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# The Estey Centre Journal of **International Law and Trade Policy**

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## **Triggers, Remedies, and Tariff Cuts: Assessing the Impact of a Special Safeguard Mechanism for Developing Countries**

Jason H. Grant

*Department of Agricultural & Applied Economics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia*

Karl D. Meilke

*Department of Food, Agricultural, and Resource Economics, University of Guelph, Guelph, Ontario*

The WTO negotiations broke down on July 30th, 2008 because members could not bridge their differences over the operation of a Special Safeguard Mechanism (SSM). This article evaluates the latest SSM proposal using the world wheat market as our case study. Whether low-income WTO members should be allowed to breach their pre-Doha bound tariffs is a key element of our analysis. The SSM leads to sizeable additional duties but is not very trade distorting, even when pre-Doha bound rates are breached. Moreover, the extent to which low-income countries should be allowed to exceed pre-Doha bound rates depends heavily on the product under consideration, the ambition of the tariff cutting exercise, and the gap between members' bound and applied tariffs.

Keywords: agriculture, Doha Development Agenda, July Package, Special Safeguard Mechanism, World Trade Organization

*Editorial Office: 410 22<sup>nd</sup> St. E., Suite 820, Saskatoon, SK, Canada, S7K 5T6.*

*Phone (306) 244-4800; Fax (306) 244-7839; email: [kerr.w@esteycentre.com](mailto:kerr.w@esteycentre.com)* 223

## **Introduction**

Negotiations over the Special Safeguard Mechanism (SSM) for low-income countries in the WTO's agricultural negotiations intensified in July of 2008, and ultimately proved to be a major reason for the failure of the talks that were expected to produce the final modalities for agricultural trade reform.<sup>1</sup> That a seemingly small technical detail such as the SSM would lead to the collapse of the mini-ministerial meeting in Geneva came as a shock to international trade economists and policy makers alike. How could ministers walk away from a new round of agricultural trade reforms over failure to agree on a temporary safeguard tariff designed to counter import surges or sharp price declines in low-income countries?

The collapse of the WTO negotiations concerning agricultural trade is not about the inclusion of the SSM in the modalities. It is not even about the general structure of the SSM. Instead, it is about one possible outcome arising from the application of the SSM: should low-income countries be allowed to exceed their pre-Doha bound tariffs when the SSM is triggered (WTO, 2008a)? Developing countries want the maximum amount of policy flexibility to levy additional SSM duties to protect small-scale farmers, even if it means breaching pre-Doha bound tariffs. Moreover, for some products in developing countries applied and bound tariffs are very similar, which makes it almost impossible not to exceed pre-Doha bound tariffs when the SSM is triggered. China's tariff structure due to its recent accession is just one example. On the other hand, the United States needs to sell the Doha Round to agricultural stakeholders on the basis of new market access opportunities, and the optics of allowing developing-country importers to raise their tariffs above pre-Doha bound levels is viewed as a "deal breaker".

In this study we use a global, stochastic, partial equilibrium model developed in Grant and Meilke (2006) to quantify the impact of the SSM when it is used in conjunction with tariff cuts according to the recent July Package proposal (WTO, 2008b). Three scenarios are evaluated. First, we cut world wheat tariffs according to the July Package formula. Second, we repeat the tariff cutting exercise and allow low-income countries (developing and least-developed) the right to the July Package SSM but do not allow them to exceed their pre-Doha bound tariffs when the SSM is triggered. In the final scenario, we allow low-income countries to exceed their pre-Doha bound tariffs when the SSM is triggered. To keep the analysis tractable, we focus on the world wheat market – a staple commodity in many low-income countries. Nevertheless, the results from this study may provide important insights for policy makers that can help guide further negotiations over the SSM.

Specifically, this article addresses four questions surrounding the SSM:

1. In terms of economic welfare, how costly is the SSM, particularly when low-income countries exceed their pre-Doha bound tariffs?
2. How often will low-income countries make use of the SSM?
3. What is the size of the additional SSM duties and how often will low-income countries exceed their pre-Doha bound tariffs if such a provision is allowed?
4. Can the SSM stabilize domestic wheat markets in low-income countries?

### **Negotiations and Concerns over the SSM**

The need for an SSM was first acknowledged in early 2003 (WTO, 2003a; WTO, 2003b). Little progress was made in refining the proposed SSM mechanism before the Hong Kong Ministerial Conference in December 2005, where ministers agreed that the SSM would be available only for developing countries and that it would have both a *price and a volume trigger* (WTO, 2005). In March of 2006, the G33, a group of (now 42) developing countries, tabled what was widely considered the most concrete proposal for an SSM at that time (WTO, 2006). The G33 proposal formed the basis of Agriculture Chair Crawford Falconer's draft modalities tabled in February 2008 and the subsequent revision of May 2008 (WTO, 2008c; WTO, 2008d). However, as discussed below, the G33 proposal has the potential to generate large additional SSM duties. For this reason, Falconer's original SSM proposals of February and May 2008 contained numerous "bracketed" options reflecting the divergence of views among WTO members.

After a third draft of the modalities texts, tabled in July 2008, it appeared that WTO members had reached a consensus on many of the modalities' technical aspects, except for the question of whether developing countries should be allowed to exceed their pre-Doha bound tariffs (WTO, 2008b). Members' differences on this issue proved to be irreconcilable and ultimately led to the collapse of the WTO negotiations.

