Another Look at the WTO Negotiations on Agriculture

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50th AARES Annual Conference,
Sydney, New South Wales, 8-10 February 2006

Abstract

The WTO negotiations on the reform of agricultural tariffs, export subsidies and domestic support is proving to be increasingly frustrating with little progress since prior to the Cancun Ministerial of August 2003, apart from an agreement to keep talking. In this paper a possible outcome in the agricultural negotiations is analysed and the various impacts on exporters, importers and taxpayers assessed. The results indicate that holding out for exemptions leads to a loss in welfare for developing countries but export growth is maintained. Whether this is an attractive outcome depends on priorities. One inherent drawback is that the majority of WTO members will experience a welfare loss from any likely negotiated agricultural reform.

Key words: WTO negotiations, trade, agricultural tariffs

1. Introduction

The WTO negotiations on agriculture contain many of the elements of a good detective novel – a convoluted plot, unresolved conflict, shifting alliances, betrayal, recriminations, and a fast approaching deadline with the resolution hopefully to be provided by a strong character with a shady past. With the negotiations virtually stalled and the 2007 dealine fast approaching, the reader is wondering whether good will triumph over evil once again.

For the uninitiated, the history of the current agricultural negotiations is no page-turner, although the glacial pace has been interspersed with moments of excitement, with the failures of Seattle and Cancun, and last-minute breakthroughs on the promise of EU export subsidy elimination and tariff conversion methodologies. A major source of conflict hinges on developed country reluctance to remove agricultural subsidies, on the one hand, and developing country determination not to be short-changed once again on the other. The Europeans have upheld a fragile alliance with the United States, while Japan and other friends of multifunctionality have maintained more of a united front. Although proponents of ambition on market access, the United States lacks the same ambition on domestic support. The developing countries seem determined to obtain improved access to developed country markets, something they believe they were promised in the previous round that never eventuated. With this betrayal in mind, they are reluctant to open their own markets to much needed international competition. Within the developing countries conflict revolves around preferential access, with many of the smaller and poorer countries concerned about losing out to the larger, more advanced, developing countries as mfn rates are reduced. For much of 2005, attention was focused on the conversion of specific to *ad valorem* tariff equivalents, although the parameters for reducing tariffs have not been agreed. This may seem like a red herring, but with higher tariffs to be reduced by a greater amount and the plethora of specific tariffs in agriculture, establishing a basis from which to make cuts has removed some uncertainty and enabled the trail of clues to be pursued once again. To galvanise the pursuit, the WTO has appointed a new leader, Pascal Lamy, a respected negotiator but previously aligned with the European Union, a potential Achilles heel.

The Hong Kong Ministerial in December 2005 produced little more than an agreement to keep talking. Members resolved to establish modalities by the end of April and to submit draft schedules by the end of July, an optimistic time frame given the unreslolved issues. There was agreement to eliminate all forms of agricultural export subsidies by 2013, three years later than a previous proposal. The European Union offered to cut tariffs by an average of 46 per cent, but this was considered too low by most WTO members, and too high by some EU members. There was also pressure on the United States to make greater actual cuts in domestic support.

The main area of contention is a tariff reduction formula. While there is agreement that the cuts should be progressive (higher cuts on higher initial tariffs), differentiated (less onerous for developing countries) and flexible (lesser reductions on politically sensitive products), there is no agreement as to the required degree of progressivity, differentiation and flexibility. Members appear to be moving back to the Harbinson type banded approach, but the specification of the bands and the cuts within them are still to be negotiated. However, there was agreement that there be four bands for tariff reductions.

The essential trade-off is between ambition and flexibility. An ambitious round is necessary to improve market access, but flexibility is needed to protect sensitive products. A negotiated outcome would not be possible without some flexibility, but too much flexibility weakens the ambition.

An important characteristic of developed country tariff structures is the small number of very high tariffs compared with a large number of relatively low ones. By contrast, bound tariffs in many developing countries tend to be rather similar. This permits developed countries to take greater advantage of any flexibility built around the number of tariff lines. This is the flaw in the Derbez text arrived at following the Cancun meeting.

The following section examines the clues in more detail. The situation in each of the three pillars ― market access, export subsidies and domestic support ― is examined. A likely outcome is described. The impacts of this likely scenario are assessed with the aid of ATPSM, a global trade model available online from UNCTAD.[2] The evidence is analysed in section 3 and the major culprits exposed. These are Europe and Japan, countries with large trade flows and highly protected agriculture. These countries are also the major beneficiaries of reform. Many developing country WTO members are innocent victims because the removal of export subsidies on temperate products and the tariff reductions in other countries raise the cost of their imports. Furthermore, the modest cuts to bound tariffs imply few reductions in applied tariffs. Suggestions for a just outcome are made in section 4.

