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TRADE PREFERENCE EROSION: EXPANDED ASSESSMENT OF COUNTRIES AT RISK OF WELFARE LOSSES

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ABSTRACT

This paper presents additional findings from the on-going work of the OECD project on trade preference erosion. The purpose was to assess in more detail the situation of those preference-reliant countries seen as being most at risk of experiencing negative welfare effects from preference erosion as a consequence of multilateral tariff liberalisation (building on Lippoldt and Kowalski, 2005). Based on a selection criterion, 7 developing countries were chosen for inclusion in the present study: Bangladesh, Madagascar, Morocco, Mozambique, Tanzania, Uganda and Zambia. Using the standard GTAP database and model, the paper considers a scenario of multilateral tariff liberalisation involving a 50% linear reduction in the *ad-valorem* equivalent measure of protection. Whereas most developing regions experienced welfare gains as a consequence of such a scenario, the selected countries were found to be at risk of modest welfare losses, most of which were associated with tariff liberalisation by European Union countries (EU-15). Where negative welfare impacts occurred in the selected developing countries, they tended to be driven primarily by terms of trade losses (especially by negative export price effects). In line with the modest size of the estimated welfare losses, the overall impact in terms of structural adjustment -- as measured by an index of structural change -- tended to be relatively modest. For three of the seven developing countries, welfare losses primarily associated with the EU-15 tariff liberalisation are estimated to be more than fully offset by greater gains arising from improved market access in other sectors and markets.

Keywords: tariff reductions, multilateral trade negotiations, nonreciprocal preferences, preference erosion, statistical review, CGE simulation, developing countries.

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EXECUTIVE SUMMARY

The purpose of this note is to assess in more detail the situation of those preference-reliant countries seen as being most at risk of experiencing negative welfare effects from preference erosion as a consequence of multilateral tariff liberalisation. The starting point is a multilateral tariff liberalisation scenario as modelled in the previous phase of the OECD Trade Directorate's preference erosion project (a 50% linear reduction in the *ad-valorem* equivalent measure of protection), which focused on tariff preferences in the Quad countries and Australia (Lippoldt and Kowalski, 2005). The modelling was conducted using the standard GTAP database and model (a static model with an assumption of perfect competition). The results indicated that most developing regions experienced welfare gains as a consequence of the multilateral tariff liberalisation. A number of developing regions saw per capita welfare enhanced by 1% or more. However, a few developing regions were revealed to be at risk of modest welfare losses, most of which were associated with tariff liberalisation by the European Union-15 countries (*i.e.* countries that were EU members prior to the recent round of accessions).

In order to assess in more detail the possible negative effects of preference erosion in developing countries under the above-referenced liberalisation scenario, the Secretariat established an arbitrary, albeit relatively inclusive, criterion to define a list of countries most at risk of negative effects. This group was defined to include those non-OECD countries for which the estimated welfare effects associated with liberalisation by one of the five preference-granting regions were negative and equivalent to at least 0.05% of per capita welfare. The developing countries selected using this criterion include Bangladesh, Madagascar, Morocco, Mozambique, Tanzania, Uganda and Zambia.[1] Despite their situation, none of these countries was estimated to experience a net loss greater than -0.3% of per capita welfare under the modelled tariff liberalisation scenario and three of them actually experienced overall per capita welfare gains. Where negative welfare impacts occurred in the selected countries, they tended to be driven primarily by terms of trade losses (especially by negative export price effects). As the selected countries exhibit particular reliance on trade with the EU-15 and European Free Trade Association region, the analysis includes a particular focus on their exports to that region.

In line with the modest size of the estimated welfare losses for the selected countries under the modelled tariff liberalisation scenario, the overall impact in terms of structural adjustment in output and employment tended to be relatively modest. Among the leading preference-reliant export sectors (*e.g. Textiles*, *Wearing apparel* and *Food products*), the implied structural adjustment in output and employment was never large and negative. In a number of cases, negative impacts were more pronounced in sectors with smaller volumes of preferential exports (especially *Other manufacturing*) than in the leading preference-reliant sectors. More important were the export price changes in sectors that rely on tariff preferences, a result that is likely to be associated with preference erosion and one that is the main source of negative welfare impacts in the analyzed economies.

[1] The region "Rest of Sub-Saharan Africa" exhibits some characteristics similar to those of the selected countries, but it does not satisfy the criterion as the bulk of its estimated welfare loss is not attributable to liberalisation by the Quad countries or Australia.

On balance, the impacts of tariff preference erosion tended to be relatively modest in scale in the selected economies under the modelled tariff liberalisation scenario. At the same time, the reduction in market-distorting tariff preferences may result in negative effects in some of the associated sectors (*e.g.* in terms of lost rents or export price impacts) in these developing countries. For three of the seven countries, such negative effects are estimated to be more than fully offset by greater gains arising from improved market access in other sectors and markets.

TRADE PREFERENCE EROSION: EXPANDED ASSESSMENT OF COUNTRIES AT RISK OF WELFARE LOSSES

Introduction

1. At the direction of the OECD Trade Committee and its Working Party, the Trade Directorate is implementing a multi-phase project on the topic of trade preference erosion. The present paper is an extension of the original project document on "Trade Preference Erosion: Potential Economic Impacts" (Lippoldt and Kowalski, 2005), which included a literature review, statistical assessment and modelling exercise. The object of this extension is to assess in more detail the situation of those preference-reliant countries identified in the original paper as being most at risk of negative economic effects from preference erosion as a consequence of multilateral tariff liberalisation.

2. The present assessment first revisits the results of the simulations described in the previous paper in order to provide more detail on the impacts of the modelled scenarios, with particular regard to those preference-reliant countries that were found to be most at risk of negative economic impacts from preference erosion as a consequence of multilateral tariff liberalisation. Drawing on summary statistics available from the model, the analysis considers the situation of the selected developing countries with regard to trade-related losses, sectoral output and price changes, reallocation of employment and economic sources for losses (terms of trade vs. allocative efficiency components). Using an index of structural change, the paper then presents analysis of the implied economic adjustment including a comparison of the results for the "at risk" countries with results for regions that experience a net gain despite having initially enjoyed preferential access to Australia and the Quad countries (*i.e.* Canada, the European Union, Japan and the United States).

3. Using a separate database assembled by the Secretariat, the analysis then moves to consider preferences and the structure of trade for the selected developing countries in light of detailed data on actual and estimated trade flows according to type of tariff treatment. The purpose is to illustrate concretely the reliance on preferences by these economies. Two specific cases are considered. First, the share of preferential exports to the European Union (EU) is considered for each of the selected developing countries by sector and in relation to its global exports. Secondly, a brief case study of Madagascar's exports to Australia and the Quad countries is considered.

Economic situation of the selected countries

4. The point of departure for this analysis is the scenario of a worldwide 50% cut in the *ad-valorem* equivalent measures of tariff protection, which is assessed using the standard model and database of the Global Trade Analysis Project (GTAP).[2] The per capita changes in welfare (equivalent variation in

[2] Version 6.05 of the GTAP database was employed for this analysis. The standard GTAP model is a static model with an assumption of perfect competition. For more information on the model and database, please visit the GTAP web site at: http://www.gtap.agecon.purdue.edu/default.asp .

income) under this scenario are presented in Table 1.[3] This table provides a breakdown of welfare effects by country (or region) taking the liberalisation action and by trading partners where the welfare effects accrue. It therefore permits identification of countries that are at risk of losing under the modelled scenario.

5. The estimates presented here are based on a static resource allocation exercise taking resources, technology and institutions as given. If the trade reform encouraged inflows of technology (as it is expected to do) — for example, through increased imports or exports, foreign direct investment or licensing — or if it introduced fundamental institutional reform, it could have more pronounced effects on welfare. The magnitude of resulting welfare change estimates would undoubtedly change if some these elements were incorporated into the model structure. At the same time, it is worth pointing out that there is no presumption that everyone benefits from dynamic effects. In this context, the static results presented in this paper can be interpreted with more confidence in relative terms than in absolute terms (*i.e.* it is more useful to compare results across countries rather then the absolute equivalent variation values themselves).

6. For a large majority of developing regions, a 50% multilateral tariff liberalisation results in welfare gains that accrue specifically from improved overall access to the 5 preference-granting markets considered here.[4] This conclusion extends to a number of developing countries that gain despite having initially enjoyed substantial positive preferential margins with respect to the Australian and Quad markets. However, the results also indicate a negative correlation between the initial size of the effective preferential margins (taking into account the structure of exports) and the welfare impacts of liberalisation, including a number of cases of net welfare losses. For a majority of developing regions shown in the table, the preferential schemes of the EU have a more significant impact than those of the United States, Japan, Canada or Australia. This is primarily due to the relatively sizable export volumes and shares of many of these developing countries under the EU schemes. As a flip side of this coin, a MFN liberalisation by the EU is estimated to generate negative welfare impacts in a number of developing countries, predominantly in Africa.

