IMPORT SAFEGUARDS: PROTECTIONIST MEASURES OR A LIBERALIZATION STRATEGY?

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Abstract

The Doha Trade Round maintains that a considerable effort will be given to take into account better the particular needs of developing nations. Many low-income countries argue that the flexibility to invoke a special safeguard mechanism when faced with volatile commodity markets is a necessary condition for further market access reform. The implications of a safeguard for developing agriculture as a trade-off for lowering their tariff rates, is an important empirical question.

Two stochastic simulation experiments are developed using wheat as a case study to estimate the marginal effects of a safeguard in terms of domestic market stability and on developed exporting nations. The results reveal that a safeguard for developing agriculture is minimally trade distorting and in general, costs less than one percent of total world welfare that would be realized if low-income countries were not granted a safeguard. Furthermore, safeguards are an attractive policy tool because they are transparent, easy to use and are an automatic mechanism.

Keywords: Special Safeguard Mechanism, price stability, import stability, tariffication.

Background

WTO member countries have a number of legal means to cope with import surges. For "fairly" traded imports they can rely on the provisions of Article XIX of the GATT and the Uruguay Round Agreement on Safeguards. For "unfairly" traded imports they have recourse to countervailing duties and anti-dumping actions[1]. However, each of these trade actions requires the importing country to provide proof of injury and in the case of the general safeguard provision to provide compensation. For low income countries, proving injury and providing compensation is often beyond their technical and financial capabilities. For this reason, the Special Agricultural Safeguard (SSG) made available to member countries in the Uruguay Round (UR) of trade negotiations has considerable appeal to developing country importers. First, the SSG was designed to counter import surges and sharp declines in import prices. Second, the rules for its application are transparent and it requires no injury test, nor the provision of compensation. However, only those countries who "tariffied" their non-tariff barriers during the UR are allowed to use the Special Agricultural Safeguard. Of the 146 current members of the WTO only 39 countries reserved the right to use the SSG, of which 29 are developing countries. However, since 1995, the use of the SSG has been dominated by three developed countries.[2]

In the WTO agricultural negotiations leading up to the launch of the Doha Development Round (DDR) low income countries tabled numerous proposals calling for *Special and Differential Treatment*. One aspect of *Special and Differential Treatment*

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[1] These actions are governed by the Agreement on Subsidies and Countervailing Measures and the Agreement on Implementation of Article VI of GATT 1994.
[2] The three countries are: the United States, the European Union and Japan.

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mentioned in many of these proposals was the need for a *Special Safeguard Mechanism* to help manage import surges and rapid price declines in the price of staple commodities.

The need to have developing countries fully "on-side" was demonstrated in Cancun in September 2002; with the failure of the WTO Ministerial meeting to push forward the trade liberalization process. A well designed SSM might form an important part of an acceptable agricultural package for low-income countries. The need for a SSM is recognized in several important WTO documents but the wording changes through time suggest a lack of consensus on the exact form a new SSM should take.

After his first draft was met with stark criticism, chair of the agricultural negotiations, Stuart Harbinson tabled a revised modalities text on 18 March 2003 (WTO 2003b). In this text the wording surrounding a new special safeguard measure is as follows:

- The current SSG would cease to apply for developed countries.

- Developing countries could continue to use the current SSG for products identified in their UR tariff schedules.

- Developing countries can not apply the current SSG and a new SSM to a product, concurrently.

- Technical work will be undertaken on the development of a SSM.

Finally, in the 13 September 2003 Draft Cancun Ministerial Text tabled by Mexican Foreign Minister Lois Ernesto Derbez the wording was refined to: "A special agricultural safeguard shall be established for use by developing countries subject to conditions for products to be determined (WTO 2003c)." This commitment to an SSM, but the lack of detail on the exact parameters of a SSM suggests there is scope for

research to shed light on this issue.[3] Basically, a SSM is a temporary tariff. The economics of tariffs are well known. Exporters favor the elimination of tariffs and importers lower them with great reluctance, in spite of the fact that there are often welfare gains in importing countries as a result of tariff elimination. The attraction of an SSM, to an exporter, stems from the realization that the existence of an SSM might entice a low income country to lower its tariffs more than it would if the SSM did not exist. The use of an SSM is discretionary; an importer has the right but not the obligation to use the SSM when it is triggered. Hence, from the exporter's perspective it might be better to face higher tariffs part of the time, than high tariffs all of the time. This is clearly an empirical question that hinges on the size of tariff cuts, the size of the additional tariff an importer can impose when the SSM is triggered, how often the SSM is triggered, and on how often the importing country will actually use the SSM when it is triggered. It is on these questions that this study is focused.

Objectives

Since the economic effects of a SSM are largely an empirical issue this study uses a case study approach. Wheat has been chosen for analysis for a number of reasons: 1) it is a staple commodity; 2) it is of export interest to a number of developed countries; and 3) it is a major importable of low income countries. The focus of this study is on three questions: 1) will an SSM stabilize commodity markets in low income countries; 2) does an SSM have the potential to entice low income countries to accept larger tariff cuts; and 3) how costly would an SSM be for wheat exporters, who consist primarily of developed countries.

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[3] Very little analysis of special safeguard mechanisms is available in the literature. Somwaru and Skully have examined a special agricultural safeguard but using a methodology quite different from what is employed in this study. Ruffer and Vergano provide a good discussion of the rationale for an SSM.

The Special Safeguard Mechanism

None of the proposals tabled during the WTO negotiations contain explicit parameters for a SSM but many of the proposals make reference to the current SSG. For that reason we have assumed that the parameters of a new SSM will mirror those of the current SSG. Consequently, the SSM will consist of a "price trigger" and a "volume trigger". A country can apply the price trigger safeguard whenever its import price falls to less than 90 percent of the average price in the previous three years and the additional duty that can be levied increases the further the import price falls below the reference price. In other words, the additional duty under the price trigger is an increasing function of a declining import price. The calculation of the volume trigger safeguard is more complex, but generally the larger the share of imports in domestic consumption, the smaller the import surge required to trigger the volume remedy.[4] The volume remedy is an additional tariff equal to one-third of the country's applied tariff. In this analysis it is assumed that a country will always apply a safeguard when it has the right to do so, and further if it has the choice of applying either the price or volume safeguard it will choose the one allowing the highest additional duty.

The Model and Data

The model is a static, synthetic, stochastic, partial equilibrium model of the wheat sector calibrated to supply and demand data averaged over 1999-2001. Data on the supply, distribution and trade flows of wheat were obtained from the ERS/USDA PS&D database and FAOSTAT. World prices for wheat were taken from the OECD's database and reflect the free on board (fob) US dollar price per metric ton of wheat. Exchange rate

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[4] The trigger level also depends on the level of consumption in the current year in comparison to the pervious year.

data for all countries was taken from the USDA Agricultural Exchange Rate Database and the International Monetary Fund's *Financial Statistics Yearbook* for the period 1999-2001.

Thirty-eight countries/regions are included in the model. Of these, 32 are low income net importing countries and 6 are large, net exporting nations. Domestic equations for the net exporting countries are identical to net importing countries except there is no price adjustment for tariffs and there are modifications made to handle a few domestic policies in the European Union and US. Finally, the market clearing condition that determines the world price is implemented by forcing the sum of net trade, across all of the countries in the model, to zero. The parameters in the model are largely derived from elasticities in the OECD's AGLINK model. Tariff data and other data on border measures were taken primarily from the Agricultural Market Access Database (AMAD).

In order to simulate the operation of the volume trigger of the SSM, pseudo-random error terms are added to the supply and food demand equations. Random shocks in an individual countries wheat supply and food wheat demand result in random net imports. As net imports increase the volume trigger of the safeguard mechanism can be breached and the importing country is allowed to impose a safeguard duty. Modeling the price trigger is more challenging. In order to introduce some differentiation in local price movements a pseudo-random error term was attached to the exchange rate in each countries price linkage equation. Although it is impossible to introduce shipment-by-shipment price variability; in this way some countries will be applying the price trigger

while others aren't, and the size of the duty allowed by the price trigger can vary across countries. [5]

Policy Set

The primary policies considered in this study are border policies, tariffs in particular. However, before moving to a detailed discussion of tariffs it is useful to outline the other policies explicitly incorporated into the model. In terms of domestic policies only the United States loan rate policy and the EU's intervention price are considered. In the United States the average loan rate (1999-2001) was US$94.80/mt and the average farm price was US$96.63/mt. Hence, in the baseline simulations the loan rate is not binding. However, in the stochastic simulations the farm price often drops below the loan rate. In this case, the U. S. supply inducing price is not allowed to fall below US$94.80/mt and the government cost of an implied deficiency payment equal to the difference between the loan rate and the farm price is calculated.

