The Cost of Wiggle-Room: Looking at the Welfare Effects of Flexibility in Tariff Rates at the WTO

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There is considerable variation in the depth of countries’ commitments at the World Trade Organization (WTO). While WTO members apply tariffs on imports at roughly comparable levels, the maximum levels allowed on these tariffs vary dramatically, leaving some members with far more flexibility to raise trade barriers overnight. Some countries have argued that such “binding overhang” is harmless unless it is exploited, while other countries disagree. This paper is the first attempt to empirically assess the effect of binding overhang on trade flows. I argue that the mere existence of binding overhang has a strong negative effect on trade, through the way in which it muddles expectations. Using data at the 4-digit harmonized system product level, covering the WTO membership from 1995 to 2008, I demonstrate that the cost in terms of lost trade resulting from the ability to legally raise a tariff by one point is tantamount to nearly half the cost of having done so. In sum, WTO membership is, by itself, no panacea. Negotiating greater tariff flexibility can water down a country’s legal commitments and significantly reduce the benefits flowing from the institution.

Much recent work in international relations has taken a closer look at the net effect of membership in multilateral institutions. Notably, a debate has emerged over the impact of the General Agreement on Tariffs and Trade and its successor, the World Trade Organization (GATT/WTO): Some argue that the organization observably increases world trade, while others disagree. In examining this and other institutions, however, scholars have worked from the premise that once a state accedes to the institution, conditional on compliance with its rules, the fruits of membership, however defined, are assured. Yet what we already know about international institutions should lead us to question this assumption. Rosendorff and Milner (2001) warn of the risk of escape clauses being abused at the cost of the institution’s stability. Downs, Rocke, and Barsoom (1996) point to variation in the depth of commitments across institutions and the member-states within them and speak of the need to re-examine the meaning of compliance in light of this variation. Pascal Lamy, Director General of the WTO, recently beseeched WTO members to not only respect their obligations, but also show restraint in “exercising [their] rights”. In other words, member-states have agency that goes beyond choosing to comply with the rules or not. The underlying question, then, is whether state compliance is sufficient to secure the benefits of international institutions. The literature has thus far fallen short of providing an answer.

One notable exception is an article by Goldstein et al. (2007), in which the authors attempt to measure the impact on trade flows of the decision by WTO members to exercise an opt-out clause, under which states can limit the degree of concessions granted to new entrants. Opt-out clauses allow countries to curb their commitment within the institution, which the authors hypothesize should have observable effects on trade outcomes. But while such reservations involve about half a percent of country dyads over the institution’s 60-year history, far more states limit their WTO commitments in a more direct and pervasive manner. Indeed, while GATT-WTO members apply tariffs on imports at roughly comparable levels, the maximum level allowed on each of these tariff lines varies dramatically (Bagwell and Staiger 2005). Whereas both Armenia and Pakistan levy 10% applied tariffs on tomatoes, for instance, Pakistan could raise that tariff overnight to its bound rate of 100% and remain compliant, while Armenia can only raise its tariff to 15% before falling foul of its WTO commitments.

Hence, while the effective import barrier on tomatoes does not vary between Pakistan and Armenia, the same cannot be said of the predictability of each barrier. This discrepancy leads to the following puzzle: Do countries “loosening the ties that bind” (Koremenos 2001), by setting aside policy space to handle unexpected conditions, while remaining in compliance all along, affect the expected benefits delivered by international commitments in the first place?

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2 See Rose (2004), Gowa and Kim (2005), Subramanian and Wei (2007), and Goldstein, Rivers, and Tomz (2007). And the debate continues; most recently, see Gowa (2009).

3 See also Downs et al. (1998). Empirical studies have not risen to the challenge of theory in this case, most likely since measures of “depth of commitment” for members of the same institution are difficult to come by. For an attempt to address this shortcoming, see Pelc (2011a).


5 During its most recent Trade Policy Review, WTO Members roundly criticized Pakistan for keeping such high overhang levels, thus undermining the stability of its trading regime. In a typically worded complaint, the representative of Taiwan stated: “Large gaps between applied and bound rates afforded Pakistan ample opportunity to raise the applied rates, as was done recently, thereby reducing predictability” (WT/TPR/M/195, 12).

6 These rates correspond to 2006 ad valorem import barriers on “Tomatoes, Fresh or Chilled,” HS 0702.
The answer is far from evident. Goldstein et al. (2007) found the exercise of opt-out clauses to have no conclusive effect on trade flows, though the authors attributed the null finding in part to the rare occurrence of such reservations. In the case of tariff rates, the matter is no clearer. Within the WTO membership itself, there is a growing debate over the effect of what has come to be called “binding overhang”—the gap between bound and applied tariff rates. A number of countries—the United States and Canada among them—have argued that binding overhang significantly increases uncertainty for traders and investors. Others, such as India, claim that overhang has little impact if it is not used, while providing countries with much needed flexibility in the event of an exogenous shock.

With a view to contributing to this debate, this paper conducts the first empirical examination of the effect of binding overhang on trade flows. The paper’s findings are unambiguous. Looking at the 4-digit harmonized system (HS) product level, and controlling for the rate of applied tariffs, as well as a host of other country-specific variables, the wiggle-room countries set aside for themselves by negotiating bound tariff rates far above applied rates significantly decreases trade flows. From this article’s standpoint, the key aspect of binding overhang is that it can be called on without warning, and its use, as opposed to trade remedies such as safeguards or antidumping, is not made contingent on the occurrence of exogenous shocks. Its mere availability thus leads to unpredictability in a country’s trade schedule. Because of the absence of formal stipulations on its use, even countries that have no intention of exploiting their binding overhang except in times of true crisis are unable to credibly convey their intentions. In sum, investors and traders value stability in market access; because it undermines such stability, binding overhang acts as a tax on trade, over and above applied duties.

The paper’s findings hold numerous implications for the study of institutions. First, the results bolster the belief that ensuring “security and predictability”—an objective enshrined in the WTO texts—ought to be as important a goal for trade institutions as reducing average tariffs.14 10 Economic institutions are concerned not only with improving the status quo, but also with using legal commitments to “lock in” that status quo (Mansfield and Reinhardt 2008).

Secondly, and related, membership in the GATT/WTO is, by itself, no panacea. Just as states can derive rights and obligations from an institution they are not party to (Goldstein et al. 2007), so too can official signatories negotiate to water down their binding commitments to the point of irrelevance, and in so doing, reduce the ensuing expected benefits. The GATT/WTO allows states to achieve gains from trade through reciprocal commitments and credible sanctions that make it easier for state leaders to confront domestic industries, but the extent to which it achieves this remains contingent on subsequent state behavior. Membership per se is no guarantee.

Finally, the findings hold considerable policy implications for ongoing WTO negotiations. Following the collapse of the Doha trade round over the issue of special safeguards requested by many of the very countries exhibiting high binding overhang,11 it is worth asking whether the current tradeoff is a favorable one. The likely conclusion is that any form of conditional and temporary trade remedy may be preferable to high, permanent, binding overhang.

