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HOW WTO COMMITEMENTS TAME UNCERTAINTY*

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How WTO Commitments Tame Uncertainty*

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Abstract

This paper studies how WTO rules and flexibilities shape its members' trade policy responses to import shocks. Guided by a cost benefit analysis model and using a unique database of tariff bindings for all WTO countries over the 1996-2011 period, we show that WTO commitments affect members' trade policy. More stringent bindings reduce the likelihood of responding to import shocks by raising tariffs and increase the likelihood of contingent measures. We argue that this reduces overall trade policy uncertainty. In a counterfactual scenario where WTO members can arbitrarily increase tariffs they are 4.5 times more likely to do so than under current bindings.

Keywords: trade agreements, trade policy, trade policy uncertainty, anti-dumping
JEL Classification: F13; F14; F53

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1 Introduction

Trade economists and WTO jurisprudence agree that one of the reasons countries sign trade agreements is to create a predictable trading environment. Limão and Maggi (2015) show that, when governments are risk averse, trade agreements which constrain countries' behaviour are particularly valuable in periods of enhanced uncertainty. WTO jurisprudence has on several occasions reaffirmed that "security and predictability" are among the goals of the WTO Agreement as well as of the GATT that preceded it.[1]

However, trade agreements cannot eliminate uncertainty altogether. In order to remain incentive compatible under privately observed unpredictable shocks, they have to allow for some flexibility (Beshkar et al., 2015; Beshkar and Bond, 2017). For example, under WTO rules members commit to keep their tariffs below product specific maximum levels (called bound tariff rates) but are free to change their applied tariffs at any time to any level not exceeding these rates. In addition, under certain conditions, countries can exceed these bound rates using contingent measures, such anti-dumping, safeguards, and countervailing duties.

In this paper, we study whether and how the system of rules and flexibilities regulated by WTO commitments helps to deliver a predictable trading environment. Our argument is that WTO commitments create such a predictable trading environment by shaping its members' trade policy responses to import shocks, incentivising a move away from unilateral tariff increases towards contingent protection.

We model a country's response to import shocks as the choice between unilaterally increasing its tariffs within the bound rate (without the need to go through any investigation procedure) or introducing a potentially higher tariff in the form of a contingent measure and going through the required investigation procedure.[2] In order to capture the unilateral nature of increasing tariffs within the bound, we assume that there is a reputational cost associated with this policy choice. In the preamble to the WTO Agreement countries indicate their desire to enter into "arrangements directed to the substantial reduction of tariffs and other barriers to trade." (WTO, 1994) Unilateral tariff increases may cast doubt on a member's commitment to a continued liberal trade policy. When a country uses a contingent measure, for example an anti-dumping (AD) measure, to respond to an import shock, it credibly signals that it will only temporarily deviate from its policies and that its protectionist reaction has been motivated by specific circumstances. Indeed, AD are transparent measures of protection, that can only be used in certain conditions, they are time limited and subject to a sunset review, and they can be legally challenged at the WTO. These checks are not required in the case of tariff increases within the bound.

Our model has two key predictions: (i) the probability of responding to an import shock with either unilateral tariffs or contingent measures increases with the size of the import shock; (ii) more stringent bindings decrease the probability of using unilateral tariffs and increases the prob-

[1] According to the Appellate Body, "the disciplines of the GATT and the WTO, as well as the dispute settlement system, are intended to protect not only existing trade but also the security and predictability needed to conduct future trade." (WTO, 2004) See also GATT (1985) and WTO (1993, 2005).

[2] To introduce contingent measures, countries must show injury to domestic industry caused by imports. In addition, their use can be challenged by the affected countries at the WTO dispute settlement.

ability of using contingent measures. To test these predictions, we augment the empirical model used by Bown and Crowley (2013b, 2014) to explain protectionist reactions to import shocks by including tariff water (the gap between the bound and the applied tariff rate) as a measure of stringency of WTO commitments in tariffs. Importantly, we can use a new database of bound tariffs presented in Groppo and Piermartini (2014) that accounts for countries' implementation periods and changes of tariff rate commitments over time, rather than just time invariant final bindings hitherto used in the empirical literature. Thanks to this new database, we can correctly measure tariff water for our panel of 129 WTO countries over the period 1996-2011.

We find that in tariff lines with positive water, lower flexibility reduces the probability of a unilateral tariff increase but raises the probability of introducing contingent protection - specifically we look at AD measures. However, the absolute frequency of AD measures in the presence of import shocks is low in comparison to tariff increases. Even in the absence of tariff water the frequency is 0.27%, whereas when water is available it is 0.11%. Both figures are low in comparison to a 4.3% frequency of tariff increases when water is available, which indicates that despite the flexibilities afforded by contingent measures trade policy uncertainty overall is reduced by bindings.

In a counterfactual analysis, we show that without WTO commitments, in a scenario where tariffs can freely be raised to the prohibitive level, the probability to raise a tariff in response to a shock is 4.5 times larger than under WTO bindings. Furthermore, many tariff lines which had zero water now face the possibility of an increase. Our model predicts that over 1998-2011 under current bindings about 7.3% of trade with water is subject to a tariff increase in response to an import shock. Absent WTO commitments on bindings, we estimate that this share rises to around 18% in the original sample and 24.3% in the sample including tariff lines which had zero water. This means that the share of global trade affected by a protectionist response to an import shock rises from about 1% to 10.5% under the counterfactual.

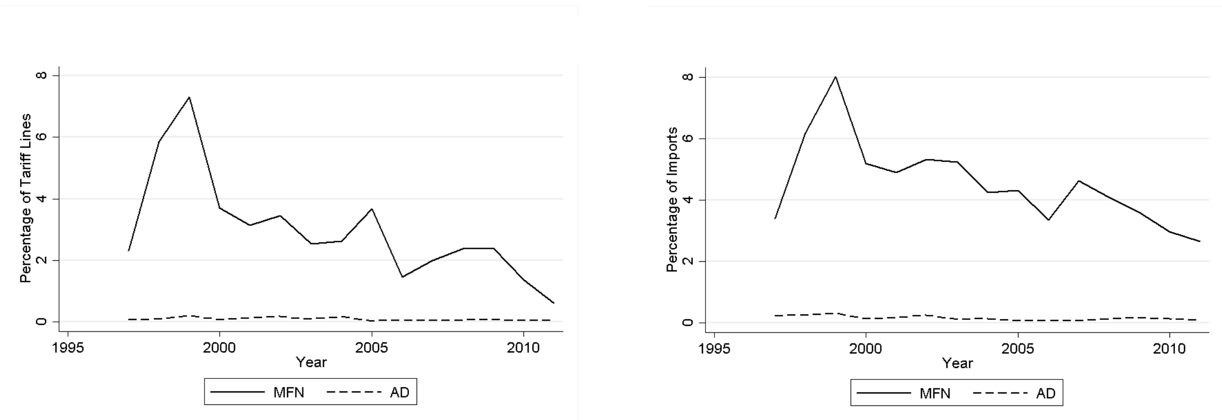
Our findings are important for three reasons. First, we explain how WTO rules and flexibilities help provide a more predictable trading environment. The extensive flexibilities available under WTO commitments have led some authors to ask whether a WTO binding set above the applied tariff has any effect at all (Bagwell and Staiger, 2011). Nicita et al. (2018) find that in tariff lines where there is water, applied tariffs are set uncooperatively and are higher than the cooperative level. Rather than the level of the tariff, we study the dynamics of trade policy responses to import shocks and demonstrate that the WTO helps tame protectionist reactions by reducing the incentive to respond to import shocks through unilateral measures. We therefore argue that while tariff levels may indeed be higher than optimal, the WTO Agreement has been instrumental in reducing trade policy uncertainty by increasing the amount of global trade occurring under bound tariffs since 1995. Second, we prove that WTO does matter in shaping trade policy. Empirical evidence so far finds no discernible effect of WTO on trade policy stability, let alone the level of trade liberalisation (Rose, 2004a,b, 2005). Yet, there is evidence that reductions in trade policy uncertainty encourage firms to enter new markets, to expand exports and increases consumer welfare by reducing prices (Handley, 2014; Handley and Limão, 2015, 2017). A typical modelling approach in the trade policy uncertainty literature is to consider that a trade policy regime evolves according to a Markov process. Therefore, the impact on trade crucially depends on the tariffs currently in place, the tariffs in the best and worst-case regimes, and the transition probabilities between states. Our contribution is to highlight that trade agreements such as the WTO Agreement act to reduce trade policy uncertainty not only by capping the level of protection under the worst-case policy regime, but also by reducing the transition probability to this regime by altering the costs and benefits of such a transition. Third, we generalise the validity of the standard theoretical predictions that trade policy responses are triggered by import shocks given market power (Bagwell and Staiger, 1990) for a sample of 129 countries and for both AD and tariff increases. To our knowledge, the only other paper that provides empirical evidence on the validity of the terms of trade theory in explaining trade policy changes is Bown and Crowley (2013b), who use data on AD and safeguard tariffs applied by the US over the 1997-2006 period.