7. In order to focus the present analysis, we select countries that -- according to the modelled scenario -- are most likely to experience negative economic impacts from preference erosion as a consequence of multilateral tariff liberalisation. These are defined to include those non-OECD countries for which the estimated welfare impacts associated with liberalisation by one of the preference-giving countries are negative and equivalent to at least 0.05% of per capita welfare. (In comparison, the median overall welfare change among the non-OECD regions was +0.31%.) Inevitably, such a selection criterion is to some extent arbitrary. We have aimed to select a relatively inclusive definition of countries at risk. This was done by selecting a relatively small threshold of loss as a cut-off point. This resulted, for example, in selection of 3 developing countries with overall net welfare gains, but losses associated with liberalisation in an individual preference-granting market that initially afforded substantial preferential access (*i.e.* the EU-15 and EFTA). Given the focus here on preferences of the Quad plus Australia, the criterion excluded developing regions estimated as facing net welfare losses associated primarily with

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3 These data were originally presented in Table 29 of (Lippoldt and Kowalski, 2005). That document also provides detailed information on the market access conditions and preferential programmes in Australia and the Quad countries.

4 It should be noted that the CGE modelling experiments employ a fairly high level of regional aggregation and therefore do not provide detailed information on outcomes for some of the smaller individual countries. Please note that the composition of the country groupings used in the present GTAP analysis can be found in Table 17. For the GTAP analysis in this paper, the "EU-15 and EFTA" data refer to the European Union-15 countries (*i.e.* the EU excluding the recent EU accession countries) plus the four European Free Trade Association countries (Iceland, Liechtenstein, Norway and Switzerland). The EU-15 countries account for 96.3% of the imports from developing countries into the EU-15 and EFTA region.

liberalisation in markets other than the Quad plus Australia (the excluded regions in this category were Columbia[5], the Rest of Sub-Saharan Africa and the Rest of North America[6]).

8. Countries selected for inclusion in the following analysis using the "at risk" criterion include: Bangladesh, Madagascar, Morocco, Mozambique, Tanzania, Uganda and Zambia. In each of these countries, the loss of at least 0.05% in per capita welfare is attributable to liberalisation by the EU-15 and EFTA.[7] Moreover, Madagascar, Mozambique, Tanzania and Uganda are identified as net losers from the worldwide liberalisation. It is worth noting that the region "Rest of Sub-Saharan Africa" exhibits some characteristics similar to those of the selected countries. This region is estimated to experience a modestly negative welfare change under the multilateral tariff liberalisation scenario modelled as part of this exercise. (Drawing on the Secretariat's preferential trade database which assumes that trade with the EU takes place at the best available tariff rates, an analysis of the countries comprising the Rest of Sub-Saharan Africa region reveals similar degrees of reliance on EU preferences as for the seven selected developing countries covered in the present analysis; *e.g.* 18 of the SSA countries are inferred to rely on EU preferences for 10% or more of their total exports). Consequently, the conclusions from the present analysis may also be applicable to the SSA region. Unfortunately, the GTAP database does not permit disaggregation of the region in order to test this hypothesis with respect to the individual countries.

9. As discussed in more detail in Lippoldt and Kowalski (2005), the welfare losses for some developing countries under a scenario of unilateral liberalisation by an individual preference-granting country tend to be more than offset under the multilateral liberalisation scenario by gains from liberalisation by other preference-granting countries. This is the case for Bangladesh and Madagascar, for example, which experience non-negligible welfare losses as a result of liberalisation by the EU-15 and EFTA (and to a lesser extent Japan) but at the same time benefit significantly from the liberalisation by the United States. Malawi would have lost from liberalisation by Japan, but is more than compensated under the multilateral scenario by liberalisation in the European Union and the United States.

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5 Columbia actually has modest welfare gains from tariff liberalisation by the EU-15 and EFTA region and the US (no change with respect to Australian, Canadian and Japanese liberalisation), but suffers net welfare losses due to liberalisation elsewhere. After the United States, its two largest trading partners are Venezuela and Ecuador.

6 Rest of North America is a residual category of small economies comprising Greenland, St. Pierre et Miquelon, and Bermuda.

7 Simulation of MFN liberalisation by the EU-15 and EFTA region generates reductions in annual per capita welfare for the following developing regions: Mozambique and Bangladesh (-0.21%), Zambia and Madagascar (-0.14%), Morocco and Uganda (-0.11%), Tanzania (-0.07%), Rest of Sub-Saharan Africa (-0.02) and Venezuela (-0.01), as well as for Rest of North America (-0.35%). The subtotals attributed to the liberalisation by the United States indicate three cases of negative impacts: South Africa (-0.01%), the Rest of Sub-Saharan Africa (-0.02%) and the Rest of Middle East and North Africa (-0.01%). A number of countries that currently enjoy preferential treatment in the Japanese market are also affected negatively. These include: Malawi and the Rest of North America (-0.04%), Mozambique and Madagascar (-0.02%), and Bangladesh, Peru, Rest of SACU, Tanzania and Zambia (-0.01%). The simulation of liberalisation by Australia shows a number of cases with small negative marginal impacts in Singapore (-0.02%) and the Rest of North America, Botswana, rest of SACU, Malawi, Mozambique, Zambia and Zimbabwe (each by -0.01%). The simulation of liberalisation by Canada indicates that most developing countries either would not be affected or would benefit. Marginal negative impacts are recorded only for the Rest of North America (-0.03%), Malawi (-0.01%) and the Rest of Sub-Saharan Africa (-0.01%).

Trade Shares

10. Since welfare results depend to a large extent on the observed trade shares, Tables 2 to 4 provide some basic information on the structure of exports for the seven selected countries as of 2001.[8] As can be seen from Table 2, all of these countries rely heavily on the EU-15 and EFTA region, with that region accounting for exports shares of between 50 and 70%. These shares are notably higher than those observed for the US (2 to 23%), Japan (2 to 6%), or Canada and Australia (up to 1%). Moreover, as shown in Table 3, exports to the EU-15 and EFTA region exhibit notable concentration in some product categories. *Textiles* and *Wearing apparel* account together for 82, 48 and 37% of exports to the EU-15 and EFTA region by, respectively, Bangladesh, Madagascar and Morocco. *Primary agriculture* accounts for 46 and 19% of exports to the EU-15 and EFTA region by, respectively, Uganda and Tanzania. *Other manufacturing*[9] accounts for 82, 67, 33 and 20% of exports to the EU-15 and EFTA region by, respectively, Zambia, Mozambique, Tanzania and Morocco. Other relatively important categories include *Services* and *Food Products nec*.

11. Table 4 presents the preference margins expressed as the difference between the bilateral and overall trade-weighted average *ad-valorem* measures of protection for the EU-15 and EFTA region as of 2001. Presenting the preference margins in this way takes into account the preferential situation of a given exporter relative to all the exporters to the EU-15 and EFTA region, including other developing countries and not simply those countries exporting under MFN rates. A comparison of Tables 3 and 4 does not indicate a consistent relationship between the export concentration pattern and the size of preferential margins enjoyed in the EU-15 and EFTA region. Whereas all of the selected countries benefited from preferential access to the EU-15 and EFTA region, they did not uniformly experience advantageous preference margins with respect to the trade-weighted average duty rate in each product category. This outcome is a function of variation in the availability of preferential tariffs for specific products for each of the region's trading partners, variation in the preferential margins across products, and the structure of trade of the individual developing countries considered here.

Decomposition of welfare results

12. The measure of change in welfare reported in this note is the equivalent variation in income, which is the money metric equivalent of the utility change brought about by the price change. More straightforwardly, welfare gains from trade liberalisation can be broken down into two components: (1) the change in efficiency with which countries utilise their resources and (2) the change in their terms of trade [Hertel and Martin (1999)].[10] Table 5 breaks down the welfare results of the modelled scenario of a

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8 NB, the GTAP 6.05 database takes into account trade protection as of 2001. However, with respect to least developed countries (LDCs), a number of changes in OECD country import regimes have subsequently reduced the tariff and quota barriers the LDCs faced. Of particular relevance to the six LDCs considered here (Morocco is not an LDC), access to the EU market was enhanced through the introduction of the so-called Everything-But-Arms initiative.

9 *Other manufacturing* includes such sectors as wood products, paper products, publishing, petroleum and coal products, chemical, rubber and plastic products, mineral products, metals and metal products, motor vehicles and parts, transport equipment, machinery and equipment, and miscellaneous manufactures.

10 Additionally, equivalent variation accounts for changes of prices of capital goods and savings (spending on capital goods represents investment in the standard GTAP model). An increase in the price of capital goods increases real income of a region while an increase in the price of saving decreases the real income. While the inclusion of the investment and saving price decomposition term in the welfare decomposition is necessary for the model mechanics, the true costs of investment and saving are not well represented in this model and the investment and saving price component of the welfare decomposition does not convey any genuine economic insight. For the sake of completeness, we report all three components of the welfare decomposition in Table 5.

multilateral 50% reduction in tariff protection into the allocative efficiency and terms of trade components, indicating the subtotal of these gains that can be attributed to the liberalisation by the EU-15 and EFTA region. For reference, the impact on prices of capital goods (investment) and savings is also shown in the welfare decomposition. Tables 6 and 7 provide further product-level breakdowns of allocative and terms-of-trade welfare components of the *worldwide* liberalisation; Tables 8 and 9 provide equivalent breakdowns for results concerning solely liberalisation *by the EU-15 and EFTA region*. At least two observations are warranted.

