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REFORMING WTO RULES ON EXPORT RESTRICTIONS – IS THERE ANY POINT?

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Abstract

A number of major agricultural exporting countries responded to high food prices from 2007 to 2010 by imposing export restrictions on agricultural commodities in efforts to constrain domestic food-price inflation. These restrictions reduced the volume of internationally traded food, and exacerbated international price spikes. Net food importing countries were faced with growing import bills, and non-governmental organisations that target food security had to scale back programme commitments and appeal for increased funding. There have subsequently been a chorus of calls for the development of a formal international framework that could discipline the use of agricultural export restrictions; the agreements of the WTO have been targeted as a possible forum for such a framework. We present a framework in which the efficacy of such disciplines can be analysed, and conclude that constraints on agricultural export restrictions are not likely to be effective within the WTO's Dispute Settlement Understanding.

Keywords: Agricultural Trade, Dispute Settlement Understanding, Export Restrictions, Food Security, Retaliation, WTO

1.0 Introduction

Since the *food crisis* of 2007-2008, which saw the international prices of major grains rise quickly to historically high levels, the prices for a wide range of traded agricultural products have experienced considerable volatility and have been difficult to predict. High prices have been particularly hard on poor consumers, required large unanticipated budgetary expenditures by some developing countries that are dependent on food imports and have made it difficult for non-government organizations (NGOs) and others charged with the provision of emergency food aid to acquire the foodstuffs they require to meet programme commitments. How to mitigate the effects of rising food costs for the poor has been the subject of an intense debate on food security (Haq, Nazli and Meilke, 2008). One of the factors that exacerbated the problem of rising prices has been export restrictions put in place by some traditional grain exporting countries; governments in these exporting countries justified such restrictions on the basis of keeping food prices low for domestic consumers. Withdrawing food supplies from the international market further increases already high prices to the detriment of poor consumers and those responsible for alleviating their plight (Meilke, 2008). As a result, there have been calls for the World Trade Organization's (WTO) disciplines on export restrictions to be strengthened. This paper explores the likely efficacy of attempts to strengthen WTO disciplines on the use of export restrictions.

2.0 Export Restrictions on Trade in Food

The major focus of the work on international trade policy is on the effects of government policies that benefit domestic producers to the detriment of producers in trading-partner countries – not just border measures used to restrict imports but also subsidies and non-tariff barriers. Policies that constrain exports can be just as trade distorting as those that protect domestic producers from competition but have received less attention because they tend to be detrimental to the interests of domestic producers in the countries that impose them, and hence are much less pervasive than traditional protectionism (Scholefield and Gaisford, 2007).[1] Also, a long period of low agricultural commodity prices resulted in governments imposing policies that tended to encourage production and exports, instead of restricting exports and disincentivizing production.

An export tax, or other inhibitor of exports including export bans, lowers the domestic price of the product to which they are applied to the detriment of domestic producers but to the benefit of local consumers. In the case of the export restrictions on grains imposed as the food crisis unfolded starting in 2007, the clear intent was moderating the increase in food prices faced by domestic consumers. Some form of export restrictions were put in place by a large number of countries including on rice by India and Vietnam and on wheat by India, Argentina and Kazakhstan (Mitra and Josling, 2009). While the distortions to trade arising from the use of export restraints are similar to those that arise from import-limiting measures or trade-distorting subsidies in the long run, and, hence, can be considered similarly welfare reducing, in the short run export restrictions on food may lead to considerable hardship for the most vulnerable in society, particularly in net food importing developing countries (NFIDCs). Also, the emergence of export restrictions has shaken the confidence of many governments in NFIDCs and civil-

[1] Note that export restrictions on agricultural products are common in some developing countries (Anderson, *et al*; 2008).

society groups, fueling calls for policies that aim for domestic food self-sufficiency. To be sure, there is a strong case for strengthening the disciplines on export restrictions.