**Binding Overhang and Uncertainty**

The function of the WTO, and the purported reasons for its success, are generally agreed upon. The goal of the WTO is explicitly to expand “the production of and trade in goods and services.”12 It achieves this objective by allowing countries to exchange reciprocal commitments, harnessing export-oriented interests at home to balance protectionist pressure from import-competing domestic groups, as a means of reducing barriers to trade worldwide. Moreover, by virtue of establishing enforceable, binding legal constraints, the WTO serves as a solution to the problem of time-inconsistent preferences. State leaders have a long-term interest in abating barriers to trade across the board, yet they may face periodic domestic pressure to reinstate targeted trade barriers to protect special interest groups.13 In such cases, credible commitments made at the international level can reduce the domestic political costs of denying protection (Hudec 1987; Staiger and Tabellini 1999).

A more recent line of argument, moreover, notes that regional and multilateral institutions expand trade not only by increasing market access, but also by reducing the volatility of market conditions. In this way, Mansfield and Reinhardt (2008) have recently shown that international trade agreements reduce export volatility. This increase in stability, in turn, is shown to have an independent effect on the expansion of trade flows. The same has been advanced by economists with respect to variance in trade policy (for example, Francois and Martin 2004), though such expectations have yet to be tested empirically. The GATT/WTO texts themselves offer support for the view of stability as one of the institution’s primary goals, and of tariff bindings as the main means of achieving it. Article XXVIII bis 2(a) of the GATT specifies how negotiations among members should aim for the lowering of duties or “the binding of duties at then existing levels.”14 Scholars have similarly argued that the objective of international trade institutions is not only to expand market access, but also to lock in existing reforms. Along those lines, Rodrik suggests in reference to the North American Free Trade Agreement that “[i]t is no secret that Carlos Salinas wanted NAFTA at least as badly for its potential role in cementing Mexico’s institutional reforms since 1986 as for its market-access provisions” (Rodrik 1995:110). This renewed attention to institutions’ role in

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7 The authors do find a significant effect for two-sided invocations, which are not only extremely rare, but a clear sign of fundamental political differences. For one-sided invocations, they find an increase in trade, a result they “do not regard as plausible” (Goldstein et al. 2007:59). Reservations are taken with regard to countries that are seen as likely to lead to import surges. Even conditional on the reservation being used, these expectations may be partly borne out.

8 TN/MA/M/5; WT/TPR/M/185/Add.1.

9 WT/COM/T/W/143.

10 See WTO DSU Article 3.2. John Jackson claims that the stated WTO objective of “security and predictability” is “the most important ‘central element’ of the policy purposes of the [DSU]” (Jackson 2004:112, 117).

11 See the concept of “standing,” as opposed to membership, in Goldstein et al. (2007).

12 Preamble to the Marrakesh Agreement Establishing the World Trade Organization.

13 There is general agreement that the domestic pressure for protection waxes and wanes with market conditions and unemployment. See Mansfield and Henisz (2006).

14 GATT Article XXVIII bis 2(a).
reducing uncertainty and stabilizing expectations constitutes the first step to understanding the significance of binding overhang and the way in which it modulates the WTO’s impact on trade outcomes. Simply put, if one of the purported benefits of institutions is locking in existing commitments, then any provisions that loosen such commitments would be expected to curb the benefits of membership.

The issue of overhang emerges at the time of the WTO’s inception in 1995. The Uruguay Round was in great measure successful in its goal to bind all tariff lines for all members. And yet, in many cases, the newly bound rates were set at levels higher than a state had ever applied in the past, or has ever applied since, on the product in question (Ingo and Croome 2004:37). Indeed, states had considerable discretion in the way they converted nontariff barriers to ad valorem equivalents (Frais and Martin 2004), especially in sectors such as agriculture, resulting in high bound ceilings. As a result, many countries, especially recent developing country entrants, ended up with considerable headroom above applied duties. Figure 1 plots overhang in industrial and agricultural tariffs by Gross Domestic Product (GDP) per capita. As Figure 1 shows, overhang in agriculture is on average significantly higher than for industrial tariffs, and in both cases, there exists an observable, though imperfect, negative relationship between overhang and wealth.

Crucially, the levels of applied duties are widely observable prior to setting bound rates, though those applied rates can vary subsequently. Binding overhang, in this sense, is effectively driven more by high bound rates than by low applied rates. On average, overhang across all traded products, for all WTO members, was 18% in 2007, though for some countries it was as high as 89%. It is not hard to understand why countries would value some “headroom” over and above the duties they levy. They may value binding overhang as providing policy space that can be called upon in times of economic duress to provide import relief. Also, it is likely that states value the way high overhang allows them to offer large tariff “cuts” in subsequent trade negotiations without sustaining equivalent pain domestically. In other words, high overhang acts as a buffer zone during multilateral bargaining.

While the incentives of individual states in setting aside wiggle-room for themselves are easy to grasp, there is considerable debate around the associated welfare costs. The WTO Secretariat, for one, has been unusually vocal in explicitly linking high overhang to ensuing uncertainty in a country’s trade regime. In a typically formulated instance of criticism, the Secretariat recently complained about South Korea’s trade regime, claiming that “[a]lthough 90.8% of tariff rates are bound, the predictability of the tariff is eroded by the leeway to raise applied tariffs.” This focus on unpredictability finds much support from claims within the private sector, where producers claim that the lack of transparency and instability of the barriers they face abroad is, in itself, an additional barrier to trade. To offer but one example, US wine manufacturers recently complained in hearings before the US International Trade Commission (ITC) that they do not know what the actual rate of protection imposed on wine imports by Israel, bound at a rate of 148%, actually is at any given time and that “the result is confusion and unpredictability about any pricing of product, a very effective deterrent to selling in the Israel wine market.” In another instance, following on complaints from US exporters to India, the USITC reported that, thanks to the great “difference between high Indian average bound tariff rates and lower average applied tariff rate,” the Indian government “frequently changes its rates on heavily traded international commodities, such as wheat, rice, sugar, and vegetable oils” and that “[i]ndustry sources claim that tariff rate variability is an impediment for U.S. agricultural exports because frequently changing tariff rates create uncertainty, making negotiating future sales and determining financial plans difficult.” Even more explicitly, the USITC goes on to conclude how “exporters to the Indian market generally describe the process [of tariff adjustment] as lacking transparency and certainty.”

A number of states have echoed these claims. WTO members exhibiting high overhang are often warned by their trading partners that their tariff schedule contributes to uncertainty in the global trading system. In a meeting of the Negotiating Group on Market Access, the EC declared that “[u]nderestimating the importance of binding overhang did the Group no service at all.” At the same meeting, the Australian representative added, speaking of all nonagricultural tariffs, that “[t]he whole

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15 Agriculture is notable by the fact that it is the only sector where all countries, developed and developing, have bound all rates. What this suggests is that there exists a substitution effect between binding coverage and binding overhang, a point also made elsewhere (Pelc 2011a).

16 Bound rates also vary considerably more than do applied rates. Though the latter vary more across time, bound rates are modified following further sectoral agreements or trade rounds.