13. Firstly, the terms of trade component is consistently negative and of relatively significant magnitude for each of the seven "at risk" economies. According to the modelled scenario, prices of products exported by the selected developing countries decrease relative to prices of these countries' imports (Table 5). As shown in Table 7, the terms of trade losses are concentrated in sectors known to benefit from preferences. Bangladesh and Morocco experience significant losses with respect to *Textiles* and *Wearing apparel* (as does Madagascar to a lesser extent). Several countries experience notable terms of trade losses with respect to *Other manufacturing*, *Primary agriculture*[11], *Food products* and *Services*.

14. Since GTAP specifies trade flows on a bilateral basis, the terms of trade effect can be de-composed into three effects:

- a world price effect (positive when aggregate exports are dear or imports are cheap),
- an export price effect (positive when varieties exported by the region are dear relative to other varieties of the same good), and
- an import price effect (positive when the composition of varieties imported by region is cheap relative to world average price of the same good).

15. A decomposition of welfare effects associated with terms of trade changes in Table 10 indicates that the export price effect is the major component driving the negative results. A plausible interpretation is that liberalisation simulated in the model results in greater competition faced in world markets by these developing countries' products which in turn drives exporters to lower their prices in order to preserve their market shares. The export price effect is expected to be relatively high in products suffering from preference erosion. This result points to negative price effects rather than output effects as a main consequence of preference erosion. Such an interpretation of observed terms of trade results is supported, for example, by the further finding that most of the welfare loss associated with the export price effect in Bangladesh and Morocco occurs in *Textiles* and *Wearing apparel*, a sector receiving better-than-MFN treatment and heavily reliant on exports to the EU-15 and EFTA region.

16. Secondly, allocative efficiency results obtained for the worldwide liberalisation contrast with those relating to the liberalisation by the EU-15 and EFTA region. In all of the selected developing economies allocative efficiency gains relating to the liberalisation by the EU-15 and EFTA region are negative, whereas taking the global liberalisation into account they are positive and substantial.[12] As a rough generalisation, this implies that following the trade shock of liberalisation by the EU-15 and EFTA

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[11] For a further assessment of agriculture, see *Agricultural Non-Reciprocal Tariff Preferences By the Quad Countries*, [COM/AGR/TD/WP(2005)15], 7 March 2005.

[12] Bangladesh and Morocco experience substantial allocative efficiency gains from worldwide liberalisation, particularly with respect to *textiles*, *wearing apparel* and *other manufacturing* (Table 6). Mozambique, Tanzania and Zambia also experience notable allocative efficiency gains from worldwide liberalisation in *other manufacturing*.

region, the corresponding productive resources in these developing countries are reallocated to uses which are less efficient as compared to the pre-shock situation.

17. A further decomposition of the allocative efficiency losses from EU-15 and EFTA liberalisation into product level categories (Table 8) indicates that, similar to terms of trade effect, allocative efficiency losses in Bangladesh and Morocco can be mainly attributed to developments in *Textiles, Wearing apparel* and *Other manufacturing* sectors. It should also be noted that corresponding impacts on output in these sectors are negative (Table 12). A plausible interpretation of this result is that erosion of preferential margins and large initial volumes of exports by Bangladesh and Morocco of these products to the EU-15 and EFTA region trigger a reallocation of productive resources into other sectors that use them less profitably from the point of view of these countries' welfare. While these results should be interpreted with caution keeping in mind that the model is subject to a variety of assumptions, they may portray a situation of a genuine case of negative effects of preference erosion. On the other hand, as shown in Table 11, it should be noted that output by Bangladesh and Morocco in *Textiles* and *Wearing apparel* benefit overall as a consequence of worldwide liberalisation.[13]

Structural Change Index

18. To provide a more comprehensive picture of the structural change resulting from the multilateral liberalisation scenario described above, the Structural Change Index (SCI) is used here to assess the extent of the changes in the sectoral value added and employment shares arising in an economy as a consequence of the trade shock. The index is given by the formula:

$$SCI = \frac{1}{2}\sum \left| x_{i,t} - x_{i,t-1} \right|$$

where $x_{i,t}$ and $x_{i,t-1}$ represent each industry's share of total value added after and before the trade shock under consideration (respectively, t and $t-1$) [Productivity Commission (1998)]. The index is bounded between 0 and 100, with 0 indicating no structural change and 100 a complete reversal of structure (i.e. complete reallocation of resources with an economy) [OECD (1994)]. The scores are internationally comparable and describe the percentage of productive resources reallocated within each economy as a result of adjustment to the analysed trade shock. The interpretation of an SCI score equal to 25% is that 25% of the economy's resources were reallocated between sectors as a result of the analysed shock. The sectoral contributions to the index make it possible to trace the reallocation of resources. In the present analysis, the GTAP database and model results provide a good basis for calculating such an index of structural change because they are available across countries on a comparative basis.

19. Table 13 reports SCI scores calculated on the basis of sectoral value added shares before and after the shock of the modelled trade liberalisation scenario (measured in constant prices to separate out the effects of price changes). Table 14 presents equivalent scores calculated on the basis of sectoral shares of expenditure on labour. Thus, the first of the two tables presents a proxy measure for the extent of structural change in output and the second a proxy measure for the extent of structural change in employment. For the sake of comparison, we report SCI scores for all individual developing countries represented in our model (*i.e.* excluding regional groupings).

20. The index scores calculated on the basis of value added shares (Table 13) are fairly modest and range from 0.2 to 0.3% in Singapore and Venezuela to 2.1 to 2.9% in Tunisia and Vietnam. Among the 7 selected "at risk" developing countries, the scores range from 0.4% in Madagascar and Zambia, to 1.4 and

[13] More generally, the output changes from worldwide liberalisation do not exhibit a consistent pattern by sector, but rather shift depending on the situation of each developing country in the sample.

1.5% in Bangladesh and Morocco[14], respectively. The interpretation is that the model simulation predicts that up to 3% of output will be reallocated between sectors as a consequence of the multilateral liberalisation involving a 50% reduction in ad valorem protection. While there is some variation across countries, there is a notable tendency for output in *Other manufacturing* to contract somewhat in most countries.[15]

21. The scores calculated on the basis of sectoral shares of the expenditure on labour (Table 14) tend to be smaller than those for changes in output. They range from 0.2% in Singapore, Peru, Turkey, South Africa and Uganda to 1.5% and 1.8% in Morocco and Vietnam, respectively. The change in Bangladesh, Mozambique, Tanzania, Zambia and Madagascar ranges from 0.3 to 0.6%. The interpretation is that the model simulation predicts that up to 1.8% of the labour resources will be reallocated between sectors as a consequence of the multilateral liberalisation involving a 50% reduction in the *ad valorem* protection.[16] As with the scores for output, there is a notable tendency for expenditure on labour in *Other manufacturing* to contract somewhat.

22. The SCI scores are much smaller than percentage output changes presented in Tables 11 and 12 but are a preferred measure of structural change: estimated percentage output changes do not account for the size of the initial shares in production or employment. While the calculated SCI scores are comparatively modest, their magnitude is consistent with that of per capita welfare changes reported in Table 1. It should be pointed out, however, that there is no direct link between welfare and SCI scores. In principle, high welfare gains are consistent with both high and low SCI scores. The SCI scores should rather be interpreted as supplementary measures indicating the temporary transition costs of the implemented trade reform. Seen from this perspective, compared to the other developing countries considered in Tables 11 and 12, the impacts of structural change in the selected countries are not extreme (admittedly, the employment adjustment in Morocco is toward the high end of the modest range).

Leading preferential exports

23. Although the *ad-valorem* equivalent measures of protection in the GTAP database reflect the influence of preferences, the structure of the database does not permit separate analysis of preferential trade flows. In order to assess product-specific reliance on *EU* trade preferences, we turn to the OECD Secretariat's database of preferential trade flows. In the case of imports into the EU, these data are drawn from the World Integrated Trade Solution (WITS) database developed by UNCTAD and the World Bank. Using the actual tariff and trade flow data provided through WITS, the OECD Secretariat estimated preferential trade flows into the EU on the assumption that imports entered at the best available tariff rates. This approach is in line with the findings in a recent report by the European Commission (2005), which confirms relatively high rates of utilisation of preferential tariff schemes (and, where available, MFN duty-free tariff treatment) by developing countries seeking access to the EU market. Nevertheless, the approach used in this statistical assessment may still overestimate the preferential trade flows, because in practise traders do not always take advantage of the preferential rates.[17] In effect, the estimates provide an

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14 Morocco is notable in that, in addition to the shift of output away from *Other manufacturing*, it reaps comparatively large allocative efficiency gains (in absolute terms) in *Wheat*, *Leather products*, *Dairy products* and *Natural resources* while reducing the shares of output in these sectors.

15 In comparison, the shifts of output away from other contracting sectors (*e.g.* some commodity sectors in agriculture or natural resources) tended to be similar or smaller than in *Other manufacturing*.

16 The model holds overall employment constant and does not provide for unemployment.

17 Among other reasons, traders may forego the use of preferential rates due to availability of low MFN rates, avoidance of additional administrative costs associated with use of the preferential rates, or failure to comply with rules of origin provisions.

indication of the upper bound for preferential trade flows given the structure of trade. The data used here refer to 2002; they have been aggregated to GTAP categories to maintain a degree of comparability with the data in the previous section.