2. Crimes and Misdemeanours

Support for agriculture is still high. Transfers to OECD agricultural producers alone in 2003 amounted to US$257 billion, some 32 per cent of farm receipts of US$714 billion (OECD 2004). Including non-producer specific support raises the total support estimates to US$350, almost 50 per cent of receipts. About two thirds of the producer support is through border measures (tariffs and subsidies), while the rest is through direct support. Although total protection (including non-producer

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2 ATPSM can be downloaded from UNCTAD website at www.unctad.org/tab. The version used here has been modified, as described in the Appendix.

specific support) had fallen from 63 per cent at the start of the Uruguay Round (1986-88) to 49 per cent, the most notable feature was a switch from border measures to direct support.

Developing countries also provide significant support to their agriculture sectors, although the picture is confused by unfavourable exchange rate policies which act as a tax on exports. The average applied tariffs in developing countries are now estimated at around 18 per cent, a significant decrease from 30 per cent in 1990 (TRAINS, cited in Aksoy and Beghin 2005, p. 43) but still substantial nonetheless. Developing countries make little use of export subsidies and domestic support.

The higher support measures and associated quantitative restrictions (i.e. quotas) generate huge rents which may be captured by the importer as tariff revenue, provided to the exporter as preferential access, or to the domestic producer if quotas limit production. There remains much about which to negotiate.

The negotiations received some momentum in July 2004 when WTO members agreed on a framework for modalities. The post-July negotiations have focused on technical issues and have been as difficult and slow as before. The US fast track provisions expire in 2007 and for this reason it is highly desirable to complete the current round by 2006, given the 12 months or so required to finalise an agreement. Hence an agreement on modalities was considered necessary by the Sixth WTO Ministerial Conference held in Hong Kong in December 2005. The Hong Kong Ministerial produced little more than an agreement to keep talking (WTO 2005). Members committed themselves to reaching these targets, but so far there is little evidence of agreement as to what numbers go inside the brackets, nor on exemptions to the rules. As always, details matter.

Market access
The market access provision is the most difficult. There is agreement that bound tariffs shall be reduced by a formula approach, that higher tariffs shall be reduced more than proportionately, that consideration shall be given to a country's stage of development and that some products shall attract lesser reductions because of their economic significance or political sensitivity. But as yet there is no agreement on the reduction formulae, the percentage cuts, schedules, deadlines or implementation period. These are to be agreed by the end of July 2006, according to the revised schedule.

Discussions in early 2005 focused on the conversion of specific to *ad valorem* tariff equivalents (AVE). This conversion requires nominating a price by which to divide the specific tariff per tonne to obtain a percentage. The prices are unit values derived from import volumes and import values obtained from trade data supplied to the UN Comtrade database and the WTO's IDB. The Comtrade database tends to give lower unit values and thus higher AVEs. The higher AVEs will attract higher reductions under the tiered approach. As a result the European Union and other highly protected

countries (G-10) wish to employ the higher IDB unit values in converting specific tariffs.[3] A tentative agreement was reached in May 2005 to use a weighted average of the two data source if the difference of the two data is sufficiently large.[4] For unprocessed products the Comtrade price would be given a weight of 0.825 and the IDB price 0.175. For processed products the weighting would be 0.6 and 0.4. This implies lesser tariff cuts for processed products, which tend to have higher initial tariffs. This goes against the notion of harmonising tariffs by reducing the higher tariffs more than proportionately. Sugar, a sensitive product because of the many countries receiving preferential access to the EU and US highly protected markets, was excluded from the agreement.

Assuming a banded approach is used, the four bands suggested by the EU October 2005 proposal were 30, 60 and 90 per cent for developed countries and 30, 80 and 130 per cent for developing countries.[5] Within the four bands for developed countries, the respective average linear cuts would be 35, 45, 50 and 60 per cent (with minimum cuts of 20 per cent in the first band), with no final tariff exceeding 100 per cent. Within the four bands for developing countries the respective cuts would be 25, 30, 35 and 40 per cent with minimum cuts of 10 percentage in the first band and a cap of 150 per cent. Least developed countries would be exempt from reduction commitments.

