and unfavourable terms of trade.

Table 2 45 Percent Reduction in EU Export Subsidy Expenditures: Percentage Changes in Supply

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario A: baseline 1997											
EU15	-0.8	-2.0	-0.9	0.2	-1.4	-3.9	-5.3	-1.0	-1.3	-0.5	-0.7
CEECs	0.2	1.0	0.2	-0.1	0.2	0.4	0.5	0.1	0.4	-0.6	-0.4
USA	0.4	0.4	0.0	-0.1	0.2	0.2	0.2	0.4	0.4	0.2	0.2
Canada	0.6	0.8	0.0	0.0	0.1	0.4	0.5	0.8	1.1	0.1	0.2
Australia & N. Zealand	0.2	0.2	-0.1	-0.2	0.0	0.6	0.6	3.7	4.2	0.4	0.7
Brazil	0.1	0.1	0.1	-0.1	0.0	1.0	2.0	0.1	0.1	0.0	0.0
Argentina	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1
Rest of the Cairns Group	0.2	0.2	0.0	0.1	0.0	0.5	0.6	0.4	1.1	0.2	0.2
Japan	0.3	0.3	0.0	0.2	0.0	0.1	0.1	0.4	0.4	0.1	0.1
India	0.0	0.0	0.0	0.0	0.7	0.0	0.1	0.0	0.2	0.0	3.8
Mediterranean countries	0.5	1.2	0.2	0.1	0.3	1.1	2.5	0.7	2.1	0.2	1.1
Sub-Saharan Africa	1.0	0.1	0.0	0.1	0.0	1.0	2.2	0.3	6.2	0.1	1.2
China	0.1	0.1	0.0	0.1	0.0	1.1	2.3	0.1	1.7	0.0	0.2
Rest of the world	0.4	0.2	0.0	0.0	0.0	0.8	1.4	0.7	1.9	0.3	0.6
Scenario C: baseline 2010											
EU15	-1.1	-2.4	-1.1	0.2	-1.7	-4.2	-5.8	-1	-1	-0.7	-1
CEECs	-2.4	-1.4	-0.3	0.5	-0.3	-9.6	-12	0	0	-0.2	-0.8
USA	0.7	0.4	0	-0.1	0.3	0.2	0.2	0.3	0.3	0.2	0.2
Canada	1	1	0	0	0.1	0.5	0.7	0.7	0.9	0.2	0.2
Australia & N. Zealand	0.6	0.4	0	-0.1	0.1	0.6	0.6	2.8	3.1	0.5	0.8
Brazil	0.2	0.1	0.1	-0.1	0	1.4	2.6	0	0.1	0	0
Argentina	0.4	1	0.1	-0.1	0.1	0	0	0.1	0.3	0.1	0.2
Rest of the Cairns Group	0.3	0.3	0	0.1	0	0.8	0.9	0.3	0.8	0.2	0.2
Japan	0.3	0.4	0	0.2	0	0.1	0.1	0.3	0.3	0.1	0.1
India	0	0	0	0	0.9	0	0.1	0	0.1	0	4.4
Mediterranean countries	0.6	1.5	0.2	0.1	0.3	1.1	2.6	0.6	1.7	0.3	1.2
Sub-Saharan Africa	1.4	0.1	0	0.1	0	0.4	0.9	0.3	5.3	0.1	1
China	0.1	0.2	0	0	0	1	2.1	0.1	1.2	0	0.2
Rest of the world	0.6	0.3	0	0	0	1.2	2.2	0.5	1.2	0.4	0.7

Source: Authors' simulation results

Table 3 45 Percent Reduction in EU Export Subsidy Expenditures: Percentage Changes in Market Prices