24. Table 15 presents the leading preferential trade flows from each of the selected developing countries into the EU market.[18] The top four preferential export product categories are shown for each supplier as a percentage of each supplier's total exports (*i.e.* their global exports of all products). Among these seven developing countries, the estimated preferential trade flows for the top four preferential exports to the EU amounted to between ¼ and ½ of the exporter's global trade. Mozambique has the highest concentration of preferential trade in the top four export product categories and Tanzania the lowest, but all of the countries exhibit a notable reliance on preferential trade with a concentration in just a few product groups. For all of the countries, agricultural products figure among the leading preferential exports to the EU; four of the countries also list *Textiles* and/or *Wearing apparel* among the leading preferential exports to the EU. Mozambique was unique in that a large share of its preferential exports fell in the *Metals nec* product group. As indicated by the small shares of MFN trade, among the trade flows for the products shown in the table most were eligible for preferential treatment. Only in the case of certain agricultural exports from Uganda, was there substantial MFN trade inferred.[19]

25. Overall, the examination of preferential trade flows presented in Table 15 confirms the importance of preferential trade with the EU for the seven selected developing countries and it underscores a degree of concentration of preference usage by these countries in a limited number of product groups. Despite this, the structural changes in output and employment in the leading preference-reliant sectors as a consequence of multilateral *tariff* liberalisation tend to be modest.[20] For example, as indicated in Tables 13 and 14, the structural changes in *Textiles* and *Wearing apparel* are either positive or relatively small (*i.e.* ranging from 0.0 to -0.1). In three cases in each of these two tables (among the 7 countries), the effects of the modelled liberalisation in terms of structural adjustment in output and employment tend to be more negative in *Other manufacturing* (a product group with a lower concentration of preferential exports than *Textiles* and *Wearing apparel*). At the same time, as highlighted in the preceding analysis, the price effects are relatively large and drive the welfare results.

A closer look at preference reliance in Madagascar

26. As an illustrative case, the export situation of Madagascar vis-à-vis Australia and the Quad countries is presented in more detail in Table 16. Madagascar figures among the least developed countries. It was one of the three pilot countries for the Integrated Framework programme for trade-related technical assistance. Due to a political crisis, during the first half of 2002 trade was somewhat disrupted but began to recover in later in the year after the crisis subsided [IF(2003)]. Madagascar's exports actually became somewhat more diversified in recent years. As of 1990, for example, food and unprocessed agricultural products accounted for more than 75% of merchandise exports [WTO (2001)]. By 1999, exports of those products declined to account for just 42% of the total. During the same period exports of textiles grew from about 4% to 29% and *Other semi-manufactures* grew from about 2% to 8%. Nevertheless, exports still exhibited a fair degree of concentration. As can be seen in the Table 16, Madagascar exhibited notable preference reliance, with over ½ of its total exports in 2002 inferred as taking place via the preferential

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18 For more details on the exports of these countries to the other Quad countries and Australia, please see Lippoldt and Kowalski (2005).

19 Exports from Uganda to the EU are eligible for EBA preferences, but a portion enter the EU under MFN tariffs -- particularly where there is MFN duty-free access available. For example, in the case of coffee the EU MFN tariff rate is zero.

20 This analysis does not take into account the effects of quota liberalisation, which are likely to be different.

programmes of the EU. A further 9% share of total exports entered the US under preferential schemes. All together, the share of preference-reliant exports from Madagascar to Australia and the Quad countries approached 2/3 of total exports in 2002. The bulk of those preferential exports were in *Wearing apparel*, *Textiles*, *Food products, nec*, and *Primary agricultural products*.

Conclusions

27. As modelled in the previous phase of the OECD Trade Directorate's preference erosion project, most developing regions experience welfare gains as a consequence of the multilateral tariff liberalisation scenario.[21] The purpose of this note has been to assess in more detail the situation of selected preference-reliant countries seen as being most at risk of negative economic effects from preference erosion. The analysis points to the likely connection between welfare losses under the modelled scenario and preference erosion, particularly with respect to the EU-15 and EFTA region. The model predicts that the worsened conditions of access to the EU-15 and EFTA region are accommodated primarily by changes in prices. For three of the seven countries, the negative effects of EU-15 and EFTA tariff liberalisation are estimated to be more than fully offset by greater gains arising from improved market access in other regions under the modelled scenario. For the remaining countries, the estimated overall adjustment is projected to be modest and not necessarily negative in the most preference-reliant export sectors.

[21] Under the modelling exercise, the team aggregated the countries of the world into 44 regions. Consequently, it is possible that certain smaller countries within these regions might stand to lose out in per capita welfare, even though the overall region gains. Given the relatively aggregated nature of the GTAP database, it is not possible to break out all of these economies separately. In its most basic disaggregation, the GTAP database includes data for 57 pre-defined countries and regions.

Table 1. Welfare implications of worldwide 50% cut in *ad-valorem* equivalent measures of protection

(% change in per capita welfare sorted by the magnitude of overall impact)

	Breakdown of % welfare gains by region taking liberalisation action						
	All	Australia	Japan	Canada	US	EU-15 and EFTA	others
Rest of North America	-6.09	-0.01	-0.04	-0.02	0.03	-0.31	-5.74
Tanzania	-0.29	0.00	-0.01	0.00	0.00	-0.07	-0.21
Uganda	-0.29	0.00	0.00	0.00	0.00	-0.11	-0.18
Mozambique	-0.22	-0.01	-0.02	0.00	0.02	-0.21	0.00
Colombia	-0.20	0.00	0.00	0.00	0.03	0.05	-0.28
Rest of Sub-Saharan	-0.16	0.00	0.00	-0.01	-0.02	-0.02	-0.11
Madagascar	-0.14	0.00	-0.02	0.00	0.20	-0.13	-0.19
Peru	0.06	0.00	-0.01	0.01	0.05	0.05	-0.04
Chile	0.07	0.00	0.00	0.00	0.03	0.02	0.02
Zambia	0.09	-0.01	-0.01	0.00	0.01	-0.14	0.24
Philippines	0.10	0.00	0.01	0.00	0.11	0.02	-0.04
Venezuela	0.10	0.00	0.00	0.00	0.01	-0.01	0.10
Argentina	0.13	0.00	0.00	0.00	0.01	0.05	0.07
Rest of Europe	0.16	0.00	0.00	0.00	0.00	0.03	0.13
Bangladesh	0.26	0.00	-0.01	0.01	0.21	-0.20	0.25
Brazil	0.26	0.00	0.00	0.00	0.03	0.20	0.03
Uruguay	0.26	0.00	0.01	0.03	0.00	0.20	0.02
Indonesia	0.31	0.01	0.01	0.00	0.05	0.11	0.13
Rest of MENA	0.31	0.00	0.00	0.00	-0.01	0.04	0.28
South Africa	0.32	0.01	0.00	0.00	-0.01	0.06	0.26
China	0.36	0.00	0.03	0.01	0.08	0.10	0.14
India	0.44	0.00	0.00	0.00	0.02	0.06	0.36
Botswana	0.58	-0.01	-0.01	0.00	0.03	0.15	0.42
Morocco	0.64	0.00	0.00	0.00	0.02	-0.12	0.74
Zimbabwe	0.65	-0.01	0.02	0.00	0.04	0.21	0.39
Singapore	0.68	-0.02	0.08	0.00	0.03	0.12	0.47
Thailand	1.07	0.01	0.01	0.00	0.08	0.30	0.67
Rest of SADC	1.21	0.00	0.00	0.00	0.02	0.15	1.04
Sri Lanka	1.26	0.01	0.00	0.01	0.51	0.30	0.43
Malawi	1.43	-0.01	-0.03	-0.01	0.49	0.16	0.83
Tunisia	1.50	0.00	0.00	0.00	0.02	0.18	1.30
Malaysia	1.64	0.00	0.02	0.00	0.03	0.06	1.53
Rest of SACU	1.80	-0.01	-0.01	0.01	0.34	1.31	0.16
Vietnam	2.64	0.05	0.07	0.02	0.06	0.77	1.67

Source: GTAP model simulations and (Lippoldt and Kowalski, 2005).