A review of the design of the G33 and July Package proposals provides a number of insights about the potential problems associated with the SSM. An SSM is a temporary tariff that gives low-income countries additional policy flexibility to circumvent rapid import surges or sharp price declines. Two trigger levels (price and volume) determine when the SSM can be applied. The calculation of the volume trigger is equal to the average of the most recent three-year period for which import data are available. The price trigger is defined analogously and is equal to the average of the most recent three-year *monthly c.i.f.* import prices (WTO, 2006; WTO, 2008b). Because of the disagreement over the additional duties concerning the volume trigger, we start by discussing its operation first.<sup>2</sup>

### Volume-Based SSM

The magnitude of the volume-based SSM duty depends on the size of the surge in imports. Table 1 illustrates the potential size of the additional SSM duties under the G33 and July Package SSM proposals for three countries (India, Bangladesh, and China) using the most recent applied and bound tariff data for cereals contained in the WTO/UNCTAD's World Tariff Profiles 2006 report (WTO/UNCTAD, 2008).<sup>3</sup> There are minor differences in the size of the import surge required to trigger the volume-based SSM between the G33 and July Package SSM proposals. For example, the G33 proposal requires an import surge greater than 105 percent of the volume trigger level before an SSM remedy can be applied. Higher additional duties are triggered for imports greater than 110 percent but less than or equal to 130 percent, and greater than 130 percent of the volume trigger. In the July Package SSM, the import surge must be greater than 110 percent before the volume-based SSM can be used. The remaining bands are set at 115 and 135 percent of the volume trigger.

**Table 1** The G33 and July Package SSM Duties for Cereals

-----July Package SSM Proposal-----				
-----Examples of additional SSM duties-----				
		India	Bangladesh	China
<i>Import surge (X)</i>	<i>Remedy</i>	<i>Tb=120%; Ta=40%</i>	<i>Tb=200%; Ta=10%</i>	<i>Tb=25%; Ta=24%</i>
X ≤ 110%	No remedy	0% + 40% = 40%	0% + 10% = 10%	0% + 24% = 24%
110% < X ≤ 115%	Max{0.25*Tb, 25 percentage points}	30% + 40% = 70%	50% + 10% = 60%	25% + 24% = 49%
115% < X ≤ 135%	Max{0.4*Tb, 40 percentage points}	48% + 40% = 88%	80% + 10% = 90%	40% + 24% = 64%
X > 135%	Max{0.5*Tb, 50 percentage points}	60% + 40% = 100%	100% + 10% = 110%	50% + 24% = 74%
-----G33 SSM Proposal-----				
-----Examples of additional SSM duties-----				
		India	Bangladesh	China
<i>Import surge (X)</i>	<i>Remedy</i>	<i>Tb=120%; Ta=40%</i>	<i>Tb=200%; Ta=10%</i>	<i>Tb=25%; Ta=24%</i>
X ≤ 105%	No remedy	0% + 40% = 40%	0% + 10% = 10%	0% + 24% = 24%
105% < X ≤ 110%	Max{0.50*Tb, 40 percentage points}	60% + 40% = 100%	100% + 10% = 110%	40% + 24% = 64%
110% < X ≤ 130%	Max{0.75*Tb, 50 percentage points}	90% + 40% = 130%	150% + 10% = 160%	50% + 24% = 74%
X > 130%	Max{Tb, 60 percentage points}	120% + 40% = 160%	200% + 10% = 210%	60% + 24% = 84%

Source: World Tariff Profiles 2006 (WTO/UNCTAD, 2008)

Note: *Tb* and *Ta* denote bound and applied tariffs, respectively. In the columns labelled India, Bangladesh, China, the first number denotes the maximum additional SSM duty that can be applied for a given import surge; the second number denotes the country's current applied tariff;

and the third number denotes the country's new augmented applied tariff inclusive of the SSM duty. The cells shaded in grey illustrate cases where the new applied tariff exceeds the pre-Doha bound tariff rate ( $Tb$ ).

More significant differences between the G33 and July Package SSM proposals appear when we look at the size of the additional duties for two developing countries (India and China) and one least-developed country (Bangladesh) in table 1. The variables  $Tb$  and  $Ta$  denote bound and applied tariff rates for cereal products in 2006, respectively. The G33 proposal allows for much larger additional duties within its respective bands, with coefficients of 50, 75, and 100 percent of bound tariffs or 40, 50, and 60 percentage points, whichever is higher. This compares to 25, 40, and 50 percent of bound tariffs or 25, 40, and 50 percentage points, whichever is higher, in the July Package SSM. Thus, for a given bound tariff level, the additional SSM duties under the G33 proposal will be roughly double those of the July Package.