Calibrating the model in the EU is more difficult. [6] Substantial export subsidies were paid in 1999 when the intervention price was $119 Ecu/mt, and almost no export subsidies were paid in 2001 when the intervention price was $101 Ecu/mt. However, the average farm price over this period is distorted through intervention buying, and furthermore, EU export subsidy payments during this period were $15 Ecu/mt. We assume that the farm price equals the intervention price and then incorporate a $15 Ecu/mt export subsidy payment by defining an EU export price of wheat. This price is equal to the farm price minus $15 Ecu/mt, or $95.6 Ecu/mt. When the simulations are

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[5] More details on the way the pseudo-random errors were generated and some modifications made to them for the empirical analysis are contained in Grant.

[6] Another factor complicating the calibration is that the EU is defined as the EU-25 in this analysis to account for the imminent expansion of the EU to an additional ten countries.

such that the world price falls below the $110.6 Ecu/mt intervention price, the model calculates the appropriate export subsidy and cost of maintaining the intervention price. Note also that one element of the liberalization scenarios is the reduction of the intervention price from $110.6 Ecu/mt to $101 Ecu/mt.

For this study the tariffs in all countries are converted to their *ad valorem* equivalents. The tariff structure across all net importing countries is remarkable. There exists a huge gap between bound and applied tariffs in many of these countries. The simple average difference between bound and applied tariff rates is 62 percentage points. The differences are further illustrated in Figure 1 where the countries have been rank ordered, with the country with the lowest bound tariff assigned number one and the country with the highest bound tariff assigned number 32.[7] For those countries with bound tariffs less than 100 percent only two countries apply tariffs above 50 percent and many of these countries apply tariffs of less than 10 percent. Four of the countries with bound tariffs above 100 percent apply tariffs below 25 percent. The data on applied and bound tariffs make it clear that only aggressive tariff cutting exercises in the wheat sector will have a significant liberalizing effect.

These figures also beg the question of why countries with such large gaps between their bound and applied tariffs are worried about a special safeguard mechanism. Undesirable import surges can be remedied by raising applied tariffs. There are at least three reasons why a country might not want to do this. First, the applied tariffs might be specified in domestic legislation and hence are not easily changed. Second, the "optics" of raising applied tariffs is not good since it makes it clear the government is favoring

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[7] Japan has been excluded from this figure because its bound (396 percent) and applied tariffs (225 percent) compress the scale making it harder to read.

domestic producers over domestic consumers. Finally, while wheat tariffs might not be a problem for most low income countries, there might be a few politically sensitive commodities where applied and bound tariffs are similar. Since the SSM will apply to all commodities; if a country wants this instrument, for even a few commodities, it must support its use for all.

Expected Outcomes

As in most policy analysis the expected direction of change in the mean values of key variables is relatively straightforward. However, an SSM has an implied objective of market stability although exactly what is to be stabilized is often left unstated. Since the SSM is triggered by changes in prices and import quantities it seems reasonable to monitor the stability of these variables, especially given the current design of the safeguard mechanism. The work of Zwart and Meilke provides a theoretical framework that is useful for this purpose. Consider the following two-country model:

$$DE = a - bPW, \tag{1}$$

$$SE = c + dPW + \varepsilon_1, \tag{2}$$

$$DI = e - fPD, \tag{3}$$

$$SI = g + hPD + \varepsilon_2, \tag{4}$$

$$SE - DE = DI - SI, \tag{5}$$

where, DE represents demand in the exporting nation, SE is supply in the exporting nation, DI and SI are demand and supply in the importing region respectively, PW is the world price and PD is the domestic price of the commodity. ε_1 and ε_2 are random errors assumed to be normally and independently distributed: $\varepsilon_1 \sim N(0, \sigma_1^2), \varepsilon_2 \sim N(0, \sigma_2^2)$.

Parameters (a) through (h) are supply and demand constants and slope coefficients.

Zwart and Meilke show that under free trade, the domestic price equals the world price *(PW)* with expected value *E[PW]* and variance, *var[PW]:*

$$E[PW] = \frac{e - g + a - c}{d + b + f + h} \qquad\qquad [6]$$

$$Var[PW] = \frac{\sigma_1^2 + \sigma_2^2}{(d + b + f + h)^2} \qquad\qquad [7]$$

The form of policy intervention in the empirical model is that of an *ad valorem* tariff illustrated in equation (8).

$$PD = \gamma PW \qquad\qquad [8]$$

where,

$\gamma = (1+t)$ and *(t)* is the *ad valorem* tariff rate.

Because it is the importing country that implements a tariff policy, equations (3) and (4) can be re-expressed as,

$$DI = e - f\gamma PW, \text{ and} \qquad\qquad [9]$$

$$SI = g + h\gamma PW. \qquad\qquad [10]$$

Using equations (9) and (10) it can be shown that the expected value of the world price and its variance as well as the variance in domestic prices are:

$$E[PW] = \frac{e - g + a - c}{d + b + \gamma(f + h)}, \text{ and} \qquad\qquad [11]$$

$$Var[PW] = \frac{\sigma_1^2 + \sigma_2^2}{(d + b + \gamma(f + h))^2} \qquad\qquad [12]$$

$$Var[PD] = \frac{\gamma^2(\sigma_1^2 + \sigma_2^2)}{(d + b + \gamma(f + h))^2} = \gamma^2 Var[PW] \qquad\qquad [13]$$

Equations (11) and (12) illustrate two things. First, the expected world price decreases when an importing nation imposes a tariff because *(1+t)* is greater than one,

thereby increasing the denominator in both equations. Second, the variance around world price is smaller compared to free trade because of the additional policy parameter in the denominator, but the variance of domestic price is higher by γ^2. Gamma, in the above equations, can be reinterpreted as the additional tariff levied under either the price or volume based safeguard. Consequently, it's expected that a safeguard duty will increase the variance around domestic prices and lower the variance of world price, *certeris paribus*.

Policy Scenarios

The most detailed tariff cutting proposals tabled in the DDR are the cuts from bound rates contained in Mr. Harbinson's draft text of 18 March 2003 and the United States original proposal to employ a Swiss-25 tariff reduction formula from applied rates (WTO 2003b). The tariff cuts proposed by Harbinson are shown in Table 2. The Harbinson formula contains a harmonization element with higher tariffs subject to larger cuts than smaller tariffs. In addition, the commitments for developing countries are lower than for developed countries. However, given the huge gap between bound and applied tariffs the Harbinson formula, using average tariff cuts, would only lower applied tariffs in four countries: Japan (225 to 158 percent), Egypt (5 to 3.8 percent), the developed country group (121.5 to 81 percent) and the EU (62 to 37 percent). The tariff cut in the EU is important as there are cases where the tariff is not high enough to "protect" the EU's intervention price. In such cases, the EU becomes a strict net importer of wheat.

In order to analyze a more aggressive tariff cutting exercise the second scenario involves the use of a Swiss-25 harmonization formula to cut tariffs from applied rates, as was originally proposed by the United States (WTO). Under this scenario all applied

tariffs are cut to 25 percent or less, and the tariff cutting exercise is binding on all

countries. Hence, the two scenarios presented involve one very conservative scenario, at

least as far as reducing applied tariffs in the wheat sector are concerned and one

aggressive scenario where all applied tariffs are reduced. In both of these scenarios the

EU's intervention price is lowered to $101.25 Ecu/mt while US domestic policies are left

unaltered.

In all, four policy experiments are reported: 1) Harbinson with no SSM; 2) Swiss-

25 with no SSM; 3) Harbinson with an SSM; and 4) Swiss-25 with an SSM. Scenarios

one and two are compared to the status quo simulation and scenarios three and four are

compared to the comparable scenario with no SSM to isolate the price and welfare effects

of an SSM. The comparisons are based on the results obtained and averaged over 1000

drawings of pseudo-random errors. As a result it is possible to measure the number of

times the SSM is triggered and its effects on the stability of all of the models endogenous

variables.