Table 2. Export shares by trading partner, 2001

(% of total exports)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Destination market							
Rest of Oceania	0.1	0.7	0.1	0.2	0.0	0.0	0.1
Australia	0.4	0.6	0.2	0.5	0.1	0.1	0.4
China	0.2	1.6	1.6	1.3	3.3	1.3	0.8
North/East Asia	2.2	1.9	2.3	2.3	4.4	1.5	3.6
Japan	1.9	3.7	3.9	6.1	4.4	3.0	2.3
Indonesia	0.2	0.2	0.3	0.8	0.0	1.0	0.6
Malaysia	0.2	0.2	0.4	0.6	0.9	0.2	0.3
Philippines	0.2	0.1	0.2	0.2	0.0	0.0	0.1
Singapore	1.1	1.7	0.5	1.9	0.4	7.9	1.3
Thailand	0.5	0.6	0.2	0.8	4.9	0.6	0.2
Vietnam	0.2	0.2	0.1	0.2	0.0	0.0	0.2
Rest of the World	1.4	2.4	1.6	3.0	0.9	0.7	1.9
Bangladesh	0.0	0.1	0.0	0.1	0.1	0.0	0.2
India	0.8	2.7	1.0	6.2	1.2	0.3	0.3
Sri Lanka	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Canada	1.8	1.2	0.6	1.0	0.3	0.5	0.9
United States	37.4	9.6	5.5	8.4	1.8	23.1	7.4
Mexico	0.4	0.9	0.1	0.6	0.2	0.2	0.4
Rest of North America	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Colombia	0.0	0.1	0.0	0.1	0.0	0.0	0.1
Peru	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Venezuela	0.0	0.2	0.1	0.1	0.0	0.0	0.1
Argentina	0.1	0.3	0.1	0.3	0.0	0.0	0.3
Brazil	0.4	1.0	0.3	0.3	1.0	0.1	0.2
Chile	0.0	0.1	0.1	0.1	0.0	0.0	0.1
Uruguay	0.0	0.1	0.0	0.0	0.0	0.0	0.0
EU-15 and EFTA	44.8	61.6	70.2	51.6	51.7	54.4	49.1
Rest of Europe	0.7	1.7	0.7	1.8	0.6	0.4	3.2
Turkey	0.4	0.5	0.1	0.2	0.1	0.0	0.2
Rest of Middle East and Nor	3.7	3.6	1.1	3.2	9.7	0.7	1.7
Morocco	0.1	0.0	0.0	0.1	0.0	0.2	0.2
Tunisia	0.0	0.4	0.0	0.0	0.0	0.2	0.1
Botswana	0.0	0.0	0.0	0.0	0.6	0.0	0.0
South Africa	0.1	0.1	2.8	0.8	4.3	0.3	3.6
Rest of SACU	0.0	0.0	0.3	0.0	0.5	0.0	0.1
Malawi	0.0	0.0	1.5	0.5	0.8	0.0	0.1
Mozambique	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Tanzania	0.0	0.0	0.1	0.0	0.4	0.1	1.9
Zambia	0.0	0.0	0.1	0.4	0.0	0.0	2.7
Zimbabwe	0.0	0.0	3.7	0.0	1.9	0.0	0.0
Rest of SADC	0.1	0.2	0.2	0.7	0.2	3.0	1.5
Madagascar	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Uganda	0.0	0.0	0.0	0.7	0.1	0.0	0.0
Rest of Sub-Saharan	0.4	1.6	0.3	4.8	5.1	0.2	13.7
Total	100	100	100	100	100	100	100

Source: For Tables 2 to 14, GTAP 6.05 database and authors' calculations.

Table 3. Product shares in exports to the EU-15 and EFTA region, 2001

(percentages)

	Tanzania	Uganda	Mozambique	Madagscar	Zambia	Bangladesh	Morocco
Paddy rice	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Cereal grains	0.7	0.3	0.1	0.0	0.0	0.0	0.1
Vegetables, fruits and nuts	1.1	3.1	0.2	6.0	2.1	0.3	6.7
Oil seeds	0.2	0.2	0.3	0.0	0.0	0.0	0.0
Sugar cane, sugar beet	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Primary argiculture nec	19.3	46.2	3.8	6.6	5.7	0.3	2.7
Bovine cattle, sheep and goats, horses	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Natural resources	1.5	2.4	1.9	2.0	0.2	0.0	3.6
Bovine cattle, sheep and goat meat products	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Meat products	0.3	0.0	0.0	0.0	0.0	0.1	0.1
Other manufacturing	33.1	7.6	67.2	8.7	82.1	3.1	20.8
Vegetable oils and fats	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Processed rice	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Sugar	1.0	0.1	0.2	0.3	0.9	0.0	0.1
Food products nec	18.0	19.4	10.8	25.3	0.1	4.5	7.5
Beverages and tobacco products	0.8	0.3	0.0	0.0	0.0	0.0	0.1
Textiles	2.7	1.5	0.4	24.5	3.0	36.0	7.1
Wearing apparel	1.4	0.1	0.1	23.5	0.1	45.9	29.7
Leather products	0.3	0.4	0.0	0.1	0.2	4.2	3.0
Services	19.1	18.4	14.9	2.7	5.6	5.5	18.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: NEC = not elsewhere classified.

Table 4. The EU-15 and EFTA region: differences between market average and bilateral *ad valorem* measures of protection, by product and source country, 2001

(% points)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	12.0	36.0	36.0	36.0	36.0	36.0	36.0
Wheat	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Cereal grains	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Vegetables, fruits and nuts	7.9	-7.2	7.9	7.8	7.8	7.6	5.1
Oil seeds	1.6	1.6	1.6	1.6	1.6	1.6	-4.0
Sugar cane, sugar beet	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Primary agriculture, nec.	1.7	0.5	1.7	1.7	1.4	1.7	1.7
Bovine cattle, sheep and goats, horses	3.5	2.4	3.5	3.5	3.5	3.5	3.5
Natural resources	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bovine cattle, sheep and goat meat products	17.0	-150.6	17.0	17.0	17.0	17.0	17.0
Meat products nec	5.6	0.1	5.6	5.6	5.6	5.6	5.6
Other manufacturing	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Vegetable oils and fats	5.1	-41.6	5.1	5.1	5.1	-30.3	5.1
Dairy products	3.5	-7.2	3.5	3.5	3.5	3.5	3.5
Processed rice	45.3	49.4	49.4	42.5	49.4	21.8	49.4
Sugar	62.6	51.1	41.2	-33.4	-35.2	-31.2	62.6
Food products nec	3.5	2.4	3.5	3.5	3.5	3.5	3.5
Beverages and tobacco products	2.3	-12.6	2.3	2.3	2.3	2.3	2.3
Textiles	1.8	1.8	1.8	1.7	1.8	1.8	1.8
Wearing apparel	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Leather products	2.7	2.7	2.7	2.7	2.7	2.7	2.6
Average trade-weighted	2.4	0.7	1.0	1.2	0.5	2.6	1.8

NB, this assessment does not take into account non-tariff barriers.

Table 5. Welfare implications decomposition (equivalent variation in US$ million)

	Allocative efficiency	Terms of trade	Investment/saving price component	Total
	attributed to worldwide liberalisation			
Bangladesh	351.8	-221.9	-19.2	110.8
Morocco	440.0	-232.8	-10.5	196.7
Mozambique	6.6	-8.4	-5.4	-7.1
Tanzania	19.6	-19.5	-25.4	-25.4
Zambia	6.6	-6.3	2.5	2.8
Madagscar	3.4	-6.7	-2.5	-5.9
Uganda	1.0	-5.4	-11.0	-15.4
	attributed to liberalisation by the EU-15 and EFTA			
Bangladesh	-26.1	-48.5	-10.7	-85.3
Morocco	-26.4	-5.7	-1.0	-33.2
Mozambique	-1.1	-4.5	-1.2	-6.9
Tanzania	-1.2	-4.2	-1.0	-6.3
Zambia	-0.8	-3.6	0.0	-4.4
Madagscar	0.0	-4.0	-1.8	-5.7
Uganda	-0.3	-3.2	-2.3	-5.8

Table 6. Welfare impacts of worldwide liberalisation: decomposition of allocative efficiency gains by commodity

(equivalent variation, US$ million)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	0.0	0.4	0.0	0.1	0.0	0.0	0.0
Wheat	0.1	40.2	0.0	0.2	0.0	0.0	0.0
Cereal grains	0.0	2.7	0.0	0.1	0.0	0.0	0.0
Vegetables, fruits and nuts	3.4	4.6	0.4	0.1	0.1	0.0	0.0
Oil seeds	-0.3	0.9	0.0	0.1	0.0	0.0	0.0
Sugar cane, sugar beet	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Primary argiculture nec	3.9	9.6	0.3	0.7	0.1	0.0	0.0
Bovine cattle, sheep and goats, horses	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Natural resources	11.0	16.6	0.0	0.7	0.1	0.0	0.0
Bovine cattle, sheep and goat meat products	0.1	5.5	0.1	0.1	0.1	0.0	0.0
Meat products	0.5	0.5	0.6	0.2	0.0	0.0	0.1
Other manufacturing	65.1	138.1	2.4	10.0	3.1	0.4	0.4
Vegetable oils and fats	14.4	2.8	0.5	0.7	0.5	0.1	0.0
Dairy products	8.1	25.6	0.1	0.1	0.1	0.0	0.0
Processed rice	0.2	0.5	0.0	0.8	0.0	0.0	0.0
Sugar	5.3	5.3	0.0	0.2	0.0	0.0	0.2
Food products nec	5.7	9.3	1.0	1.8	0.6	0.0	0.1
Beverages and tobacco products	0.0	2.2	0.3	0.0	0.2	0.0	-0.2
Textiles	203.5	86.3	0.6	1.3	0.6	2.7	0.1
Wearing apparel	29.3	59.4	0.4	1.7	0.6	0.1	0.1
Leather products	1.3	26.6	0.0	0.8	0.2	0.1	0.1
Services	0.1	2.3	-0.1	0.1	0.2	0.0	0.1
Total	351.8	440.0	6.6	19.6	6.6	3.4	1.0