Reducing the quantity of grain that reaches the international market drives up its price – making a high price situation worse. One estimate suggests that international wheat prices increased approximately 20 percent due to export restrictions imposed in 2007 and 2008 (Mitra and Josling, 2009). To mitigate the effects of rising prices on poor consumers, governments in NFIDCs were faced with large increases in expenditures on food subsidies. In addition, the need for food aid was rising sharply, but the relatively sticky revenue sources of those purchasing food for aid purposes meant that less food could be acquired (Cardwell, 2012). Demands for new and stricter disciplines on agricultural export restrictions came from a number of NFIDCs as well as NGOs in both developed and developing countries.

3.0 Current WTO Rules Pertaining to Export Restrictions

There are no restrictions on the use of export taxes in the GATT, thus there is no effective discipline on restricting exports in international trade law. This is because an export tax can be used to restrict exports to any degree desired including setting the export tax sufficiently high so as to eliminate exports (Scholefield and Gaisford, 2007). Article XI of the GATT (94) states in paragraph 1 that there shall be "no prohibitions or restrictions other than duties, taxes or other charges...on the exportation...of any product."

On the other hand, quantitative restrictions on exports are banned for all products, including food but this has no real effect because, if a quantitative restriction were to be challenged, it could simply be converted to an export tax that cannot be challenged. Further, an exception to the ban on quantitative restrictions is allowed: Article XI of the GATT (94), paragraph 2(a) states that they can be "temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party." Hence, in the case of food, it appears as if quantitative restrictions can be used in addition to export taxes (Mitra and Josling, 2009).

Over time, a number of *soft law* additions have been included in the provisions on export restrictions so that if a member is contemplating the imposition of such a policy it is supposed to consider the effect on importers' food security, to provide advanced notice and to consult, if requested, with a country that feels it will be negatively impacted. It does not appear that those countries imposing the export restrictions in 2007 and afterward felt the need to engage in any of these *soft law* niceties (Mitra and Josling, 2009). Hence, countries can impose costs on their trading partners with impunity under the current WTO rules.

4.0 Proposals to Strengthen WTO Disciplines on Food Export Restrictions

While advocates for strengthening disciplines on export taxes and other restrictions on food exports have not had success in moving their initiatives forward at the WTO, it has not inhibited the putting forth of proposals for reform. When the resumption of the agricultural negotiations that had been mandated in the Uruguay Round Agreement on Agriculture began in 2000 (prior to the Doha Round), reforming disciplines on export taxes and other restrictions was

on the agenda (Tangermann and Josling, 2001). The US and the Cairns Group (of agricultural exporting countries) both accepted, in a general way, the need for further disciplines on these trade instruments (Mitra and Josling, 2009).

More specific proposals for reform can generally be classified into two types: (1) those reliant to a considerable degree on moral suasion – *soft law* proposals and; (2) those that specifically ban or cap the use of export taxes and restrictions – *hard law* proposals. Of course, most proposals included a *soft law* element even if they relied primarily on *hard law* in their reform proposals. Further, proposals often included a waiver or special and differential treatment clause for developing/least-developed countries.

Examples of *soft law* proposals include Japan's suggestion for dividing disciplines into two types – long term policies and those pertaining to short-term emergency interventions (WTO, 2000c). In terms of the emergency restrictions, the proposal would have established a prerequisite of consultation and conciliation with trading partners that felt they would be harmed prior to putting the barriers in place – *soft law*. In the case of long-term reforms, Japan proposed turning all export restrictions into export taxes and then binding them at pre-announced levels – *hard law*. Other *soft law* proposals were made in the wake of the 2007-2008 food crisis including, for example, requiring those countries contemplating restrictions to consider the impact on food importing countries; to constrain their use to the minimum necessary for the aims of the imposing country; to give due consideration to importing countries' food security, to show how NFIDCs and food aid would be affected; to pre-notify the WTO Committee on Agriculture and explain why the restraints were needed and for how long (Mitra and Josling, 2009). Moral suasion-based provisions such as these, even if complied with, do not actually require countries to foreswear the use export restrictions – and it is unlikely that governments faced with rapidly rising domestic food prices would pay them more than lip service.