The rest of the paper is structured as follows: Section 2 presents some stylised facts from our data, Section 3 provides a theoretical model, and Section 4 presents our empirical analysis and results. Section 5 concludes.

2 Stylised Facts

Figure 1: Tariff increases and AD actions over time

(a) Average percentage of WTO members' tariff lines (b) Average percentage of WTO members' imports

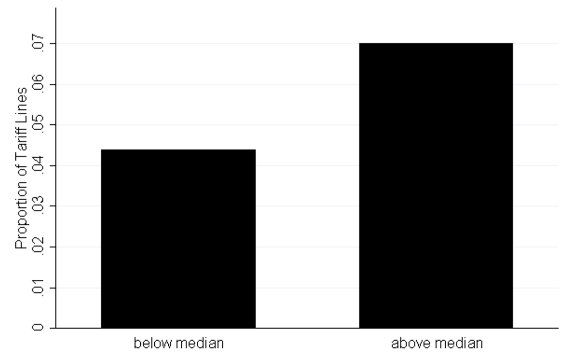


There are a few interesting stylised facts that emerge from a simple descriptive analysis of tariff water and the use of flexibility. First, the extent of policy flexibility in setting tariffs within the bound is large, but WTO members use this trade policy flexibility relatively rarely. On average one quarter of world trade takes place in unbound tariff lines or bound lines with at least 5 percentage points of water. The average level of water in bound lines is around 23 percentage points, and is substantially higher in low income countries. However, as shown in Figure 1, the average percentage of tariff lines among WTO members that exhibit a unilateral tariff increases or AD actions (left panel) and the respective percentage of imports affected (right panel) remain strikingly low. Over the 1997-2011 period, on average each member increased 126 tariffs out of 5764 tariff lines per year and started one or more AD actions to 3.9 tariff lines per year.[3] The portion of total world trade covered by tariff increases over this period was 3.4% and that covered by AD was at most 0.96%.[4]

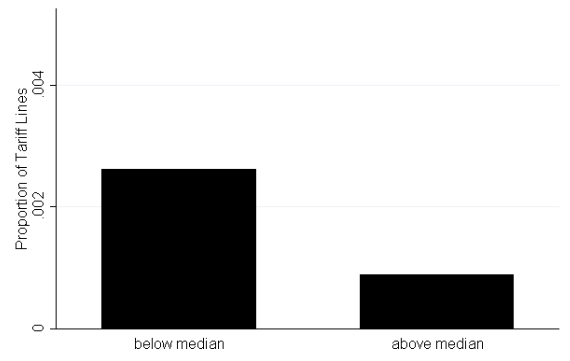
Taking account of other measures of contingent protections does not change the overall conclusion that trade policy reversals since 1995 have been rare. Data in Ghodsi et al. (2017) shows that safeguards, special safeguards applied to agricultural products, and countervailing duties are even an order of magnitude less common than AD measures. In our study we focus on AD, as this is the most used measure of contingent protection and because the economic literature has also highlighted the role of AD measures as a protectionist reaction to economic shocks (Bown and Crowley, 2013a).

Figure 2: Tariff increases and AD actions under varying effective water

(a) Tariff Increases



(b) AD Actions



Second, there is a positive correlation between tariff increases and water and a negative correlation between the frequency of new AD and water. As shown in Figure 2, the average frequency of tariff increases for levels of water below the median is 4.1% and for levels of water above the median is 7%. For AD these figures are 0.21% and 0.1%, respectively. These facts suggest that WTO commitments may have a role to play in the choice of trade policy.

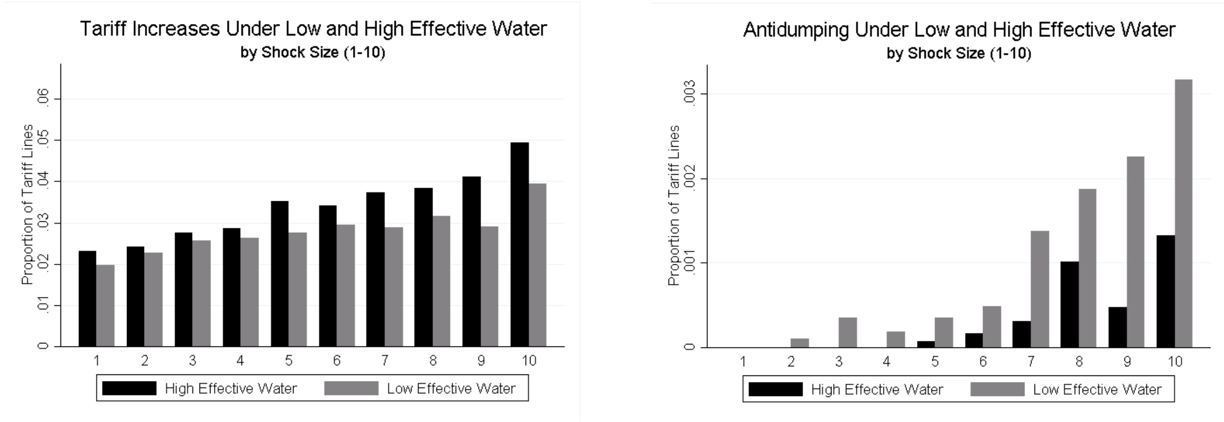
Third, the frequency of both types of protectionist reactions increases with the size of the import shock. Figure 3 shows the frequency of protectionist measures by decile of the import shock and for sectors characterised by low and high levels of tariff water (the lowest and the highest decile of tariff water are shown as light and dark bars respectively). If there were no costs to increasing tariffs and no alternative trade policy responses to a shock, we would expect tariffs to be used with equal probability for low and high levels of water. On the contrary, Figure 3 shows that water plays a significant role in policy decisions. Furthermore, we observe that the size of the water makes a bigger difference when shocks are larger.

