Size inequality, coordination externalities and international trade agreements

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ABSTRACT

Developing countries now account for a significant fraction of world trade and two-thirds of the membership of the World Trade Organization (WTO). However, many are still individually small and thus have a limited ability to bilaterally extract and enforce trade concessions from larger developed economies even though as a group they would be able to do so. We show that this coordination externality generates asymmetric outcomes under agreements that rely on bilateral threats of trade retaliation – such as the WTO – but not under agreements extended to include certain financial instruments. In particular, we find that an extended agreement generates improvements in global efficiency and equity if it includes the exchange of bonds prior to trading but not if it relies solely on ex post fines. Moreover, a combination of bonds and fines generates similar improvements even if small countries are subject to financial constraints that prevent them from posting bonds.

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1. Introduction

International trade relations between developed and developing countries have often been adversarial. As early as 1947, some developing countries were denouncing the United States' proposals for the predecessor of the World Trade Organization (WTO) as "serving the interests of developed countries and undermining the development prospects of poor countries" (Srinivasan, 1999, p. 1050). More recently, the Uruguay Round was seen by most developing countries as having produced a multilateral bargain that is biased heavily in favor of developed countries. Partly to rectify the perceived imbalance of the Uruguay Round outcome, the Doha *Development* Round was launched in 2001 with the idea that it would put the interests of developing countries at the forefront.[1]

Developing countries now account for two-thirds of the 157 WTO members (up from 11 in the GATT) and over a third of world trade and have increasingly begun to demand a more active voice in multilateral negotiations. However, they still face considerable challenges in translating such demands into tangible outcomes: despite having been launched over a decade ago, the Doha Round has yet to be concluded. In this paper we analyze a key problem that developing countries face in

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  [1] The Doha ministerial declaration of November 2001 states: "We recognize the need for all our peoples to benefit from the increased opportunities and welfare gains that the multilateral trading system generates. The majority of WTO members are developing countries. We seek to place their needs and interests at the heart of the Work Programme adopted in this declaration."

trying to achieve a more favorable outcome in international trade negotiations—i.e. the presence of a *coordination externality* among themselves. Even though developing countries are now large on aggregate, most are still individually small and thus have a limited ability to bilaterally extract and enforce trade concessions from larger developed economies. We show that under standard agreements that rely on bilateral threats of trade retaliation – such as the WTO – this coordination externality generates asymmetric outcomes that are less favorable to developing countries (as well as globally) than those obtained under an agreement extended to include certain types of financial instruments.

The traditionally dominant role of large countries in the world trading system is partly due to the bilateral and reciprocal nature of negotiations in international trade agreements such as the GATT/WTO. The key idea is the following: if the European Union (EU) wants the United States (US) to lower its tariffs on EU exports then it must reciprocate with lower tariffs on goods it imports from the US. However, this reciprocal exchange relies on the presence of relatively symmetric market power on both sides: while a tariff reduction by a country with a sufficiently high import share and market power increases the price received by foreign exporters, no significant bilateral concessions occur when the reduction is undertaken by a small country.[2] Market power is also essential in enforcing cooperation since the threat to abandon the agreement and increase tariffs on the part of a country that lacks such power is not credible and therefore fails to act as a useful deterrent. Thus, *bilateral asymmetries* in market power undermine international cooperation and may explain why some exports from (smaller) developing countries (e.g. in agriculture, textiles, some manufactures) have historically faced relatively higher tariffs in (larger) developed countries. By undermining cooperation, this asymmetry can also lead to higher tariffs by developing countries but, as long as they remain small as a group, the large countries do not lose much from this, which may explain why the latter have not pushed developing countries to liberalize further until recently.[3]

Most formal analyses of the GATT/WTO focus on two large countries.[4] The focus on this canonical case has yielded important insights and was a reasonable approximation until the Uruguay Round since up to that point GATT/WTO negotiations were led primarily by the US and Europe (cf. Schott, 2009). However, the global economic landscape has changed significantly with the emergence of the BRICs—Brazil, Russia, India and China. From 2000 to 2009 alone the world import share of the largest traders, the US and EU, fell from 43% to 34% (54–42% if we also include Japan and Canada) and their bilateral trade accounts for less than 20% of their total trade.[5] The relative decline of the US and EU in world trade suggests that it is important to analyze international trade agreements between multiple countries of asymmetric size, something that we focus on in this paper.