Scenario 1: Harbinson Tariff Cuts with No SSM

The impacts of the Harbinson (HB) scenario on most countries are small (Tables 2 and

3). World prices rise but by 3.4 percent because the HB tariff cutting proposal is binding

on only four countries. Domestic price variability in all three net importing countries that

reduce tariffs declines while domestic price stability decreases to a lesser extent for all

but one of the 31 net importing countries (Brazil) not making tariff cuts (Table 2). For

most countries, the 3.4 percent world price increase is transmitted directly into a domestic

price increase

With the exception of Japan, the developed country group and the six net exporters, low income countries suffer small welfare losses from liberalization (Table 3). The losses stem from the decline in consumer surplus from higher food prices, and in some cases (Egypt) from losses in tariff revenue as net importers reduce their demand for higher priced imports. The biggest winners are Japanese and developed country group consumers with 30.1 percent and 14.7 percent gains in consumer surplus, as well as their governments through increased tariff revenue (38.8 percent and 1.2 percent, respectively). Net imports by Japan increase by 1.2 mmt and by 0.54 mmt in the developed country group. In the EU and US the cost of their domestic support programs fall by 96 and 75 percent, respectively ($157 and $90 million).

Globally, world welfare increases by 0.7 percent ($716 million). The distribution of welfare changes in the Harbinson scenario is mixed. Developed country exporters gain but the Harbinson tariff cuts leave trade flows and welfare distributions virtually unchanged. The only significant gains accrue to developed country importers (Japan and the developed country group). Low income countries lose with Indonesia (-6.5 percent), Nigeria (-5.0 percent) and North African (-5.0 percent) countries losing the most, albeit the losses in all cases are small.

Scenario 2: Swiss-25 Tariff Cuts with No SSM

Applying a Swiss-25 tariff cutting formula, from applied rates, results in all countries with positive tariffs facing a reduction commitment (Tables 4 and 5). As a result, world prices rise 5.7 percent. Following the tariff cuts 25 low income countries face higher domestic prices, and, with the exception of Indonesia, prices have been stabilized in 30 low income countries.

World welfare increases by 1.6 percent or $1.8 billion. Among the top net exporting nations, Australia and Canada are the biggest gainers at roughly 3.5 percent. Low income countries, as a group, lose economic welfare under the Swiss-25 scenario. Nigeria whose applied tariff drops from 80.7 percent to 19.1 percent under this scenario illustrates the gains from trade. Nigerian wheat production declines by 22.1 percent and wheat imports rise by 0.9 mmt. Total economic welfare improves by 10.7 percent driven by a gain of 104 percent in consumer surplus. Conversely, the African Developing Group (AFD) whose applied tariff drops from 29.2 to 13.4 percent loses economic welfare (-2.5 percent). In the AFD, the 47 percent drop in tariff revenue is more than enough to offset the 10.3 percent increase in consumer surplus. Again, the major gains under a Swiss-25 tariff cut accrue to developed country importers, where steep applied tariffs are cut to less than 25 percent.

Scenario 3: Harbinson Tariff Cuts with an SSM

We now turn to an examination of the effects of an SSM when it is combined with a particular tariff cutting formula (Tables 6 and 7). In this scenario, the Harbinson tariff cutting proposal without an SSM is compared to the Harbinson tariff cutting proposal with an SSM. The SSM results in domestic prices rising and becoming less stable in 16 of 31 low income countries. However, imports in 26 low income countries are stabilized, although the stability effects are generally quite small. World prices fall slightly (0.2 percent) as a result of the SSM causing increased production and lower consumption in the majority of small, low income countries. Morocco and Nigeria experience large increases in the standard deviation of domestic prices because of the size and frequency of safeguard duties. Least developed African countries (NAG and SAG regions) increase

their domestic price of wheat and also stabilize there domestic wheat prices with an SSM. Conversely, in Ethiopia's case, a one percent increase in average domestic prices comes with a 4 percent increase in price volatility.

Among the exporting nations, Canada suffers a drop in its price of wheat (-0.20 percent) and an increase in its producer price variability (2.0 percent). The small decrease in world price is accompanied by small reductions in the domestic price variation in the US (-0.2 percent) and the EU (-0.04 percent), however, the tiny drop in world price increases the cost of domestic farm programs by 18.4 percent in the US and 5.4 percent in the EU.

The welfare cost of an SSM under the Harbinson proposal is $146.1 million. This needs to be taken in context with the welfare gain from trade liberalization under the Harbinson formula of $716 million. Individual developing countries tend to gain by using the SSM, however the greater losses occur in Morocco (-0.36 percent), Nigeria (-4.0 percent) and the AFD (-0.3 percent).

Swiss-25 Tariff Cuts with an SSM

The results of allowing an SSM along with the reduction of applied tariffs using a Swiss-25 formula are summarized in Tables 8 and 9. World price and variance changes are small. Domestic prices in 16 of 31 low income countries rise from use of the SSM and domestic prices are stabilized in 18 countries. Imports decline in 19 of 31 low income countries but are stabilized in an astounding 27 of 31 low income countries. On this criterion alone the SSM would have to be considered a major success.

Under the Swiss-25 scenario the world welfare cost of the SSM is only $133 million compared to a welfare gain of $1.79 billion from liberalization using a Swiss-25

formula with no SSM (Table 5). The low cost of the SSM stems from the fact that the

additional duties allowed under the volume trigger decline as applied tariffs fall.

Developed exporting nations loose slightly in terms of net national welfare and in the

case of the US and EU, both countries face rising costs of their domestic programs of 18

and 4.4 percent respectively. Among the developing countries Nigeria is the major looser

as average prices increase 7.3 percent but this rise is accompanied by a 22.8 percent

decline in the standard deviation of domestic prices. Ethiopia, a least developed country,

looses slightly as the increase in tariff revenue and producer surplus of 40.5 and 1.8

percent is not enough to offset the loss in consumer surplus of 1.5 percent. Prices rise

slightly in the Philippines but they are much more stable, as are net imports whose

variability is reduced by 12.5 percent.

Conclusions

Summarizing the results of this analysis is difficult because in some sense each country

has a different stake in the trade negotiations depending on its initial tariff levels and

trade position in the wheat market. However, some general observations are possible.

First, the potential use of the SSM increases as the degree of trade liberalization

increases and domestic prices fall. Second, the larger the trade reforms, the smaller the

average SSM duty.[8] Third, nearly all low income countries lose economic welfare under

Harbinson and Swiss-25 reforms, Argentina and Kazakhstan two low income wheat

exporters are the only exceptions. These results are similar to those obtained by Vanzetti

and Peters in a more comprehensive analysis of the effects of trade liberalization on

developing countries. The largest losers are: Indonesia (-10.6 percent), the North Africa

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[8] Under Harbinson reforms the average volume based SSM duty is 4.5 percent and under the Swiss-25
reforms the average SSM duty is 2.4 percent.

Group (-8.12 percent), South Korea (-6.13 percent), United Arab Emirates (-5.2 percent), the Central American Group (-5.2 percent), and the South Africa Group (-5.1 percent) where initial applied tariffs are zero or low.

Fourth, under the Harbinson reform scenario with an SSM six low income countries lose economic welfare, and the loss of consumer surplus in two countries as a result of applying the SSM is greater than two percent: Nigeria (-13.0 percent) and Africa Developing Group (-2.4 percent). The same is true, although the magnitudes differ, for these same two countries using a SSM under Swiss-25 reforms. Fifth, the SSM, especially under Swiss-25 reforms significantly stabilizes the level of imports in nearly all low income countries and stabilizes producer surplus in 23 of 27 low income countries. Finally, as the tariff cuts get more aggressive the gains in economic welfare not only get bigger but the cost of allowing a SSM become smaller. This result is more obvious in Grant (2003) where he considered a larger range of tariff cutting scenarios.

A *Special Safeguard Mechanism* does have the capacity to stabilize the imports and producer surplus of many low income countries under trade liberalization. However, our results suggest that many low income countries will lose from trade reform in the wheat market so they are unlikely to be enthusiastic supporters of trade liberalization for this commodity. Conversely, developed countries, both importers and exporters gain from wheat trade liberalization. From the perspective of developed country exporters, an SSM costs, in welfare terms, only a small fraction of the gains from liberalization. Hence, if developing countries are willing to accept larger cuts in tariffs for an SSM, it is a trade-off developed countries should accept – at least at far as the wheat market is concerned.