Hard law provisions, on the other hand, require that firm commitments be agreed. South Korea, for example, proposed (WTO, 2001a) that: exporting countries be prohibited from arbitrarily imposing export restrictions and bans and; that the use of export taxes be forbidden. Switzerland proposed that the option to use export restrictions should be removed and that export taxes be bound at zero (WTO, 2000b). Jordan (WTO, 2001c) has proposed the banning of export taxes and the Democratic Republic of the Congo (WTO 2001b) proposed a prohibition on any export restriction on agricultural products (Mitra and Josling, 2009).

For there to be any effective constraints on the use of export restrictions, the WTO Members would have to agree to the inclusion of *hard law* provisions. Before any major efforts to initiate such reforms are made, the likely efficacy of such provisions should be investigated. To be effective, *hard law* provisions must, however, be backed by a *credible threat* that choosing to ignore them will not be costless. While what constitutes a *credible threat* has a number of elements (Gordon *et al.*, 2001), in the case of the WTO there are four that are essential: (1) that it can be proven that an agreed prohibition or an agreed limit has been breached; (2) that it can be proven that the breach has caused, or can be expected to cause, injury to a complaining party; (3) that, if a breach has been proven and injury found, a sufficient cost can be imposed on the country which breached its commitments and; (4) that acting upon the threat can be accomplished in a sufficiently short time to prevent injury – or better yet act as a deterrent to

initiating a breach. Only if there is a reasonable probability that all four of these elements can be achieved, can there be any confidence that countries will not ignore the constraints on export restrictions in times of high domestic food prices. In the WTO, the cost which can be imposed on the country that is in breach of its obligations is for the injured party to be authorized to retaliate through the imposition of trade barriers. Hence, one element that a country considering a breach of its commitments will consider in its assessment of the credibility of the threat is the degree to which injured parties can retaliate. The first two elements above, proving a breach and that the breach has caused injury, require the use of the Dispute Settlement Understanding (DSU), while the fourth element depends on the speed with which disputes can be adjudicated.

In this paper we will assume that the first element – the existence of a breach – has been confirmed, and concentrate on questions pertaining to injury, retaliation and periodicity. We eschew examination of whether a breach has occurred for two reasons: (1) as yet no definition of the potential *hard law* constraint(s) has been agreed and; (2) we believe that the probability of satisfying conditions (2), (3) and (4) are sufficiently remote to make it a moot point. Hence, the strong assumption of a breach having occurred is made. Our examination begins with the question of periodicity.

5.0 The Dispute Settlement System of the WTO

Export bans, restrictions or taxes are most often imposed on agricultural products in times of food price spikes. This was the case both in the early 1970s when international grain and oilseed prices rose quickly, and in the wake of the very rapid rises in prices in 2006 and 2007. The export restraints were imposed to isolate consumers in grain exporting countries from the price spikes – and led to further increases in international prices. Agricultural price spikes, however, tend to be of relatively short duration. A spike may have been caused by a natural phenomenon that led to a crop failure – e.g. drought, pest infestations, flooding, early frosts – which often affect only one harvest with supplies returning to normal levels the next crop year. Further, high prices for farmers normally lead to a supply response as farmers adjust output to take advantage of the higher prices. The result is that in the next crop year, the supply response drives down prices. As prices come off their peaks, governments in exporting countries will no longer feel the need to moderate domestic consumer prices. In addition, they are likely to face pressure from domestic exporters, who have had to forgo the windfall gains associated with the price spike, to allow them to export to realize the higher export prices. Export restrictions are typically removed.

For foreign countries negatively impacted by the export restrictions of their foreign suppliers, the severest impacts come in the period immediately after export restrictions are imposed. Ideally, they would like WTO commitments to deter countries from implementing an export restriction. If that is not possible, then relief would only come if the restrictions imposed are removed very quickly. For exporters, delays in the dispute settlement system can be used strategically. If the adjudication process is sufficiently long, then the time when export restraints would normally be removed will have passed before an adverse judgement is reached. If the export restraint is removed, the case will be dropped. If retaliation will not have the desired effect on the exporting country's behaviour, putting in place retaliatory barriers imposes costs on consumers in the importing country for no positive result.