[3] Usually no more than one new AD action is taken per tariff line per year, however, this is not always the case. The maximum number of new AD actions in a single tariff line recorded in our sample is 28.

[4] Since AD measures are narrowly targeted at specific countries and firms it is difficult to quantify the exact value of world trade affected. An upper bound estimate, calculated assuming that all trade in the targeted HS 6-digit tariff line is covered, is 0.96% of world trade. Tariff increases within the bound generally apply to all trading partners.

Figure 3: Tariff increases and AD actions under high and low effective water by shock deciles

(a) Tariff Increases (b) AD Actions



3 The Model

We model the optimisation problem a country faces when choosing its trade policy response to an import shock as the choice between three options: no action, increase tariffs within the bound, or introduction of a AD duty. We take as given the optimal tariff that maximises terms-of-trade gains in response to a certain import shock, and model the costs and benefits of the various actions. We show how the optimal policy choice depends on the import shocks and model parameters.

Consider a country exposed to an import shock $\theta \in \mathbf{R}_{+}$. Let $\tau^{*}(\theta)$ be the tariff level which maximises terms-of-trade gains (or political economy considerations) and is strictly increasing in θ. Let τ be the pre-shock applied tariff, τ' the tariff resulting from the policy decision, τ^{B} the WTO binding tariff. All tariffs are constrained to be weakly positive. WTO tariff water is then defined as $\tau^{B} - \tau$. Our scenario of interest is when both flexibilities (tariff increases within the bound and AD duties) are available, so that $\tau^{B} - \tau > 0$.

The set of available actions is given by $\mathscr{A} = \{a_1, a_2, a_3\}$. Here a_1 indicates no protectionist action and results in $\tau' = \tau$, a_2 indicates the choice of increasing the tariff within the bound and results in $\tau' = \min\left\{\tau^{*}(\theta), \tau^{B}\right\}$, and a_3 is the choice of introducing an AD duty and results in $\tau' = \tau^{*}(\theta)$. The country chooses the action that maximises its welfare:

$$\max_{a \in \mathscr{A}} \Omega(a, \theta) = \max_{a \in \mathscr{A}} \omega(a, \theta) - c(a, \theta). \tag{1}$$

We normalise the net welfare effect of option a_1 (no action) to zero, that is $\omega(a_1, \theta) = c(a_1, \theta) = 0$. The benefit of choosing a_2 depends on the water and the size of the import surge as follows. If $\tau^{*}(\theta) < \tau^{B}$ then the country can maximise its welfare by increasing tariffs , and $\omega(a_2, \theta) = \omega^{*}(\theta)$. If $\tau^{*}(\theta) > \tau^{B}$ then tariff increases are limited by the bound rate and therefore $\omega(a_2, \theta) = \omega^{B}(\theta) < \omega^{*}(\theta)$. The benefit of choosing a_3 does not depend on the water, but only on the size of the import shock. This is because AD duties can exceed the binding τ^{B}.[5] Therefore it is always

[5]We abstract from other potential benefits of choosing AD, such as the ability to target a specific firm. In

possible to maximise benefits using AD, and $\omega(a_3,\theta) = \omega^*(\theta)$.

We assume that $\frac{\partial \omega^*(\theta)}{\partial \theta} > 0$ and $\frac{\partial \omega^B(\theta)}{\partial \theta} > 0$ since the potential term-of-trade gains or political economy benefits are larger for larger shocks.

We assume that there is a reputational cost $c(a_2,\theta)$ associated with the choice a_2. When a country faces an unexpected import surge its incentives to raise tariffs will increase (Bagwell and Staiger, 1990; Grossman and Helpman, 1995). If there were no costs, countries would increase tariffs at any import surge. The presence of reputational costs limits their incentive to increase tariffs. We assume that the reputational cost decreases with the size of the import shock so that $\frac{\partial c(a_2,\theta)}{\partial \theta} < 0$. Our reasoning is that while a country is free to set any tariff rate below the bound at its own discretion, without incurring any legal and technical costs beyond an annual notification of tariff schedules to the WTO, the extent to which tariff increases are seen as justified by trading partners depends on the size of the import surge. When shocks are large, the use of tariff increases is less likely to cast doubt on the good faith of the country protecting itself from an exceptional, rare, and temporary import shock rather than acting against its commitment to liberalisation.

The cost of using contingent measures of protection (choice a_3) is a fixed legal and technical cost which we define as $c(a_3,\theta) = c^{AD}$. For anti-dumping, for example, Article VI of GATT 1994 provides for the possibility of imposing an anti-dumping duty which may exceed the bound rate if dumping causes or threatens injury to a domestic industry or materially retards the establishment of a domestic industry. However, the burden of proof regarding such injury rests on the importing country, and may be challenged by the exporting country at the WTO under the Dispute Settlement Understanding. Since imposition of AD duties must follow a formal procedure and allows other countries the possibility to challenge and verify legitimate use, a member using this policy option does not incur reputational damage.

Solving equation (1) for the country's optimal policy for a given import shock θ yields the following results:

1. $a^* = a_1$ if θ is such that $\omega^*(\theta) < c^{AD}$ and $\omega(a_2,\theta) < c(a_2,\theta)$

2a. $a^* = a_2$ if θ is such that $\tau^*(\theta) < \tau^B$ and $c(a_2,\theta) < \omega^*(\theta)$ and $c(a_2,\theta) < c^{AD}$

2b. $a^* = a_2$ if θ is such that $\tau^*(\theta) > \tau^B$ and $c(a_2,\theta) < \omega^B(\theta)$ and $c(a_2,\theta) < c^{AD}$ and $c^{AD} - c(a_2,\theta) > \omega^*(\theta) - \omega^B(\theta)$

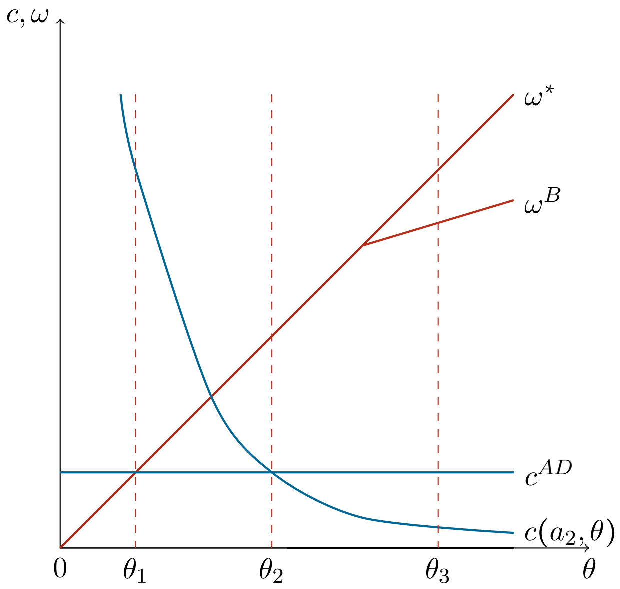
3. $a^* = a_3$ otherwise.