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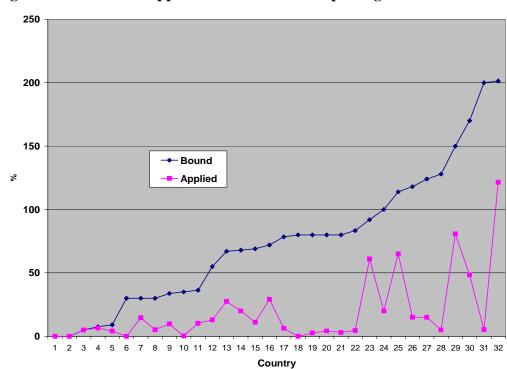
Figure 1: Bound and Applied Tariffs For Net Importing Countries

Table 1: Harbinson Tariff Reduction Commitments

Development Status	Agricultural Tariff	Reduction Commitment	Minimum Cut
Developed	T > 90%	60%	45%
	15% < T <= 90%	50%	35%
	T <= 15%	40%	25%
Developing	T > 120%	40%	30%
	60% < T <= 120%	35%	25%
	20% < T <= 60%	30	20
	T <= 20%	25%	15%
	"SP" Products	10%	5%

Source: World Trade Organization TN/AG/W/1/Rev.1

Table 2: Harbinson Tariff - No SSM

COUNTRY	Wheat Price (%) Mean	Wheat Price (%) Stdev	Wheat Production (%) Mean	Wheat Production (%) Stdev	Total Wheat Use (%) Mean	Total Wheat Use (%) Stdev	Net Trade Wheat (%) Mean	Net Trade Wheat (%) Stdev		Net Trade Wheat (1000mt) Base	Net Trade Wheat (1000mt) HB
Developed											
Australia	3.412	-10.968	1.958	0.653	-0.813	-7.889	3.128	0.662		16,768.39	#######
Canada	3.419	-14.608	2.055	1.089	-2.062	-11.930	3.856	0.771		17,153.12	#######
EU-25	-5.106	595.769	-3.119	-23.222	3.133	256.395	-72.593	-31.107		9,807.70	2,687.97
Israel	3.422	-12.129	1.307	-12.129	-1.798	-7.079	-1.974	-7.308		-1,475.08	-1,445.97
Japan	-17.766	-22.907	-22.212	-6.104	16.356	-19.452	20.613	-18.968		-5,418.56	-6,535.52
USA	2.733	14.387	1.235	-1.870	-1.634	-13.607	5.004	-0.739		26,048.03	#######
DCG	-15.705	-30.669	-21.929	-17.490	9.316	-11.794	46.594	-19.991		-1,156.74	-1,695.70
Developing											
Algeria	3.403	-16.304	2.066	-0.154	-0.711	-3.127	-1.477	-1.493		-4,945.30	-4,872.26
Argentina	3.416	-17.820	1.844	0.992	-1.072	-1.656	3.115	0.958		11,150.22	#######
Brazil	3.440	0.548	2.366	0.145	-1.910	0.367	-3.321	0.421		-7,280.70	-7,038.91
China	2.999	-9.676	0.414	0.752	-1.905	-6.796	1,449.741	3.943		173.01	2,681.18
Columbia	3.410	-10.455			-1.165	-2.294	-1.193	-2.294		-1,166.67	-1,152.75
Egypt	2.197	-7.928	1.034	-1.940	-0.457	-0.848	-1.952	-2.041		-6,284.31	-6,161.64
Indonesia	3.420	-0.631			-3.399	-0.570	-3.369	-0.570		-3,821.70	-3,692.94
Iran	3.417	-16.294	2.193	-0.746	-0.609	-0.972	-4.334	-1.456		-6,360.47	-6,084.79
Iraq	3.416	-17.820	2.202	-0.507	-0.274	0.031	-0.796	0.023		-2,970.00	-2,946.36
Kazakhstan	3.403	-3.181	1.696	-0.664	-0.937	-1.124	4.951	-0.871		4,700.48	4,933.20
Malaysia	3.416	-17.820			-1.009	-3.490	-1.009	-3.490		-1,139.14	-1,127.64
Mexico	3.418	-13.897	2.268	-4.056	-1.752	-6.556	-7.026	-7.749		-2,442.63	-2,271.02
Morocco	3.409	-16.397	3.099	-0.211	-0.732	-1.502	-3.539	-0.660		-3,221.48	-3,107.47
Nigeria	3.417	-13.273	2.491	-0.338	-4.902	-3.887	-5.082	-3.927		-1,914.25	-1,816.96
Peru	3.413	-16.615	2.573	-5.961	-1.154	-1.771	-1.648	-2.684		-1,375.52	-1,352.85
Philippinnes	3.415	-11.645			-3.341	-8.559	-3.267	-8.559		-2,990.26	-2,892.58
South Korea	3.431	-4.408			-3.670	-4.483	-3.587	-4.483		-3,537.44	-3,410.54
Tunisia	3.402	-16.371	2.134	-0.551	-0.816	-0.713	-3.908	-1.292		-1,205.84	-1,158.71
United A.E	3.416	-17.820			-1.759	-0.320	-1.760	-0.320		-700.82	-688.48
Venezuela	3.413	-16.982	1.818	-1.685	-1.455	-3.580	-1.456	-3.582		-1,352.31	-1,332.62
AFD	3.403	-14.242	3.738	-1.596	-2.426	-3.621	-4.026	-4.815		-1,669.71	-1,602.48
CTA	3.416	-16.367			-1.655	-2.066	-1.657	-2.066		-3,148.29	-3,096.13
STA	3.409	-10.953	3.317	-2.512	-1.553	-6.737	-7.750	-5.777		-1,614.77	-1,489.62
ASG	3.418	-13.347	2.942	-1.219	-2.404	-6.926	-5.497	-6.366		-2,854.22	-2,697.32
MEG	3.416	-17.927			-1.290	-3.291	-1.297	-3.291		-1,243.28	-1,227.16
ROW	3.417	-17.298	2.600	-4.728	-2.538	-1.969	-13.031	-4.357		-6,652.56	-5,785.65
Least Developed											
Bangladesh	3.415	-16.729	1.151	-0.644	-1.797	-0.661	-5.238	-1.015		-1,490.87	-1,412.78
Ethiopia	3.357	-16.467	1.301	-0.757	-1.571	-1.045	-9.600	-1.810		-816.57	-738.18
Yemen	3.415	-15.127	0.788	-0.104	-1.367	-0.726	-1.536	-0.762		-1,952.02	-1,922.04
SAG	3.417	-13.897	2.813	-5.841	-2.166	-5.681	-2.976	-6.656		-1,857.71	-1,802.41
NAG	3.398	-14.828	2.999	-2.302	-2.933	-4.400	-3.066	-4.519		-1,387.14	-1,344.61
WORLD	**3.416**	**-17.820**	**-0.105**	**-4.440**	**-0.103**	**-4.440**	**0.000**	**0.000**		**0.00**	**0.00**