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario A: baseline 1997											
EU15	-0.18	-0.24	-0.15	-0.12	-0.07	-0.34	-0.12	-0.18	-0.1	-0.15	-0.1
CEECs	0.05	0.16	0.03	-0.02	-0.03	0.06	0.15	0.03	0.03	-0.04	0.01
USA	0.19	0.16	0.13	0.12	0.06	0.18	0.09	0.12	0.08	0.12	0.09
Canada	0.14	0.15	0.15	0.13	0.13	0.11	0.04	0.13	0.09	0.14	0.09
Australia & N. Zealand	0.28	0.27	0.25	0.2	0.18	0.38	0.19	0.49	0.32	0.28	0.19
Brazil	0.11	0.11	0.11	0.1	0.1	0.2	0.14	0.11	0.11	0.11	0.1
Argentina	0.18	0.32	0.13	0.13	0.09	0.13	0.08	0.16	0.11	0.17	0.13
Rest of the Cairns Group	0.07	0.12	0.08	0.08	0.06	0.22	0.1	0.09	0.16	0.08	0.07
Japan	0.04	0.05	0.02	0.04	0.02	0.03	0.08	0.06	0.28	0.09	0.04
India	0.03	0.03	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.04	0.03
Mediterranean countries	0.09	0.17	0.04	0.05	0.03	0.11	0.16	0.1	0.12	0.08	0.1
Sub-Saharan Africa	0.11	0.04	0.03	0.04	0.02	0.08	0.07	0.06	0.26	0.04	0.03
China	0.04	0.04	0.02	0.03	0.02	0.22	0.15	0.04	0.02	0.04	0.02
Rest of the world	0.17	0.14	0.13	0.13	0.1	0.3	0.17	0.2	0.2	0.14	0.14
Scenario C: baseline 2010											
EU15	-0.12	-0.15	-0.11	-0.16	-0.04	-0.12	-0.06	-0.07	-0.06	-0.07	-0.05
CEECs	-0.57	-0.43	-0.86	-0.4	-0.03	-1.3	-0.33	-0.23	-0.19	-0.29	-0.15
USA	0.22	0.16	0.13	0.12	0.07	0.19	0.11	0.12	0.08	0.13	0.1
Canada	0.15	0.16	0.16	0.14	0.14	0.11	0.04	0.13	0.09	0.15	0.1
Australia & N. Zealand	0.27	0.26	0.23	0.19	0.17	0.34	0.18	0.4	0.27	0.25	0.18
Brazil	0.12	0.11	0.11	0.1	0.1	0.21	0.13	0.11	0.1	0.11	0.1
Argentina	0.36	0.59	0.23	0.22	0.12	0.23	0.08	0.29	0.13	0.31	0.22
Rest of the Cairns Group	0.08	0.14	0.09	0.1	0.06	0.28	0.13	0.09	0.13	0.09	0.07
Japan	0.05	0.07	0.03	0.04	0.02	0.03	0.1	0.07	0.23	0.13	0.05
India	0.03	0.03	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.04	0.03
Mediterranean countries	0.12	0.22	0.05	0.07	0.03	0.12	0.18	0.11	0.12	0.1	0.12
Sub-Saharan Africa	0.15	0.04	0.03	0.04	0.02	0.06	0.06	0.06	0.26	0.04	0.03
China	0.05	0.05	0.02	0.03	0.02	0.16	0.11	0.04	0.02	0.04	0.02
Rest of the world	0.23	0.17	0.14	0.14	0.1	0.39	0.24	0.18	0.17	0.16	0.15

Source: Authors' simulation results

Table 4 45 Percent Reduction in EU Export Subsidy Expenditures: Changes in Trade Balances (million US$ 1997)