Figure 4 illustrates an example, where the range of θ between 0 and θ_1 is where $a^* = a_1$, between θ_1 and θ_2 we have $a^* = a_3$, between θ_2 and θ_3 we have $a^* = a_2$, and finally above θ_3 we have $a^* = a_3$. Our data show that a_3 is more prevalent when θ is large, indicating that the gap shown here between θ_1 and θ_2 need not always exists.

To summarise, our model predicts no reaction if the import shock is small. As shocks get larger, there may be an incentive to use AD if the reputational costs of using tariff increases are still

our empirical model we control for fear of retaliation which depends on the number of affected trading partners.

Figure 4: Choice of trade policy instruments



too large. Within-bound tariff increases are the preferred policy response when shocks are big enough so that the reputational costs of tariff increases are below the technical costs of AD, but not so big that there are significant additional benefits from raising tariffs above the bindings. AD becomes the optimal policy response when the additional benefit form raising tariffs above the bindings outweighs the difference in costs.

We have constructed this model of policy choice, which takes into account the implications of WTO rules and flexibilities, namely bindings and the possibility of applying contingent measures, as well as the associated technical and reputational costs, in order to rationalise key facts and empirical findings. Firstly, the model explains why protectionist reactions to import shocks are relatively uncommon under the WTO system. Secondly, a simple comparative static with respect to τ^B yields the main empirical implication of interest. Increasing τ^B increases $\omega^B(\theta)$ when $\tau^*(\theta) > \tau^B$, which enlarges the set of shocks where $a^* = a_2$, that is, it shifts θ_3 in Figure 4 to the right. Thus the model serves to rationalise our empirical finding that given a distribution of θ, flexibility in the form of WTO tariff water, defined as $\tau^B - \tau > 0$, increases the probability of reacting to an import shock with tariff increases and reduces the probability of applying new AD duties. It is through this mechanism that WTO bindings reduce trade policy uncertainty.

4 Empirical Section

4.1 Empirical Strategy

Our benchmark empirical specification is the following.[6]

[6] A multinomial specification is theoretically possible and offers more efficient parameter estimates, in practice the size of our dataset prohibits this approach.

$$Y_{ckt} = \beta_0 + \beta_1 \Delta M_{ckt-1} + \beta_2 P_{ck} + \beta_3(\Delta M_{ckt-1} \times P_{ck}) + \beta_4 s_{ck}(\Delta M) + \beta_5 eW_{ckt} + \beta_6(\Delta M_{ckt} \times eW_{ckt}) + \beta_7 FoR_{ckt} + \delta_c + \delta_k + \delta_t + \epsilon_{ckt}. \quad (2)$$

The dependent variable is either a tariff increase within the bound $Y_{ckt} = \mathbf{1}_{\{\tau_{ckt} > \tau_{ckt-1}\}}$ or the imposition of one or more new AD actions $Y_{ckt} = \mathbf{1}_{\{\#AD_{ckt} > 0\}}$ by country c in sector k at time t.

Our main variable of interest is the measure of effective tariff water eW_{ckt}. This is calculated as the percentage point gap between the prohibitive or bound rate (whichever is lower) and the applied rate. The unit of the eW_{ckt} variable is 100 percentage points.[7]

Like in Bown and Crowley (2013b), the explanatory variables include an import shock variable ΔM_{ckt-1}, which is the change in the share of world imports in the previous year, and $s_{ck}(\Delta M)$, the standard deviation of import surges in a given sector, which is inversely related to how surprising an import surge is and therefore how likely it is to elicit a policy response. We expect a positive coefficient for the import shock and a negative coefficient for the standard deviation of import surges. P_{ck} is a proxy for the country's market power in the given sector measured as an average over time of its share of world imports. Import market power is a determinant of trade policy response since it determines a country's ability to influence the terms of trade (Johnson, 1953; Bagwell and Staiger, 1990). Note, it is important to control for market power to avoid omitted variable bias on the coefficient of water, which Beshkar et al. (2015) shows is negatively correlated with market power.[8]

We also control for fear of retaliation. In our model, there is a reputational cost which disincentivises tariff increases, but not AD actions. This may be thought of as a reduced form representation of incentives to cooperate on tariffs in a dynamic game. In the real world these incentives bite only if the partners that a tariff increase risks offending (and hence may view it as a defection from a cooperative equilibrium) have relevance as destination markets and are likely to react with a policy of their own. The literature has shown in various contexts that countries are concerned with the threat of retaliation induced by their policy actions and this influences their conduct within the WTO legal framework (Blonigen and Bown, 2003; Bown, 2004; Crowley et al., 2016; Bao and Qiu, 2011). We create an explanatory variable which we term 'fear of retaliation' FoR_{ckt} to capture these incentives. We expect FoR_{ckt} to have a negative effect on the likelihood to increase tariffs within the bound but no effect on the likelihood to impose AD duties.

We use two different measures for fear of retaliation. The first type of FoR_{ckt} captures how exposed country c is as an exporter to destination markets which would be affected by a potential tariff increase on product k at time t, but does not consider the propensity of the destination

[7] As per equation (9) in Nicita et al. (2018), the prohibitive tariff rate is $\tau_{ckt} + (1 + \tau_{ckt}) / \eta_{ck}$ where η_{ck} is the import demand elasticity.

[8] Beshkar et al. (2015) show that when governments have private information about the magnitude of shocks and thus have incentives to misrepresent the extent of their injury, these incentives are exacerbated by a country's market power, and therefore trade agreements will optimally impose lower bindings in sectors where market power is higher.

markets to impose trade restrictive policies:

$$FoR_{ckt} = \frac{\sum_{\{d:X_{dckt}>0\}} X_{cdt}}{X_{ct}} \tag{3}$$

The second type of FoR_{ckt} measures destination markets' propensity to use trade restrictive policies (tariff increases or AD) by counting their incidence in the previous year. Destination markets which would be affected by a potential tariff increase are weighted by their share in country c's total exports.

$$FoR_{ckt} = \sum_{\{d:X_{dckt}>0\}} \frac{X_{cdt}}{X_{ct}} \#Policy_{dt-1} \tag{4}$$

Fixed effects for country, sector, and time are denoted by δ. Due to computational limitations we do not include fixed effects at a finer level in the logistic regressions. They are included in the estimates based on a linear probability model reported in Appendix C.

When we estimate probabilities of a tariff increase using logistic regressions we report the marginal effects of our regressors at the means of control variables.[9]

$$\frac{\partial Pr\left(Y_{ckt} = 1 \mid \mathbf{x}\right)}{\partial X} \tag{5}$$

4.2 Data

We use a new database on tariff bindings compiled by Groppo and Piermartini (2014). This database tracks changes of tariff bindings over time. This allows us to calculate tariff water changes over time due to both changes in the applied rate and changes in the bound rate. Publicly available databases typically contain information only on final bound tariff rate and neglect to account for the decrease of bindings over their implementation period. Details on the construction of this database can be found in Appendix A.

We merge this with data on applied rates from the WTO's Integrated Data Base (IDB) and UNCTAD's Trade Analysis and Information System (TRAINS), data on AD measures from Ghodsi et al. (2017), and import data from UN COMTRADE. Prohibitive tariff levels are based on elasticities from Kee et al. (2008).

Our dataset is an unbalanced panel of 10,210,152 observations covering 129 WTO members, 5764 distinct tariff lines at the HS6 level, and the 16 years from 1996-2011. Out of these observations 76.60% are covered by WTO bindings. In our analysis we focus on a subsample of 1,438,828 observations that are theoretically relevant to answer our question. Therefore, we restrict our attention to those WTO members' tariff lines that are bound with positive water, and that face positive import surges. Tables 1 summarises the variables in this subsample.