Table 3: Harbinson Tariff - No SSM

COUNTRY	Consumer Surplus Feed		Consumer Surplus Food		Producer Surplus Food		Gov't Revenue (Cost)		Net Welfare	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev
Developed										
Australia	-1.876	-11.835	-1.354	-3.741	4.891	3.709			**2.116**	3.923
Canada	-7.111	-18.026	-1.291	-2.306	4.969	3.224			**2.005**	4.043
EU-25	6.540	621.668	6.257	113.798	-7.336	-33.422	(-95.927)	-84.789	**0.680**	11.489
Israel	-7.044	-15.595	-0.569	-0.267	4.238	-10.848	1.422	-8.884	**-0.893**	-0.451
Japan	83.239	4.374	30.128	-6.359	-38.356	-26.566	38.836	6.554	**30.027**	-0.899
USA	-13.236	-23.735	-0.612	-1.612	3.515	0.141	(-74.537)	-55.483	**0.450**	2.100
DCG	45.012	-16.528	14.271	0.963	-38.961	-35.615	1.237	-47.151	**6.205**	-5.880
Developing										
Algeria			-1.431	-3.800	4.915	2.595	1.918	-1.801	**-1.006**	-1.926
Argentina			-2.167	-2.763	4.759	3.071			**2.027**	3.155
Brazil	-12.718	-6.635	-3.492	-1.542	5.291	3.577	-0.006	3.710	**-2.095**	-0.991
China	-4.750	-11.570	-3.702	-7.937	3.262	5.914	0.000	0.000	**-0.086**	1.219
Columbia			-2.362	-3.473	3.410	-10.455	2.213	-3.671	**-1.904**	-2.799
Egypt			-0.918	-1.280	2.865	-2.991	-23.900	-22.692	**-0.597**	-0.879
Indonesia			-6.550	-3.996					**-6.550**	-3.996
Iran			-1.242	-1.612	5.048	1.484			**-0.495**	-0.542
Iraq			-0.529	-0.232	4.994	2.242			**-0.429**	-0.165
Kazakhstan	-5.576	-5.728	-0.622	-0.420	4.516	1.434			**0.734**	1.004
Malaysia			-2.106	-4.544			2.402	-9.089	**-1.835**	-3.883
Mexico	-15.667	-21.464	-3.020	-6.786	5.108	-3.331	-3.696	1.790	**-1.136**	-1.989
Morocco			-1.510	-2.269	6.129	3.235	-0.168	3.205	**-0.786**	-0.184
Nigeria			-9.525	-8.645	5.396	2.636	-1.731	3.460	**-5.042**	-3.711
Peru			-2.429	-2.977	5.478	-5.162	1.754	-1.742	**-1.658**	-1.978
Philippinnes	-14.900	-18.426	-2.407	-2.756			0.114	2.021	**-2.932**	-4.166
South Korea	-15.129	-12.747	-2.873	-5.058	3.431	-4.408	-0.236	12.504	**-3.775**	-7.219
Tunisia			-1.624	-1.520	4.968	1.680	-0.517	3.357	**-0.669**	-0.679
United A.E			-3.368	-2.098	3.416	-17.820	1.648	3.132	**-3.172**	-1.969
Venezuela			-2.898	-4.996	4.664	-2.448	1.947	-4.949	**-2.413**	-4.031
AFD			-4.808	-5.940	7.265	1.993	-0.644	3.559	**-2.860**	-3.189
CTA			-3.384	-3.733	3.416	-16.367	1.746	-0.299	**-3.162**	-3.469
STA			-3.143	-8.260	6.666	0.523	-4.459	2.764	**-1.147**	-2.699
ASG	-5.911	-16.189	-4.590	-7.916	6.043	1.672	-2.160	3.274	**-2.281**	-3.359
MEG			-2.571	-4.576	3.416	-17.927	2.109	-5.916	**-2.488**	-4.473
ROW	-5.619	-19.816	-4.903	-3.824	5.534	-3.988	-9.858	1.826	**-1.059**	-1.994
Least Developed										
Bangladesh			-3.537	-2.524	4.125	-4.908	-1.902	3.446	**-1.038**	-1.705
Ethiopia			-3.102	-2.565	4.163	-0.803	-6.135	1.881	**-0.573**	-1.183
Yemen			-2.699	-2.126	3.867	0.861			**-2.381**	-2.048
SAG			-4.306	-7.841	5.823	-4.150	0.410	2.111	**-3.160**	-6.590
NAG			-5.811	-7.225	6.051	0.376	0.332	2.980	**-5.029**	-6.494
WORLD									**0.645**	0.604
			Welfare Difference From Baseline ($US)						**$716,244,000**	

Table 4: Swiss-25 Tariff Cut - No SSM

COUNTRY	Wheat Price (%)		Wheat Production (%)		Total Wheat Use (%)		Net Trade Wheat (%)			Net Trade Wheat (1000mt)	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev		Base	SWA
Developed											
Australia	5.642	-13.072	3.237	1.017	-1.345	-9.329	5.173	1.055		16,768.39	17,636
Canada	5.654	-16.884	3.398	1.833	-3.410	-13.890	6.376	1.649		17,153.12	18,247
EU-25	-4.356	664.998	-2.661	-17.260	2.673	291.169	-61.932	-14.893		9,807.70	3,734
Israel	4.853	-14.172	1.853	-14.172	-2.551	-8.196	-2.799	-8.464		-1,475.08	-1,434
Japan	-60.169	-62.680	-74.579	-19.480	55.393	-50.339	69.735	-49.847		-5,418.56	-9,197
USA	5.141	22.020	2.323	-2.255	-2.702	-16.720	8.914	-0.537		26,048.03	28,370
DCG	-42.446	-56.419	-59.267	-30.031	25.179	-19.080	125.929	-34.333		-1,156.74	-2,613
Developing											
Algeria	5.337	-22.128	3.240	-0.301	-1.115	-4.069	-2.317	-2.136		-4,945.30	-4,831
Argentina	5.648	-22.230	3.049	1.668	-1.773	-2.179	5.150	1.694		11,150.22	11,724
Brazil	1.573	-0.953	1.082	0.025	-0.873	-0.971	-1.519	-0.475		-7,280.70	-7,170
China	5.208	-13.983	0.719	1.120	-3.309	-10.222	2,517.912	5.867		173.01	4,529
Columbia	0.491	-17.810			-0.168	-3.605	-0.172	-3.605		-1,166.67	-1,165
Egypt	4.865	-6.308	2.289	-1.617	-1.013	-0.578	-4.323	-1.548		-6,284.31	-6,013
Indonesia	5.659	0.986			-5.624	0.203	-5.575	0.203		-3,821.70	-3,609
Iran	5.648	-20.436	3.626	-0.901	-1.006	-1.188	-7.165	-1.769		-6,360.47	-5,905
Iraq	5.648	-22.230	3.640	-0.679	-0.452	0.054	-1.316	0.088		-2,970.00	-2,931
Kazakhstan	5.622	-3.794	2.802	-0.528	-1.548	-1.263	8.179	-0.723		4,700.48	5,085
Malaysia	2.412	-24.612			-0.712	-4.425	-0.712	-4.425		-1,139.14	-1,131
Mexico	-6.281	-26.033	-4.167	-7.027	3.219	-11.468	12.909	-13.634		-2,442.63	-2,758
Morocco	-17.126	-37.810	-15.568	-0.324	3.674	-3.557	17.777	-1.289		-3,221.48	-3,794
Nigeria	-30.355	-44.716	-22.136	-1.298	43.555	-11.871	45.157	-12.034		-1,914.25	-2,779
Peru	-2.193	-27.229	-1.653	-9.210	0.741	-2.671	1.059	-4.070		-1,375.52	-1,390
Philippinnes	0.668	-18.204			-0.653	-13.461	-0.638	-13.461		-2,990.26	-2,971
South Korea	5.065	-3.377			-5.417	-3.575	-5.295	-3.575		-3,537.44	-3,350
Tunisia	-2.208	-27.702	-1.385	-1.007	0.530	-1.026	2.537	-2.073		-1,205.84	-1,236
United A.E	5.040	-22.678			-2.595	-0.462	-2.597	-0.462		-700.82	-683
Venezuela	0.498	-25.629	0.266	-2.115	-0.212	-5.207	-0.213	-5.211		-1,352.31	-1,349
AFD	-7.174	-29.082	-7.880	-2.771	5.114	-7.581	8.488	-9.722		-1,669.71	-1,811
CTA	4.959	-21.004			-2.404	-2.708	-2.405	-2.708		-3,148.29	-3,073
STA	2.751	-16.758	2.677	-3.547	-1.254	-9.956	-6.255	-8.392		-1,614.77	-1,514
ASG	2.983	-17.590	2.567	-0.959	-2.097	-9.048	-4.797	-7.448		-2,854.22	-2,717
MEG	5.669	-22.388			-2.141	-4.019	-2.153	-4.019		-1,243.28	-1,217
ROW	5.649	-21.274	4.299	-5.768	-4.197	-2.275	-21.546	-5.173		-6,652.56	-5,219
Least Developed											
Bangladesh	4.744	-21.383	1.599	-0.562	-2.496	-0.852	-7.275	-1.216		-1,490.87	-1,382
Ethiopia	4.719	-21.285	1.829	-0.891	-2.208	-1.378	-13.496	-2.304		-816.57	-706
Yemen	5.646	-18.790	1.303	-0.166	-2.260	-0.848	-2.539	-0.897		-1,952.02	-1,902
SAG	4.428	-17.279	3.646	-7.295	-2.807	-7.107	-3.857	-8.336		-1,857.71	-1,786
NAG	4.300	-21.051	3.795	-3.163	-3.711	-6.224	-3.879	-6.391		-1,387.14	-1,333
WORLD	**5.648**	**-22.230**	**0.210**	**-6.666**	**0.206**	**-6.666**	**0.000**	**0.000**		**0.00**	**0.00**