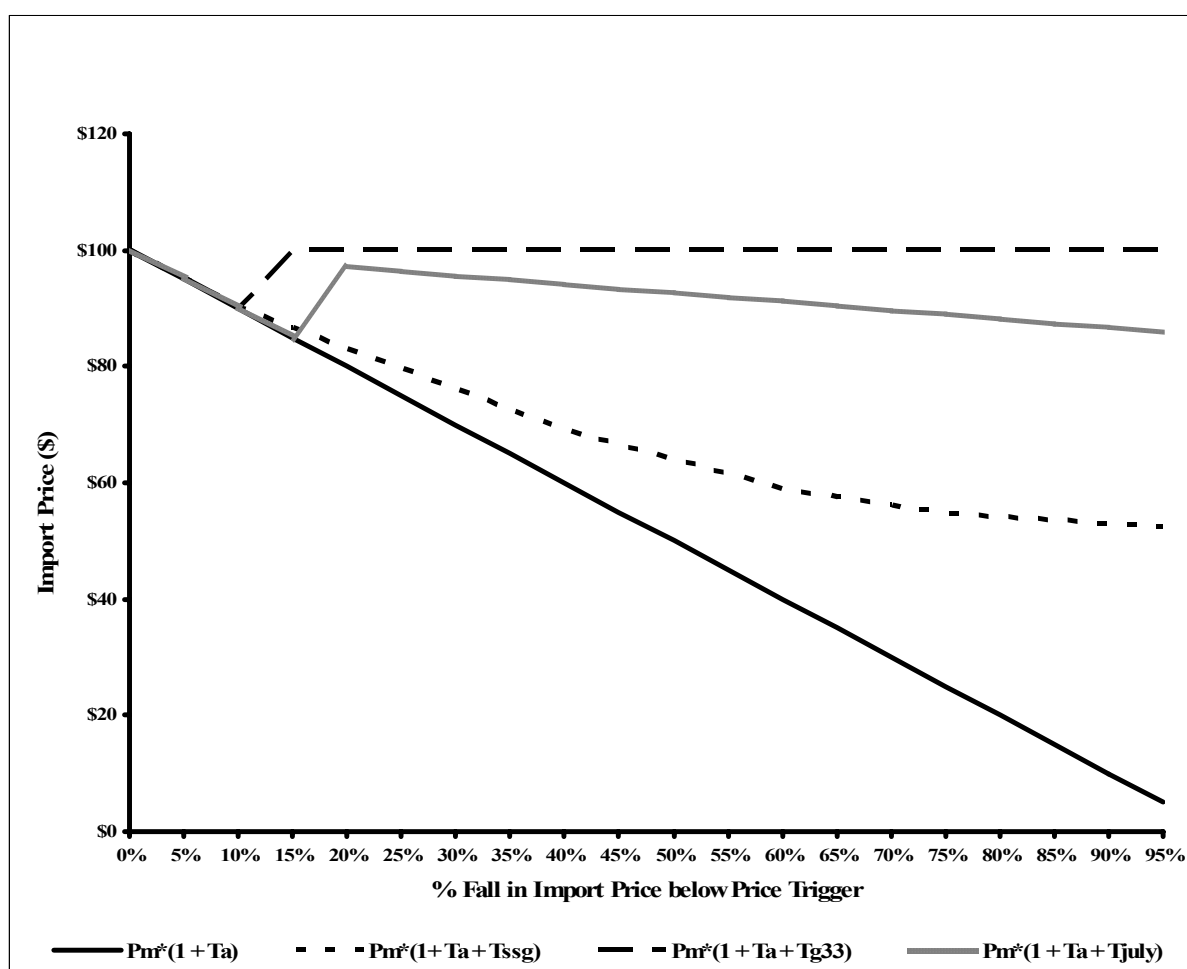
What is noteworthy about the data in table 1 is that if countries choose to apply the maximum additional SSM duty, with no restrictions on exceeding pre-Doha bound tariff levels, the resulting SSM-augmented applied tariffs are likely to result in no trade. The grey shaded cells in table 1 illustrate the potential problems with the July Package SSM. India's 2006 bound and applied tariffs were 120 and 40 percent, respectively. If the volume surge is greater than 130 percent above the trigger level in the G33 proposal, India is permitted to apply an additional SSM duty of 120 percentage points, bringing its new applied tariff rate to 160 percent! Even under the July Package (assuming pre-Doha bound tariffs can be breached), the new applied tariff for India is 100 percent after applying a 60–percentage point SSM duty, which is the remedy for a volume surge greater than 135 percent of its trigger level.

Moreover, least-developed countries that are not making tariff cuts and have even larger gaps between bound and applied tariffs will gain a lot of policy flexibility with the SSM. Bangladesh's bound tariff for cereal imports averaged 200 percent in 2006. Its applied tariff is just 10 percent. In a situation where import penetration in Bangladesh is greater than 130 (135) percent above the volume trigger, the resulting tariff is 200 (100) percent with the G33 (July Package) SSM proposal (table 1).

China's situation is different, because bound and applied tariffs are very similar. This is one case where it is difficult to argue that pre-Doha bound tariffs (or those bound tariffs agreed to under accession) should serve as an upper bound for the application of SSM duties. Not allowing China to exceed its bound tariff level effectively eliminates the SSM policy altogether. This is an important point. When additional SSM duties are tied to bound tariffs as in the July Package SSM or G33 proposal, countries with similar applied and bound tariffs will almost always exceed their bound tariffs with the SSM.

### Price-Based SSM

Figure 1 illustrates the operation of the price-based SSM. This time, however, we add in the Uruguay Round Special Agriculture Safeguard (UR SSG) for comparison.<sup>4</sup> The G33 price-based SSM allows for full compensation (expressed as a percentage of the import price) once prices fall by more than 10 percent below the price trigger, which is assumed to be \$100 in figure 1. Letting  $P^m$  denote the current *c.i.f.* import price in local currency and  $PT$  the price trigger level, the remedy allowed under the G33 price-based SSM is  $PT/P^m - 1$ . The July Package SSM modifies the G33 price-based remedy in two ways. First, the *c.i.f.* import price must fall by more than 15 percent below the trigger level, to \$85, before the July Package SSM duty may be imposed (figure 1).