In addition to tariffs, other market access issues include tariff rate quotas, special and sensitive products, safeguards, non tariff barriers and trade preferences. There were indications in the Harbinson proposal that tariff rate quotas be increased to 10 per cent of the level of consumption (6.6 per cent in developing countries). The European Union put forward a variation of this in October 2005 (European Commission 2005), but this was dropped in he Ministerial Declaration.

Special and sensitive product exemptions are a means of providing flexibility allowing countries to continue to protect politically sensitive sectors, such as sugar, dairy, rice, cotton and tobacco. Developing countries argue the need the flexibility for food security and rural development. The idea is that a limited number of tariff lines, perhaps one or eight per cent, attract a minimal (e.g. 10 per cent) tariff reduction. If this exemption applied to the items with the highest tariffs or trade flows, a substantial reduction in ambition may occur. This is because in developed countries tariffs are highly skewed with relatively few very high tariffs. Developing countries have relatively flat bound tariffs, but skewed applied tariffs. Coupled with the gap between bound and applied rates, the special and sensitive products exemption would allow many developing countries to make little or no cuts in

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3 In both the European Union and the United States 44 per cent of agricultural tariff lines are non-ad valorem. Japan and Canada have 15 and 28 per cent respectively (WTO IDB, cited in de Gorter, Ingco and Ignacio (2004a, p70.).
4 If tariffs pass a filter IDB data are used. For tariffs caught in the filter the weighted average is used.
5 The text of the Harbinson proposal can be found on the WTO website, http://www.wto.org, document number TN/AG/W/1/Rev.

applied rates. Significantly, in Hong Kong members agreed that developing countries may 'self-designate' (WTO 2005), a significant weakening of ambition.

The role of a special agricultural safeguard remains under negotiations. The Declaration specifies that developing countries would have 'recourse to a Special Safeguard Mechanism' (WTO 2005), with price and volume triggers. As tariffs are reduced import surges are seen as an increasing threat to developing countries, yet at the moment it is mainly developed countries that are able to make use of the safeguard provision.

Developing countries, particularly the G-33, have maintained their position on the exclusion of non-tariff barriers, such as geographical indicators, from the discussions. The issue of some form of compensation for the erosion of preferences has not been resolved. This is a contentious issue because many WTO members see themselves as losing from mfn liberalisation and therefore have an incentive to maintain the status quo. However, non-reciprocal preferential arrangements go against the fundamental principle of the WTO, i.e. non-discrimination, and there is pressure to at least open up their own markets.

Export subsidies
Under pressure from the United States, the Cairns Group and many developing countries, the European Union relented on export subsidies, agreeing in July 2004 to their elimination by 2010 with certain conditions. As the European Union provides 80-90 per cent of global subsidies, this was seen as a necessary step to maintain the momentum of the negotiations. Also agreed were the tightening of conditions relating to export credits, food aid and state trading enterprises. The timetable for elimination was moved back to 2013 in the Ministerial Declaration, by which time the EU's internal reform should have removed the remaining export subsidies.

Traditional exporters see the removal of export subsidies as important as they dampen world prices and reduce returns to producers. However, the likely benefits to developing countries are often overstated. The European Union subsidises temperate products whereas many developing countries produce tropical products. In some cases these are substitutes (i.e. sugar, vegetable oils), but the major beneficiaries of the removal of export subsidies are New Zealand and Australia (dairy products) and the wealthier Latin American cereal and livestock producers. Many developing countries that import these products will be worse off, initially at least.

Domestic support
As border measures have been tightened countries have moved to support their producers through domestic support. As amber box support is constrained and blue box support production limited, there is an obvious incentive to provide support through the exempt green box. This category

includes direct income support, so long as it is not production distorting. Developing countries are keen to minimise the shuffling of support between boxes. The existing support may be decoupled, but it tends to lock in the distortions because of the belief among producers that sooner or later governments will rebase their support. In fact the US Government updated its support criteria in the 2002 Farm Bill. This encourages producers to stay in the industry and to keep producing.

Discussions in the negotiations at Hong Kong indicate there would be three bands for reduction of final bound total AMS. These are country, not commodity, specific. The country ranked highest (the European Union) would make the largest cut (, yet to be negotiated, but probably 70 per cent), while countries ranked second and third (the Unnited States and Japan) making the second tier reductions (perhaps 60 per cent), and all other countries applying the third tier reductions (perhaps 50 per cent). There was no discussion in the Declaration about the Blue Box, although recognition was given to the problem of box shifting to minimise reduction commitments.