While some of the recent decline of the US and EU in world trade is mirrored in the rise of the BRICs – particularly China – there is also a longer trend driven by other developing countries' trade liberalization and growth.[6] This is important in motivating the coordination externality underlying our model since this externality is most relevant if several countries jointly account for a non-negligible amount of exports of a larger country. For example, if we exclude Japan, Australia and China, the next top 10 Asian destinations in 2009 accounted for 13% of total US exports but their median share was only 1.3% (the largest is Korea with less than 3%). Another case in point is South and Central America: while the region jointly accounts for 10% of US exports all but one country accounts for less than 1% (the only exception is Brazil, whose share is 2.5%). More broadly, if the US were to negotiate only with the top five destinations for its products it would cover only 64% of its exports, with the analogous figure for the EU being even smaller, 44%.[7]

Our model highlights the role of *bilateral size asymmetry* in international trade agreements by focusing on two "regions" of equal size with one containing a single country (Large) and the other multiple countries, each of whom individually has less market power in trade. Large exports a single good, *x*, to all small countries and imports a different good in return. The bilateral size asymmetry generates lower tariffs and welfare for the smaller countries in the absence of an agreement because their tariff choices are subject to a coordination externality, i.e. when setting its tariff on good *x* each small country ignores any positive terms-of-trade effect that its tariff has on all other *importers* of the same good. We then show that this

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[2] For evidence of the positive relationship between market power and either import shares or GDP see Broda et al. (2008).

[3] In fact, if the asymmetry is sufficiently large, the large country would be strictly better off by not cooperating (cf. Johnson, 1953–1954). An additional explanation for relatively higher tariffs by the large developed countries on exports of small developing countries is that historically the latter have tended not to take an active role in multilateral trade negotiations. One reason for such non-participation and higher tariffs by large countries arises when, as in our setup, a large country imports the same good from many small countries. Ludema and Mayda (2009) show how the WTO's MFN rule requiring the importer to set the same tariff on all exporters lowers the incentive for the latter to participate in reciprocal negotiations in an attempt to minimize reductions in their own tariffs. Since this incentive is well understood theoretically we abstract from it (by assuming all exporters either participate or not) and focus instead on the coordination externality.

[4] See for example Mayer (1981), Grossman and Helpman (1995) and Bagwell and Staiger (1999). The latter also considers a third large country to study tariff discrimination.

[5] Authors calculations based on data from the WTO's "International trade statistics 2010". We treat the EU as a single country since it has a common tariff and negotiates as a block. Thus, world imports exclude flows within EU-27.

[6] As the Director General of the WTO notes "Between 1973 and 1997 the developing countries' share of manufactured imports in developed markets tripled—from 7.5% to 23%. What these figures reflect is the developing world's truly remarkable integration into the global economy over the past three decades." Source: Ruggiero (1999) accessed at ⟨http://www.wto.org/english/news_e/pres99_e/pr122_e.htm⟩. Besedes and Prusa (2011) examine the sources of export growth for 46 countries between 1975 and 2003.

[7] Moreover, the recent increases in this dispersion measure suggest an increasingly important role for the coordination externality among importers of US goods. For example, the top five US destinations in 2000 accounted for 70% of its exports but those in 2009 only accounted for 64%. At the industry level we see a similar trend with over 2/3 of HS 2 industries showing declines averaging 7 percentage points in the share of top five destinations (the average for those with an increase was about 4 p.p.).