**Figure 1** Effect on import prices of the G33, July Package, and Uruguay Round price-based safeguard mechanisms.

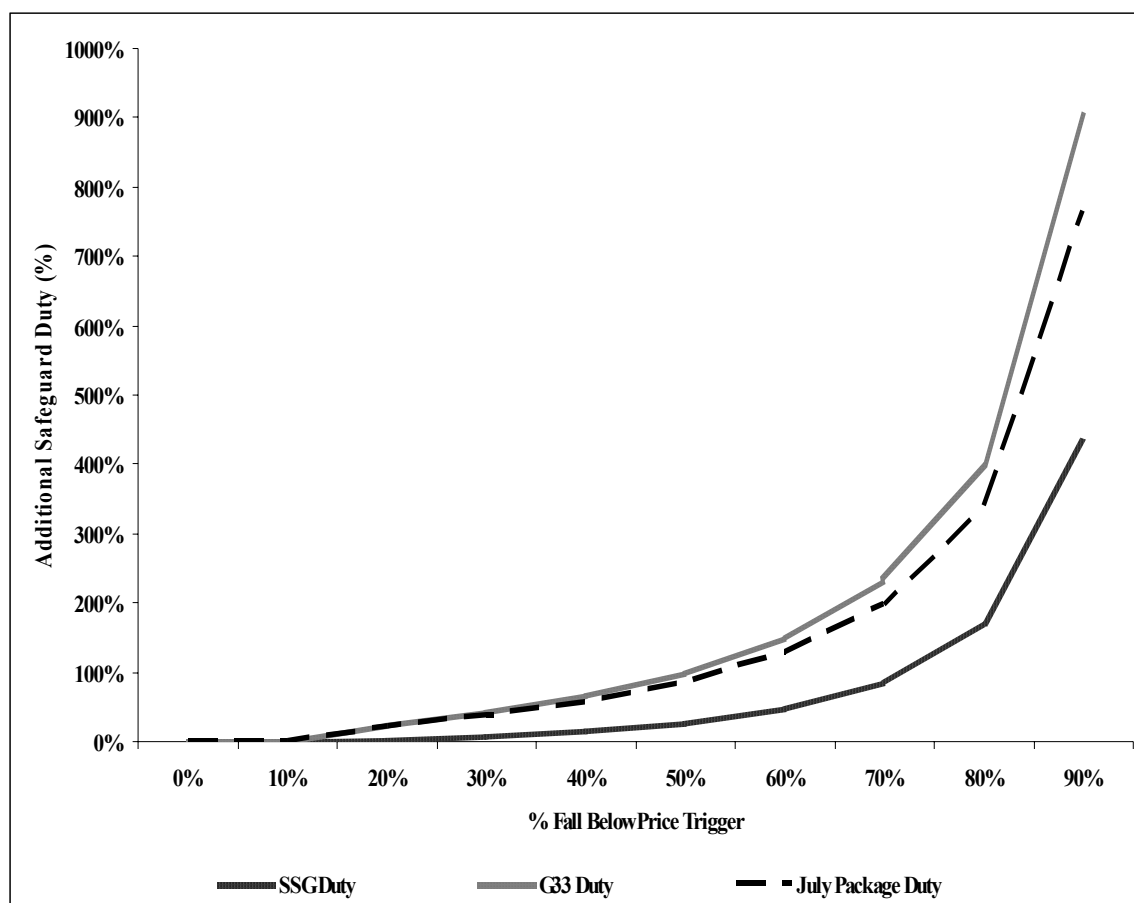
Note:  $T_a$  denotes the applied tariff;  $T_{ssg}$  denotes the UR SSG duty,  $T_{g33}$  denotes the G33 SSM duty; and  $T_{july}$  denotes the July Package SSM duty.

Second, the price-based remedy is equal to 85 percent of the fall in the import price below the trigger level. Thus the July Package does not allow members to fully offset price declines.

In figure 1 the horizontal axis measures the percentage fall in the import price below the \$100 trigger level as illustrated by the solid line. The vertical axis measures import prices, and each line traces out the behavior of import prices when an additional price-based SSM duty is added to the applied tariff. As noted above, import prices of \$100 are maintained as long as the depth of the price decrease is greater than 10 percent below the trigger level with the G33 SSM. The July Package SSM compensates for 85 percent of the price fall after prices drop 15 percent, so import prices decrease linearly beyond a 15 percent fall below the price trigger. Conversely, the UR SSG allows for higher additional safeguard duties the greater the fall in the import price below the trigger, but never allows for the extent of compensation provided in the G33 or July Package SSM.

Figure 2 plots the size of the additional price-based SSM duties as the import price falls by up to 90 percent below the price trigger. Interestingly, all three proposals (G33, July Package SSM, and the UR SSG) could potentially exceed pre-Doha bound tariff levels if the price fall below the trigger is severe. For example, if import prices fall by 60 percent below the trigger, the July Package (G33 proposal) triggers a 198 (233) percent SSM tariff. These additional duties are more than double the 86 percent additional duty allowed under the UR SSG for the same 60 percent price decline.

As a final note we consider a more fundamental question: why are countries with such large differences between their bound and applied tariffs worried about an SSM? With so much water in their tariff rates, it appears that low-income countries could circumvent import surges and price declines by simply raising applied tariffs within their bound rates. However, as Grant and Meilke (2006) point out, there are at least three reasons why a country might not want to do this. First, applied tariffs are usually specified in domestic legislation and are not easily changed. Second, raising applied tariffs makes it clear that the government is favouring domestic producers over domestic consumers. Finally, there may be a few politically sensitive commodities where applied and bound tariffs are very similar. If a country wants an SSM for even a few commodities, it must support the proposal to create this mechanism for all commodities.



**Figure 2** Additional price-based SSM duties of the Uruguay Round (SSG), G33, and July Package proposals.

### Stochastic Simulation Model

We adopt the stochastic, global, partial equilibrium model of the world wheat sector developed in Grant and Meilke (2006), which is calibrated to supply and demand data over the 1999-2001 reference years.<sup>5</sup> The model includes 38 countries/regions, 32 of which are net importers. Three out of the 32 net importers are developed countries and 29 are developing and least-developed importing countries. Twenty-five out of the 29 developing and least-developed countries are WTO members eligible for an SSM. The equations used to represent a typical wheat importing country include a domestic price linkage equation relating the domestic price to the world price adjusted for the local exchange rate, the applied tariff rate, and, potentially, an additional SSM tariff. Price linkage equations for net exporting



countries are similar, except there is no adjustment for tariffs, and modifications are made to handle farm programs in the United States and the EU.