Table 5: Swiss-25 Tariff Cut - No SSM

COUNTRY	Consumer Surplus Feed		Consumer Surplus Food		Producer Surplus Food		Gov't Revenue (Cost)		Net Welfare	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev
Developed										
Australia	-3.090	-14.504	-2.232	-4.699	8.135	6.513			**3.529**	6.650
Canada	-11.576	-22.373	-2.129	-3.067	8.273	6.411			**3.360**	6.990
EU-25	5.579	690.356	5.337	131.119	-6.265	-20.175	-97.728	-90.351	**0.721**	12.480
Israel	-9.895	-19.025	-0.806	-0.374	6.030	-12.377	-13.690	-24.372	**-1.459**	-0.642
Japan	388.373	-17.292	118.469	-19.283	-91.150	-76.807	-44.415	-67.263	**75.396**	-30.441
USA	-21.251	-31.576	-1.010	-2.025	6.677	2.652	-92.394	-79.046	**0.758**	3.343
DCG	141.639	-32.613	40.817	8.262	-83.009	-71.337	-58.940	-86.832	**11.548**	-8.158
Developing										
Algeria			-2.239	-5.128	7.748	4.093	-7.966	-12.004	**-1.657**	-2.424
Argentina			-3.568	-3.986	7.916	6.193			**3.385**	5.669
Brazil	-6.012	-4.487	-1.611	-1.890	2.399	1.570	-31.134	-30.017	**-3.189**	-0.731
China	-8.169	-17.436	-6.382	-12.434	5.668	10.206	0.000	0.000	**-0.124**	2.379
Columbia			-0.360	-3.827	0.491	-17.810	-33.880	-38.904	**-3.062**	-3.934
Egypt			-2.023	-1.562	6.410	-0.281	-15.036	-11.609	**-0.983**	-1.225
Indonesia			-10.662	-5.521					**-10.662**	-5.521
Iran			-2.047	-2.225	8.419	3.183			**-0.804**	-0.764
Iraq			-0.874	-0.392	8.340	4.154			**-0.707**	-0.280
Kazakhstan	-9.107	-8.065	-1.025	-0.621	7.540	3.427			**1.239**	1.898
Malaysia			-1.494	-5.186			-27.501	-37.874	**-3.057**	-4.933
Mexico	30.568	-16.433	5.612	-6.732	-9.274	-15.920	-42.988	-54.120	**-0.778**	-2.899
Morocco			7.727	0.058	-28.200	-19.017	-57.603	-63.817	**0.289**	-0.487
Nigeria			103.500	26.222	-42.476	-32.068	-63.568	-75.281	**10.674**	-8.450
Peru			1.554	-1.912	-3.574	-14.249	-40.710	-44.380	**-2.705**	-2.738
Philippinnes	-3.536	-20.067	-0.485	-2.761			-33.776	-34.347	**-4.430**	-5.896
South Korea	-21.745	-15.662	-4.221	-5.303	5.065	-3.377	-14.540	5.921	**-6.138**	-8.178
Tunisia			1.044	-0.516	-3.255	-4.769	-39.772	-41.453	**-0.866**	-1.011
United A.E			-4.947	-3.079	5.040	-22.678	-11.735	-9.693	**-5.198**	-3.175
Venezuela			-0.446	-5.421	0.645	-6.831	-33.902	-39.742	**-3.782**	-5.585
AFD			10.322	-2.897	-14.880	-10.801	-46.808	-51.531	**-2.547**	-5.426
CTA			-4.892	-5.132	4.959	-21.004	-12.496	-14.321	**-5.199**	-5.037
STA			-2.553	-11.192	5.331	-1.304	-29.709	-26.675	**-1.712**	-3.610
ASG	-5.192	-20.183	-4.024	-9.425	5.267	1.460	-27.863	-24.315	**-3.492**	-4.557
MEG			-4.243	-6.132	5.669	-22.388	14.907	3.728	**-4.090**	-6.001
ROW	-9.178	-25.278	-8.027	-5.586	9.248	-3.558	-16.901	3.886	**-1.668**	-3.164
Least Developed										
Bangladesh			-4.894	-3.424	5.746	-5.281	-18.573	-12.234	**-1.681**	-2.778
Ethiopia			-4.344	-3.509	5.873	-0.411	-23.215	-13.719	**-0.898**	-1.909
Yemen			-4.432	-3.142	6.411	2.184			**-3.908**	-3.048
SAG			-5.560	-9.879	7.581	-5.091	-18.091	-16.091	**-5.103**	-8.760
NAG			-7.336	-9.790	7.678	0.163	-19.040	-16.281	**-8.120**	-9.547
WORLD									**1.611**	-1.078
					Welfare Difference From Baseline ($US)				**$1,787,845,000**	

Table 6: Harbinson Tariff Cut - With SSM

COUNTRY	Wheat Price (%) Mean	Wheat Price (%) Stdev	Wheat Production (%) Mean	Wheat Production (%) Stdev	Total Wheat Use (%) Mean	Total Wheat Use (%) Stdev	Net Trade Wheat (%) Mean	Net Trade Wheat (%) Stdev	Net Trade Wheat (1000mt) HB	Net Trade Wheat (1000mt) HB SSG
Developed										
Australia	-0.197	1.771	-0.115	-0.202	0.049	1.175	-0.181	-0.216	17,292.93	17,262
Canada	-0.198	2.650	-0.120	-0.157	0.126	2.034	-0.222	-0.115	17,814.51	17,775
EU-25	-0.041	-0.336	-0.025	-0.415	0.023	-0.323	-2.020	-1.226	2,687.97	2,634
Israel	-0.198	2.331	-0.077	2.331	0.109	1.361	0.120	1.405	-1,445.97	-1,448
Japan	-0.194	0.879	-0.256	0.259	0.126	0.695	0.153	0.727	-6,535.52	-6,546
USA	-0.156	0.529	-0.072	-0.045	0.099	2.273	-0.282	-0.165	27,351.35	27,274
DCG	-0.197	2.016	-0.297	0.941	0.090	0.501	0.336	1.067	-1,695.70	-1,701
Developing										
Algeria	-0.041	0.694	-0.025	-0.449	0.009	-0.810	0.019	-1.188	-4,872.26	-4,873
Argentina	-0.198	3.164	-0.108	-0.142	0.065	0.268	-0.181	-0.135	11,497.57	11,477
Brazil	0.787	-8.436	0.547	-2.945	-0.461	-8.415	-0.813	-9.208	-7,038.91	-6,982
China	-0.191	2.872	-0.027	-0.165	0.127	2.233	-6.125	-0.616	2,681.18	2,517
Columbia	0.395	-3.411			-0.141	-5.923	-0.145	-5.923	-1,152.75	-1,151
Egypt	0.121	-1.471	0.057	-1.611	-0.026	-1.719	-0.112	-2.954	-6,161.64	-6,155
Indonesia	-0.017	-2.821			0.018	-1.386	0.018	-1.386	-3,692.94	-3,694
Iran	-0.198	2.870	-0.128	0.057	0.037	0.138	0.271	0.154	-6,084.79	-6,101
Iraq	-0.198	3.164	-0.129	0.084	0.016	-0.008	0.048	-0.018	-2,946.36	-2,948
Kazakhstan	-0.197	0.476	-0.100	-0.010	0.057	0.077	-0.283	-0.005	4,933.20	4,919
Malaysia	0.007	-0.820			-0.002	-2.848	-0.002	-2.848	-1,127.64	-1,128
Mexico	1.509	-16.357	1.012	-13.003	-0.814	-16.640	-3.449	-24.518	-2,271.02	-2,193
Morocco	3.602	43.321	3.285	-10.645	-0.805	-1.033	-4.009	-17.264	-3,107.47	-2,983
Nigeria	3.994	32.470	2.939	0.571	-6.231	-33.810	-6.473	-33.809	-1,816.96	-1,699
Peru	0.832	-0.001	0.632	-1.384	-0.294	-9.170	-0.422	-10.997	-1,352.85	-1,347
Philippinnes	0.391	-10.624			-0.410	-11.946	-0.400	-11.946	-2,892.58	-2,881
South Korea	0.046	-3.732			-0.053	-3.760	-0.052	-3.760	-3,410.54	-3,409
Tunisia	-0.190	1.784	-0.121	0.120	0.047	0.041	0.235	0.162	-1,158.71	-1,161
United A.E	0.317	2.707			-0.172	-1.267	-0.172	-1.267	-688.48	-687
Venezuela	0.010	-0.175	0.006	-0.219	-0.005	-3.244	-0.005	-3.245	-1,332.62	-1,333
AFD	1.461	-6.831	1.600	-4.003	-1.104	-15.502	-1.863	-19.516	-1,602.48	-1,573
CTA	0.063	1.063			-0.032	-2.422	-0.032	-2.422	-3,096.13	-3,095
STA	0.463	-7.364	0.450	-6.849	-0.221	-6.799	-1.179	-10.417	-1,489.62	-1,472
ASG	0.367	-5.287	0.317	-3.387	-0.273	-7.475	-0.645	-10.204	-2,697.32	-2,680
MEG	-0.196	3.047			0.078	0.442	0.078	0.442	-1,227.16	-1,228
ROW	-0.198	3.050	-0.152	0.758	0.156	0.253	0.896	0.635	-5,785.65	-5,837
Least Developed										
Bangladesh	-0.075	2.106	-0.026	-0.538	0.041	-0.963	0.125	-1.352	-1,412.78	-1,415
Ethiopia	0.874	3.857	0.345	-1.053	-0.429	-1.891	-2.857	-3.086	-738.18	-717
Yemen	-0.195	2.379	-0.046	0.008	0.082	0.079	0.092	0.083	-1,922.04	-1,924
SAG	0.039	-2.444	0.032	-0.884	-0.026	-3.815	-0.036	-4.037	-1,802.41	-1,802
NAG	0.241	-2.666	0.214	-0.481	-0.222	-4.766	-0.232	-4.816	-1,344.61	-1,341
WORLD	**-0.198**	**3.164**	**-0.016**	**-0.432**	**-0.016**	**-0.432**	**0.000**	**0.000**	**0.00**	**0.000**