17 These correspond to simple averages across all tariff lines, aggregated by Member, at the 4-digit level.

18 WT/TPR/S-204/Rev.1.

19 The confusion arises in part from the fact that the Israeli applied Most Favored Nation (MFN) duty on wine is a combination of an ad valorem and specific tariff. In 2000, for instance, it was set according to the formula: “42% + 1.35 per Litre but not more than 73.2%.” The minimum Israeli binding overhang for wine in 2000 was thus nearly 75%.

20 Hearing Testimony by the Wine Institute and the California Association of Winegrower Growers before the US International Trade Commission, investigation number 392-494, 4.

21 The report goes on to narrate in detail how India exploited tariff overhang by varying the rates on vegetable oil over a 5-year period: “In order to support farm prices, India raised tariff rates in early 2005 on crude palm oil from 65 to 80% and on refined palm oil from 70 to 90%. In early 2007, edible oil prices began rising quickly because of lower domestic production, which led the government to reduce rates three times during 2007 on both crude and refined palm oils, before reducing the tariff rates on crude soybean and crude palm oils to zero and on all refined edible oils to 7.5% on April 1, 2008.”

22 Communication from EC, TN/MA/M/7, p.27, para 1.71.
issue of closing the gap between bound and applied rates was really the core of this negotiation.\textsuperscript{25} In a recent trade policy review of Bahrain, the representative of Canada openly questioned the country on its overhang of over 30\%, arguing how “binding overhang… creates an element of uncertainty for traders.”\textsuperscript{24}

Members’ change of heart with regard to the wisdom of offering entrants during the Uruguay Round high overhang in exchange of greater binding coverage is perhaps most evident in the evolution of the deals new entrants have received upon accession since 1995. Indeed, accession working parties have been progressively raising the bar and increasingly demanding that entrants cut their overhang. As a result, the average rate of overhang of a country entering the institution has been reduced by an average of 2.7\% for every year past 1995 that new Members entered the WTO.\textsuperscript{25}

Along these lines, the United States has gone as far as to suggest basing further liberalization efforts on applied, rather than bound, rates, a proposal that received support from members such as the EC and Canada, but met with considerable resistance from others. Indeed, a 2003 resolution by a group of 10 Member countries claimed that the gap between applied and bound rates is “extraordinary to the mandate and to the tradition of GATT/WTO negotiations. Any move to address the issue would […] not be appropriate since the rights and obligations negotiated in the last round were with reference to the bound rates.”\textsuperscript{26} Separately, and restating the logic employed during the Uruguay Round talks, India declared that “developing countries should have the flexibility to bind [previously unbound rates] at levels generally above the higher of the bound rates prevailing for bound items in a country’s tariff schedule.”\textsuperscript{27} Indeed, India’s general attitude has been that tariff overhang has little impact unless it is exercised and that when countries do so, it is because of the inability of availing themselves of traditional trade remedies.\textsuperscript{28}

Despite the apparent cleavage in these discussions between developing and developed countries, it would be a mistake to reduce, as is sometimes done,\textsuperscript{29} the issue of overhang to development status. Being as it is the result of trade round negotiations, overhang remains a policy choice, rather than the result of structural differences. This belief is borne out by the considerable variation in overhang among developing countries. The aforementioned comparison between Armenia and Pakistan is one example. Senegal and Madagascar, both low-income developing countries, exhibit very low overhang (Diakontoni and Escaith 2009:19). Meanwhile, a number of developed countries, such as Iceland, South Korea, and Norway, have negotiated substantial wiggle-room into their trade regimes. Norway, in particular, has been roundly criticized by trading partners in its last three trade policy reviews (which take place at 4-year intervals) for bound rates 23\% in excess of its applied rates, far higher than the membership’s average.\textsuperscript{30} As in all other similar discussions, trading partners complained that such a wide gap reduced the predictability of Norway’s trade regime.\textsuperscript{31}

Members claim, further, that overhang provides necessary flexibility for countries that lack the capacity to employ traditional trade remedies such as antidumping and countervailing duties. The WTO Secretariat itself has given wide currency to the view of overhang as a form of flexibility: the 2009 World Trade Report, the WTO’s flagship publication, groups binding overhang alongside other “contingency measures” such as trade remedies, renegotiations, and export taxes.\textsuperscript{32} Furthermore, it appears that variation in overhang levels across states is also driven by the availability of other sources of flexibility, such as currency flexibility, and that once we account for these alternative means of offering import relief, the relation between development level and overhang becomes insignificant. This substitution story also holds at the domestic level. Industries that are able to avail themselves of remedies tend to get less binding overhang. As a result, the types of industries that rely most heavily on remedies (chemicals and metals) usually do not exhibit high levels of overhang or rely on it as a common source of flexibility (Pelic 2011b). In sum, a large gap between bound and applied rates represents a true “loosening of the ties that bind,” in the sense used by the flexibility literature, which members can exploit to deal with variation in domestic demand for trade protection.

The way in which overhang corresponds to the difference between two tariff rates qualifies what would otherwise be a natural conclusion, namely that if overhang acts as a form of flexibility, then firms should lobby to increase it. Indeed, it is unlikely that firms ever do so. Rather, lobbying is likely to aim at increasing both bound and applied rates. Yet private industry only has one chance at affecting bound rates, namely during trade round negotiations. After that, changes to bound rates are exceedingly rare, since they require renegotiations with all Members concerned. Moreover, data about the relationship between political clout and bound rates suggest that the process of negotiating bound rates during the Uruguay Round was sufficiently isolated from private sector pressure to allow governments to effectively tie their hands against the very industries most able to exert pressure for protection.\textsuperscript{33}

In other words, the influence that industry has on binding overhang is likely to be exercised through pressure on applied rates. What this entails is that firms with political clout will lobby to “spend” overhang, by increasing applied rates within the bound. Hence, while the flexibility represented by overhang may well benefit industry, special interests are unlikely to lobby for it directly. The upshot is that on average, overhang is most likely a supply-side phenomenon.