Wheat supply and food and feed demand are functions of domestic prices. Net trade (defined as net exports) is calculated with beginning and ending stocks held fixed. Global market-clearing determines the world price by forcing to zero the sum of net trade across all countries.<sup>6</sup>

In order to simulate the operation of the July Package SSM, pseudo-random error terms are incorporated into each country's supply, food demand, and price linkage equations. Random shocks to supply and food demand result in random net imports. As imports increase, the volume trigger of the SSM can be breached and the importing country is allowed to impose an SSM duty.<sup>7</sup> To introduce some differentiation in domestic price movements, a pseudo-random error term is attached to the exchange rate in each country's price linkage equation. In this way some countries will apply the price-based safeguard while others will not, and the size of the additional duty allowed will vary across countries depending on the size of the error term.<sup>8</sup>

Two domestic policies are incorporated: the U.S. loan rate and the EU's intervention pricing system. In the United States, the average loan rate for wheat during 1999-2001 was US\$94.80/mt and the average farm price was US\$96.63/mt. Thus, in the benchmark equilibrium, the loan rate is not binding. However, in the stochastic simulations, the farm price may drop below the loan rate. In this case, the price received by U.S. producers is not allowed to fall below the loan rate, and the government cost of an implied deficiency payment equal to the difference between the loan rate and the market price is calculated. We assume that U.S. consumer prices for food and feed demand are allowed to follow market prices to levels below the loan rate.

The EU paid substantial export subsidies on wheat in 1999 and 2000, when the intervention price was 119 euro/mt. However, almost no export subsidies were paid in 2001, when the intervention price was lowered to 101 euro/mt. The WTO notifications show that EU export subsidy payments averaged 15 euro/mt in 1999-2001. Thus, we assume that the EU farm price equals the average intervention price and a 15 euro/mt export subsidy payment is incorporated by defining an EU export price for wheat. This export price is equal to the farm price minus 15 euro/mt, or 95.6 euro/mt. When the world price falls below the 110.6 euro/mt average intervention price, the appropriate export subsidy is calculated. In each liberalization scenario, the EU's intervention price is lowered from 110.6 euro/mt to 101 euro/mt, its actual value since 2001, while the U.S. loan rate program is left unchanged.

For low-income countries, *ad valorem* tariffs are the primary policy considered, with the exception of China. China was a small net importer during 1995-1999 and

2004-2005, averaging 3.1 million metric tons (mmt), but it was a small net exporter of wheat during 2000-2002 and 2005-2007, averaging 1.5 mmt of net exports. China has also established a tariff-rate quota (TRQ) on wheat imports that increased to 9.1 mmt over a five-year period.<sup>9</sup> However, the July Package SSM does not allow developing countries to use an SSM under scheduled tariff-quota increases (WTO, 2008b). Thus, even though China becomes a small net importer of wheat in certain instances of the stochastic simulations, we do not allow China the use of the SSM because of its TRQ on wheat.

We are interested in the cost and stability implications of the July Package SSM when it is used in conjunction with tariff cuts. Deeper cuts to bound tariffs will result in smaller additional volume-based SSM duties. In the July Package tariff cutting formula, developed countries face four tiers: less than or equal to 20 percent; greater than 20 percent but less than or equal to 50 percent; greater than 50 percent but less than or equal to 75 percent; and greater than 75 percent. The tariff cuts in these bands correspond to 50, 57, 64, and 66 or 73 percent, respectively (WTO, 2008b).<sup>10</sup> Developing countries have tiers of zero to less than or equal to 30 percent; greater than 30 percent but less than or equal to 80 percent; greater than 80 percent but less than or equal to 130 percent; and greater than 130 percent. Developing-country tariff cuts are two-thirds of the developed-country cuts within the respective bands. Least-developed countries are not required to make tariff cuts.

## **Results**

Three policy experiments are conducted. Scenario one (July Package tariff cuts) assesses the impact of the July 2008 tariff cutting proposal. Scenario two (tariff cuts with July Package SSM & Pre-Doha bound tariff cap) evaluates the market stability and welfare implications of the July Package SSM for low-income WTO members simultaneously with the July 2008 tariff cuts and the provision that low-income countries can not exceed their pre-Doha bound tariff levels when the SSM is triggered. Scenario three (tariff cuts with July Package SSM & no pre-Doha bound tariff cap) is identical to scenario two except we allow low-income WTO members to exceed their pre-Doha bound tariff levels. Scenario one is measured with respect to the benchmark equilibrium (1999-2001). Scenarios two and three are judged with respect to scenario one. The policy results are obtained by averaging the results over 1000 drawings of pseudo-random errors. In this way, we can measure the number of times the SSM is triggered, the size of the additional duties, and effects on the stability of key market variables.

### ***Scenario 1: July Package Tariff Cuts***

The impacts of the July 2008 tariff cuts (to bound rates) on world market prices are modest (table 2).<sup>11</sup> World wheat prices rise by only 3.91 percent and most of this price rise (two percentage points) is due to lowering the EU intervention price. This result is driven by the large differences between applied and bound tariffs. Cutting bound tariffs results in a reduction in applied rates in four countries: Japan, Egypt, Nigeria, and a group of other developed countries (DCG) (Iceland, Switzerland, and Norway).<sup>12</sup> Domestic prices are more stable for 30 out of 31 net importing countries (the exception being Brazil) (table 2). In Japan and the DCG, large tariff cuts result in a decrease in the standard deviation of their domestic price by over 38 and 41 percent, respectively.

World welfare increases by 1.15 percent, or \$1.28 billion (table 3). However, the distribution of welfare changes is mixed. Developed-country importers gain 21.75 percent on average due to the large tariff cuts (and welfare gains) in Japan and the DCG. Developing and least-developed countries lose 2.27 and 2.78 percent, respectively, due to higher world prices. All four developed-country exporters gain by an average of 1.52 percent due to higher world prices for wheat exports.<sup>13</sup>

### ***Scenario 2: Tariff Cuts with July Package SSM & Pre-Doha Bound Tariff Cap***

The July Package SSM with a bound tariff cap at pre-Doha levels results in domestic prices rising in 23 out of 31 low-income countries but becoming less stable in 21 out of 31 low-income countries, relative to cutting tariffs alone (table 2).<sup>14</sup> However, the SSM stabilizes import volumes (over and above cutting tariffs alone) in 27 out of 31 low-income countries. Moreover, if we restrict our attention to the 25 low-income WTO members eligible to use the SSM, imports are stabilized in 23 out of 25 cases (the exceptions being Egypt and Malaysia)!<sup>15</sup> World prices fall only slightly (-0.90 percent) as a result of the SSM and become less stable, with the standard deviation increasing by over 16 percent compared to scenario one.