Table 7: Harbinson Tariff Cut - With SSM

COUNTRY	Consumer Surplus Feed		Consumer Surplus Food		Producer Surplus Food		Gov't Revenue (Cost)		Net Welfare	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev
Developed										
Australia	0.114	1.852	0.082	0.453	-0.291	-0.452			**-0.131**	-0.430
Canada	0.458	2.994	0.078	0.264	-0.288	-0.186			**-0.120**	-0.296
EU-25	0.047	-0.316	0.045	-0.254	-0.060	-1.054	5.362	4.282	**-0.003**	-0.115
Israel	0.453	2.659	0.034	0.034	-0.243	2.217	-0.084	1.142	**0.054**	0.073
Japan	0.491	1.167	0.226	0.741	-0.450	-0.013	0.084	-0.078	**0.182**	0.596
USA	0.911	3.844	0.037	0.210	-0.204	-0.204	18.380	11.860	**-0.028**	-0.211
DCG	0.372	2.268	0.138	0.270	-0.560	0.567	0.121	-0.057	**0.095**	0.175
Developing										
Algeria			0.017	-0.809	-0.107	-0.611	6.617	149.276	**0.063**	0.004
Argentina			0.133	0.338	-0.276	-0.179			**-0.121**	-0.244
Brazil	-3.962	-11.127	-0.895	-8.967	0.913	-3.107	8.705	143.263	**0.054**	-0.131
China	0.328	3.105	0.252	2.279	-0.211	-0.563	0.000	0.000	**0.004**	-0.063
Columbia			-0.318	-6.513	0.395	-3.411	4.531	134.869	**0.102**	0.071
Egypt			-0.058	-1.795	0.143	-2.202	9.655	135.326	**0.034**	-0.029
Indonesia			-0.034	-1.756			A	B	**0.416**	0.396
Iran			0.075	0.176	-0.290	-0.020			**0.029**	0.060
Iraq			0.031	0.008	-0.280	-0.048			**0.025**	0.005
Kazakhstan	0.353	0.661	0.037	0.006	-0.264	-0.127			**-0.045**	-0.054
Malaysia			-0.012	-3.076			1.982	121.813	**0.113**	0.512
Mexico	-8.182	-20.585	-1.436	-15.466	2.134	-15.723	4.917	50.625	**-0.171**	-1.697
Morocco			-1.660	-2.023	4.755	-8.101	8.935	45.138	**-0.364**	1.217
Nigeria			-12.980	-39.609	6.445	5.644	2.443	22.345	**-3.968**	-22.732
Peru			-0.672	-10.007	1.332	-0.787	5.948	172.167	**0.081**	-0.050
Philippinnes	-2.269	-12.935	-0.313	-4.768			4.353	248.372	**0.117**	-0.283
South Korea	-0.433	-4.736	-0.048	-3.030	0.046	-3.732	6.540	707.732	**0.228**	1.190
Tunisia			0.095	0.089	-0.271	0.050	0.074	-0.132	**0.040**	0.033
United A.E			-0.437	-1.558	0.317	2.707	15.080	82.608	**0.185**	0.128
Venezuela			-0.023	-3.599	0.011	-0.359	1.514	90.198	**0.137**	0.220
AFD			-2.367	-17.289	2.873	-2.613	5.891	87.110	**-0.261**	-2.985
CTA			-0.091	-2.698	0.063	1.063	6.439	167.643	**0.197**	0.425
STA			-0.467	-7.179	0.777	-6.175	7.077	65.368	**0.025**	0.168
ASG	-0.698	-5.702	-0.559	-7.376	0.545	-3.338	6.281	102.112	**0.078**	0.214
MEG			0.156	0.534	-0.196	3.047	0.798	241.870	**0.153**	0.539
ROW	0.356	3.323	0.306	0.317	-0.314	0.888	0.658	0.102	**0.063**	0.104
Least Developed										
Bangladesh			0.061	-1.140	-0.097	-0.693	3.429	30.210	**0.061**	0.119
Ethiopia			-0.899	-2.181	1.055	-1.301	24.878	35.061	**0.005**	0.020
Yemen			0.163	0.166	-0.220	0.072			**0.146**	0.160
SAG			-0.072	-4.207	0.059	-1.047	4.122	172.449	**0.180**	0.628
NAG			-0.527	-5.482	0.415	-0.312	7.622	139.887	**0.276**	0.575
WORLD									**-0.131**	-4.478
			Welfare Difference From Baseline ($US)						**-$146,104,000**	

A = $8,833,667; B = $33,839,608

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Table 8: Swiss-25 Tariff Cuts - With SSM