\textsuperscript{25} Communication from Australia, TN/MA/M/7, p.20 para 1.52.
\textsuperscript{24} WT/TPR/M/185/Add.1.
\textsuperscript{25} Pelc (2011a).
\textsuperscript{26} The communication, dated March 14, 2003, was received from Egypt, India, Indonesia, Kenya, Malaysia, Mauritius, Nigeria, Tanzania, Uganda, and Zimbabwe, TN/MA/W/31, 5.
\textsuperscript{27} WT/COMTD/W/145.
\textsuperscript{28} WT/COMTD/W/145.
\textsuperscript{29} For example, Subramanian and Wei (2007).
\textsuperscript{30} This figure from 2008 (WT/TPR/M/295, para 75), Norway’s average applied rate in 2008 was 6.7\%.
\textsuperscript{31} The United States formulated the same complaint during the 2000 and 2004 Trade Policy Review of Norway (ibid).
\textsuperscript{32} World Trade Report (2009). See also Pascal Lamy’s speech on 2006 UNCTAD Trade and Development Report.
\textsuperscript{33} See Kucik and Reinhardt (2008), who find that those countries that had an antidumping regime also had, on average, lower bound rates. Moreover, those industries that were demonstrably able to avail themselves of trade remedies such as antidumping duties, known to be associated with political clout, received the lowest tariff rates (Pelic 2011b). The premise about insulation from interest groups during multilateral negotiations is also at the base of the large literature arguing that countries join trade agreements chiefly for domestic reasons, to bind their hands vis-à-vis import-competing interest groups (Hupe 1987; Staiger and Tabellini 1987, 1999). Absent such insulation, this hand-tying function would be negated.
The question remains, however, whether flexibility that is provided through binding overhang leads to observable welfare costs, even if it is not exploited. One of the leading studies to have looked at the significance of the GATT/WTO asks this question with regard to another provision. Goldstein et al. (2007) examine the possibility that the reservations WTO members exercise vis-à-vis certain states have the effect of diluting the level of self-constraint members engage in, and the expected benefits of membership along with it. Specifically, they test whether use of the opt-out clause (GATT Article XXXV and the corresponding Article XIII under the WTO), which allowed members to restrict the amount of concessions offered to newly entering countries, had an observable effect on trade. Using a standard gravity model, and looking at GATT/WTO history up to 2004, the authors test for the impact of the opt-outs on dyadic imports; they find no conclusive effect.

This should come as no surprise. The opt-out clause at the GATT/WTO has been only very rarely relied on. It applied to just half a percent of the dyad year observations in the authors’ data. Moreover, opt-outs usually concern new entrant states, with which there was no preferred relationship previously, limiting the amount of observable variation through time. And, as recognized by the authors (Goldstein et al. 2007:59), opt-outs are targeted at strong exporters, Japan and China being prime examples. These are also precisely the countries that are most likely to expand their exports despite facing barriers abroad.

Both opt-outs and overhang represent different ways of limiting the constraints imposed by the institution on a country’s freedom of action. Countries exercising their right under Article XXXV limited the real total concessions they made, and similarly, countries that set aside large amounts of overhang are less limited in the protection they levy. The way in which their effect is felt, however, should be very different: The existence of overhang is not targeted at a given state. Whatever cost it imposes is incurred by the totality of a country’s trade partners. It is durable, in a way that opt-out clauses usually are not. Most importantly, binding overhang, by itself, does not equate volatility, only the possibility that barriers will be unexpectedly raised. Nonetheless, our knowledge of the considerable value that investors put on stable market conditions should lead us to suspect that such a muddling of expectations will have an observable effect on trade flows.

Distinguishing the Different Effects of Overhang on Trade

One of the functions of the GATT/WTO, beyond reducing barriers to trade, is to reduce the degree of uncertainty around market conditions faced by traders. This role, which is emphasized in WTO law, most prominently in Article 3.2 of the Dispute Settlement Understanding, has until recently been largely overlooked by the literature. Yet states entering the institution voluntarily restrict their range of policy action as a means of reassur-

ing their trading partners that the terms they face will not change overnight. To render this delegation of power credible, members make such commitments enforceable, by setting up a dispute settlement system under which breaches are sanctionable.

There exists a vast literature dealing with business uncertainty, and the costs it imposes on investors. The reasoning underlying the claims of this literature is straightforward. If firms cannot costlessly reallocate resources from one market to another or one product to another, and if investments are sticky in the sense that they cannot easily be unwound, then unexpected changes in market conditions can lead to operating losses. Uncertainty in trade thus arises, among other factors, from the lack of predictability in fluctuating exchange rates (Frieden 2002); variation in the costs of transportation and the risks it entails; and uncertainty in trade policies faced abroad (Francois and Martin 2004). If we accept that one of the functions of trade institutions is to reduce the latter source of uncertainty, then large gaps between bound and applied rates represent a reduction in the benefit these institutions can provide. Indeed, overhang offers an unrestricted avenue for countries to legally raise their applied duties.

The most telling comparison in this respect is between overhang and trade remedies, which include antidumping duties, countervailing duties, and safeguards. Not only does the WTO now equate the function of the two as contingent flexibility mechanisms, it seems that the scale of their use is comparable: looking at a cross-section of 72 WTO Members between 2005 and 2006, states exploited binding overhang by raising duties by at least 15% within the bound, a total of 560 times; compare this to over just 200 antidumping investigations for the same group of countries during the same period. While trade remedies differ in their specifics—antidumping and countervailing duties, for instance, are triggered by actions taken by a trading partner, while safeguards are triggered by circumstances in the home country—from the standpoint of this article, they all share a set of common features, which flexibility through binding overhang lacks. All remedies are contingent on some measure of “serious injury or threat thereof” to a domestic industry, usually linked to an observable import surge. Along similar lines, recent work has shown that the evolution of GATT/WTO rules covering safeguards has been dictated by an explicit concern to make flexibility contingent on demonstrably

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34 Specifically, WTO Dispute Settlement Understanding Article 3.2 speaks of “security and predictability.”

35 The literature has brought attention to the predictability-enhancing role of dispute settlement within the institution, however: see Guzman (2002), Jackson (2004). Jackson has argued that the stated WTO objective of “security and predictability” is “the most important central element” of the policy purposes of the [DSU]” (Jackson 2004:112, 117).


37 “…contracts may not be enforceable across jurisdictional boundaries, bribes may be extorted by customs officials, and shipments may even be hijacked” (Anderson and Marcouiller 2002).

38 Expectations over the effect of uncertainty rest on assumptions about the ability of exporters to gather information. Recent work, however, suggests that even developing country exporters are able to conduct complex calculations in this regard: Bartels and Hafner (2010) claim that developing country exporters are able to assess the variation in political uncertainty behind Generalized System of Preferences (GSP) schemes, which can be modified at the whim of a host’s changing preferences. Since all data on tariff overhang are widely available, as it is part of every country’s trade schedule, assessing uncertainty resulting from tariff flexibility is a comparatively simple exercise.


40 Ibid, 136. Note that this simplistic comparison ignores a number of features of each mechanism: AD investigations can cover a number of tariff lines, but they are directed against a single country, or group of countries. Nonetheless, the comparison remains useful, since it offers a sense of the scale of use of both instruments.

41 See WTO Antidumping Agreement, GATT Article XIX, and WTO Agreement on Safeguards.
exogenous circumstances, in a way that prevents spirals of defection. If circumstances leading to the use of flexibility are exogenous, then by definition the exercise of safeguards will not affect the likelihood of their future use, either by the user or by its trading partners.

Moreover, all exercise of contingent flexibility is actionable: If countries abuse trade remedies and fail to meet the requirements put on their use, they are liable to be taken to dispute settlement. This is no infrequent occurrence: more than a third of all WTO disputes since the institution’s inception in 1995 have been over the use of trade remedies.

Finally, even when the criteria for trade remedy use are fulfilled, exercising trade remedies remains costly in and of itself, owing to the complex investigations required (Kucik and Reinhardt 2008). For this reason, industries will avoid petitioning for contingent protection if they are unlikely to obtain it.