Several countries, including Mexico, Morocco, Tunisia, the United Arab Emirates, and many least-developed countries, experience large increases in the standard deviation around domestic prices (please see the technical annex). This result is driven by the size and frequency with which they apply the SSM. For example, Morocco increases its domestic price instability by 165 percent because it applies the volume safeguard almost 30 percent of the time (296 times out of 1000), well above the 13.7 percent average for all eligible SSM countries. Moreover, the size of Morocco's applied tariff plus the additional volume-based SSM averages 87 percent, which is among the highest of all developing countries. Bangladesh increases its domestic price

instability by some 574 percent, not necessarily because it applies the volume- or price-based SSM excessively (26 and 18 percent of the time, respectively), but because its additional volume-based SSM duties range from 50 percentage points (25 percent of its bound tariff) to 100 percentage points (50 percent of its bound tariff), well above the average volume-based SSM duty for all low-income WTO members of 36 percent.

On the other hand, there are several countries that stabilize domestic prices using the July Package SSM for wheat. For example, the Philippines and South Korea use the price-based SSM 29 and 33 percent of the time, respectively, very similar to Morocco and Bangladesh’s use of the volume trigger discussed above. However, the Philippines and South Korea increase and stabilize their domestic wheat prices because they impose smaller price-based SSM duties. The average price-based SSM duties for these two countries are 3.8 and 3.9 percent, respectively.

**Table 2** Price and Stability Effects for 31 Low-Income Countries

	July Package tariff cuts <sup>a</sup>				July Package tariff cuts with SSM & cap on pre-Doha bound tariffs <sup>b</sup>				July Package tariff cuts with SSM & no cap on pre-Doha bound tariffs <sup>b</sup>			
	-----Mean-----		----Stability----		-----Mean-----		----Stability----		-----Mean-----		----Stability----	
	Up	Down	More	Less	Up	Down	More	Less	Up	Down	More	Less
<b>Domestic price</b>	31	0	30	1	23	8	10	21	23	8	7	24
<b>Producer surplus</b>	28	0	13	15	21	7	18	10	21	7	16	12
<b>Imports</b>	3	28	27	4	5	26	27	4	5	26	25	6
<b>World price increase = 3.91%</b>				<b>World price decrease = -0.90%</b>				<b>World price decrease = -1.16%</b>				

Note: The results in the table are based on 1,000 pseudo-random draws and show the number of countries in each category. For domestic price and imports, there are 31 low-income countries (2 are exporters – Argentina and Kazakhstan – and 29 are low-income importers). For producer surplus, 3 low-income countries (Indonesia, Malaysia, and the Philippines) have no wheat production, for a total of 28 countries in this category.

<sup>a</sup> Scenario one (July Package tariff cuts) is measured relative to the baseline (1999-2001).

<sup>b</sup> Scenarios two and three (July Package tariff cuts with SSM) are measured relative to scenario one – the tariff cutting scenario without an SSM.

**Table 3** Summary of Welfare Changes across Each Scenario

	----July Package tariff cuts <sup>a</sup> ----			July Package tariff cuts with SSM & pre-Doha bound tariff cap <sup>b</sup>			July Package tariff cuts with SSM & no pre-Doha bound tariff cap <sup>b</sup>		
	Gain	Loss	Welfare $\Delta$ (%)	Gain	Loss	Welfare $\Delta$ (%)	Gain	Loss	Welfare $\Delta$ (%)
<b>Exporters</b>	6	0	1.52	0	6	-0.34	0	6	-0.44
<b>Developed importers</b>	2	1	21.75	3	0	0.37	3	0	0.48
<b>Developing importers</b>	0	24	-2.27	16	8	0.05	15	9	0.10
<b>Least-developed importers</b>	0	5	-2.78	3	2	-0.41	3	2	-0.53
<b>World</b>	<b>8</b>	<b>30</b>	<b>1.15</b>	<b>22</b>	<b>16</b>	<b>-0.18</b>	<b>21</b>	<b>17</b>	<b>-0.20</b>
	<b>Welfare gain by value = \$1.28 billion</b>			<b>Welfare loss by value = \$-204 million</b>			<b>Welfare loss by value = \$-223 million</b>		

Note: The results in the table are based on 1000 pseudo-random draws. *Gain* and *Loss* show the number of countries that gained or lost in each category. *Welfare  $\Delta$  (%)* is the average change in aggregate economic welfare for all of the countries belonging to a particular category. There are 38 countries/regions in the model: 6 are exporters; 3 are developed importers; 24 are developing countries; and 5 are least-developed countries.

<sup>a</sup> Scenario one (July Package tariff cuts) is measured relative to the baseline (1999-2001).

<sup>b</sup> Scenarios two and three (July Package tariff cuts with SSM) are measured relative to scenario one – the tariff cutting scenario without an SSM.

The welfare cost of the July Package SSM is \$204 million (table 3), compared to a welfare gain of \$1.28 billion from trade liberalization (i.e., cutting tariffs alone). Thus, 84 percent of the increase in world welfare is still realized when low-income countries are granted an SSM. All wheat exporters (Australia, Canada, the EU, the United States, Argentina, and Kazakhstan) lose slightly when low-income countries are granted an SSM. However, 16 out of the 25 low-income WTO members eligible to use the SSM gain economic welfare, as higher producer surplus and large increases in tariff revenue are enough to offset the decline in consumer surplus. In terms of all low-income *importing* countries (WTO members and non-members), 19 out of 29 countries gain; however, for least-developed countries, the losses in Bangladesh (-2.86 percent) and Ethiopia (-0.55 percent) are large enough to result in an average loss (-0.41 percent) for all least-developed countries (table 3).