COUNTRY	Wheat Price (%)		Wheat Production (%)		Total Wheat Use (%)		Net Trade Wheat (%)			Net Trade Wheat (1000mt)	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev		SWA	SWA SSG
Developed											
Australia	-0.189	0.739	-0.111	-0.091	0.048	0.481	-0.174	-0.098		17,636	17,605
Canada	-0.189	1.189	-0.116	-0.092	0.125	0.900	-0.211	-0.082		18,247	18,208
EU-25	-0.099	-0.553	-0.059	-0.468	0.057	-0.545	-3.539	-1.152		3,734	3,601
Israel	-0.189	1.000	-0.074	1.000	0.107	0.560	0.117	0.580		-1,434	-1,435
Japan	-0.189	0.268	-0.333	-0.019	0.045	0.134	0.051	0.165		-9,197	-9,202
USA	-0.209	0.601	-0.097	-0.062	0.098	1.025	-0.326	-0.112		28,370	28,277
DCG	-0.189	0.942	-0.372	0.257	0.051	0.117	0.143	0.311		-2,613	-2,617
Developing											
Algeria	-0.091	0.314	-0.056	-0.376	0.020	-0.496	0.043	-0.931		-4,831	-4,833
Argentina	-0.189	1.533	-0.104	-0.090	0.064	0.120	-0.173	-0.093		11,724	11,704
Brazil	0.628	-7.253	0.434	-2.220	-0.357	-7.004	-0.625	-7.283		-7,170	-7,125
China	-0.189	1.523	-0.027	-0.085	0.130	1.191	-3.664	-0.323		4,529	4,363
Columbia	0.375	-3.463			-0.129	-5.088	-0.132	-5.088		-1,165	-1,163
Egypt	0.071	-2.215	0.034	-1.746	-0.016	-1.575	-0.069	-2.839		-6,013	-6,009
Indonesia	-0.072	-2.154			0.081	-1.046	0.080	-1.046		-3,609	-3,612
Iran	-0.189	1.387	-0.124	0.029	0.036	0.068	0.272	0.077		-5,905	-5,921
Iraq	-0.189	1.533	-0.124	0.035	0.016	-0.004	0.047	-0.008		-2,931	-2,932
Kazakhstan	-0.189	0.113	-0.097	-0.019	0.056	0.013	-0.268	-0.021		5,085	5,071
Malaysia	-0.014	-1.665			0.004	-2.580	0.004	-2.580		-1,131	-1,131
Mexico	2.772	-7.691	1.799	-6.405	-1.290	-8.576	-4.730	-12.589		-2,758	-2,628
Morocco	4.052	-0.145	3.616	-1.617	-0.695	-0.966	-2.960	-2.743		-3,794	-3,682
Nigeria	7.352	-22.827	4.795	-0.278	-5.118	-2.603	-5.247	-2.653		-2,779	-2,633
Peru	0.903	-2.352	0.677	-1.990	-0.296	-7.605	-0.422	-9.285		-1,390	-1,384
Philippinnes	0.474	-11.288			-0.470	-12.522	-0.460	-12.522		-2,971	-2,958
South Korea	-0.044	-2.840			0.052	-2.864	0.051	-2.864		-3,350	-3,352
Tunisia	1.838	3.211	1.143	-2.863	-0.429	-2.748	-2.013	-5.899		-1,236	-1,212
United A.E	0.241	1.272			-0.134	-1.128	-0.134	-1.128		-683	-682
Venezuela	0.041	-1.203	0.022	-0.257	-0.018	-3.601	-0.018	-3.603		-1,349	-1,349
AFD	2.414	-5.656	2.672	-2.403	-1.519	-10.340	-2.444	-13.056		-1,811	-1,767
CTA	-0.004	-0.284			0.002	-1.958	0.002	-1.958		-3,073	-3,073
STA	0.348	-6.394	0.339	-5.555	-0.165	-5.679	-0.868	-8.670		-1,514	-1,501
ASG	0.262	-4.886	0.227	-2.763	-0.194	-6.397	-0.456	-8.511		-2,717	-2,705
MEG	-0.189	1.539			0.077	0.191	0.077	0.191		-1,217	-1,217
ROW	-0.189	1.460	-0.146	0.297	0.155	0.105	0.970	0.257		-5,219	-5,270
Least Developed											
Bangladesh	-0.385	0.777	-0.134	-0.423	0.218	-0.826	0.667	-1.146		-1,382	-1,392
Ethiopia	1.437	3.579	0.573	-1.053	-0.720	-2.012	-4.975	-3.244		-706	-671
Yemen	-0.189	1.198	-0.045	0.005	0.082	0.041	0.092	0.043		-1,902	-1,904
SAG	-0.047	-2.244	-0.039	-0.917	0.032	-2.741	0.044	-2.965		-1,786	-1,787
NAG	0.125	-2.647	0.111	-0.457	-0.117	-4.092	-0.123	-4.142		-1,333	-1,332
WORLD	**-0.189**	**1.533**	**-0.022**	**-0.251**	**-0.021**	**-0.251**	**0.000**	**0.000**		**0.00**	**0.000**

Table 9: Swiss-25 Tariff Cuts - With SSM

COUNTRY	Consumer Surplus Feed		Consumer Surplus Food		Producer Surplus Food		Gov't Revenue (Cost)		Net Welfare	
	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev	Mean	Stdev
Developed										
Australia	0.112	0.801	0.080	0.204	-0.273	-0.309			**-0.125**	-0.294
Canada	0.450	1.452	0.076	0.131	-0.274	-0.228			**-0.118**	-0.252
EU-25	0.115	-0.493	0.110	-0.431	-0.143	-1.082	4.408	2.418	**-0.002**	-0.125
Israel	0.438	1.249	0.033	0.021	-0.234	0.915	-0.074	0.482	**0.052**	0.037
Japan	0.139	0.344	0.081	0.145	-0.477	-0.243	-0.139	0.322	**0.067**	0.127
USA	0.906	2.041	0.036	0.085	-0.274	-0.263	17.764	11.453	**-0.028**	-0.143
DCG	0.185	1.035	0.081	0.085	-0.698	-0.111	-0.050	-0.075	**0.067**	0.074
Developing										
Algeria			0.040	-0.479	-0.170	-0.560	4.676	131.220	**0.060**	0.064
Argentina			0.130	0.187	-0.264	-0.251			**-0.119**	-0.232
Brazil	-3.019	-9.445	-0.696	-7.410	0.732	-2.428	10.820	165.506	**0.081**	-0.095
China	0.334	1.713	0.257	1.267	-0.207	-0.458	0.000	0.000	**0.002**	-0.095
Columbia			-0.288	-5.509	0.375	-3.463	6.667	176.209	**0.107**	0.061
Egypt			-0.037	-1.660	0.077	-2.538	7.184	116.182	**0.032**	0.021
Indonesia			0.101	-1.283			A	B	**0.410**	0.264
Iran			0.073	0.106	-0.279	-0.103			**0.028**	0.036
Iraq			0.031	0.013	-0.275	-0.124			**0.025**	0.009
Kazakhstan	0.347	0.280	0.037	0.014	-0.254	-0.185			**-0.045**	-0.080
Malaysia			0.003	-2.754			2.424	151.275	**0.112**	0.278
Mexico	-10.431	-12.238	-2.244	-8.355	4.055	-7.067	20.334	99.407	**-0.122**	-0.280
Morocco			-1.432	-1.668	6.741	1.549	26.852	47.814	**-0.130**	0.086
Nigeria			-9.936	-7.591	11.091	6.657	39.381	59.266	**-0.977**	-0.125
Peru			-0.665	-8.129	1.430	-1.530	10.885	237.391	**0.103**	0.200
Philippinnes	-2.414	-12.963	-0.361	-4.616			7.661	347.341	**0.131**	-0.206
South Korea	0.068	-3.566	0.034	-2.311	-0.044	-2.840	4.629	551.247	**0.223**	0.563
Tunisia			-0.882	-3.111	2.498	-2.711	20.223	69.447	**-0.010**	-0.088
United A.E			-0.353	-1.378	0.241	1.272	14.727	82.057	**0.183**	0.104
Venezuela			-0.049	-3.929	0.052	-0.479	2.660	140.345	**0.136**	0.112
AFD			-3.101	-11.315	5.037	-0.017	19.671	143.133	**-0.141**	-0.776
CTA			-0.016	-2.176	-0.004	-0.284	5.390	154.513	**0.193**	0.295
STA			-0.349	-5.968	0.578	-5.093	8.335	76.798	**0.039**	0.080
ASG	-0.498	-5.234	-0.401	-6.194	0.378	-2.777	7.129	114.353	**0.095**	0.074
MEG			0.154	0.272	-0.189	1.539	-0.113	0.317	**0.149**	0.265
ROW	0.350	1.659	0.302	0.220	-0.304	0.267	0.762	-0.059	**0.054**	0.109
Least Developed										
Bangladesh			0.412	-0.784	-0.471	-1.148	-3.209	21.941	**0.057**	0.101
Ethiopia			-1.472	-2.570	1.765	-0.846	40.560	53.508	**-0.010**	0.003
Yemen			0.162	0.125	-0.214	-0.051			**0.142**	0.120
SAG			0.049	-3.005	-0.087	-1.119	3.096	147.130	**0.181**	0.321
NAG			-0.306	-4.689	0.209	-0.392	6.893	135.105	**0.283**	0.143
WORLD									**-0.118**	-4.678
	Welfare Difference From Baseline ($US)								**-$133,036,000**	

A = $5,800,834; B = $26,098,719