The WTO's Disputes Settlement Understanding (DSU) was endowed with a set of specific timetables. Considering all aspects of the disputes mechanism including the bringing of a complaint, the striking of a WTO Panel, the hearing of the case, ruling on the case, evaluation of the ruling, the appeal process and implementation, the process was expected to take a maximum of approximately 600 days (Kerr and Perdikis, 2003). Some latitude was built in to allow Panels to extend the timelines. Over time, Panels have taken advantage of this latitude and the time that disputes take has gradually increased. Hence, the adjudication of disputes may extend over two crop years and likely extend beyond the period for which the export restriction would be in place. Hence, the current disputes mechanism of the WTO is unlikely to act to support the credibility of a threat in the eyes of a country contemplating a breach of its commitments pertaining to export restrictions.

It is possible that export taxes and bans could be treated in a similar fashion to prohibited subsidies whereby if a country is found to have such a subsidy it must be immediately withdrawn. In the case of prohibited subsidies there is an expedited process for the establishment of a Panel – if a member country wishes to launch a complaint against another member it believes is using a prohibited subsidy and asks for a Panel, then it must be established in 30 days (compared to standard disputes where 60 days is allowed) (Palmeter and Mavroidis, 2004). Other aspects of the disputes process have similarly reduced timetables but Palmeter and Mavroidis (2004, p. 186) observe that:

> No provision is made for interim reports of a panel concerned with prohibited subsidy disputes. Instead, panels are directed simply to submit their final reports to the parties to the dispute and to circulate the final report to the Members within 90 days of the date of the composition of the panel and the establishment of its terms of reference. In practice no panel has been able to issue its report within 90 days of its composition. Two panels have required more than 300 days.

While it is true in the case of prohibited subsidies that there is no requirement to prove injury, if a Member refuses to immediately withdraw its subsidy then a Panel must grant authorization to the complaining Member to take appropriate countermeasures. If the countermeasures taken are considered inappropriate by the Member on which they are imposed, they can request an arbitrator to determine whether the countermeasures are appropriate (Raworth and Reif, 1995). Thus, even if export restrictions were to be treated in similar procedural fashion as prohibited subsidies there is ample time for strategic delay to be practiced by countries wishing to impose such restrictions over the short run. Furthermore, the allowable countermeasures may not be sufficient to coerce a change in behaviour on the part of the respondent Member, as discussed below.

6.0 Retaliation

Even if there is no requirement to prove injury, a DSU must still determine the appropriate size of the authorized retaliatory measure. Unless a penalty could be agreed in negotiations relating to new disciplines on export restraints, panels will still have to establish the appropriate penalty. The DSU currently sanctions a complainant country to retaliate against a respondent country, in the event of a positive Panel ruling, by suspending tariff concessions in an

amount "equivalent to the level of nullification or impairment" arising from the original violation. The conceptual difficulties in translating this equivalence into a quantifiable level of trade retaliation are well documented (Anderson, 2002; Keck, 2004; Breuss, 2005). Anderson (2002) highlights that equivalence is commonly understood to be based on bilateral trade values, but such a measure does not equate to lost welfare, as understood by economists. A measure of lost welfare would require estimates from a computable general equilibrium (CGE) model; something that is not tenable in the context of most trade disputes. The level of commodity aggregation and the imprecision of estimates in CGE models render them of little use in modeling the economic effects of changes to a single tariff rate (Keck, 2004).

Arbitrators in WTO cases have instead based calculations of the injury on which retaliation can be based on vaguely-defined concepts of lost trade. For example, in the EC-bananas III case (WTO, 2000a), arbitrators generated a value of allowable retaliation based on "the WTO-consistent counterfactual chosen by us [the arbitrators]." This counterfactual would certainly not satisfy the requirements of a rigorous econometric or simulation investigation, but was based on the assumption that banana exports from Ecuador to the EC would have reached the level of its "best-ever" value during the previous ten years. Arbitrators in the EC-beef hormones dispute with the US and Canada based impairment on a comparison between currently-observed (under the import ban) trade values and a hypothetical value of trade without the ban, at current prices. The underlying assumption is that Canada and the US would have filled their import quota of beef to the EU without the ban; perhaps a reasonable assumption. However such a counterfactual does not control for price effects that would have occurred if the ban had not been imposed.