3. An evaluation of the evidence

To assess the potential impact of a negotiated outcome on developing countries, a quantitative analysis of the EU proposal is undertaken. As the European Union is the current stumbling block in the negotiations, its proposal can be seen as the lowest common denominator, or perhaps the most likely outcome. The analysis uses ATPSM, a global trade model jointly developed by UNCTAD and FAO. Tools such as these with detailed country and commodity coverage are useful in capturing the likely impacts on individual countries and sectors. The model, with associated database and documentation, is publicly available but for this application several modifications have been made. These are described in appendix 2.

Scenarios

The aim of the analysis is to assess:

    (i)   the potential gains from proposed reforms; and

    (ii)   the effects of special and sensitive product exemptions.

The scenarios are described in table 1. The exemptions apply to one of the 35 four digit categories in the ATPSM database for developed countries and three categories for developing countries. The categories are selected by tariff revenue, with the assumption being that policy makers are attempting to preserve the greatest amount of revenue. For the major developed countries, exempted categories are EU bananas, US tobacco, Japanese pulses, Canadian poultry, Norwegian citrus and Swiss apples. A possible anomaly with this approach is that sensitive products with prohibitive tariffs, such as Japanese rice, have low tariff revenue and are not selected.

Table 1: Alternative liberalisation scenarios

Scenario			Tariffs	Export subsidies	Domestic support
			%	%	%
Scenario 1	Bands	Developed countries	If >90, -60 If >60 and <90, -50 If >30 and <60, -45 If < 30, -35	-100	EU –70, US and Japan –60, others -50
		Developing countries	If >130, -40 If >80 and <130, -35 If >30 and <80, -30 If < 30, -25	-100	-50
		LDCs	0	0	0
Scenario 2	Bands with exemptions	Developed countries	As for Scenario 1 with 10 per cent reduction on one sector with highest tariff revenue	-100	-60
		Developing countries	As for Scenario 1 with no reduction in three sectors with highest tariff revenue	-100	-40
		LDCs	0	0	0

The policy changes apply only to the 35 specified agricultural commodities. The LDCs in the model plus the Rest of World, which contains some non-LDCs, are exempt from reduction commitments.

Coverage
The present version of the model covers 150 individual countries plus two regions, the European Union, which includes 25 countries, and the Rest of World, which includes those countries, mostly small island economies, not covered explicitly. Developing countries include Republic of Korea, and Taiwan, Province of China.[6] A third group is the 49 least developed countries.

There are 35 commodities in the ATPSM data set, including meat, diary products, cereals, sugar, edible oils, vegetables, fruits, beverages, tobacco and cotton (see Appendix 1). This includes many tropical commodities of interest to developing countries, although many of these have relatively little trade by comparison with some of the temperate products.

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6 With the WTO, members can self-select their development status. Developing countries receive differentiated treatment.

The data

Price and production data are from 2001 and are compiled from FAO statistics. Elasticities are from FAO's World Food Model. These are based on a trawling of the literature and are not econometrically estimated specifically for the model. Some of the elasticities were modified by the authors to reflect homogeneity, symmetry and other conditions. Inquota tariffs, outquota tariffs and global quotas, notified to the WTO, are obtained from the AMAD database where available and aggregated to the ATPSM commodity level. For the quad countries plus Norway and Switzerland *ad valorem* equivalents have been calculated based on the guidelines agreed to at the Mini-Ministerial in Paris in May 2005. Export subsidy data are notified to the WTO and modified by UNCTAD (Peters 2004). Bilateral trade flow data relate to 2001 and are from the United Nations Comtrade database. These are used to allocate global quotas to individual countries. The UNCTAD TRAINS database is the source of information on applied tariffs.

Some markets include production quotas. These include EU raw sugar and dairy products, US tobacco, Canadian dairy and poultry and Japanese rice and dairy. In the absence of better information, in most cases the rent is assumed to be 20 per cent, with the exception of US tobacco (36 per cent) and EU sugar (30 per cent).[7] These quotas are quite significant, with implicit rent (quantity times price time assumed percentage rent) on these products alone amounting to $15 billion.

A summary of the base data is shown in table 2. Developed country production of $478 billion differs from the $714 billion estimate for OECD countries noted earlier, but here our model excludes some commodities and production is at world rather than domestic prices. Furthermore, some OECD countries are here classified as developing countries. Developing country production is much greater than that in developed countries but exports and imports are of a roughly similar magnitude. Least developed countries are net importers. Tariff revenues are similar. Perhaps the most striking feature of the table is the government expenditure. This is mainly domestic support and export subsidies. The implied tariffs are similar at around 13 per cent. For various reasons, these numbers may not reflect revenues actually collected or spent but indicate where the distortions are and where the reforms may impact. In other words, reforming tariffs has the greatest impact, with relatively little benefits from removing some $2 billion in export subsidies. Removing some $40 billion in domestic support could conceivably have a substantial impact, but much of the support is channelled to commodities with production quotas or are otherwise decoupled, limiting the production response and the effect on trade.