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario A: baseline 1997											
EU15	-98.7	-183.5	2.4	16.9	-22.1	0.3	-494.0	0.8	-694.7	24.0	-278.2
CEECs	-0.1	16.2	0.0	-0.3	1.7	0.0	4.9	-0.1	9.8	-14.3	-13.7
USA	44.3	96.9	-0.2	-2.1	2.9	0.0	3.5	-0.1	121.4	-4.0	90.8
Canada	30.1	17.7	0.0	-0.5	-0.2	0.0	0.3	0.0	38.1	1.0	10.1
Australia & N. Zealand	11.6	3.2	-0.2	-0.3	0.1	0.0	14.3	0.0	318.2	-2.7	62.5
Brazil	-0.4	2.5	-0.2	-2.3	-0.2	0.0	191.0	0.0	6.0	-0.1	3.0
Argentina	12.4	30.5	0.1	-0.8	0.5	0.0	0.6	0.0	13.4	0.0	9.0
Rest of the Cairns Group	-1.4	2.6	-0.2	-0.7	4.0	0.0	55.8	0.0	30.9	0.7	10.8
Japan	-2.3	-9.8	0.0	-3.4	0.3	0.0	-0.8	0.0	1.0	-0.5	3.0
India	0.5	0.3	-0.7	0.6	6.7	0.0	8.8	0.0	1.8	0.0	7.0
Mediterranean countries	8.7	9.0	0.0	-0.8	0.4	0.0	113.4	-0.2	35.9	-2.7	35.3
Sub-Saharan Africa	1.3	3.1	0.0	0.4	0.9	-0.1	15.5	0.0	6.2	0.0	3.7
China	0.6	11.5	0.1	0.8	2.1	0.0	14.5	0.0	8.7	0.2	4.3
Rest of the world	-3.7	13.4	-0.9	-5.4	4.3	-0.2	98.2	-0.3	133.5	-0.6	79.7
Scenario C: baseline 2010											
EU15	-172.6	-278	6.33	26.4	-30.51	1.69	-589.3	1.29	-825.2	13.14	-432.9
CEECs	-51.35	-34.63	0.01	4.26	-5.31	0.43	-217.9	0.98	-5.88	3.36	-31.56
USA	83.58	142.45	-0.45	-3.33	3.77	-0.02	5.78	-0.09	132.19	-6.91	122.9
Canada	53.68	27.89	-0.03	-0.76	-0.3	0.01	0.51	-0.04	49.54	1.24	15.32
Australia & N. Zealand	25.38	7.79	-0.16	-0.26	0.34	-0.01	17.79	-0.04	344.09	-2.24	83.68
Brazil	1.04	4.94	-0.25	-4.8	-0.22	-0.01	331.61	-0.01	3.05	-0.12	7.69
Argentina	37.56	71.71	0.03	-4.51	1.58	0	2.46	-0.01	23.47	-0.73	27.88
Rest of the Cairns Group	-1.85	9.01	-1.02	-1.24	9.07	-0.01	118.52	-0.06	42.59	0.66	18.23
Japan	-3.4	-15.29	-0.01	-4.65	0.8	0	-0.92	-0.02	3.16	-0.74	4.82
India	1	0.53	-1.52	0.74	9.14	0.04	13.45	-0.09	2.36	0.02	8.54
Mediterranean countries	25.31	20.71	-0.08	-1.31	0.15	-0.02	147.2	-1.13	50.89	-4.17	53.25
Sub-Saharan Africa	2.5	5.83	-0.16	0.42	1.86	-1.74	-7.43	-0.02	12.71	-0.19	6.42
China	2.01	24.58	-0.05	1.3	3.01	0	20.95	-0.04	9.89	0.32	6.34
Rest of the world	6.13	44.52	-2.06	-9.32	8.14	-0.42	213.17	-0.72	164.62	-3.47	153.2

Source: Authors' simulation results

Table 5 45 Percent Reduction in EU Export Subsidy Expenditures: Welfare Changes

	Scenario A: baseline 1997			Scenario C: baseline 2010		
	Allocative efficiency	Terms of trade	Total	Allocative efficiency	Terms of trade	Total
EU15	1,008.6	705.8	1,756.4	1,144.2	857.7	1,962.5
CEECs	-66.1	-16.2	-91.5	306.8	149.9	422.5
USA	-110.1	47.9	-76.0	-144.9	38.3	-100.9
Canada	-39.1	19.6	-21.3	-48.0	23.5	-24.9
Australia & N. Zealand	-12.1	99.4	86.4	-13.3	102.1	79.0
Brazil	38.7	38.8	89.5	47.0	70.8	151.6
Argentina	2.3	17.7	21.4	1.9	80.4	89.5
Rest of the Cairns Group	-34.7	-21.9	-60.0	-43.3	-6.5	-47.7
Japan	-81.2	-55.0	-146.4	-73.2	-91.7	-144.7
India	-3.8	4.9	-0.3	-3.9	11.4	9.0
Mediterranean countries	-305.7	-356.9	-664.1	-419.2	-513.1	-934.4
Sub-Saharan Africa	-31.0	-83.3	-113.8	-53.9	-144.4	-197.4
China	-15.5	-3.0	-22.3	-25.7	14.5	7.9
Rest of the world	-434.7	-397.7	-840.9	-587.9	-592.7	-1,183.2
Total	**-84.3**	**0.2**	**-82.7**	**86.6**	**0.2**	**88.7**

Source: Authors' simulation results

4.2 Scenario B: Elimination of Export Subsidies on the 1997 Baseline

As mentioned, results for this scenario are similar in many respects to those for the previous one and are generally larger in size. As in the previous scenario, production tends to shift from the EU to other exporting countries, trade balances tend to move accordingly and welfare gains arise for some net exporters, mainly due to improvements in their terms of trade and, in the EU, improved resource allocation. Food importers, the Mediterranean countries and Japan especially, are net losers in terms of welfare, while overall a small net welfare gain arises.

European production of cereals is displaced by increases in production occurring in most traditional exporting countries, especially Australia and New Zealand, Brazil, and Argentina (table 6). As well, some net importing countries show increases in supply; this happens in sub-Saharan Africa and the Mediterranean countries. Australia and New Zealand show a large increase in dairy production, as do Canada, sub-Saharan Africa, China and the Mediterranean, where increased local production is

mostly absorbed by higher consumption. Sugar production (both raw and processed) decreases in the EU, and increases not only in Brazil, but also in Mediterranean countries.