Despite the potential for the welfare effects of a trade restriction to be significantly different from the value of lost trade (Anderson, 2002), arbitrators in WTO disputes have based injury estimates on *ad hoc* comparators of lost trade. New rules on export restrictions would likely be adjudicated in the same manner, and the role of economic identification of a counterfactual level of welfare, or even trade flows, is likely to be limited in such cases (Keck, 2004). We proceed to analyse how a concept such as lost trade, applied to cases of food export restrictions, is problematic. Specifically, such measures may not be able to impose costs on respondent countries that would be high enough to either coerce a change in behaviour, or to deter future violations of WTO obligations in many cases. They would not constitute a credible threat.

We begin the analysis with a simple case in which a hypothetical exporting country, Country A, imposes a temporary ban on cereal exports. If Country A were to be found in violation of a WTO discipline on export restrictions in response to a complaint from Country B (a NFIDC that, until implementation of the ban, imported cereals from Country A), then Country B would be authorised to retaliate in an amount equal to the value of lost trade, as quantified by arbitrators. We abstract from the issues of the time lag between the violation and the Panel decision, and from the possible divergence between welfare losses and trade value losses, to consider a simple counterfactual measure of lost trade. An export ban would reduce the value of cereal exports from Country A to Country B to zero[2] over the duration of the restriction.

[2] An (non-prohibitive) export tax would presumably reduce trade flows by less than an export ban. Our study places an upper bound on the value of lost trade and we analyse this scenario for expositional purposes.

Country B could then suspend tariff concessions on imports from Country A in an amount equal to the value of lost cereal imports.

The DSU allows for three types of retaliation, to be pursued in the following order of preference (Spadano, 2008): 1) retaliation in the same sector in which the original violation occurred, 2) retaliation in a different sector under the same WTO agreement, and 3) retaliation under a different agreement. Option 1 is not likely to be relevant in cases of cereal export bans because a NFIDC is unlikely to implement higher import barriers on food products; such action would exacerbate the problem of high import bills that triggered the initial complaint. We are left with retaliation in a different sector under the GATT[3]. The crux of the retaliation problem in this context is that many NFIDC would not be able to impose retaliatory tariffs in an amount "equivalent to the level of nullification or impairment" because non-cereal bilateral trade flows are smaller than cereal trade flows in many cases. Even if Country B were to impose a ban on all imports from Country A, the value of retaliation may not add up to the counterfactual value of lost cereal trade. That is, there exists a "retaliatory deficit" for many NFIDCs that would prevent them from credibly threatening to impose punitive costs on respondent countries.

To investigate the importance of this potential problem, we calculate hypothetical retaliatory deficits for NFIDCs that could have been affected by export restrictions during the 2007-2010 period of high food prices. The first step in this investigation is the identification of country pairs that share bilateral cereal trading relationships. Potential complainant countries in this study include all countries that the WTO categorises as NFIDCs[4] (WTO, 2012), and our set of respondent countries is drawn from Sharma (2011), which provides a timeline of food export restrictions imposed from 2007 to 2011. Country lists are in tables A1 and A2. A few points about these bilateral pairs are worth noting. First, the list may not include every country that implemented export restrictions, but is sufficiently comprehensive to illustrate our main points. Second, some of the exporting countries in this list imposed export taxes, not export bans. The retaliatory deficits below are calculated under conditions of export bans, as discussed in note 2, and therefore represent upper bounds on values of lost trade. Third, some of the countries included in the calculations are not currently WTO Members; for example, Kazakhstan (a food-exporting country that imposed a range of export restrictions) and Ethiopia (a NFIDC) are both observer nations. We include these countries in the calculations because their eventual accession to the WTO may precede any new disciplines on export restrictions, and because it is these countries that could be most affected by new WTO disciplines on export restrictions.