### **Scenario 3: Tariff Cuts with July Package SSM & No Pre-Doha Bound Tariff Cap**

The final scenario is analogous to the previous scenario except that we allow developing and least-developed countries to (potentially) exceed their pre-Doha bound tariff rates when the SSM is triggered. In the interest of space, we briefly summarize the stability and cost implications of exceeding bound tariffs with

additional SSM duties before turning most of our attention to discussing the frequency of application and the size of the additional SSM duties.

In terms of market stability, domestic prices in 24 (versus 21 in scenario two) out of 31 low-income countries become less stable (table 2). Twenty-five (versus 27 in scenario two) low-income countries stabilize imports. Moreover, the welfare cost of allowing low-income countries to breach their pre-Doha bound tariffs with additional SSM duties is \$223 million compared to \$204 million when we capped tariffs at pre-Doha bound rates in scenario two. In other words, the welfare cost of exceeding pre-Doha bound tariffs amounts to just \$19 million – a very small amount compared to the gains from tariff reform only (table 3).

Table 4 summarizes pre-Doha bound and current applied tariffs, the frequency of SSM use, the average and maximum duties imposed, and the number of times pre-Doha bound rates are breached for each country eligible to use the SSM. Looking across the last row, low-income countries use the price-based SSM relatively more than the volume-based SSM, at 23.9 and 14.3 percent, respectively. Bangladesh, a least-developed country not making tariff cuts to bound rates, stands out as applying the highest volume-based SSM duties. For all others however, countries seem to be making use of the maximum duty options contained in the July Package SSM rather than applying a duty that is based on a percentage of their bound tariff. This result is driven by the fact that as bound tariffs come down through further tariff cuts, so too will the size of the additional SSM duties unless there is provision for choosing a higher duty, which is the case in the July Package SSM.

The interesting information contained in table 4 is the number of times a country exceeds its pre-Doha bound tariff rate, and whether this is due to the volume- or price-based SSM. Collectively, all low-income countries exceed their pre-Doha bound tariffs an average of 4.6 percent of the time. In fact, 16 low-income WTO members never exceed their pre-Doha bound rates with either the price- or volume-based SSM. Brazil, Egypt, Indonesia, Korea, Mexico, the Philippines, the Asian Developing Group (ASG), the South American Developing Group (STA), and Ethiopia are the only countries that breach their pre-Doha bound tariff rates. Ethiopia stands out because it uses the volume-based SSM almost 40 percent of the time and almost always chooses the 25, 40, or 50 percent maximum duties the July Package SSM allows.

Conversely, Egypt exceeds its pre-Doha bound tariff almost 34 percent of the time by applying the price-based SSM. However, there is no gap between applied and bound tariffs for wheat in 2001 in Egypt, very similar to China's case in table 1. Thus, the question of whether or not developing countries should be allowed to exceed their pre-Doha bound tariffs depends fundamentally on the product being traded, the extent to which bound tariffs will be cut, and the gap between applied and bound tariffs.

**Table 4** SSM Frequency and Additional Duty Results, July Package SSM and No Cap on Pre-Doha Bound Tariffs

Country	Pre-Doha bound tariff	Current applied tariff	Freq. of price-based SSM	Freq. of vol-based SSM	Max. price safeguard duty	Max. vol. safeguard duty	# of times vol. safegd. exceeds pre-Doha bound rate	# of times price safegd. exceeds pre-Doha bound rate	Mean vol. safeguard duty	Mean price safeguard duty
<b>Developing</b>										
Algeria	80	3	26.8%	5.2%	19.2%	40.0%	0.0%	0.0%	27.0%	5.0%
Brazil	55	13	27.0%	16.8%	44.3%	50.0%	0.2%	0.1%	33.9%	5.6%
Columbia	124	15	31.4%	2.6%	25.6%	25.0%	0.0%	0.0%	25.0%	5.0%
Egypt	5	5	33.9%	13.3%	5.0%	40.0%	13.3%	33.9%	31.7%	3.3%
Indonesia	30	0	25.8%	21.2%	30.0%	40.0%	14.1%	0.1%	35.0%	6.8%
Korea	9	4	32.8%	5.7%	9.0%	40.0%	5.7%	12.1%	28.7%	4.1%
Morocco	170	49	19.0%	30.4%	18.9%	50.0%	0.0%	0.0%	38.1%	4.5%
Mexico	67	28	14.4%	18.2%	12.6%	50.0%	13.4%	0.0%	36.5%	2.9%
Malaysia	69	11	27.9%	0.1%	18.7%	25.0%	0.0%	0.0%	25.0%	4.5%
Nigeria	150	81	29.0%	20.1%	17.6%	50.0%	0.0%	0.0%	34.0%	4.0%
Peru	68	20	26.6%	3.7%	15.9%	40.0%	0.0%	0.0%	25.4%	4.4%
Philippines	30	15	29.2%	4.4%	18.6%	40.0%	4.4%	0.1%	29.1%	4.0%
Tunisia	100	20	16.4%	30.6%	17.1%	50.0%	0.0%	0.0%	39.1%	4.8%
United A.E.	80	4	16.9%	31.1%	18.7%	50.0%	0.0%	0.0%	38.1%	4.1%
Venezuela	118	15	26.8%	0.9%	17.9%	25.0%	0.0%	0.0%	25.0%	4.5%
AFD	72	29	21.4%	14.1%	16.7%	40.0%	0.0%	0.0%	32.1%	4.1%
ASG	34	10	23.2%	12.1%	15.1%	50.0%	12.1%	0.0%	32.8%	3.5%
CTA	83	4	23.9%	6.7%	17.6%	40.0%	0.0%	0.0%	27.7%	4.3%
STA	36	10	18.4%	16.7%	15.8%	50.0%	12.3%	0.0%	36.6%	3.8%
MEG	35	1	27.0%	0.8%	18.5%	25.0%	0.0%	0.0%	25.0%	4.3%
<b>Least-devel.</b>										
Bangladesh	200	5	18.4%	26.6%	17.9%	100.0%	0.0%	0.0%	78.1%	4.2%
Ethiopia	30	5	11.8%	39.7%	14.1%	50.0%	39.7%	0.0%	44.8%	4.1%
NAG	75	7	23.7%	12.3%	16.8%	40.0%	0.0%	0.0%	31.3%	4.9%
SAG	78	6	26.3%	4.2%	15.3%	40.0%	0.0%	0.0%	28.6%	4.3%
YE	80	0	20.7%	20.8%	17.3%	40.0%	0.0%	0.0%	33.7%	4.6%
<b>World</b>	<b>75.16</b>	<b>14.37</b>	<b>23.9%</b>	<b>14.3%</b>	<b>18.2%</b>	<b>43.6%</b>	<b>4.6%</b>	<b>1.9%</b>	<b>33.7%</b>	<b>4.4%</b>