[9] Note that the sign of the estimated coefficient of interaction terms are not informative as the true interaction effect in a logistic model may take different signs depending on the values of the covariates, for a detailed derivation please see Appendix B.

Table 1: Summary statistics for the main variables for bound tariff lines with positive water that face positive import surges

Variable	Mean	Median	sd	Min	Max
$Y_{ckt} = \mathbf{1}_{\{\tau_{ckt} > \tau_{ckt-1}\}}$	0.0425514	0	0.2018434	0	1
$Y_{ckt} = \mathbf{1}_{\{\#AD_{ckt} > 0\}}$	0.0010641	0	0.0326026	0	1
ΔM_{ckt-1}	0.0026438	0.0002186	0.0141368	0.000	1
P_{ck}	0.0061507	0.0005834	0.0224035	0.000	0.9552423
$s_{ck}(\Delta M)$	0.0042136	0.0005949	0.0157132	0.000	0.9621727
eW_{ckt}	0.2470848	0.2	0.2142772	0.000	3.05
FoR_{ckt} (exposure)	0.5657762	0.6430737	0.2835148	0.000	0.9998647
FoR_{ckt} (exposure top 5)	0.480593	0.5185128	0.257272	0.000	0.9787881
FoR_{ckt} (past tariff increases)	50.29932	31.15972	97.93077	0.000	2045.652
FoR_{ckt} (past AD usage)	9.531274	5.86342	16.46168	0.000	148.2111

4.3 Results

4.3.1 Benchmark Results and Counterfactual Analysis

Table 2 presents our benchmark results. Here we quantify the effects of import shocks on the probability of tariff increases in bound tariff lines.

In column (1) we show that the theoretical determinants of tariff increases identified in Bagwell and Staiger (1990) are valid for tariff increases within the bound. The marginal effects of the import shock, the standard deviation of the shocks, and market power, have the expected sign and are significant. These results are the first to show terms of trade theory applies to tariff increases. Bown and Crowley (2013b) perform a similar exercise with a focus on AD actions and safeguard duties applied by the US over the 1997-2006 period.

In column (2), we control also for effective water. As our theory predicts, we find that the marginal effect of effective water is positive and statistically significant in all specifications.

In columns (3) to (5) we control for the fear of retaliation a country may face if it increases tariff rates within the bound. As predicted, fear of retaliation has a significant deterring effect on tariff increases. In column (3) we use a measure for fear of retaliation based on a country's exposure to the set of countries potentially affected by its tariff increase. In columns (4) and (5) we use measures of fear of retaliation based on these countries' past usage of tariff increases within the bound and AD duties respectively, which represent instead the propensity for retaliatory action by this group. The marginal effect of effective water remains positive and significant in all these specifications.

The results in Table 2 are produced using the most extensive set of fixed effects we could include using logistic regressions. Unobservable characteristics not absorbed by fixed effects, for example, country-sector level lobbying power, productivity, or other variables, may correlate with both the level of water and the probability of a protectionist reaction, potentially biasing our estimates. For example, governments might be more determined to protect uncompetitive sectors both at the negotiation stage and in response to import shocks. We address this concern by estimating

Table 2: Protectionist Reactions to Import Shocks

	Dependent variable: Tariff increases					
	(1)	(2)	(3)	(4)	(5)	(6)
ΔM_{ckt-1}	0.0252***	0.0249***	0.0280***	0.0282***	0.0273***	0.0632**
	(0.00656)	(0.00682)	(0.00725)	(0.00719)	(0.00721)	(0.0221)
P_{ck}	0.0277***	0.0286***	0.0303***	0.0300***	0.0296***	0.0751***
	(0.00447)	(0.00459)	(0.00480)	(0.00480)	(0.00479)	(0.0117)
$s_{ck}(\Delta M)$	-0.0169*	-0.0164**	-0.0182**	-0.0170*	-0.0162*	-0.0879**
	(0.00668)	(0.00674)	(0.00728)	(0.00726)	(0.00725)	(0.0288)
eW_{ckt}		0.0164***	0.0217***	0.0211***	0.0215***	0.0186***
		(0.000947)	(0.00103)	(0.00102)	(0.00103)	(0.00323)
FoR_{ckt}			-0.00193***	-0.0000181***	-0.000219***	-0.0086***
			(0.000466)	(0.00000124)	(0.0000162)	(0.000757)
Observations	1,317,691	1,280,527	1,153,152	1,147,527	1,147,527	176,495
Logit R-squared	0.218	0.220	0.222	0.220	0.218	0.422
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Sector 4-digit FE	YES	YES	YES	YES	YES	YES

Notes: Logit estimates come with Huber and White robust standard errors in parenthesis, clustered by country 4-digit sector. The table reports marginal effects, which take into account interactions, are calculated at the means of all variables and come, and with delta-method standard errors in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

a linear probability model that uses more granular fixed effects. The results of these estimates are reported in Appendix C.

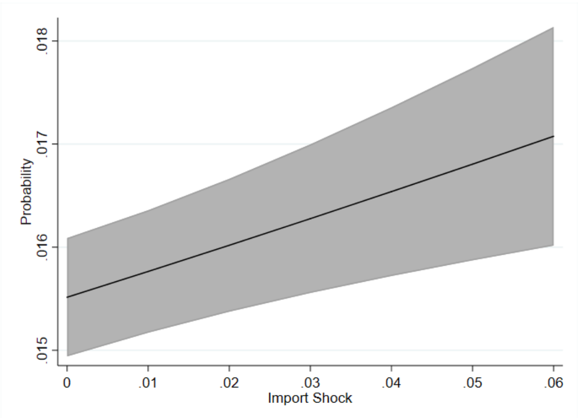
Another source of endogeneity is reverse causality. This would occur if a country manages to obtain higher binding rates in sectors that are more prone to protectionism. We do not believe this is a problem in our analysis, because the level of bindings is the outcome of multilateral negotiations and any individual country has relatively little bargaining power to influence the variation in bindings across industries.

Nevertheless, in column (6), we deal with a potential concern for endogeneity of the bindings by re-estimating our benchmark specifications for a subsample of 24 WTO members that acceded after the Uruguay Round of 1995. Since much of the heavy lifting in negotiated tariff reductions occurred during the Uruguay Round, countries that acceded WTO after 1995 had little bargaining power in setting their own binding. For the subsample of post-Uruguay accessions, the bindings implemented upon accession for each industry were determined on the basis of relevant bindings in members with similar levels of development. In the case of China, Brandt et al. (2017) show that as a result of WTO negotiations import tariffs decreased from an average of 44 to 10 percent over the 1992–2007 period and the across industry standard deviation decreased from 28 to 7 percent. They argue that low variation in tariff rates implies a limited role for policy discretion in tariff reductions. The results in column (6) confirm the validity of our baseline result that the probability of tariff increases is positively affected by water. The magnitudes of the marginal effects are also similar.