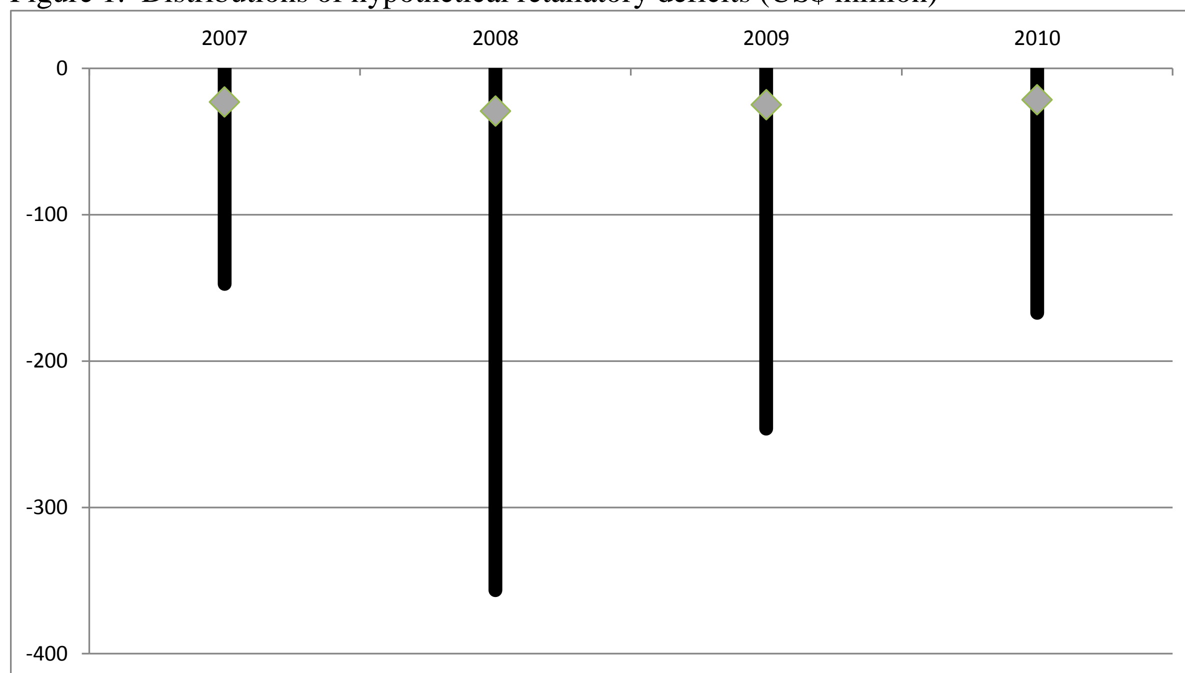
The second step in the calculation of retaliatory deficits is to compute the difference between total non-cereal exports and cereal[5] exports for each bilateral (potential respondent and potential complainant) country pair. The comparator value of lost trade applied in this calculation is the current-year value of cereal trade between countries. Note that this value may understate the size of allowable retaliation because many exporting-countries had already

[3] We do not consider retaliation under the GATS or TRIPS.
[4] This includes all countries that the Economic and Social Council of the United Nations recognises as "least developed", in addition to the countries listed in WTO (2012). Countries on the United Nations' list of "least developed countries" have per capita gross national incomes below US$ 750.
[5] Some countries imposed export restriction on other agricultural products during this period (e.g. oilseeds and meat products), however we narrow the focus to cereals (maize, rice and wheat).

imposed export restrictions during these years; an arbitrator's decision on lost trade may be based on a larger value (as was the case in EC-bananas III, in which lost trade was based on the "best-ever" value from the previous ten years). Our estimated retaliatory deficits are therefore conservative.

If the value of non-cereal exports exceeds the value of cereal exports, then a NFIDC could credibly impose retaliatory trade measures in an amount up to the value of trade lost due to a cereal export ban; *ie.* there would be no retaliatory deficit. If, however, the value of lost cereal trade exceeds the value of all other bilateral trade, then the threat of retaliatory trade sanctions is not credible - even a complete ban on all imports from the respondent country would not affect trade flows up to the value of lost cereal trade. Figure 1 presents a summary of retaliatory deficits from 2007 to 2010.[6] Trade data are from UN Comtrade, with commodities categorised by HS code and reported in US dollars. Each observation is measured as non-cereal exports minus cereal exports for every bilateral country pair (respondent to complainant, as defined above). Bar ends illustrate the maximum (*ie.* largest negative) and minimum (*ie.* smallest negative) deficits in each year, and the ◆ symbols represent the means of each periods' deficits.