Such attributes of trade remedies seek to balance flexibility with predictability; binding overhang, tellingly, features none of these. Its use is not reliant on any particular, let alone exogenous, circumstances. Its exploitation is thus never liable of being challenged in dispute settlement. Countries are free to fall back on it when and how they choose, and precisely for this reason, they lack the means of credibly conveying their intention not to. The ease of relying on flexibility through overhang is bound to make investors wary. More generally, the easier relying on wiggle-room is, the more exporters will suspect governments might do so.

Operationalizing the Effects of Overhang

In analyzing the impact of overhang, it is possible to distinguish between three different types of potential effects, all of which can be operationalized separately. First, the plainest effect of overhang is that it allows for real changes in the rates levied, over and above initial applied rates. Thus, overhang may have a direct effect on trade by raising average applied rates over time. That is why countries value wiggle-room in the first place. Indeed, overhang is at times relied on as a means of raising tariff revenue or providing import relief to beleaguered domestic industry. Some observers have been warning that overhang is being relied on during the current crisis (for example, Gamberoni and Newfarmer 2009). Past history, moreover, indicates that this is a valid concern. The Asian Financial Crisis saw countries like Malaysia raising rates of tariff lines with high overhang as a means of recouping lost government revenue. This first, direct effect of overhang is the cost observers allude to when they estimate that if all states were to raise import barriers to bound levels, the estimated welfare costs would amount to between US $135 billion and US $350 billion. Such an event remains improbable. This article suggests, however, that binding overhang exerts a negative effect even if countries never increase their mean tariffs anywhere close to the bound levels.

The way applied rates are calculated in the analysis, by averaging across duties levied over a given period, takes this first effect into consideration. In other words, tariff increases allowed by virtue of a high bound rate are included in the measure of the applied rate controlled for in the analysis. This expected effect of overhang on applied rates is not, however, left to assumption. I test for it in the analysis, by looking at whether applied rates on products with higher overhang, controlling for other possible causes, display a greater tendency to rise over time.

Secondly, overhang has unintended consequences by muddling expectations over the rates an exporter will face in the future. Here, we can distinguish between two additional types of effects, corresponding to volatility and expectations. These two concepts are related, and both can be regarded as indirect effects on trade, but the former relies on actual movement in rates, while the latter does not.

In the first place, volatility of trade policy is the result of frequent changes in the terms faced by exporters. When Californian wine growers and the USITC complain of the confusion resulting from frequent modifications in Israeli rules on imports and Indian duties on vegetable oil, they are referring to this effect. Volatility is easily distinguishable from the first direct effect on trade described above, since it need not result in heightened average rates of protection. To return to the initial example, the mean annual tariff on tomatoes could be the same for Armenia and Pakistan, with Pakistan increasing and lowering its tariff continually, and Armenia’s remaining fixed. This effect of trade policy movement is closest to what has been focused on in the literature. Mansfield and Reinhardt examine the effects of the movement in the rate of exports, and institutions’ role in lowering such volatility; François and Martin focus on movement in tariff rates across time, and the resulting costs of protection (François and Martin 2004). In both cases, scholars are looking at the absolute values of real changes, and the impact of such observable instability on behavior among traders. I operationalize this second effect by taking the absolute value of the difference in applied tariff rates between a given year and the previous year.

On the other hand, overhang has a third effect that is confined only to expectations and which is not dependent on any movement in rates. The mean applied rate could be historically low, and volatility within the past years at a minimum, yet an exporter may still fear that the rate will increase tomorrow—since a state can do so (almost) costlessly—and be reticent to make any investment as a result. The result is closest to the uncertainty in a country’s trade regime that the Secretariat refers to when rebuking individual members for exhibiting too high an overhang. This effect of overhang on trade

42 See GATT Article XIX:1a).
43 Ibid. (2009).
44 See GATT Article XIX:1a).
45 As I note above, manipulation of duties within bound levels is not entirely costless. As frequently occurs in cases where socially undesirable behavior is not formally sanctionable, we observe the emergence of an informal system of enforcement (Ellickson 1998). Norms of behavior take over where rules fall short. The WTO Secretariat and Members have been reprimanding countries not only for raising their tariffs within allowable bounds, but also for merely holding onto this option by maintaining a high level of binding overhang. This, by itself, constitutes a remarkable phenomenon: reputational costs are being incurred by states that remain de jure compliant. Yet such denouncements have at most a limited effect, especially if they are levied at a number of countries, and if they are limited to technical discussions within the institution (rather than communicated to domestic audiences). Movement within high bound levels remains sufficiently costless, even after accounting for normative pressure, that traders and investors may justifiably fear that states will make use of that flexibility when domestic politics call for it.
46 Malaysia, among other countries, aggressively raised barriers within bound levels for import relief and additional government revenue in 1997–1998. TN/MA/M/7, 1.59.
flows—which this article is more concerned with, since it is the one countries holding on to high overhang openly question—is what remains of the effect of overhang once we control for both the level of applied tariffs and the level of volatility as described above. In other words, we should expect that even if a country has never dipped into its binding overhang to raise trade barriers, the possibility it has of doing so indiscriminately should still affect imports.

The effects of volatility and expectations are naturally related, and the way I distinguish between them in the analysis likely oversimplifies their relationship. Indeed, if there is much real movement in trade policies, and variance in the mean rate over time, traders grow more uncertain of the duties they will face tomorrow. Such simplification should not be too great a concern, however, since I expect both the increase in volatility and the decrease in certainty resulting from overhang to have a parallel, dampening effect on imports. The main reason for distinguishing between the two is to convey the point that the effect of overhang does not rely on any real change in trade policy. This reasoning leads to the two following hypotheses:

H1: Binding overhang leads to increases in average applied rates over time.

H2: Controlling for volatility in trade barriers, binding overhang will have an independent negative effect on trade flows.

In sum, the wiggle-room countries set aside for themselves by negotiating high bound rates reduces their commitments under the institution. Since the expectations of members are said to “converge” around these commitments, high overhang effectively muddles these expectations and thus raises the uncertainty faced by exporters. Such uncertainty acts as a tax on trade and should thus lead to an observable reduction in imports.

Data and Methods

The dependent variable of interest is the amount of total imports (from all trading partners) of a given product, by a given country, in a given year. Importantly, while the use of imports as a measure of the benefits provided by the WTO is standard in the literature, my analysis is not dyadic, as is common practice, but monadic, since tariff rates vary little for different WTO partners of a given reporter country. Moreover, using a monadic approach allows me to disaggregate further among products, across which tariff rates do vary considerably. I use data on traded goods at the 4-digit product level of the HS. I consider the 4-digit level, since it is the highest level of disaggregation that allows for complete consistency across different versions of the HS nomenclature, thus minimizing the amount of missing data, and the likelihood of mistakes in converting HS codes. Moreover, given that I use all available data from 1995 to 2008 for all WTO members, the sheer amount of data becomes prohibitively high past four digits. As it is, the data cover 577,751 country-product-years, though the sample size varies by variable. The data on imports come from Comtrade, the UN trade agency, and are accessed through the World Bank’s World Integrated Trade Solution (WITS). As per common practice, the import figures I use are recorded cif: they include costs of insurance and freight.