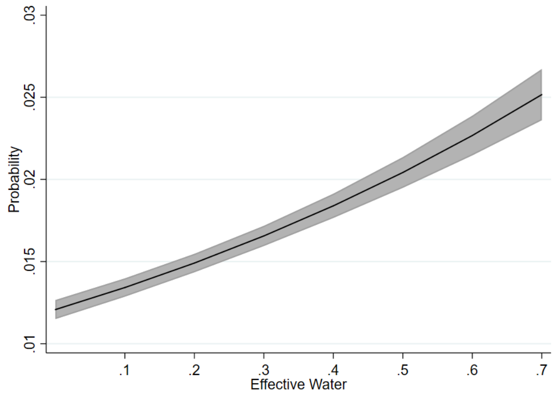
In order to gauge the impact that our explanatory variables have on the likelihood of a tariff increase in our non-linear model, in addition to reporting the marginal effects at the means of covariates in tables, in Figure 5 we present the estimated probabilities of tariff increases by level of the import shock and by level of effective water with 95% confidence intervals. The ranges of these variables graphed here contain 99% of their observed values. We observe that the marginal effect of the shock is fairly stable over the reported range and the marginal effect of effective water increases for larger values. The mean value of the shock is 0.0034 and the mean value of effective water is 0.23. At the means, the predicted probability of a tariff increase is 0.016. When effective water is 0.46, double its mean, the predicted probability of an increase is 0.02.

Figure 5: Predicted probabilities of tariff increases

(a) By Shock Size



(b) By Effective Water

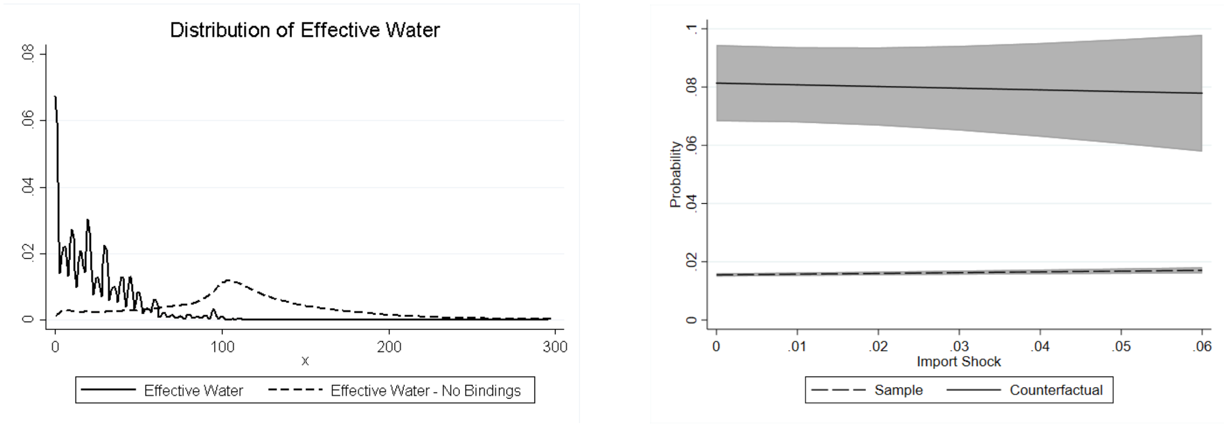


A key question when assessing the value of the WTO is its contribution to trade policy stability. To address this question, we look at a counterfactual scenario where countries can respond to import shocks by increasing tariffs to any level, up to prohibitive tariff levels. In this case effective water would increase from 23 percentage points to 159 percentage points on average. Note that the sample for which water is positive is larger under the counterfactual. Figure 6 shows the new distribution of effective water in the left panel, and in the right panel the predicted probabilities using both the actual effective water as in Figure 5 and the counterfactual level of effective water. Since these values are much greater, the predicted probabilities are estimated less precisely. However, they are significantly higher than under WTO binding commitments. At the means of covariates the predicted probability of a tariff increase is 0.07. This implies that tariff increases, where permissible, would be about 4.5 times more likely without WTO bindings. Furthermore, the set of tariff lines where increases are permissible would expand.

Our model predicts the under current bindings the share of trade with water affected by a tariff increase in response to an import shock is about 7.3%. Absent WTO commitments on bindings, we estimate that this share rises to around 18% in the original sample and 24.3% in the sample including tariff lines which had zero water. This means that the share of global trade where tariffs increase in response to an import shock rises from about 1% to 10.5% under the counterfactual.

Figure 6: Counterfactual without bindings

(a) Distribution of Effective Water (b) Predicted probabilities of tariff increases



4.3.2 Substitutability with Antidumping Duties

In 1995 the WTO Agreement codified a common set of rules for the use of AD. These rules specify how a government must conduct its investigation and the economic evidence it must consider to apply a new AD measure. If a domestic industry has suffered material injury caused by dumped imports, the government may apply new import restricting measures, including duties above its binding rate. In order to show that the imports were dumped, a country must provide evidence that import prices were below the normal value of the product (WTO, 1995). There are further technical guidelines to determining the normal value.

There are fixed technical and legal costs associated with AD investigations, and there are potentially further costs if the measure is challenged at the WTO. In our model, we assume that these costs are fixed and not prohibitive (Bown, 2008). Countries are willing to pay these costs because AD duties can exceed the bound rate and because there is no reputational cost to using AD measures.

Table 3 reports the results of our estimation for the use of AD measures. Like in Bown and Crowley (2013b), we find that AD is used in reaction to import shocks, the more so the higher market power is and the more unusual import shocks are. As predicted, when the effective water is large, AD measures are less likely to be used. That is, AD is used as a protectionist reaction to import shocks to substitute for tariff increases within the bound. As predicted, fear of retaliation is not a significant determinant of AD. This result holds for all definitions of fear of retaliation in columns (2) to (4). Note that since AD measures may be more narrowly targeted than general tariff increases, to better capture exposure based fear of retaliation, we focus on the top 5 exporters of the product. Note also that countries may have other motivations to choose AD measures, for example the ability to target specific firms, but to the extent that these motives are independent of tariff water they do not bias our key findings.

We do not report results in this section for the subsample of 24 acceded countries, since these countries have not used AD sufficiently to generate enough positive observations to be able to calculate marginal effects.

Table 3: Protectionist Reactions to Import Shocks

	New AD Measures			
	(1)	(2)	(3)	(4)
ΔM_{ckt-1}	0.00485***	0.00443**	0.00444**	0.00450**
	(0.00158)	(0.00146)	(0.00146)	(0.00146)
P_{ck}	0.00528***	0.00546***	0.00541***	0.00545***
	(0.000992)	(0.00104)	(0.00104)	(0.00104)
$s_{ck}(\Delta M)$	-0.00598**	-0.00638**	-0.00628**	-0.000632**
	(0.00218)	(0.00239)	(0.00239)	(0.00239)
eW_{ckt}	-0.000642*	$-0.000609^{\#}$	$-0.000631^{\#}$	$-0.000632^{\#}$
	(0.000326)	(0.000343)	(0.000345)	(0.000345)
FoR_{ckt}		-0.000223	-0.000000103	-0.00000661
		(0.000166)	(0.000000211)	(0.00000487)
Observations	293,756	282,598	282,321	282,321
Logit R-squared	0.208	0.206	0.206	0.206
Year FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Sector 4-digit FE	YES	YES	YES	YES