Supply adjustments result in significant price decreases for all commodities in some regions, especially the EU, the CEECs and the United States, while prices increase in Brazil (for almost all products), in Australia and New Zealand (especially for raw milk, dairy products, cattle, wheat, other cereals, paddy rice and sugar products) and to a lesser extent in Argentina (especially for wheat, other cereals, paddy rice, raw milk, cattle and meat). (See table 7 for price changes.) As in the previous scenario, price decreases in exporting countries such as the United States, Canada and the "rest of the Cairns Group" should be explained by the relatively lower competitiveness of these countries compared to that of exporters like Australia and New Zealand, Brazil, and Argentina, whose competitiveness improves with the removal of export subsidies.

Trade balances in the EU worsen for almost all products; exceptions are cattle, paddy rice, raw sugar and raw milk (table 8). For dairy, significant improvements in the trade balance occur in Australia and New Zealand, Canada, and the United States. For sugar, trade balances for all jurisdictions decrease, with the exception of Brazil, the Mediterranean countries, China and India.

In general, welfare changes under this scenario are larger than those under scenario A. Total gains reach almost 3.5 billion dollars, with major improvements in the EU (due to both improved resource allocation and more favourable terms of trade) and Brazil (table 9). Major losers under this scenario appear to be the Mediterranean countries and Japan. For the former, this is due to both higher import prices and worsened resource allocation. Japan experiences a significant increase in its import bill due to the increase in world prices; thus its welfare decrease is mostly due to less favourable terms of trade.

4.3 Scenario C: 45 Percent Reduction of Export Subsidy Expenditures on the 1997 Baseline

Changes in European agricultural policies are the most likely explanation for the difference between the results of this scenario and those of scenario A: as European agriculture becomes relatively more market-oriented after the Agenda 2000 CAP reforms and the MTR, supply responses to the reduction in export subsidies become more pronounced. The model seems to capture this effect in the difference between the 1997 and 2010 baselines.

Table 6 Elimination of EU Export Subsidies: Percentage Changes in Supply

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario B: baseline 1997											
EU15	-2.2	-4.2	-1.1	-2.5	-1.7	-8.0	-10.7	-1.3	-1.6	-1.1	-1.4
CEECs	0.3	1.8	-0.9	-1.3	0.3	-1.1	-1.5	0.5	2.2	-1.3	-0.7
USA	0.8	0.6	-0.3	-2.1	0.7	-1.4	-1.4	0.3	0.4	0.3	0.4
Canada	1.8	1.6	-0.1	-1.6	0.7	-1.8	-3.7	3.2	4.3	0.3	0.3
Australia & N. Zealand	3.6	1.4	0.2	-2.5	-0.4	-0.9	-0.9	10.4	11.8	2.0	0.6
Brazil	1.0	2.8	2.1	10.4	0.2	6.6	12.7	0.2	0.2	-0.8	-0.7
Argentina	1.7	1.4	2.1	-0.5	1.7	-0.4	-0.4	0.2	1.0	-0.3	-0.1
Rest of the Cairns Group	-0.6	0.2	-0.1	-1.5	-0.1	-0.4	-0.5	1.3	3.1	0.7	1.7
Japan	-0.3	0.3	0.1	-1.5	0.1	0.6	0.6	1.6	1.9	0.0	0.1
India	0.0	0.0	0.1	-0.1	2.2	0.0	0.0	0.0	0.5	0.1	6.8
Mediterranean countries	0.7	2.3	0.3	-1.2	0.8	1.2	2.4	1.6	5.2	0.4	2.0
Sub-Saharan Africa	2.0	0.1	-0.1	-0.7	-0.1	0.2	0.4	0.7	15.7	0.2	2.8
China	-0.1	0.0	0.0	-1.2	0.0	0.5	1.1	0.3	5.3	0.1	0.7
Rest of the world	0.5	0.3	0.1	-2.2	0.0	1.8	3.2	0.2	0.3	0.6	1.3
Scenario D: baseline 2010											
EU15	-3.1	-5.1	-1.7	-3.1	-2.1	-8.6	-11.9	0.6	1.1	-1.6	-2
CEECs	-5.5	-3.6	-2.1	-1.3	-0.5	-19.6	-24.3	0	0.7	-0.6	-1.7
USA	1.3	0.7	-0.4	-2.9	0.7	-1.4	-1.4	0.3	0.3	0.3	0.3
Canada	2.5	2.1	-0.2	-2	0.5	-1.4	-3.5	3.4	4.5	0.2	0.2
Australia & N. Zealand	4.8	1.6	0.5	-3.1	-0.1	-0.4	-0.4	9.4	11	2	1.1
Brazil	2.1	4.4	3.4	12.1	0.2	8	14.7	0.2	-0.1	-0.7	-0.6
Argentina	1.8	1.8	2.5	-1	2	-0.8	-0.8	0.4	1.8	-0.4	0
Rest of the Cairns Group	-0.3	0.4	-0.1	-1.8	-0.1	0	0	1.2	2.8	0.7	1.7
Japan	0	0.8	0.2	-2.1	0.1	0.9	0.9	1.8	2.2	0	0.2
India	0	0	0	-0.1	2.5	0	0	0	0.5	0	8
Mediterranean countries	1.1	3	0.3	-1.5	0.8	1.2	2.6	1.5	4.2	0.5	2.2
Sub-Saharan Africa	3	0.1	-0.1	-0.7	-0.1	-0.7	-1.1	0.7	14	0.2	2.9
China	0	0	0	-1.5	0	0.5	0.9	0.2	4.1	0.1	0.7
Rest of the world	1	0.4	0.1	-2.5	0.1	2.3	4.5	-2.8	-7.7	0.8	1.8