Table 7. Welfare impacts of worldwide liberalisation: decomposition of terms of trade gains by commodity

(equivalent variation, US$ million)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Wheat	0.7	0.0	-0.1	-0.2	0.0	0.0	0.0
Cereal grains	0.0	-0.3	0.0	-0.2	0.1	0.0	-0.2
Vegetables, fruits and nuts	0.9	2.9	-0.1	-0.5	-0.1	-0.2	-0.2
Oil seeds	0.4	-0.3	-0.1	-0.2	0.0	0.0	0.0
Sugar cane, sugar beet	0.0	0.0	0.0	-0.1	0.0	0.0	0.0
Primary argiculture nec	0.5	-3.4	-0.6	-3.0	-0.3	-0.7	-2.8
Bovine cattle, sheep and goats, horses	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Natural resources	0.1	-2.0	-0.2	-0.5	-0.2	-0.2	-0.3
Bovine cattle, sheep and goat meat products	0.0	-0.7	0.0	0.0	0.0	0.0	0.0
Meat products	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other manufacturing	-4.5	-36.2	-4.1	-5.7	-5.4	-0.4	0.9
Vegetable oils and fats	-3.7	-1.0	-0.2	-0.4	0.0	-0.1	-0.1
Dairy products	-0.1	-0.4	0.0	0.0	0.0	0.0	0.0
Processed rice	0.4	0.0	0.0	-0.3	-0.1	0.1	0.0
Sugar	-0.5	-0.7	-0.3	-0.5	0.2	-0.1	0.0
Food products nec	-1.9	-12.9	-1.0	-2.7	-0.1	-0.5	-1.1
Beverages and tobacco products	0.0	-0.4	0.0	-0.2	0.0	0.0	0.0
Textiles	-37.5	-38.8	0.2	0.0	0.0	-1.9	0.1
Wearing apparel	-170.7	-137.9	0.0	-0.2	0.2	-2.5	0.0
Leather products	-5.0	-1.9	0.0	0.0	0.0	0.0	0.0
Services	-3.2	-0.8	-2.6	-6.1	-0.8	-1.0	-2.7
Total	-224.4	-234.7	-9.2	-20.9	-6.7	-7.4	-6.5

Table 8. Welfare impacts of liberalisation by the EU-15 and EFTA: decomposition of allocative efficiency gains by commodity

(equivalent variation, US$ million)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	-0.2	1.5	0.0	-0.1	0.0	0.0	0.0
Cereal grains	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Vegetables, fruits and nuts	-0.4	0.1	0.0	0.0	0.0	0.0	0.0
Oil seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sugar cane, sugar beet	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Primary argiculture nec	-0.5	-0.5	-0.1	0.0	0.0	0.0	0.0
Bovine cattle, sheep and goats, horses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural resources	-0.3	0.0	0.0	0.3	0.0	0.0	0.0
Bovine cattle, sheep and goat meat products	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Meat products	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0
Other manufacturing	-6.7	-0.8	-0.4	-0.6	-0.7	-0.1	-0.1
Vegetable oils and fats	-2.0	0.0	-0.1	-0.1	0.0	0.0	0.0
Dairy products	-0.6	0.3	0.0	0.0	0.0	0.0	0.0
Processed rice	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0
Sugar	-0.8	-0.6	0.0	0.0	0.0	0.0	0.0
Food products nec	-0.5	0.2	-0.1	-0.1	0.0	0.0	0.0
Beverages and tobacco products	-0.3	-0.3	-0.1	-0.1	0.0	0.0	0.0
Textiles	-12.3	-17.0	-0.1	-0.1	-0.1	0.2	0.0
Wearing apparel	-1.4	-7.1	0.0	-0.1	0.0	0.0	0.0
Leather products	-0.1	-2.1	0.0	-0.1	0.0	0.0	0.0
Services	0.0	-0.6	-0.1	0.0	0.0	0.0	0.0
Total	-26.1	-26.4	-1.1	-1.2	-0.8	0.0	-0.3

Table 9. Welfare impacts of liberalisation by the EU-15 and EFTA: decomposition of terms of trade gains by commodity

(equivalent variation, US$ million)

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	-0.006	0.017	-0.009	-0.014	-0.003	0	-0.001
Wheat	-0.4	0.7	-0.1	-0.1	0.0	0.0	0.0
Cereal grains	-0.2	-0.3	0.0	0.0	0.0	0.0	-0.1
Vegetables, fruits and nuts	-0.4	0.8	-0.1	-0.2	-0.1	-0.3	-0.1
Oil seeds	0.0	-0.2	0.0	0.0	0.0	0.0	0.0
Sugar cane, sugar beet	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Primary argiculture nec	-1.8	-0.6	-0.3	-0.9	-0.1	-0.7	-1.8
Bovine cattle, sheep and goats, horses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural resources	-0.2	-1.0	-0.1	-0.2	-0.3	-0.2	-0.1
Bovine cattle, sheep and goat meat products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other manufacturing	-9.0	5.1	-2.0	-0.7	-2.5	0.2	-0.2
Vegetable oils and fats	-2.0	-0.5	-0.1	-0.1	-0.1	0.0	0.0
Dairy products	-0.2	0.2	0.0	0.0	0.0	0.0	0.0
Processed rice	-0.2	0.0	0.0	-0.2	0.0	0.0	0.0
Sugar	-0.4	-0.5	-0.2	-0.1	0.2	-0.1	0.0
Food products nec	-1.5	-0.9	-0.6	-0.4	-0.2	-1.0	-0.3
Beverages and tobacco products	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Textiles	-13.3	3.8	-0.1	-0.2	-0.1	-1.1	-0.1
Wearing apparel	-12.1	-5.0	0.0	-0.1	0.0	-0.9	0.0
Leather products	-1.8	-0.1	0.0	0.0	0.0	0.0	0.0
Services	-5.8	-7.5	-1.1	-1.0	-0.5	-0.4	-0.8
Total	-49.1	-5.8	-5.0	-4.5	-3.9	-4.4	-3.7

Table 10. Decomposition of welfare results associated with terms of trade changes

(equivalent variation, US$ million)

	World price effect	Export price effect	Import price effect	Total
	attributed to worldwide liberalisation			
Bangladesh	-35.451	-193.268	4.293	-224.426
Morocco	-14.354	-222.585	2.241	-234.697
Mozambique	-0.506	-7.783	-0.901	-9.19
Tanzania	-1.187	-22.648	2.945	-20.89
Zambia	-0.151	-6.552	-0.03	-6.733
Madagascar	-3.744	-4.321	0.619	-7.446
Uganda	-0.447	-8.234	2.193	-6.489
	attributed to liberalisation by the EU-15 and EFTA			
Bangladesh	0.901	-35.32	-14.681	-49.1
Morocco	-0.662	-22.44	17.327	-5.776
Mozambique	-0.093	-3.787	-1.091	-4.971
Tanzania	0.218	-4.056	-0.619	-4.457
Zambia	0.187	-2.038	-2.01	-3.86
Madagascar	0.251	-4.994	0.325	-4.418
Uganda	0.381	-4.203	0.118	-3.703

Table 11. Worldwide liberalisation: percentage change in output by product

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	0.0	-47.9	-1.5	-3.1	-0.1	-0.1	-0.9
Wheat	-3.8	-13.8	-1.7	-6.5	-2.4	-0.8	0.1
Cereal grains	0.5	-1.9	-0.8	-0.4	-0.1	-0.4	-0.2
Vegetables, fruits and nuts	-1.4	1.7	-1.2	1.9	-2.5	-2.1	-0.2
Oil seeds	-7.9	-3.7	-0.7	-0.8	-2.8	-0.3	0.3
Sugar cane, sugar beet	-2.7	0.2	12.7	0.2	10.5	-0.3	-2.1
Primary argiculture nec	0.3	2.5	0.1	0.4	-0.2	0.2	0.3
Bovine cattle, sheep and goats, horses	-0.1	1.7	-3.5	-0.9	-1.2	-0.4	-0.5
Natural resources	-3.5	-5.8	0.2	0.7	-0.7	-0.1	1.2
Bovine cattle, sheep and goat meat products	-10.5	729.9	-4.5	-1.6	-2.0	-0.4	-0.7
Meat products	23.7	17.0	-13.8	-1.3	-0.5	-4.7	-6.1
Other manufacturing	-8.2	-3.2	0.4	-1.3	-0.3	-1.2	-1.2
Vegetable oils and fats	-7.9	0.7	-5.5	-9.3	-4.5	-2.9	-0.1
Dairy products	-17.0	-19.0	-5.9	-17.9	-10.4	-2.6	-3.3
Processed rice	0.0	-3.8	-5.0	-8.4	-0.5	-0.1	-4.3
Sugar	-3.0	-2.5	18.0	49.0	13.5	-0.2	-2.1
Food products nec	-2.1	0.6	-4.1	-0.9	-0.9	-3.3	-1.9
Beverages and tobacco products	-0.5	4.1	-5.2	-0.5	-1.2	-0.3	-0.4
Textiles	1.6	15.0	-18.0	-6.6	-5.7	7.3	-10.0
Wearing apparel	30.5	18.3	-12.2	-4.6	-6.6	4.4	-10.7
Leather products	0.5	-14.5	2.1	-15.1	-17.2	-1.0	-8.7
Services	-0.1	0.9	0.4	0.2	0.4	0.1	0.3