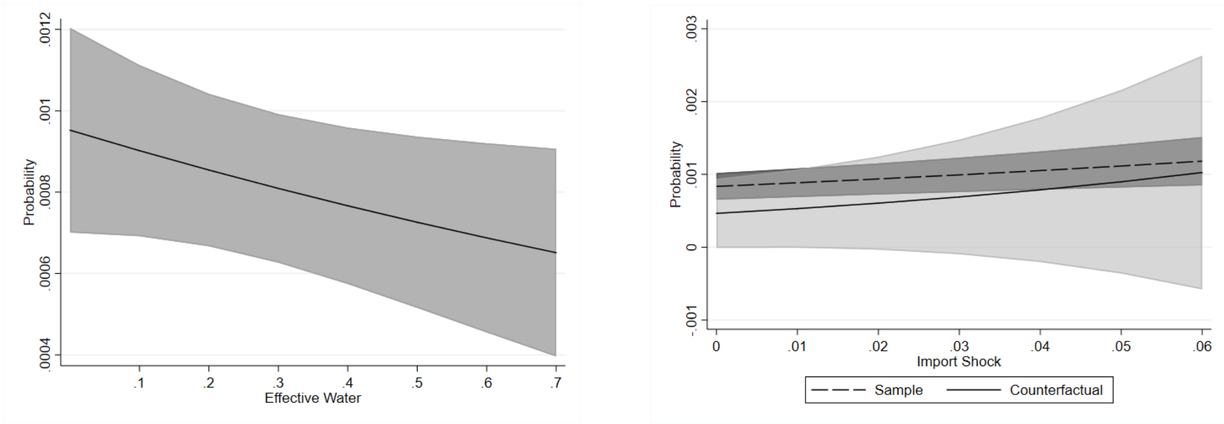
Notes: Logit estimates come with Huber and White robust standard errors in parenthesis, clustered by country 4-digit sector. The table reports marginal effects, which take into account interactions, are calculated at the means of all variables and come, and with delta-method standard errors in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Figure 7 shows the predicted probability of a new AD measure decreases in the size of effective water. Given that empirically AD measures are much less likely than within-bound tariff increases overall, a reduction in effective water will have the net effect of lowering the frequency of overall protectionist responses to import shocks and thereby reducing trade policy uncertainty.

When we run the same counterfactual exercise as before and we allow countries to set tariffs at any level up to the prohibitive tariff level, we find (Figure 7 right panel) that the higher level of effective water would entail less frequent use of AD as a reaction to import shocks, although the difference is not statistically significant.

Figure 7: Counterfactual Exercise

(a) By Effective Water (b) Predicted Probabilities



5 Conclusions

The central question of this paper is whether WTO bound tariff rates set above the applied tariff rates influence trade policy. To address this question, we build a theoretical model that features costs and benefits of protectionist reactions to import shocks. We propose an interpretation of the WTO Agreement whereby binding commitments entail an implicit commitment to trade policy transparency and predictability, and present some evidence corroborating this view. Increasing tariffs to any level below the bound rate is in principal a unilateral decision that any member can take at any time subject to the only requirement to notify this measure to the WTO, but at the risk of casting doubt on the future commitment of the country to a liberal trade policy. In contrast, the use of contingent measures does not create such doubts. This is because contingent measures are subject to an investigation process in which governments need to show that imports are causing injury and their conclusion can be challenged under the dispute settlement mechanism by other members.

Our model predicts that for sufficiently small level of shocks countries do not react. As import shocks become larger, countries increase tariffs within the bound or use contingent measures depending on the level of tariff water. An important implication is that the WTO Agreement reduces trade policy uncertainty not only by setting a maximum allowed tariff, but also by reducing the probability to use tariff water by providing other flexibilities that are designed to be more predictable.

We test our theoretical predictions by including tariff water as an explanatory variable in a standard empirical model for protectionist reactions to import shocks. To measure tariff water accurately we use a new database of WTO binding rates for 129 WTO member countries, from 1996 to 2011, at the 6-digit product code level. Existing databases only record the final bound rate, but members often commit to gradually reduce their bound rate from an initial base rate to a final bound rate over time. Therefore, the bound rate in force varies over time, depending on the negotiated implementation period. The main novelty of our database is that it accounts for the changes in the bound rate in force at each moment in time. We estimate our model both for tariff increases and new AD measures. Our empirical results support our theoretical predictions: the probability of a tariff increase depends positively on the size of tariff water and the probability of using AD decreases with the size of tariff water.

Our findings support two main conclusions: (i) WTO commitments act to moderate policy responses to import shocks and (ii) WTO commitments and flexibilities are designed in a way to increase predictability. We show that there is some level of substitutability between protectionist trade policy responses in the form of tariff increases within the bound and AD duties. When tariff water is low, AD becomes more desirable since, if a member can prove dumping and material injury to a domestic industry, it may increase tariffs above the bound. However, overall AD measures are much less common than tariff increases within the bound, and a shift from increasing tariffs within the bound to the use of AD as measure of contingent protection increases predictability, because AD measures must fulfil requisite conditions.

There are significant potential gains from signing a trade agreement additional to those associated with the reduction of tariff rates. The WTO Agreement has been instrumental in reducing uncertainty of trade policy in the process of globalisation during the last two decades. These gains have been realised through the progressive expansion of binding coverage through the accession of 36 new members since 1995, the reduction in binding rates though the progressive implementation of commitments and renegotiations, and the commitments to predictability and liberalisation by all WTO member countries. Existing research on the gains from acceding to the WTO has focussed on the impact of large scale tariff reductions, welfare gains through the reduction of trade policy uncertainty have been less explored. This paper highlight the importance of further research in this direction.

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Appendix

Appendix A: The WTO Bindings Database

In this paper we use a new panel database on the evolution of WTO bindings over time built by Groppo and Piermartini (2014). We report below the details of the construction of this database as described by the authors.

The WTO CTS database provides information on WTO Member commitments at the tariff line level. This includes the final bound rate, the base rate as well as the starting and end dates of the implementation period. Using this information, together with additional information on the Uruguay Round (UR) commitments[10] and WTO practice, Groppo and Piermartini (2014) construct the time series of bound rates.

The assumptions used to construct the database are the following:

(i) For the years before the implementation period and after a country accession to the WTO, the bound rate is set equal to the base bound rate. This assumption is supported by the practice that during the Uruguay Round, Members set the base rate of already bound tariff lines equal to the existing bound rates.[11]

(ii) During the implementation period, the bound rate is reduced gradually (that is, by the same percentage points each year) from the base rate to the final bound rate. The first and last cuts are applied in the first and last year of the implementation period, respectively, so that the final bound rate is reached on the final year of the implementation period. This is the typical evolution agreed upon by WTO Members under the Marrakesh Protocol of the GATT 1994. In fact, at paragraph 2, the Protocol provides that "The tariff reductions agreed upon by each Member shall be implemented in five equal rate reductions, except as may be otherwise specified in a Member's Schedule. The first such reduction shall be made effective on the date of entry into force of the WTO Agreement, each successive reduction shall be made effective on 1 January of each of the following years, and the final rate shall become effective no later than the date four years after the date of entry into force of the WTO Agreement, except as may be otherwise specified in that Member's Schedule...."[12] For tariff lines unbound before the Uruguay Round, the base rate of the newly bound line is set equal to the average MFN applied rate in the years before the beginning of the implementation period. Again, following Members' common practice, the base rates are set as the MFN applied rates prevailing over a certain reference period.