Source: Authors' simulation results

Table 7 Elimination of EU Export Subsidies: Percentage Changes in Market Prices

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario B: baseline 1997											
EU15	-0.77	-0.88	-0.62	-0.99	-0.42	-1.07	-0.52	-0.74	-0.44	-0.69	-0.5
CEECs	-0.26	-0.02	-0.63	-0.63	-0.26	-0.56	-0.25	-0.22	-0.18	-0.43	-0.24
USA	0	-0.04	-0.14	-0.41	-0.13	-0.32	-0.42	-0.09	-0.08	-0.09	-0.11
Canada	0.09	0.08	0.02	-0.12	-0.04	-0.14	-0.15	0.07	0.06	0.03	-0.06
Australia & N. Zealand	1.39	1.2	1.11	0.72	0.77	1.17	0.65	1.71	1.14	1.17	0.78
Brazil	4.41	4.56	4.5	5.53	3.7	5.04	4.15	4.36	3.98	4.39	3.96
Argentina	0.79	0.77	0.84	0.37	0.52	0.38	0.3	0.51	0.44	0.43	0.44
Rest of the Cairns Group	-0.25	-0.15	-0.28	-0.7	-0.23	-0.34	-0.23	-0.02	0.31	-0.07	-0.11
Japan	0.41	0.46	0.47	0.31	0.44	0.5	0.18	0.47	1.43	0.2	0.3
India	-0.22	-0.23	-0.21	-0.26	-0.22	-0.23	-0.22	-0.24	-0.21	-0.22	-0.22
Mediterranean countries	0.09	0.27	0	-0.22	-0.04	0.09	0.16	0.13	0.21	0.08	0.07
Sub-Saharan Africa	-0.05	-0.21	-0.22	-0.27	-0.21	-0.2	-0.18	-0.17	0.34	-0.2	-0.19
China	-0.22	-0.2	-0.22	-0.43	-0.17	-0.11	-0.12	-0.21	-0.12	-0.23	-0.16
Rest of the world	0.04	-0.01	-0.03	-0.6	-0.05	0.36	0.05	-0.05	0.22	0.02	0.07
Scenario D: baseline 2010											
EU15	-0.51	-0.56	-0.47	-1.12	-0.34	-0.48	-0.35	-0.38	-0.24	-0.37	-0.33
CEECs	-1.48	-1.19	-2.54	-1.33	-0.25	-2.91	-0.93	-0.76	-0.66	-0.87	-0.55
USA	0.09	-0.01	-0.13	-0.43	-0.09	-0.27	-0.39	-0.07	-0.06	-0.06	-0.09
Canada	0.14	0.12	0.05	-0.08	-0.02	-0.06	-0.1	0.1	0.1	0.06	-0.02
Australia & N. Zealand	1.23	1.02	0.91	0.57	0.65	1.02	0.57	1.44	0.98	0.97	0.66
Brazil	5.32	5.49	5.4	6.6	4.41	5.93	4.87	5.15	4.66	5.26	4.72
Argentina	1.17	1.24	1.23	0.3	0.69	0.39	0.32	0.72	0.51	0.56	0.57
Rest of the Cairns Group	-0.24	-0.16	-0.32	-0.85	-0.26	-0.25	-0.21	-0.07	0.26	-0.11	-0.13
Japan	0.49	0.55	0.51	0.27	0.47	0.56	0.2	0.51	1.49	0.27	0.31
India	-0.19	-0.2	-0.19	-0.23	-0.19	-0.2	-0.19	-0.21	-0.19	-0.2	-0.19
Mediterranean countries	0.16	0.38	0.01	-0.28	-0.04	0.11	0.21	0.15	0.21	0.11	0.11
Sub-Saharan Africa	0.04	-0.24	-0.26	-0.32	-0.24	-0.29	-0.23	-0.19	0.31	-0.22	-0.21
China	-0.2	-0.18	-0.21	-0.46	-0.16	-0.13	-0.14	-0.23	-0.12	-0.23	-0.16
Rest of the world	-0.03	-0.19	-0.26	-0.93	-0.22	0.23	0.08	-0.64	-0.09	-0.13	-0.01