Table 12. EU-15 and EFTA trade liberalisation: percentage change in output by product

	Bangladesh	Morocco	Mozambique	Tanzania	Zambia	Madagascar	Uganda
Paddy rice	-0.1	-4.9	0.3	-0.2	0.4	0.0	0.1
Wheat	0.8	0.2	1.0	0.4	0.7	-1.0	0.3
Cereal grains	0.6	0.4	-0.2	-0.2	0.0	-0.3	0.0
Vegetables, fruits and nuts	0.0	2.6	0.0	0.1	-1.7	-2.0	-0.1
Oil seeds	1.2	0.8	1.5	0.2	1.0	0.2	0.5
Sugar cane, sugar beet	0.2	0.9	0.2	0.8	7.6	-0.3	-1.3
Primary argiculture nec	0.0	-1.0	0.0	-0.1	-0.1	0.4	-0.1
Bovine cattle, sheep and goats, horses	-0.1	1.1	0.3	-0.1	0.0	-0.2	-0.2
Natural resources	0.2	0.8	0.8	0.4	0.3	0.4	1.2
Bovine cattle, sheep and goat meat products	-1.0	654.9	0.4	-0.4	-0.1	-0.1	-0.3
Meat products	-13.5	1.3	0.6	-0.2	-0.1	2.3	1.4
Other manufacturing	1.2	0.2	-0.2	0.0	-0.2	0.5	0.8
Vegetable oils and fats	1.1	2.7	1.5	0.7	0.3	2.0	2.2
Dairy products	0.7	0.1	2.6	-0.1	1.0	1.2	-0.2
Processed rice	-0.1	0.3	1.2	0.8	0.3	0.0	0.2
Sugar	0.2	-0.3	0.2	46.7	9.5	0.3	0.2
Food products nec	-0.3	-0.5	-0.8	-0.5	0.0	-1.6	-2.3
Beverages and tobacco products	-0.1	-0.9	0.1	-0.1	0.0	-0.1	-0.1
Textiles	-0.5	-4.1	0.4	-0.2	-1.0	-0.9	0.1
Wearing apparel	-1.4	-5.1	1.0	-0.1	0.0	-2.2	1.1
Leather products	0.3	-2.4	-2.6	0.3	-0.6	0.3	-0.3
Services	0.0	0.1	0.0	0.0	0.0	0.1	0.0

Table 13. Welfare Structural Change Index scores and their composition by sector

(calculated on the basis of change in value added shares under the modelled liberalisation scenario)

	Indo-nesia	Malay-sia	Philip-pines	Singa-pore	Thai-land	Viet-nam	**Bangla-desh**	India	Sri Lanka	Colombia	Peru	Venez-uela	Argentina	Brazil
	% point change in industry output share													
Paddy rice	0.0	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
Wheat	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
Cereal grains	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
Vegetables, fruits and nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Oil seeds	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
Sugar cane, sugar beet	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
Primary argiculture nec	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Bovine cattle, sheep and goats, horses	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	0.1
Natural resources	-0.2	-0.1	0.0	0.0	-0.1	-0.3	-0.1	-0.1	-0.1	0.0	0.0	0.1	0.0	-0.1
Bovine cattle, sheep and goat *meat* products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Meat products nec	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other manufacturing	-0.3	-0.7	-0.1	-0.2	0.2	-1.3	-0.8	-0.5	-0.6	-0.3	-0.4	-0.3	-0.3	-0.7
Vegetable oils and fats	0.1	0.5	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Dairy products	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
Processed rice	0.0	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sugar	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
Food products nec	-0.1	0.1	0.0	0.0	0.0	-0.4	0.0	0.0	-0.1	0.0	-0.1	0.0	0.1	0.1
Beverages and tobacco products	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Textiles	0.3	0.2	0.1	0.1	-0.1	0.3	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Wearing apparel	0.2	0.2	0.3	0.0	0.1	1.5	1.3	0.1	0.7	0.1	0.1	0.0	0.0	0.0
Leather products	0.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Services	-0.1	-0.4	-0.1	0.0	-0.2	-0.6	-0.2	0.3	0.0	0.2	0.1	0.2	0.1	0.2
Structural Change Index	**0.7**	**1.2**	**0.5**	**0.2**	**0.5**	**2.9**	**1.4**	**0.8**	**1.0**	**0.5**	**0.5**	**0.3**	**0.4**	**0.9**

Table 13 (continued). Structural Change Index scores and their composition by sector

(calculated on the basis of change in value added shares under the modelled liberalisation scenario)

	Chile	Uruguay	Turkey	**Morocco**	Tunisia	Bots-wana	South Africa	Malawi	**Mozam-bique**	**Tanzania**	**Zambia**	Zimbab-we	**Madagas-car**	**Uganda**
	% point change in industry output share													
Paddy rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0
Wheat	0.0	0.0	0.0	-0.3	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cereal grains	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
Vegetables, fruits and nuts	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Oil seeds	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
Sugar cane, sugar beet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0
Primary argiculture nec	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.8	0.0	0.1	0.0	0.2	0.0	0.0
Bovine cattle, sheep and goats, horses	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Natural resources	-0.1	0.0	0.0	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0
Bovine cattle, sheep and goat *meat* products	0.0	0.3	0.0	0.1	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Meat products nec	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Other manufacturing	-0.1	-0.5	0.1	-0.7	-0.7	-0.6	-0.1	-1.0	0.1	-0.1	0.0	-0.9	-0.2	0.0
Vegetable oils and fats	0.0	0.0	0.1	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy products	0.0	0.1	0.0	-0.1	-0.1	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Processed rice	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
Sugar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.2	0.0	0.0
Food products nec	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.2	-0.1	0.0	0.0	-0.1	0.0
Beverages and tobacco products	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
Textiles	0.0	-0.1	-0.2	0.2	-0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.1	-0.3	0.3	0.0
Wearing apparel	0.0	-0.1	-0.1	0.7	0.9	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0	0.1	0.0
Leather products	0.0	-0.1	0.0	-0.3	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Services	0.1	0.3	0.1	0.3	0.2	0.1	0.2	0.3	0.4	0.2	0.3	0.1	0.0	0.2
Structural Change Index	**0.3**	**0.8**	**0.4**	**1.5**	**2.1**	**1.2**	**0.3**	**1.5**	**0.5**	**0.5**	**0.4**	**1.5**	**0.4**	**0.3**

Table 14. Structural Change Index and its composition

(calculated on the basis of change in shares of expenditure on labour under the modelled liberalisation scenario)

	Indone-sia	Malay-sia	Philip-pines	Singa-pore	Thai-land	Viet-nam	**Bangla-desh**	India	Sri Lanka	Colombia	Peru	Venez-uela	Argentina	Brazil
	% point change in industry share													
Paddy rice	-0.1	0.0	-0.2	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	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
Cereal grains	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
Vegetables, fruits and nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.2	0.0	0.0	0.0	0.0
Oil seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Sugar cane, sugar beet	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
Primary argiculture nec	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Bovine cattle, sheep and goats, horses	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	0.1
Natural resources	-0.1	-0.1	0.0	0.0	-0.1	-0.1	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Bovine cattle, sheep and goat *meat* products	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	0.1
Meat products nec	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
Other manufacturing	-0.2	-0.3	0.0	-0.1	0.1	-0.6	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.4
Vegetable oils and fats	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy products	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
Processed rice	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
Sugar	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
Food products nec	0.0	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Beverages and tobacco products	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Textiles	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Wearing apparel	0.2	0.1	0.1	0.1	0.1	0.6	0.5	0.1	0.3	0.0	0.0	0.0	0.0	0.0
Leather products	0.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Services	-0.1	-0.3	0.1	-0.1	-0.2	-0.5	-0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.2
Structural Change Index	**0.6**	**0.7**	**0.3**	**0.2**	**0.4**	**1.8**	**0.6**	**0.5**	**0.4**	**0.3**	**0.2**	**0.3**	**0.3**	**0.4**

Table 14 (continued). Structural Change Index score and its composition

(calculated on the basis of change in shares of expenditure on labour under the modelled liberalisation scenario)

	Chile	Uruguay	Turkey	**Morocco**	Tunisia	Bots-wana	South Africa	Malawi	**Mozam-bique**	**Tanzania**	**Zambia**	Zimbab-we	**Madagas-car**	**Uganda**
	% point change in industry share													
Paddy rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0
Wheat	0.0	0.0	0.0	-0.5	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cereal grains	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
Vegetables, fruits and nuts	0.1	0.0	-0.1	0.1	0.0	0.0	0.0	-0.1	-0.1	0.1	-0.1	0.0	-0.1	-0.1
Oil seeds	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
Sugar cane, sugar beet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0
Primary argiculture nec	0.0	0.0	0.0	0.2	-0.1	0.0	0.0	0.7	0.0	0.1	0.0	0.3	0.0	0.0
Bovine cattle, sheep and goats, horses	0.0	0.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Natural resources	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	0.0	0.0
Bovine cattle, sheep and goat *meat* products	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat products nec	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
Other manufacturing	-0.1	-0.5	0.1	-0.3	-0.2	-0.6	-0.1	-0.5	0.0	0.0	0.0	-0.7	-0.1	0.0
Vegetable oils and fats	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy products	0.0	0.1	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Processed rice	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
Sugar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Food products nec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0
Beverages and tobacco products	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
Textiles	0.0	0.0	-0.1	0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.2	0.2	0.0
Wearing apparel	0.0	0.0	-0.1	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Leather products	0.0	-0.1	0.0	-0.4	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Services	0.0	0.2	0.1	0.5	0.3	0.2	0.2	0.1	0.3	0.0	0.2	0.1	0.0	0.1
Structural Change Index	**0.3**	**0.7**	**0.2**	**1.5**	**0.9**	**0.9**	**0.2**	**0.9**	**0.4**	**0.3**	**0.4**	**1.0**	**0.3**	**0.2**