Note: *Freq. of vol.* and of *price SSM* measure the number of times the volume and price SSM were triggered out of 1000 random draws; *Max. price* and *vol. safeguard* denote the maximum duty triggered; and *Mean vol.* and *price safeguard* report the average safeguard duty applied out of 1000 random draws. See endnote 13 for a description of country/regional aggregations.

## Conclusions

Discussion over a new SSM for developing countries took centre stage in the July mini-ministerial conference in Geneva because WTO members could not bridge their differences over the issue of whether developing countries should be allowed to exceed their pre-Doha bound tariffs.<sup>16</sup> Chairman Falconer's recent Draft Text, tabled

in July of 2008, commits WTO members to establishing an SSM for low-income WTO members as part of an acceptable agricultural package.

We combined the recent July Package tariff cuts with an SSM for developing countries to evaluate the market stabilization and welfare cost of this policy instrument. The July Package SSM costs very little in terms of economic welfare. When we allow developing and least-developed WTO members the use of an SSM in conjunction with tariff cuts, but do not allow them to exceed their pre-Doha bound tariffs (scenario 2), global welfare falls by only US\$204 million. Similarly, the welfare cost of an SSM with no cap on the level of the additional duties results in a welfare loss of \$223 million. This is a difference of only \$19 million, which pales in comparison to the welfare gain of \$1.28 billion from tariff reform only. However representative the world wheat market is, our results suggest that exceeding pre-Doha bound tariffs may have been a small price to pay to reach a final deal on agricultural reform in the Doha Development Agenda.



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## Endnotes

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1. In this article we use “low-income” to refer to developing and least-developed WTO members.
2. That's not to say that members were in agreement over the price-based SSM. In fact, WTO members didn't even get to the negotiations over the price-based SSM. As discussed below, the price-based SSM has the potential to exceed pre-Doha bound tariffs as well, but the likelihood of this occurring is probably less than with the volume-based SSM (WTO, 2008a).

3. We focus on cereals because wheat is used as our case study in the simulation exercise. Moreover, a detailed assessment of the potential SSM duties across all agricultural sectors is beyond the scope of the current study.
4. We refer the reader to Article 5 of the Agreement on Agriculture for rules concerning the Uruguay Round SSG. We did not evaluate the SSG when discussing the volume-based safeguard because the issue of exceeding bound tariff levels is of almost of no consequence under the SSG, since the volume-based remedy is equal to one-third of the country's *applied* tariff.
5. More specific details on the modeling framework and data sources can be found in Grant and Meilke (2006).
6. The parameters in the model are derived from elasticities in the Organisation for Economic Co-operation and Development's AGLINK model (OECD, 2002). The elasticities are provided in Grant (2003) and available from the authors upon request.
7. Due to the potential size of the additional volume-based SSM duties, we added an autarky condition to each low-income WTO member's net trade equation that does not allow them to switch to a net exporter in the model.
8. Due to the low quality of domestic price data that exist for many developing and least-developed countries, it is extremely difficult to introduce shipment-by-shipment price variability for each country.
9. For more details on China's TRQ policy see <http://www.ers.usda.gov/Briefing/China/trade.htm>
10. In the model we cut tariffs by 66 percent in the final developed-country band. Least-developed countries are granted an SSM in the model but are not required to make tariff cuts.
11. For a detailed list of individual country results for all market variables, we refer the reader to the technical annex to this article.
12. The only reason the July Package tariff cuts force a reduction in Egypt's applied tariff for wheat is because Egypt's bound and applied rates are both 5 percent.
13. The countries in each group are (1) exporters – Australia, Canada, EU-25, the United States, Argentina, and Kazakhstan; (2) developed importers – Israel, Japan, and a group of developed-country importers (DCG); (3) developing countries – Algeria, Brazil, China, Columbia, Egypt, Indonesia, Iran, Iraq, Malaysia, Mexico, Morocco, Nigeria, Peru, Philippines, South Korea, Tunisia, United Arab Emirates, Venezuela, and six geographically aggregated groups consisting of African developing countries (AFD), Central American developing countries (CTA), South American developing countries (STA), Asian developing countries (ASG), Middle East developing countries (MEG), and a Rest of the World (ROW) group; and (4) least-developed countries – Bangladesh, Ethiopia, Yemen, and two geographically aggregated groups consisting of South African least-developed countries (SAG) and North African least-developed countries (NAG).
14. Recall, this scenario is judged with respect to scenario one and not the benchmark equilibrium in 1999-2001.

15. Some clarification is in order. There are 32 net importing countries in the model. Three of these are developed countries (Japan, Israel, and the DCG) that are not granted an SSM; three are not members of the WTO in the 1999-2001 baseline (Iran, Iraq, and a group called Rest of World, or ROW); and the remaining country is China, a small net exporter of wheat. Thus there are, in total, 25 low-income WTO members eligible to use the July Package SSM.
16. There are other elements of the SSM currently under negotiation, including the price-based SSM, country eligibility, and the duration of additional duties.

The technical annex to this paper, pages 242-246 is available as a separate document.

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