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7 The EU dairy quota rent estimate of 20 per cent are support by Requillart, V., INRA
http://www.defra.gov.uk/foodrin/milk/supplychainforum/capinfluences.pdf, and the OECD's PEM model. The US tobacco rent estimate of 36 per cent is taken from CRS report for Congress 2004
http://www.uky.edu/Agriculture/TobaccoEcon/publications/womach_rl31790.pdf

Table 2: Base data for agriculture sector (2001)

Group		Developed	Developing	Least developed	Total
Production*	$m	478094	998941	76020	1553054
Exports	$m	87249	121719	7034	216002
Imports	$m	92898	111810	11294	216002
Tariff revenue	$m	12404	15465	1458	29328
Government expenditure	$m	42067	1376	0	43442
Implied average tariff**	%	13.4	13.8	12.9	13.6

Source: Derived from ATPSM database. * Agricultural production valued at world prices. ** Average tariff is tariff revenue divided by imports valued at world prices. This places a high weight on inquota tariffs as opposed to outquota tariffs, especially if the latter are prohibitive.

The results

In the baseline the initial global outquota tariff revenue is $29.3 billion. Under the Bands scenario this is reduced marginally to $27.3 billion after accounting for the additional volume of imports. This represents an implicit average trade weighted applied tariff of 11.7 per cent, down from 13.6 per cent in the base period (table 2). Under the less ambitious Exemptions scenario the tariff revenues falls to $28.3 billion, an average tariff of 12.2. In other words the reduction in the global average outquota tariff is watered down from 14 to 9 per cent. For developing countries specifically, the tariff revenue remains at around 13 per cent of imports. This merely implies that although tariffs have been reduced, the trade weights have changed. (Tariff changes are commonly calculated using initial weights.) These results indicate that the overall cuts are more modest than the bands indicate because the large cuts apply to items with relatively small trade flows. Items with zero tariffs bias downwards the calculated impacts.

These economic impacts of the various scenarios are analysed in terms of exports, imports, producer surplus, tariff revenue and welfare. These are annual effects, comparing two situations with and without the policy changes. Trade negotiators are most interested in the export revenue impact, but are also concerned to avoid being swamped with imports. In developing countries there is also concern for government revenues. A summary of these effects is represented by welfare. These variables are shown in this section for both scenarios.

Exports

Of interest in the negotiations is the extent to which the additional flexibility provided by special and sensitive product exemptions weakens the ambition. Trade liberalisation increases imports and, by definition, exports given that the volume of global imports equal

global exports in each commodity. Hence liberalising the inflow of imports also enhances exports.

As shown in table 3, the estimated effects on exports of the exemptions specified here are to reduce the growth in trade from $17.3 billion or 8.0 per cent to $14.9 billion or 6.9 per cent of initial global exports. The developing countries account for $1.3 billion of this forgone growth in exports. They experience a gain of 12.2 per cent in the initial simulation and 11.1 per cent when exemptions are permitted. Least developed countries are predominantly importers of agricultural goods but have considerably high growth rates. The less ambitious liberalisation limits their export growth from 15.1 per cent to 12.8 per cent.

Under the formula reductions in scenario 1 the major growth in exports occurs in the highly protected wheat, sugar, poultry, dairy products and beef sectors (over $1 billion in each case). There are also sizable contributions from the tomato, banana and citrus sectors. Most of the increase in exports comes from developing countries (India, Brazil, China, Argentina) with the exception of dairy products where the major beneficiaries are New Zealand and Australia.[8] The presence of binding production quotas limits the changes in production for domestic price changes less than 20 or 30 per cent (36 per cent in the case of US tobacco) for some products in the European Union, Japan, Canada and the USA, but the removal of export subsidies in the European Union eliminates exports of beef and even butter and sugar, two products with a production quota. Since much of the growth in trade is driven by removal of export subsidies in the European Union and tariff barriers in Japan, the exemption of bananas in the European Union and pulses in Japan (scenario 2) has relatively little impact.[9]

Table 3 Change in exports from alternative scenarios

Scenario	Developed	Developing	Least developed	Total
	$m	$m	$m	$m
Bands	1397	14870	1066	17333
Exemptions	489	13552	903	14945

Source: ATPSM simulations

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8 The increase in Australia's exports are $1.24 billion, or 9 per cent of the base. The major contributors are wheat ($337 million), beef ($241 million) and sugar ($193 million).
9 The method for calculating ad valorem equivalents generates a low value of 11 per cent for EU bananas, a spurious result reflecting the absence of overquota imports. The outquota tariff may be as high as €680 per tonne, depending on the source. This is well over 100 per cent.