Figure 1. Distributions of hypothetical retaliatory deficits (US$ million)



Notes: Bar ends represent maximum and minimum values in each year. The ◆ symbols represent the means for each year. Data from UN Comtrade.

The data indicate that the potential for retaliatory deficits is not trivial. There are between 55 and 65 observations in each year, with a maximum deficit of US$ 356 million in the case of Cuba as the NFIDC and Viet Nam as the exporter.[7] That is, the value of cereal exports

[6] Values for each country pair are available on request.
[7] Importer countries with retaliatory deficits are identified with the * symbol in table A2.

from Viet Nam to Cuba exceeded non-cereal exports by approximately US$ 365 million in 2008. The average deficit across all four years is approximately US$ 25 million. Countries in sub-Saharan Africa feature prominently in the list of importing countries that could face retaliatory deficits. For example, Kenya, Tanzania and Cote d'Ivoire would not be able to impose sufficiently large retaliatory sanctions in 15, 14 and 12 cases, respectively, across the four years analysed. The data also reveal several exporter countries against which retaliatory deficits appear frequently. There are 68, 52 and 37 cases in which NFIDCs could not impose sufficiently valuable trade sanctions against Pakistan, Argentina and Viet Nam, respectively. Each of these countries imposed a range of export restrictions during the 2007-2010 period.

The existence of retaliatory deficits does not preclude complainant countries from retaliating; a complainant country could retaliate in an amount of lower value than the lost cereal trade. There are cases in which non-cereal trade from a potential defendant country to a complainant country is a large share of cereal trade. That is, a complainant country could retaliate in an amount that is nearly "equivalent to the level of nullification or impairment" caused by the original violation. For example, Kenya would have experienced a retaliatory deficit against Russia in 2010, but a retaliatory ban on all non-cereal imports from Russia would have amounted to 83% of the lost cereal trade. Though not complete retaliation, such action might impose large enough costs on a respondent country that it reconsiders the export restriction.

Two points are worth noting about such "incomplete" retaliation. First, the retaliatory deficits that we calculate are typically large relative to bilateral trade flows. The average ratio of non-cereal exports to cereal exports is 0.31 for those country pairs that exhibit retaliatory deficits from 2007-2010. This means that complainant countries could not retaliate against almost 70% of lost cereal trade, on average. Second, the inability of countries to fully retaliate undermines the dispute-settlement process because the role of the Panel in determining the value of impairment becomes irrelevant.

One possible solution to the presence of retaliatory deficits would be to allow third countries to impose trade sanctions against respondent countries on behalf of NFIDCs that were faced with retaliatory deficits. A developed country that shared a bilateral trading relationship with the respondent country, and was willing to incur the welfare costs of a unilateral increase in import barriers, could impose trade sanctions against the respondent country in an amount equal to the comparator value of lost trade (or the value of the NFIDC's retaliatory deficit). This possibility has been raised in other contexts (specifically, as a means of increasing the cost to Member countries of violating their obligations beyond the value of lost trade), however it is not an option under the current DSU. The DSU rules out countermeasures by third parties (Horn and Mavroidis, 1999), so retaliatory deficits could not be made up by third countries.

7.0 Discussion

Any binding disciplines on export restrictions within the confines of the WTO may be a long way off. There is strong resistance to such measures by the governments of several WTO Member countries, and the DDA negotiations are stalled over a range of issues. It is therefore important to identify the problems with potential disciplines on export restrictions early so as to

avoid further muddling DDA negotiations with an issue that would be contentious, yet unlikely to produce effective disciplines.

We summarise our main points here. First, it is unlikely that any disciplines on export restrictions could be enforced in a timely-enough fashion to induce behavioural changes on the part of respondent exporting countries. While the issue of timelines is nothing new for WTO disputes, the duration of dispute resolution may be particularly important for export restrictions, in which issues of short-term food security are at stake. Also, the short-term nature of many export restrictions means that many such policies would be repealed before the completion of a dispute settlement process.