Source: Authors' simulation results

Table 8 Elimination of EU Export Subsidies: Changes in Trade Balances (million US$ 1997)

	Wheat	Coarse grains	Paddy rice	Oilseeds	Milled rice	Sugar cane & beet	Refined sugar	Raw milk	Dairy	Live animals	Meats
Scenario B: baseline 1997											
EU15	-224.4	-393.1	4.2	-15.7	-37.6	0.7	-1,141.5	0.8	-1,004.8	20.0	-620.1
CEECs	0.5	35.6	0.2	-13.2	4.1	0.1	-21.6	-0.6	60.7	-38.3	-30.1
USA	85.4	199.8	-2.1	-372.1	11.4	0.1	-12.0	0.0	106.5	-17.5	195.5
Canada	73.1	35.6	0.0	-63.7	0.3	0.0	-0.7	-0.2	132.0	1.3	16.4
Australia & N. Zealand	81.0	8.2	0.6	-9.4	-1.3	0.0	-27.1	-0.1	942.5	52.8	68.9
Brazil	-82.9	16.3	-12.3	604.0	-5.9	-0.1	843.1	0.0	-11.4	-12.5	-53.2
Argentina	73.8	56.3	2.7	-26.6	14.4	0.0	-5.5	0.0	65.5	-1.6	-5.4
Rest of the Cairns Group	-1.2	6.6	-1.3	-9.9	-14.6	0.0	-28.4	-0.1	81.3	-12.3	162.8
Japan	-12.3	-28.9	-0.7	1.9	0.0	-0.1	-2.8	-0.4	-1.4	0.3	-9.6
India	-0.7	0.6	-3.8	-15.9	17.6	-0.1	0.9	-0.3	6.1	-0.2	11.8
Mediterranean countries	8.9	20.4	-0.7	-14.1	6.5	-0.1	141.0	5.7	88.8	14.9	77.6
Sub-Saharan Africa	4.9	6.2	0.0	-11.5	-1.7	-0.1	-12.4	-0.1	18.9	-1.6	8.9
China	1.9	20.9	-0.7	-18.7	5.8	0.0	13.1	-0.1	27.9	-0.6	9.5
Rest of the world	-4.3	35.6	12.8	-71.6	4.9	-0.4	255.3	-4.6	-342.0	-9.2	209.5
Scenario D: baseline 2010											
EU15	-400.1	-603.1	8.5	-27.8	-47.5	3.5	-1,361.5	-2.1	426.7	-21.8	-988.0
CEECs	-117.1	-84.2	0.3	-24.0	-6.9	0.7	-512.8	0.5	16.3	2.8	-70.4
USA	174.1	298.3	-3.0	-544.0	11.9	0.1	-10.8	0.0	105.5	-21.0	246.4
Canada	121.3	55.5	0.0	-88.4	0.2	0.0	3.7	-0.3	202.2	1.1	14.1
Australia & N. Zealand	136.2	19.4	0.7	-12.0	-0.3	0.0	-15.8	-0.2	1,210.5	49.2	117.3
Brazil	-147.8	24.5	-20.7	910.5	-15.6	-0.1	1,294.4	0.8	-38.3	-16.0	-68.3
Argentina	163.5	140.8	5.5	-80.3	22.3	0.0	-14.1	-0.1	127.8	-7.1	18.2
Rest of the Cairns Group	2.6	22.4	-1.2	-21.7	-13.6	0.0	37.3	-0.5	138.9	-9.0	224.7
Japan	-23.7	-53.3	-0.8	4.8	0.6	-0.1	-4.4	-0.4	14.1	-0.3	-6.2
India	-0.5	1.1	-6.7	-26.9	22.3	0.0	7.9	-1.9	9.8	-0.2	15.0
Mediterranean countries	45.6	48.8	-0.7	-23.4	7.4	-0.1	174.7	21.9	135.9	29.8	118.9
Sub-Saharan Africa	10.2	11.7	-0.3	-16.5	-12.4	-3.6	-98.4	-0.2	37.9	-2.2	20.1
China	5.2	43.3	-1.7	-46.1	7.8	0.0	22.9	-0.6	35.9	-1.1	14.3
Rest of the world	48.4	127.7	18.5	-94.2	28.5	-0.6	500.4	-16.7	-2,255.0	-10.3	412.7