Imports

As noted, the volume of global imports in each commodity increases in line with exports. The question is the source and destination of the additional exports and imports once tariffs have been reduced. Whereas most of the additional exports come from developing countries, most of the additional imports go to developed countries. (This can be seen in table 4.) The major driving force here is the European Union where imports increase by $10.9 billion or 34 per cent, and Japan where the increase is a more modest $2.0 billion or 14 per cent. By far the most significant item is wheat in the European Union for which imports increase three-fold to $2.9 billion, or from 5 to 25 per cent of initial consumption. There are also significant (i.e. greater than $500 million) increases in EU imports of beef, sheepmeat, sugar, oilseeds, tomatoes, apples and citrus fruit.

The exemptions have a significant impact on developing country imports. Recall it is assumed here that zero tariff cuts are applied to three of the 35 specified commodity sectors in developing countries. This reduces their import growth from $3.6 billion to $1.9 billion.

Table 4 Change in imports from alternative scenarios

Scenario	Developed	Developing	Least developed	Total
	$m	$m	$m	$m
Bands	13257	3613	-185	16685
Exemptions	12590	1909	-168	14332

Source: ATPSM simulations

Government revenues

Changes in net government revenues in developed countries are driven by domestic support and export subsidies. These expenditures outweigh government revenues from tariffs. Wheat, maize and oilseeds account for most of the change in expenditure, shown in table 5, with the bulk occurring in the European Union ($11.2 billion) and the United States ($9.2 billion).

Developing countries revenues are driven by tariff and trade flows, not subsidies. The increase in imports compensates for the lower tariff rates, marginally raising tariff revenues. Least developed countries as a group do not undertake tariff reductions, but falling imports (table 4) lead to an reduction in tariff revenue.

Table 5 Change in government revenues from alternative scenarios

Scenario	Developed	Developing	Least developed	Total
	$m	$m	$m	$m
Bands	22401	676	-53	23025
Exemptions	23304	719	-48	23975

Source: ATPSM simulations

Welfare

Negotiators tend not to focus on welfare as a means of assessing trade outcomes, but it is a useful means of summarising the aggregate effects on consumers, producers and taxpayers. Our measure of welfare includes quota rents which are assumed to accrue to producers. The global welfare gains from partial agricultural liberalisation are rather modest, $14 billion (table 6). This reflects the limited size of the tariff reductions and the gap between bound and applied tariffs. The major gains go to developed countries, particularly the European Union and Japan, who have the most protection to lose. Least developed countries are worse off because of higher world prices and the absence of efficiency gains from their own reform.

The exemptions to special products have a significant effect on developing country welfare, reflecting the lesser reductions in tariffs. This limits the beneficial allocative efficiency effects, and also limits the expansion of markets to South-South trade.

Table 6 Change in welfare from alternative scenarios

Scenario	Developed	Developing	Least developed	Total
	$m	$m	$m	$m
Bands	10019	1923	-373	14096
Exemptions	9546	1389	-365	12861

Source: ATPSM simulations

5. Implications and conclusions

Although the WTO agricultural negotiations are not close to being finalised, it seems likely that the eventual outcome will be rather modest. The flexibility that members are demanding is likely to reduce ambition considerably, halving the reductions in tariff revenues. Exemptions on one commodity sector out of 35 does reduce developed country welfare gains by 5 per cent. However, policymakers may deviate from the rule of thumb that we have used here and weaken the ambition even further. The choices made in the European Union and Japan are crucial. Furthermore, at a more disaggregated level the provision could most probably be better targeted to protect tariff lines in different products. Developing countries welfare decreases by nearly 30 per cent with three

exemptions in 35 sectors because their trade flows are directed to a small number of products. This allows them to take advantage of any flexibility. This seems to be a necessary part of any agreement. Past proposals for modest but inflexible tariff reductions have not been found acceptable to members.

The Bands proposal generates modest gains of $14 billion on our dataset. These results are overestimated because it has been assumed here that countries will make the average cuts specified here. These reductions have not yet been agreed, nor is there agreement as to how the minimum cuts in the lower band are to be combined to generate the average. In the previous round the average cut did not amount to a cut in the average because of a problem of measuring the appropriate weights. On the other hand, the gains are underestimated because of the absence of a variety of dynamic effects (productivity and investment) associated with enhanced trade.