My main independent variable of interest is the gap between bound and applied rates among WTO members. I use simple averages (as opposed to averages weighted by import levels, since my dependent variable is imports) of all tariff lines within a 4-digit product category. Importantly, rather than use the MFN rates set out in country schedules, I average across the “effectively applied rates” for every partner. This allows me to get at some of the (limited) variation due to preferential trade agreements (PTAs) and one-way trade concessions (such as the GSP and the Lomé Convention) that I overlook by virtue of employing monadic rather than dyadic data. That being so, rerunning the analysis using MFN tariff rates instead of effectively applied rates in no way changes any of the findings. All data on tariff rates are obtained through WITS.

The key control variable is the applied rate for every country-year-product. Its inclusion is crucial, since it is important to ensure that the variation in overhang among countries and products is due mostly to the variation in the bound, rather than the applied, rate. Hence, the question the analysis effectively asks is: “Controlling for the level of applied duties, what is the net effect on imports of the wiggle-room countries maintain of over and above these applied duties?”

Additionally, I control for a number of country-specific variables. The first one is a country’s market power, which I code as the log of GDP. As per the theory behind gravity models, this is the main monadic determinant of trade. Large countries exhibit higher import demand, and so one would expect logged GDP to have a strong positive effect on imports.

I also control for the number of PTAs a country is party to. This variable is a count of all PTAs a country is a member of, and that are in force, in a given year. The greatest effect of PTAs is likely to be seen in the way it lowers applied rates, which are already included in the model, but PTAs may have an effect over and above the sheer level of protection, by promoting trade relations on good terms with PTA partners. Rather than relying on the WTO’s limited set of agreements notified to the organization, I employ a comprehensive measure of states’ PTA links, which comes from Baccini and Dür (2009). It counts all bilateral preferential agreement ties a country is party to, including customs unions, regardless of whether or not they have been notified to the WTO or whether the partner is a WTO member, and makes no distinction in the scope of these agreements. These data cover all member countries from the WTO’s inception to present day, for a total 3,432 PTA links in 2008 (Table 1).

Since I want to subsequently control for the volatility in trade policy as a means of isolating the “expectations” effect of overhang to test the second hypothesis, I code a simple measure of volatility, which corresponds to the absolute value of the difference in the applied rate between year $t$ and year $t-1$. This follows the most standard way the literature codes for volatility in trade (Mansfield and Reinhardt 2008). The second measure of volatility I use looks farther back in time, considering all the available history for movements in the applied rate, weighing more recent years more heavily.\footnote{WT/COMTD/W/143.} Neither measure can offer a comprehensive picture of volatility,
however, since only annual data are available, while countries have the flexibility, as in the aforementioned case of India, to change their applied tariffs at greater frequency. Nonetheless, this measure usefully approximates the degree of movement in a country’s trade policy for a given product.

As is standard in analyses of trade flows, I also control for GDP growth, corresponding to the difference between a country’s GDP in a given year and the previous year. Business cycle movements are thought to have an effect both on trade flows and, more indirectly, on trade policy. The expectation is that as GDP grows, so does the demand for imports, and the benefit a country derives from entering into trade liberalizing arrangements (Mansfield, Milner, and Pevehouse 2007:149). I later add a number of additional control variables as robustness checks.

Finally, I control for the dispersion of tariffs within a given product category as a way of capturing otherwise unmeasurable trade policy characteristics. Though I remain agnostic on the sign of the coefficient on this variable, tariff dispersion has long been seen as an indicator of trade policy overlooked when focusing solely on average tariff rates. Some scholars claim that “an uneven tariff code is one of the hallmarks of protectionism” (Nelson 2003), which would lead us to expect it to have a downward effect on trade, while others dispute this belief. Importantly, however, it is a common control included alongside tariff rates when using aggregated product-level data to give a sense of the tariff structure further down the “aggregation tree.”

### Analysis and Findings

As a preliminary test, I begin by verifying whether in fact states with binding overhang exercise their ability to increase applied duties in an observable way. The results hold both theoretical and empirical implications. First, this test serves to check whether the claims of some countries—that overhang is rarely, if ever, used—are correct. Secondly, since conventional wisdom dictates that applied duties have a negative effect on trade, a belief that I go on to verify below, this test serves to check whether part of the effect attributed to applied duties is actually indirectly caused by overhang.

I use a differences-in-differences model which allows me to test whether high-average overhang leads to increases in applied duties over a given time period. I run the model on a period of 3, 5, and 8 years. For obvious reasons, the size of the sample decreases as the relevant period of time increases. The average change in applied rates over a 5-year period is −1.4%, but it varies widely, with a standard deviation of 6%. My main independent variable is the rate of overhang at the beginning of the relevant period. I control for the change in a country’s GDP, and I include country dummies to get at some omitted or nonmeasurable factors that do not vary over time, such as a country’s geographic position or its history, which may impact trade policy. Similarly, I include year dummy variables to control for unmeasured shocks occurring in time that would have affected all countries (Table 2).

The results allow us to reject the null for Hypothesis 1. The average level of overhang has a positive, highly statistically significant effect on applied rates through time. While on average, applied rates decreased through time, whatever the time period examined, an increase in one standard deviation in the starting magnitude of overhang led the rates to increase in all three estimations. In the case of the 5-year period, for instance, the applied rate decreased by 1.4% on average when all variables were held at their mean, but an increase in one standard deviation in the magnitude of overhang at the beginning of the period led to an increase. The average rate was just over 1.4% higher at the end of the 5-year period than at its beginning, a sizeable impact when one considers that the average tariff in the sample is 6.64%. Not only do high bound rates provide countries with wiggle-room, but this wiggle-room is demonstrably utilized across the membership. Changes in market power, as measured through GDP, are also positively related to changes in applied rates over time. Adding controls for change in PTA links, both as mean levels and as changes through time, in no way changes the effect of overhang. Since applied duties are included as a control in the subsequent tests, it is worth remembering that part of the variation in these applied duties is due to the existence of overhang in the first place.

Next, I test the paper’s main hypothesis: Does overhang have any effect on world trade flows? The dependent variable is the log of imports of a given product by a given country in a given year. I control for the level of effectively applied tariffs on that product and a number of country-specific variables: the log of GDP, the number of PTAs a country is party to, GDP growth over the preceding year, and the log of GDP per capita, all of which are expected to show a positive effect on imports. I also control for trade dispersion within each product category and a measure of trade policy volatility. Importantly, I include both year and country dummy variables, as a means of accounting for country-specific or time-specific factors (these coefficients are not reported to conserve space) and estimate country-clustered robust standard errors.