Source: Authors' simulation results

Table 9 Elimination of EU Export Subsidies: Welfare Changes

	Scenario B: baseline 1997			Scenario D: baseline 2010		
	Allocative efficiency	Terms of trade	Total	Allocative efficiency	Terms of trade	Total
EU15	2,020.0	2,016.7	4,061.0	2,003.1	2,021.7	3,664.9
CEECs	-119.9	68.8	-70.5	632.7	495.2	1,049.8
USA	-75.0	463.0	297.1	-61.5	868.9	581.4
Canada	-146.9	16.5	-145.8	-176.7	157.7	-70.3
Australia & N. Zealand	7.5	266.6	268.1	5.4	323.0	249.4
Brazil	1,880.8	-624.8	1,992.1	3,138.6	-794.2	4,698.4
Argentina	-2.9	8.3	24.5	-36.6	524.7	601.8
Rest of the Cairns Group	40.3	-150.4	-132.9	-10.0	-516.9	-594.5
Japan	384.2	-700.7	-859.7	607.2	-710.5	-1,419.5
India	18.5	-4.0	5.3	19.3	-20.9	-35.8
Mediterranean countries	-400.2	-481.3	-877.4	-565.7	-775.7	-1,269.0
Sub-Saharan Africa	-56.4	-183.0	-238.1	-100.8	-335.6	-439.1
China	344.2	124.8	421.0	802.1	150.3	713.9
Rest of the world	-428.7	-806.2	-1,295.0	288.6	-1,368.1	-1,230.9
Total	**3,465.4**	**14.4**	**3,449.6**	**6,545.6**	**19.5**	**6,500.4**

Supply reacts in this way especially for products like cereals, meat and dairy, which are among the most involved in the CAP reform (table 2). Following the EU enlargement, the CEECs tend to move in the same direction. On the other hand, prices rise and production increases in many of the other countries and regions (table 3). As in previous scenarios, sugar production increases most notably in Brazil, dairy production most notably in Australia and New Zealand, and cereals production most notably in Canada and Argentina. Supplies of these same products also show increases in other nontraditional producers like sub-Saharan African countries, Mediterranean countries, China and India.

Accordingly, major changes in trade balances are observed for sugar, with Brazil, the "rest of the Cairns Group" and the Mediterranean countries expanding their export bills (table 4). Improvements are observed also in Argentina, Australia and New Zealand, and the United States for dairy and meat products, in Argentina and the United States for coarse grains, and in the United States and Canada for wheat.

Total welfare gains in this scenario appear lower than they do in the corresponding Scenario A, run on the 1997 baseline; this difference is due to more pronounced compensation between winners and losers (table 5). Brazil, Argentina, and Australia and New Zealand gain; for the latter this is mostly due to improvements

in their terms of trade, and for the two Latin American countries it is due to both improved terms of trade and improved resource allocation. The enlarged EU gains about 2.4 billion dollars, due to both improved resource allocation and more favourable terms of trade. There are welfare losses, as in previous scenarios, especially for Japan, the Mediterranean countries, sub-Saharan Africa and even the United States; here, as mentioned, some products are displaced to some extent by the competitive pressure exerted by middle-income exporters.

4.4 Scenario D: Elimination of Export Subsidies on the 2010 Baseline

The U.S.–Cairns group proposal implies larger and slightly different effects on the 2010 baseline – scenario D – than those seen with the corresponding scenario B, which analysed the same proposal with respect to a 1997 baseline.

In this scenario cereal supply increases most notably in Brazil, Australia and New Zealand, Canada, Argentina and the United States (table 6). Production of sugar, rice and oilseeds also increases significantly in Brazil, with a consequent substitution away from dairy and meat products. Dairy production increases occur especially in Australia and New Zealand, and in Canada, while supplies of cereals, meat and dairy products rise most notably in sub-Saharan Africa and in the Mediterranean region. On the other hand, agricultural supply decreases in the EU and the CEECs.