Much of the impact hinges on the European Union. The presence of production quotas and partially decoupled payments make it difficult to be confident about the changes in production that are likely to occur in response to changes in domestic support and export subsidies. In addition, to some extent the three pillars are conflated, and their production impacts may not be additive as assumed here.

WTO members may find it attractive to provide developing countries with additional flexibility through exemptions. Developing country growth in exports is reduced only slightly, significantly less than the reduction in developing country welfare. This is because developing country exports depends on developed country tariffs, whereas developing country welfare depends on their own tariffs. If such an outcome paved the way for progress in the Non-Agriculture Market Access and GATS negotiations, a mutually beneficial single undertaking may be achievable.

However, the results point to an inherent flaw in the present structure of the WTO – 92 member countries are estimated to experience a welfare loss from the likely outcome.[10] Many countries, particularly LDCs and ACP countries, are recipients of preferential access and the erosion of these preferences represents a loss. In some cases this may be overcome by an expanding market, but in many cases the export gains go elsewhere. Coupled with rising world prices driven by the removal of export subsidies and tariff reductions, the majority of WTO members are likely to lose from proposed reforms to agriculture, and are thus content with the status quo. Having painted themselves into a corner, members must hope that linking agriculture with industrial tariffs and service sector issues may generate a positive outcome for many small country WTO members. An analysis beyond agriculture is required to establish this.

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10 This assumes the 25 EU members are treated as one. ATPSM covers 142 of the 148 WTO members.

The counterpoint to this is the observation that, according to these estimates, all developing countries increase their exports as a result of the proposed changes (but this is not the case for the European Union, Japan, Switzerland and Norway). Exports obviously cost something to produce, and it is the weight policymakers attach to exports, imports, government revenue, welfare, and perhaps output and employment (not measured here) that will determine the outcome of the negotiations.

Another inherent flaw is to use the previously bound tariffs as a base from which to negotiate, with an equitable outcome being equal cuts (e.g. 36 per cent regardless of the initial value). The Swiss formula attempts to address this. However, an alternative view of equity is to have all tariffs the same (e.g 10 or 20 per cent) across all developed or developing countries. This would not only be equitable, in one sense, but also a much more efficient, effective, transparent and administratively simple policy.

The December deadline has past, but our WTO mystery is still unresolved. But some progress has been made. The victims (mainly developing countries) have been identified. The usual suspects (European Union and Japan) have been rounded up, their motives (producer support) uncovered, and alibis (decoupled payments) exposed. Some retribution (elimination of export subsidies) has been promised. It remains to seen how the conflict will be resolved, but any punishment metered out is likely to be modest compared with initial expectations.

References

Aksoy and Beghin. J. (2005) *Global Agricultural Trade and Developing Countries*, World Bank, Washington D.C.

AMAD database http://www.amad.org.

de Gorter, H., Ingco, M. and Ignacio, L. (2004a) 'Market Access: Economics and the effects of policy instruments'. In Ingco, M. and Nash, J. (eds) *Agriculture and the WTO: Creating a Trading System for Development*, World Bank, Washington D.C.

de Gorter, H., Ingco, M. and Ignacio, L. (2004b) 'Domestic Support: Economics and policy instruments'. In Ingco, M. and Nash, J. (eds) *Agriculture and the WTO: Creating a Trading System for Development*, World Bank, Washington D.C.

European Commission (2005) 'Making Hong Kong a Success : Europe's Contribution', Brussels, 28 Oct. (http://europa.eu.int/comm/trade/issues/newround/doha_da/offerdda_en.pdf).

FAOSTAT database http://apps.fao.org.

OECD (2004), "OECD Agricultural Policies 2004 At a Glance"*, Paris.*
http://www.oecd.org/dataoecd/63/54/32034202.pdf

Peters, R. (2004). "Roadblock to Reform: The Persistence of Agricultural Export Subsidies". UNCTAD, Geneva.

UNCTAD TRAINS database http://www.unctad.org/trains/index.htm.

World Bank (2001). "Global Economic Prospects and the Developing Countries 2001", Washington D.C. http://www.worldbank.org/prospects/gep2001/.

WTO (2005) Doha Work Programme Ministerial Declaration Adopted on 18 December WT/MIN(05)/DEC http://www.wto.org/english/thewto_e/minist_e/min05_e/final_text_e.htm.