Second, the methods of quantifying impairment are unclear, but it is likely that such decisions would follow DSU jurisprudence that has based impairment on a comparator value of lost trade. Again, this is a standing issue with other WTO disputes, but may be more complicated in cases of export restrictions. The export restrictions that were common from 2007-2010 typically come in bunches, with several exporting countries implementing either overlapping or simultaneous restrictions. A NFIDC can be negatively impacted (through higher world prices and higher food import bills) by export restrictions that are imposed by a large-country exporter with which it does not maintain a bilateral trading relationship. There are no mechanisms within the DSU for such a NFIDC to retaliate against a third-country with which it does not maintain a bilateral trading relationship.

Third, and most importantly, we show that there are several cases in which potential NFIDC complainant countries could not impose retaliatory trade sanctions that would equal the value of trade lost due to cereal export restrictions. The frequency and size of such cases are not trivial: we identify 232 instances of potential retaliatory deficits over the 2007 to 2010 period, with a maximum value of US$ 356 million. The potential for these retaliatory deficits renders threats of trade retaliation non-credible, thereby undermining the incentive structure of the DSU.

The food-security related concerns that arise in the context of export restrictions are likely to remain relevant. High and volatile food prices will present exporting countries with the temptation to placate domestic consumers by erecting food export barriers. The emerging pressures on governments to pursue domestic self-sufficiency policies poses an additional threat to the multilateral trading system. An examination of the countries listed in table A1 shows that it is made up of developing countries, or those still in transition from command to market economies – none are modern market economies. Some are major international grain exporters such as Russia, Kazakhstan and Argentina while others have little presence in global markets. Hence, there is no particular subset of trade (i.e. small country to small country or large country to small country) that is particularly prone to these restrictions. One problem, however, is that there are bandwagon effects whereby the international price-increasing results of one country imposing an export ban or tax leads others to subsequently impose similar restrictions further exacerbating international price increases. The WTO seems, on the surface, to be the appropriate forum for the handling of such issues, and if Member countries were to consider such disciplines then they would have to be of the *hard law* variety. The nature of the retaliatory mechanism in the DSU is not equipped to handle such cases, however, when complainant countries cannot

credibly threaten to impose large enough costs on respondent countries. It seems unproductive to pursue provisions that are, by design, fundamentally flawed.

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Appendix

Table A1. Exporter Countries Included in Retaliatory Deficit Calculations

Argentina
Belarus
Bolivia
Cambodia
China
Ecuador
Egypt
Ethiopia
India, excluding Sikkim
Kazakhstan
Kenya
Malawi
Myanmar
Nepal
Pakistan
Russian Federation
Serbia
Sri Lanka
Syria
Ukraine
Viet Nam
Zambia

Note: Country list from Sharma (2011).

Table A2: Importer Countries Included in Retaliatory Deficit Calculations

Afghanistan
Angola*
Antigua and Barbuda
Bangladesh*
Barbados
Benin*
Bhutan
Botswana
Burkina Faso
Cambodia
Central African Republic*
Chad
Comoros*
Côte d'Ivoire*
Cuba*
Democratic Republic of the Congo*
Djibouti*
Dominica
Dominican Republic
Egypt*
El Salvador
Equatorial Guinea
Eritrea*
Ethiopia*
Gabon*
Gambia*
Grenada
Guinea*
Guinea-Bissau*
Haiti*
Honduras
Jamaica*
Jordan
Kenya*
Kiribati*
Lao People's Dem. Rep.*
Lesotho
Liberia*
Madagascar*
Malawi*
Maldives*
Mali*
Mauritania*
Mauritius*
Mongolia
Morocco*
Mozambique*
Myanmar
Namibia*
Nepal*
Niger*
Pakistan*
Peru
Rwanda*
Saint Kitts, Nevis and Anguilla
Saint Lucia
Saint Vincent and the Grenadines*
Samoa*
Sao Tome and Principe
Senegal*
Sierra Leone*
Solomon Islands*
Somalia*
Sri Lanka*
Swaziland
Timor-Leste*
Togo*
Trinidad and Tobago
Tunisia*
Tuvalu
Uganda*
United Republic of Tanzania*
Vanuatu
Venezuela
Yemen*
Zambia*

Notes: 1. Country list from WTO's (2012) list of net food importing developing countries.
2. * identifies countries with retaliatory deficit(s) from 2007-2010.