Prices increase in the main net exporting countries, especially Brazil, Argentina, Australia and New Zealand, and Canada (table 7). As reported also for scenario B, decreasing prices are observed in the enlarged EU, the United States, the "rest of the Cairns Group", sub-Saharan Africa, India and China. The same possible explanations apply to this case: these countries may turn out to be relatively less competitive than the Latin American exporters once export subsidies are eliminated, since this may lead to an increase in export availability more rapid than the increase in total demand.

As expected, Canada, Australia and New Zealand, Argentina and the United States show improved trade balances for cereal, dairy and meat products as a consequence of either an increase in exports or – as in the case of the United States – a decrease in imports (table 8). The Mediterranean countries, sub-Saharan Africa and China also experience improved trade balances. Brazil's trade balances for sugar and oilseeds improve considerably under this scenario, while the enlarged EU shows a decreased trade surplus for most agricultural products, with the exception of dairy, paddy rice and raw sugar.

In terms of welfare, this scenario produces a significant gain (table 9), which is captured mostly by Brazil due to more favourable terms of trade, and by the enlarged

EU due to improved resource allocation and terms of trade. Argentina, the United States, and Australia and New Zealand also experience significant gains, while net importing countries and regions like Japan and sub-Saharan Africa incur losses due to more expensive import bills. Finally, some net exporters such as the "rest of the Cairns Group" and to a lesser extent Canada experience a net loss.

5. Concluding Remarks

The evidence presented tends to confirm the knowledge that the elimination of EU export subsidies would bring about price increases, more market opportunities and increased agricultural production primarily for countries like Brazil, Argentina, Australia and New Zealand, and the Cairns Group in general that are currently operating close to world market conditions. Products involved are those that are currently more supported by the CAP: sugar, dairy, cereals, rice and meats.

Another clear indication from the experiments is that the sizes of the effects on all important economic variables would be relatively small, as changes range more or less from 5 percent to 10 percent; nonetheless, they tend to increase 1) with the switch from the EU to the U.S.–Cairns Group proposal (i.e., the more the scenario about export subsidies becomes radical); 2) with the switch from the 1997 to the 2010 baseline (i.e., as agricultural policy in the EU becomes relatively more market oriented); and 3) with EU enlargement to include the CEECs.

Other results emerged that appear to be less predictable. First, within this group of countries there are specific sectors for which domestic prices would decrease, especially in a scenario simulating the U.S.–Cairns Group proposal and when this proposal is assessed against the 2010 baseline. A possible explanation for this outcome is that within the same group of countries that are pushing for the elimination of export subsidies, the degree of competitiveness is variable enough to allow for some to gain a competitive position compared to others. In other words, if benefits associated with some products arise under all scenarios for countries like Brazil, Argentina, and Australia and New Zealand, for others, particularly the United States and Canada, the same rise in benefits does not always hold.

Second, despite the fact that net importing countries would suffer from more expensive import bills, benefits may arise, as seen, for some of them in terms of incentives to substitute imports with domestic production. This appears to happen, for instance, in the Mediterranean region, and to a lower extent in sub-Saharan Africa. This indirect effect may thus benefit these countries in the long term by lowering their dependence on food imports.

Third, market opportunities may arise for nontraditional exporters like China and the whole "rest of the Cairns Group" aggregation. As seen in the previous section, this aggregation includes a wide host of countries ranging from South Africa, to Southern Asian countries, to several Latin American countries; still, the potential advantage for the group as a whole may indicate opportunities for some "nontraditional" exporters.

Finally, the relatively large welfare gain that the model calculates for the enlarged EU, especially in the scenarios in which export subsidies are fully eliminated, can be easily related to the very reasons the reduction/elimination of export subsidies poses so many difficulties to the European policy makers. As seen, much of this benefit arises from an improvement in resource allocation; in turn, this implies a reduction in European agriculture as a whole and a migration of resources toward other activities in the economy. To the extent to which the model predicts these effects accurately, this appears to be a reason European farmers resist the change.

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Endnotes

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1. As is well known, distorting effects will be wider the "larger" the country that operates the export subsidies, where the word "large" refers to the ability to affect world market prices.

2. Forty-one African countries, most countries of the Caribbean region, most countries of the Mercosur and the Andean Pact, plus India and Malaysia.

3. The G-22 includes Argentina, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, Egypt, El Salvador, the Philippines, Guatemala, India, Kenya, Mexico, Pakistan, Paraguay, Peru, South Africa, Thailand and Venezuela. With the accession of Nigeria and Indonesia at the end of September members of this group became 23.