The results are shown in the first two columns of Table 3. The difference between the two is in the volatility measure: The first column controls for volatility over

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Rate</td>
<td>563,183</td>
<td>8.39</td>
<td>12.28</td>
<td>0.00</td>
<td>634.13</td>
</tr>
<tr>
<td>Bound Rate</td>
<td>478,154</td>
<td>25.50</td>
<td>25.88</td>
<td>0.00</td>
<td>597.00</td>
</tr>
<tr>
<td>In GDP</td>
<td>545,062</td>
<td>24.71</td>
<td>2.20</td>
<td>19.40</td>
<td>30.26</td>
</tr>
<tr>
<td>PTAs</td>
<td>577,751</td>
<td>16.56</td>
<td>14.82</td>
<td>0.00</td>
<td>83.00</td>
</tr>
<tr>
<td>GDP Growth</td>
<td>549,798</td>
<td>3.90</td>
<td>3.86</td>
<td>−13.13</td>
<td>28.39</td>
</tr>
<tr>
<td>Tariff Dispersion</td>
<td>563,181</td>
<td>1.33</td>
<td>6.37</td>
<td>0</td>
<td>422.85</td>
</tr>
<tr>
<td>Polity</td>
<td>542,017</td>
<td>6.49</td>
<td>4.72</td>
<td>−10</td>
<td>10</td>
</tr>
<tr>
<td>In Imports</td>
<td>577,717</td>
<td>13.66</td>
<td>3.32</td>
<td>0.00</td>
<td>26.09</td>
</tr>
<tr>
<td>Applied Rate Volatility</td>
<td>404,656</td>
<td>0.80</td>
<td>3.25</td>
<td>0.00</td>
<td>363.00</td>
</tr>
<tr>
<td>Over Prior Year</td>
<td>404,656</td>
<td>1.50</td>
<td>4.67</td>
<td>0.00</td>
<td>482.61</td>
</tr>
<tr>
<td>Over Full Period, Weighted</td>
<td>404,656</td>
<td>1.50</td>
<td>4.67</td>
<td>0.00</td>
<td>482.61</td>
</tr>
<tr>
<td>Agricultural Land</td>
<td>461,554</td>
<td>39.87</td>
<td>21.17</td>
<td>1.16</td>
<td>91.32</td>
</tr>
<tr>
<td>Roads Paved</td>
<td>277,430</td>
<td>52.41</td>
<td>32.93</td>
<td>3.50</td>
<td>100.10</td>
</tr>
<tr>
<td>ln FDI</td>
<td>491,197</td>
<td>20.94</td>
<td>2.34</td>
<td>8.43</td>
<td>26.50</td>
</tr>
</tbody>
</table>

PTA, preferential trade agreements.

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31 See supra, note 20.

the prior year, whereas the second column controls for the full weighted history of volatility, as outlined above. In both cases, the results are unambiguous. Given that the independent variables of interest are tariff rates, and the dependent variable is the log of imports, the coefficients are necessarily small, and Table 3 reports them to the third decimal. The substantive effect corresponding to a one-point increase in overhang, holding all other variables constant, is a 0.802% drop in imports on the average. Hence, an increase in one standard deviation from the mean level of overhang, corresponding to the change over the relevant period (3, 5, or 8 years), as indicated by the column. *2-tailed \( p < .10; ** p < .5; *** p < .01. \)

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**Table 2. Country and Year FE Model of the Constraining Effect of Overhang on Applied Rates**

<table>
<thead>
<tr>
<th></th>
<th>3 Years</th>
<th>5 Years</th>
<th>8 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ ln GDP</td>
<td>0.929 (0.049)***</td>
<td>0.885 (0.071)***</td>
<td>-0.968 (0.225)***</td>
</tr>
<tr>
<td>Mean Overhang</td>
<td>0.010 (0.001)***</td>
<td>0.028 (0.001)***</td>
<td>0.054 (0.002)***</td>
</tr>
<tr>
<td>Mean GDP</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.811 (0.331)**</td>
<td>-2.204 (0.580)***</td>
<td>-1.194 (1.550)***</td>
</tr>
<tr>
<td>R²</td>
<td>.98</td>
<td>.26</td>
<td>.21</td>
</tr>
<tr>
<td>N</td>
<td>240,057</td>
<td>169,245</td>
<td>67,793</td>
</tr>
</tbody>
</table>

OLS regressions with country and year dummies (coefficients not shown). Standard errors in parentheses. \( \Delta \) corresponds to the change over the relevant period (3, 5, or 8 years), as indicated by the column. *2-tailed \( p < .10; ** p < .5; *** p < .01. \)

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**Table 3. Country and Year FE Model of The Effect of Overhang on Trade**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Rate</td>
<td>-0.016 (0.003)***</td>
<td>-0.016 (0.003)***</td>
<td>-0.016 (0.001)***</td>
<td>-0.011 (0.001)***</td>
<td></td>
</tr>
<tr>
<td>Overhang</td>
<td>-0.008 (0.002)***</td>
<td>-0.008 (0.002)***</td>
<td>-0.006 (0.002)***</td>
<td>-0.006 (0.001)***</td>
<td></td>
</tr>
<tr>
<td>ln GDP</td>
<td>0.501 (0.133)***</td>
<td>0.387 (0.130)***</td>
<td>0.747 (0.030)***</td>
<td>0.640 (0.050)***</td>
<td>0.824 (0.015)***</td>
</tr>
<tr>
<td>PTAs</td>
<td>0.004 (0.003)</td>
<td>0.004 (0.003)</td>
<td>0.004 (0.001)***</td>
<td>0.006 (0.000)***</td>
<td></td>
</tr>
<tr>
<td>GDP Growth</td>
<td>0.111 (0.004)***</td>
<td>0.015 (0.001)***</td>
<td>0.115 (0.055)***</td>
<td>0.013 (0.001)***</td>
<td></td>
</tr>
<tr>
<td>ln GDP Per Capita</td>
<td>0.429 (0.358)</td>
<td>0.729 (0.385)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility of Applied Rates in Prior Year</td>
<td>-0.024 (0.008)***</td>
<td></td>
<td></td>
<td>-0.001 (0.001)</td>
<td></td>
</tr>
<tr>
<td>Full History of Volatility of Applied Rates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tariff Dispersion</td>
<td>0.038 (0.020)*</td>
<td>0.041 (0.020)**</td>
<td>0.036 (0.003)***</td>
<td>0.010 (0.001)***</td>
<td></td>
</tr>
<tr>
<td>Regime</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-1.931 (3.790)</td>
<td>-1.054 (3.888)</td>
<td>-4.468 (3.111)***</td>
<td>-2.874 (1.097)***</td>
<td>-2.874 (1.097)***</td>
</tr>
<tr>
<td>R²</td>
<td>38</td>
<td>36</td>
<td>38</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>N</td>
<td>335,505</td>
<td>316,012</td>
<td>451,575</td>
<td>338,059</td>
<td>338,059</td>
</tr>
</tbody>
</table>
gravity models would lead us to expect, considerably increases imports. Strikingly, trade dispersion within a product category has a positive, highly significant effect on imports. Available theory offers little explanation for this result, though it is consistent with empirical findings in the literature (Anderson 1998). Taken together, these findings raise a puzzle worthy of further study.