Appendix 1: ATPSM Commodities

Livestock	Cocoa beans
Bovinemeat	Cocoa, processed
Sheepmeat	Tobacco leaves
Pigmeat	Oilseeds, temp.
Poultry	Oilseeds, trop.
Milk, concentrated	Vegetable oils
Butter	Pulses
Cheese	Tomatoes
Hides & skins	Roots & tubers
Wheat	Apples
Rice	Citrus fruits
Barley	Bananas
Maize	Other tropical fruits
Sorghum	Tea
Sugar, raw	Rubber
Sugar, refined	Cotton
Coffee, green	
Coffee, processed	

Appendix 2: ATPSM Model Documentation

The Agricultural Trade Policy Simulation Model (ATPSM) is a comparative static partial equilibrium global trade model with the following features:

1. A simultaneous equation system for all countries specifying production, consumption, exports and imports that respond to domestic price changes, given a policy changes, complete price transmission and perfectly competitive markets.

2. Tariff rate quotas and quota rents;

3. Distinction between bound and applied tariff rates.

4. Stocks remain unchanged.

The standard equation system for all countries has four equations:

$$(1) \quad \hat{D}_{i,r} = \eta_{i,i,r}\left[\hat{P}_{wi}\left(1+\hat{t}_{c\,i,r}\right)\right] + \sum_{\substack{j=1\\i\neq j}}^{J}\eta_{i,j,r}\left[\hat{P}_{wj}\left(1+\hat{t}_{c\,j,r}\right)\right];$$

$$(2) \quad \hat{S}_{i,r} = \varepsilon_{i,i,r}\left[\hat{P}_{wi}\left(1+\hat{t}_{p\,i,r}\right)\right] + \sum_{\substack{j=1\\i\neq j}}^{J}\varepsilon_{i,j,r}\left[\hat{P}_{wj}\left(1+\hat{t}_{p\,j,r}\right)\right];$$

$$(3) \quad \Delta X_{i,r} = \gamma_{i,r}\Delta S_{i,r};$$

$$(4) \quad \Delta M_{i,r} = D_{i,r}\hat{D}_{i,r} - S_{i,r}\hat{S}_{i,r} + \Delta X_{i,r};$$

where *D, S, X,* and *M* denote demand, supply, exports and imports respectively;

$\wedge$ denotes relative changes and Δ absolute changes;

P_w denotes world price;

t_c denotes the domestic consumption tariff and t_p denotes the domestic production tariff;

ε denotes supply elasticity, η denotes demand elasticity, and γ denotes the initial ratio of exports to production;

> i and j are commodities indexes; and
> r is a country index.

Equation 3 requires that the change in exports in each market is some proportion of the change in production. This proportion is determined by the ratio of exports to production. For example, if all the initial production is exported, all the change in production is exported. If half the initial production is exported, half of the change in production is exported. This implies that the proportion of exports to production is maintained. Equation 4 clears the market, so that production plus imports equals domestic consumption and exports.[11]

For this application the standard version of ATPSM has been modified to include the following features:

(i)   A land constraint that redistributes unused acreage. The production of wheat, barley, rice, maize and sorghum in each country is raised or lowered by the average change in production multiplied by the ratio of land to other primary factors. This assumes a tonne of each crop in a country uses the some amount of land. Total production of crop may fall or rise depending on the contribution of land compared with capital and labour.

(ii)   Production quotas and quota rents. Production quotas are specified for EU raw sugar and dairy products, US tobacco, Canadian dairy and poultry and Japanese rice and dairy. These quotas are assumed to be binding unless the market price falls below the shadow price. Producers then respond according to the specified supply elasticity. Quota rent contributes to producer surplus.

(iii) A producer response to changes in quota rents on exports. Here there is no shadow price specified. Producers respond immediately to any change in rent. This implies the supply curve goes through the point at which quantity and price are observed. This permits trade diversion when quota rents change as a result of mfn reductions.

(iv)   An enlarged European Union with 25 members.

(v)   A revised determination of export or imports so that the largest trade flow is a residual. That is, for net exporters imports are a constant function of consumption and the change in exports is determined by changes in consumption, production and imports.

(vi)   Revision of domestic support data to include amber box payments for the major users. The difficulty here is the extent to which amber box payments are conflated with border measures, implying that if tariffs are removed, the additional effect of reducing support is minimal. (See de Gorter, Ingco and Ignacio (2004b) for a comprehensive discussion.)

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11 This paragraph is taken from the ATPSM Handbook, available from UNCTAD's website at www.unctad.org/tab.