Table 15. Developing country product exports most reliant on preferences into the EU, 2002

(% of total exports of all products for each selected developing country)

Country	GTAP Product Name	Shares of total exports, by inferred tariff treatment		
		MFN	Preferential	Product total
Bangladesh				
	Wearing apparel	0%	22%	22%
	Textiles	1%	21%	22%
	Food products, nec	0%	3%	3%
	Leather products	0%	2%	2%
Madagascar				
	Food products, nec	0%	19%	19%
	Wearing apparel	0%	10%	10%
	Crops, nec	1%	8%	10%
	Textiles	0%	6%	6%
Morocco				
	Wearing apparel	0%	25%	25%
	Food products, nec	0%	7%	8%
	Textiles	0%	7%	7%
	Vegetables, fruit, nuts	0%	6%	6%
Mozambique				
	Metals, nec	0%	45%	45%
	Food products, nec	0%	5%	5%
	Crops, nec	0%	1%	1%
	Sugar	0%	1%	1%
Tanzania				
	Food products, nec	0%	17%	17%
	Crops, nec	5%	7%	11%
	Sugar	0%	2%	2%
	Textiles	0%	1%	1%
Uganda				
	Crops, nec	21%	13%	34%
	Food products, nec	0%	15%	15%
	Vegetables, fruits & nuts	0%	1%	1%
	Electronic equipment	0%	0%	1%

Source: OECD Secretariat trade preferences database.

Note: Tables 15 and 16 were derived from detailed data on product imports collected from national sources and the WITS database of UNCTAD and the World Bank. These data were aggregated to GTAP categories. For the EU and Japan, preferential imports were estimated based on the assumption that all imports entered at the best available tariff rate.

Table 16. Madagascar: preferential trade with Australia and the Quad Countries, 2002

(% of Madagascar's total exports)

	Australia			Canada			EU			Japan			USA			Total: Quad + Australia		
Product Name	MFN	Prefer -ential	Total	MFN	Prefer -ential	Total	MFN	Prefer -ential	Total	MFN	Prefer -ential	Total	MFN	Prefer-ential	Total	MFN	Prefer-ential	Total
Paddy Rice																		
Wheat																		
Cereal grains nec.								0.0%	0.0%									
Vegetables, fruit, nuts	0.0%		0.0%				0.4%	3.9%	4.3%				0.0%		0.0%	0.4%	3.9%	4.3%
Oil seeds							0.0%		0.0%									
Sugar cane/beet																		
Primary agriculture nec	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	2.3%	8.3%	10.5%	0.001%	0.000%	0.001%	13.7%	0.0%	13.7%	16.2%	8.3%	24.4%
Bovine Cattle, sheep, goats, horses																		
Natural resources	0.0%		0.0%	0.0%	0.0%	0.0%	1.0%	0.8%	1.9%	0.000%		0.000%	0.2%	0.1%	0.2%	1.2%	0.9%	2.1%
Animal products n.e.c.				0.0%		0.0%	0.1%	0.0%	0.1%	0.000%		0.000%	0.0%		0.0%	0.1%		0.1%
Other manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	3.3%	4.2%	0.000%	0.000%	0.000%	0.1%	0.0%	0.2%	0.7%	3.3%	4.4%
Vegetable oils and fats								0.0%	0.0%									
Dairy products								0.0%	0.0%									
Processed rice								0.0%	0.0%									
Sugar								0.2%	0.2%					0.3%	0.3%		0.5%	0.5%
Food products n.e.c.				0.0%		0.0%	0.0%	19.5%	19.5%	0.003%	0.000%	0.003%	0.3%		0.3%	0.3%	19.5%	19.8%
Beverages and tobacco products								0.0%	0.0%									
Textiles	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%	6.3%		0.000%	0.000%	1.1%	3.3%	4.4%	1.1%	9.6%	10.7%
Wearing apparel	0.0%	0.0%	0.0%	0.1%		0.1%	0.0%	9.8%	9.9%		0.000%	0.000%	0.6%	5.7%	6.2%	0.7%	15.5%	16.2%
Leather products	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.4%	0.4%		0.000%	0.000%	0.0%		0.0%		0.4%	0.4%
Total	0.1%	0.0%	0.1%	0.4%	0.0%	0.4%	4.3%	52.9%	57.2%	0.004%	0.000%	0.004%	16.2%	9.4%	25.6%	21.0%	62.3%	83.3%

Source: OECD Secretariat trade preferences database.

Note: Excludes services trade. Percentages may not sum exactly, due to rounding.

Table 17. GTAP regions as aggregated for the modelling exercise in the present study

Name	Member Regions (226)
Rest of Oceania	American Samoa Cook Islands Fiji French Polynesia Guam Kiribati Marshall Islands Micronesia, Federated States of Nauru New Caledonia New Zealand Norfolk Island Northern Mariana Islands Niue Palau Papua New Guinea Samoa Solomon Islands Tokelau Tonga Tuvalu Vanuatu Wallis and Futuna
Rest of North/East Asia	Hong Kong, China Korea, Democratic People's Republic of Korea, Republic of Macau Mongolia Chinese Taipei
Rest of North America	Bermuda Greenland Saint Pierre and Miquelon
EU-15 and EFTA	EU-15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom; EFTA: Iceland, Liechtenstein, Norway, Switzerland
Rest of Europe	Andorra Bosnia and Herzegovina Faroe Islands Gibraltar Macedonia, the former Yugoslav Republic of Monaco San Marino Serbia and Montenegro Albania Bulgaria Croatia Cyprus Czech Republic Hungary Malta Poland Romania Slovakia Slovenia Estonia Latvia Lithuania
Rest of South African Customs Union	Lesotho Namibia Swaziland
Rest of Southern African Development Community	Angola Congo, the Democratic Republic of the Mauritius Seychelles
Rest of Sub-Saharan Africa	Benin Burkina Faso Burundi Cameroon Cape Verde Central African Republic

	Chad
	Comoros
	Congo
	Cote d'Ivoire
	Djibouti
	Equatorial Guinea
	Eritrea
	Ethiopia
	Gabon
	Gambia
	Ghana
	Guinea
	Guinea-Bissau
	Kenya
	Liberia
	Mali
	Mauritania
	Mayotte
	Niger
	Nigeria
	Reunion
	Rwanda
	Saint Helena
	Sao Tome and Principe
	Senegal
	Sierra Leone
	Somalia
	Sudan
	Togo
Rest of MENA (includes 2 sub-regions)	
Rest of Middle East	Bahrain
	Iran, Islamic Republic of
	Iraq
	Israel
	Jordan
	Kuwait
	Lebanon
	Palestinian Territory, Occupied
	Oman
	Qatar
	Saudi Arabia
	Syrian Arab Republic
	United Arab Emirates
	Yemen
Rest of North Africa	Algeria
	Egypt
	Libyan Arab Jamahiriya
Rest of World (includes multiple sub-regions)	
Rest of Southeast Asia	Brunei Darussalam
	Cambodia
	Lao People’s Democratic Republic
	Myanmar
	Timor Leste
Rest of South Asia	Afghanistan
	Bhutan
	Maldives
	Nepal
	Pakistan
Rest of Andean Pact	Bolivia
	Ecuador
Rest of Free Trade Area of the Americas	Antigua & Barbuda
	Bahamas
	Barbados
	Dominica
	Dominican Republic
	Grenada
	Haiti
	Jamaica
	Puerto Rico; U.S Virgin Islands
	Saint Kitts and Nevis
	Saint Lucia
	Saint Vincent and the Grenadines
	Trinidad and Tobago
Rest of Former Soviet Union	Armenia
	Azerbaijan
	Belarus

	Georgia
	Kazakhstan
	Kyrgyzstan
	Moldova, Republic of
	Tajikistan
	Turkmenistan
	Ukraine
	Uzbekistan
Russian Federation	Russian Federation
Central America	Belize
	Costa Rica
	El Salvador
	Guatemala
	Honduras
	Nicaragua
	Panama
Rest of the Caribbean	Anguilla
	Aruba
	Cayman Islands
	Cuba
	Guadeloupe
	Martinique
	Montserrat
	Netherlands Antilles
	Turks and Caicos
	Virgin Islands, British
Rest of South America	Falkland Islands (Malvinas)
	French Guiana
	Guyana
	Paraguay
	Suriname

Source: GTAP database and authors' adjustments.

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