In column 3, I run a more parsimonious model as a means of maximizing the size of the sample, and of heeding concerns among methodologists about overly complex models.56 My variable of interest remains the magnitude of overhang, and I control only for logged GDP, but once again include two-way, country, and year dummy variables and cluster robust standard errors on country. As a result, the sample is increased by more than 100,000 observations, but the finding remains the same: the effect of overhang is substantively similar to the first two specifications, and it remains highly significant.

I use columns 4 and 5 to test and correct for the possibility of autocorrelation. It is worth recalling that even in the presence of autocorrelation, estimators remain unbiased, consistent, and asymptotically normally distributed, but they become inefficient (Wooldridge 2008:376–377). Among the recent studies of WTO effects, Goldstein et al. (2007) do not take autocorrelation into account, while Gowa and Kim (2005) include it in their main model, and Rose (2004) tests for it separately in his sensitivity analysis. There is some reason to believe that the argument presented here requires particular attention to the possibility of autocorrelation, since the emphasis on the costs of uncertainty resulting from binding overhang is founded on the belief that traders and investors cannot turn their production around on a dime. This, indeed, is the broad assumption behind the value of stability in trade relations, and it suggests that the decisions traders make may themselves be “sticky” through time.

A plot of residuals from the main model in Table 3 against residuals lagged by a year does suggest the presence of limited autocorrelation in the data. I correct for it in three ways. I first rerun the first specification, this time with Newey–West standard errors, which are robust to both heteroskedasticity and autocorrelation. The results are presented in column 4 of Table 3. The effect of overhang is unchanged, either substantively or statistically. Secondly, I include logged imports, the dependent variable, lagged by 1 year, on the right-hand side of the equation for the specifications shown in the first three columns of Table 3. The coefficient on overhang (not reported) remains negative and highly significant. Also, the gap between the effect of applied rates—which also remains significant—and that of overhang, decreases. Since the inclusion of lagged dependent variables can affect the estimated effect of independent variables in unexpected ways; however (Achen 2000), I go on to fit the main specifications with a first-order autoregressive disturbance term, shown in Column 5, and once again, the results are the same. In other words, we can be confident that autocorrelation is not affecting the analysis in any substantive way.

I verify the sensitivity of the results to the inclusion of a number of variables. I include a measure of regime type in Column 5, combining the autocracy and democracy measures in Polity to come up with a 21-point measure of regime. I also check for the significance of two indicators of development level over and above GDP: I add a control for proportion of agricultural land and one for the proportion of paved roads in the country, both of which come from the World Development Indicators (not shown). I also control for FDI inflows for a given year, since there is some indication in the literature that foreign investment is correlated both with trade barriers and with imports. As trade barriers go up, investors may relocate their production within the country, and this may lead to a substitution effect with imports. Likely due to the inclusion of country dummies in all estimations, none of these additional indicators are significant at the 10% level, and their inclusion, in whatever combination, has no effect on the results.

Overall, these findings demonstrate the importance of expectations in trade. Controlling for both the level of actual duties, and the movement of those duties through time, the flexibility that some countries prize as a means of adjusting their tariffs to market conditions significantly dampens trade flows, as investors and traders grow wary that countries will exercise this flexibility and raise barriers.

**Implications for the Doha Round**

July 2008 saw the collapse of the Doha Round talks at the WTO Ministerial in Cancun. Although there were many reasons behind the failure to reach an agreement, the main cause cited by both the WTO Secretariat and observers was a deadlock over the issue of the special safeguard mechanism (SSM).57 The SSM was designed to allow developing countries to raise agricultural tariffs following an exogenous shock. Interestingly, the most disputed aspect of the SSM concerned bound rates. Specifically, members disagreed over whether the SSM could allow countries to temporarily set their tariffs above the pre-Doha bound rate when faced with a domestic exogeneity. Developing countries, led in great measure by India, asked that they be allowed a ceiling of 15% over pre-Doha bound rates, which, for many developing countries, were the rates at which they had joined the WTO.58 Other members forcefully disagreed. There was less debate over the necessary triggering events that would allow for exercise of the SSM. As with GATT safeguards, and the already existing special agricultural safeguard, the trigger for the SSM would have been an observable import surge or a price drop.

Though it was not put forward in these terms, the SSM represented a tradeoff: Developing countries agreed to cut their bound rates further below Uruguay Round levels, but demanded a special safeguard to allow for raising these tariffs back under specified circumstances. In this way, the SSM replaced the permanent flexibility flowing from binding overhang that some countries valued with a conditional mechanism. Whether the benefit from lowered bound rates would have offset the costs of the SSM is ultimately an empirical question. The findings presented here, however, suggest that the welfare costs of overhang are sufficiently high that any form of temporary safeguard, no matter the terms of its use, might be preferable to permanent unpredictability in tariff rates. Just as tariffication allows for the subsequent standardized liberalization of comparable trade barriers, the passage from flexibility through high bound rates to flexibility through traditional trade remedies, such as safeguards, would allow more transparency and predictability in members’ trade policy.

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56 See the criticism of the “garbage can approach” to statistical inference in Achen (2005).
57 WTO (2008).
Conclusion

Binding overhang acts to dampen some of the purported benefits of countries’ international legal commitments, by increasing the amount of uncertainty faced by exporters. This article presents two key findings. First, states do appear to be exploiting ‘unused protection’ when it is available: products with high-bound rates see a greater average increase in applied duties over time. Further, controlling for these real increases in protection, overhang has a negative effect on trade through its sheer existence, resulting from the way it muddles expectations. Strikingly, one additional percentage point of overhang has close to half the effect of an additional tariff point, as a tax on trade.

A notable limitation of the analysis comes from the way it averages the effect of overhang over different industries. In other words, while I employ 4-digit product-level data, I do not account for the possibility that the effect of flexibility obtained through high-bound rates has a more dampening effect on certain imports than on others. And to be sure, the existence and exploitation of overhang is thought to be much less sectorally concentrated than traditional trade remedies are. That being so, it is likely that some characteristics of export industries, such as how fixed factors of production are, or the speed with which assets can be reallocated, would account for their greater exposure to business uncertainty. The paper’s analysis may thus be overestimating the effect for some industries, and underestimating it for others. Just as the research program on exchange rate volatility went from considering aggregate effects to sector-specific ones (Cho, Sheldon, and McCorriston 2002), future work looking at the effects of tariff flexibility would do well to explore such sectoral effects in trade.

This paper remains agnostic about whether the WTO as an institution has an aggregate positive effect on international trade flows. It does suggest, however, that the current research program analyzing the impact of this and other institutions may be missing a piece of the puzzle. In other words, membership by itself is no panacea. Analyses of the impact of international economic organizations would gain from distinguishing not only between members and nonmembers, but also among members themselves, on the basis of their level of commitment and subsequent behavior within the institution. Of course, the degree to which an institution compels its member-states to make tightly bound commitments is itself an indication of its success. But as this article demonstrates, just as an institution’s effects can reach beyond its membership (Goldstein et al. 2007), so too can members water down their legal commitments within it and thus reduce its observable impact.

References


Notes


Scholars have recently proxied for exposure to uncertainty by looking at employment turnover, where industries with higher turnover are said to be more adaptable to changing circumstances (Magee, Davidson, and Manusz 2005).