(iii) For the years after the end of the implementation period, the bound rate is set equal to the

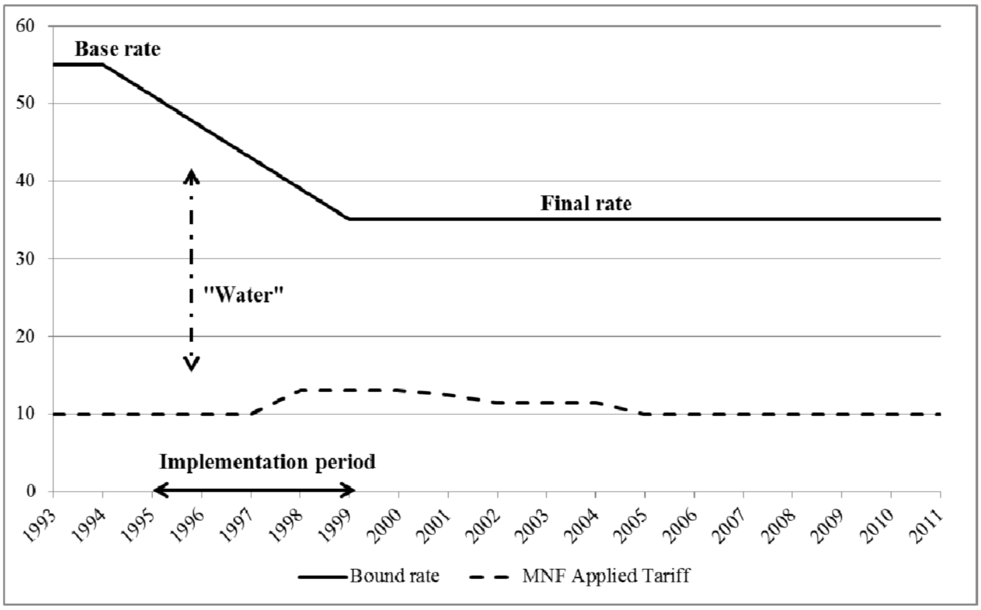
[10]For the European Union (EU), we correct the information in the CTS using data from the UR schedules. The CTS database for the EU, reports the bound rate as of December 31, 1999 as base status. As stated in the COVER NOTE of the 'Schedule CXL of the European Communities Consolidated list of concessions', "The base rate shown in the concessions table is the bound rate in force as at 31.12.99 (see also headnote 2 for Agricultural products). This common reference point has been chosen due to the problem of identifying the base rate in the most recent negotiations (there have been a number of negotiations since the UR) as well as nomenclature changes. UR base rates are shown in the correlation tables." In order to build the variable for the binding rate over time (the current bound), we use the Original Correlation Table CXL96- CTS99. The base rate provided in these tables is that set at the UR. We use the base rate obtained from the CTS that refers to the situation in 1999 as the final rate for the 1995-1999 period and calculate the yearly bound rate using the standard assumption of a progressive reduction of equal percentage point per year. For some lines (585) we have the MFN applied rate, but the base rate is missing. This is because it is non-ad valorem. We proxy the bound rate with the max between the maximum between the MFN applied and the final bound rate.

[11]See "WTO Schedules of Concessions and Renegotiations of Concession, Module 4".

[12]For those products for which countries have renegotiated commitments (such as ITA and PHARMA products, Annex 5 agriculture, renegotiations and unilateral commitments), the above assumptions may not be correct as the base rate for the new commitments may not always coincide with bound rate at the time. The total of observations falling in this case is, however, small.

final bound rate. As an example, Figure 1 shows the bound rate of the product line "030233" (denoting Tuna) for Brazil.[13] Following the Uruguay Round, Brazil committed to reduce its bound rate from 55 to 35 percent over a five year implementation period. As indicated by the continuous line, the bound rate is set equal to the base rate before 1995, it is gradually reduced at equal rate reductions in the period from 1995 to 1999 and remains fixed at the final rate after 1999. In this case, Groppo and Piermartini (2014) assume that the bound rate was reduced to 51 percent in 1995 to 47 percent in 1996, to 43 percent in 1997 and so on, until reaching the 1999 final bound rate of 35 percent.

Figure 8: From the baseline to the final bound



Notes: The graph refers to the HS1996 product line 030233 for Brazil. For this line, the country had an implementation period going from 1995 to 1999, with a base rate of 55% and a final bound rate of 35%.

[13] In the HS 1996 nomenclature, code "030233" corresponds to "Tunas (of the genus Thunnus) skipjack or stripe-bellied bonito (Euthynnus (Katsuwonus) pelamis), excluding livers and roes."

Appendix B: Note on interaction effects in a logistic regression

In a logistic regression model with interaction terms the conditional mean of the dependent variable is defined as

$$\mathbf{E}(Y \mid \mathbf{X}) = F\left(\beta_1 X_1 + \beta_2 X_2 + \beta_3 (X_1 \times X_2) + \mathbf{X}'\beta\right) := F(u) \quad (6)$$

where $F(a) = \frac{1}{1+e^{-a}}$. The interaction effect is then the cross partial derivative denoted

$$\frac{\partial^2 \mathbf{E}(Y \mid \mathbf{X})}{\partial X_1 \partial X_2} = \beta_3 F(u)(1 - F(u)) + (\beta_1 + \beta_3 X_2)(\beta_2 + \beta_3 X_1) F(u)(1 - F(u))(1 - 2F(u)). \quad (7)$$

The sign of the estimated coefficient β_3 is not informative as the true interaction effect may take different signs depending on the values of the covariates. We therefore report marginal effects in our tables.

Appendix C: Linear Probability Model

Table 4 presents the marginal effects from a linear probability model using a more granular sets of fixed effects than Table 2. We use fixed effects to account for potential Country-Year, Year-Sector, or Country-Sector level omitted variables.

Table 4: Protectionist Reactions to Import Shocks: Linear Probability Model

	MFN tariff increases				
	(1)	(2)	(3)	(4)	(5)
ΔM_{ckt-1}	0.0827***	0.0353**	0.0823***	0.0328*	0.000377
	(0.0200)	(0.0159)	(0.0203)	(0.0163)	(0.0155)
P_{ck}	0.112***	0.0652***	0.113***	0.0689***	0.0413*
	(0.0190)	(0.0168)	(0.0189)	(0.0167)	(0.0176)
$s_{ck}(\Delta M)$	-0.0612***	-0.0210	-0.0574**	-0.0174	-0.0489***
	(0.0177)	(0.0151)	(0.0177)	(0.0151)	(0.0145)
eW_{ckt}	0.0462***	0.0265***	0.0463***	0.0260***	0.0101***
	(0.00257)	(0.00227)	(0.00253)	(0.00224)	(0.00393)
FoR_{ckt}	-0.00600***	0.00759***	-0.00571***	0.00766***	0.00719***
	(0.00123)	(0.000989)	(0.00121)	(0.000983)	(0.000900)
Observations	1,170,239	1,170,238	1,170,180	1,170,179	1,162,960
R-squared	0.102	0.445	0.122	0.460	0.541
Year FE	YES				
Country FE	YES		YES		
Sector 4-digit FE	YES	YES			
Year × Country FE		YES		YES	YES
Year × Sector FE			YES	YES	YES
Country × Sector FE					YES

Notes: The table reports marginal effects, which take into account interactions at the means of variables. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5 presents the marginal effects from a linear probability model where the dependent variable is the use of new AD measures. We find results broadly consistent with those obtained using logistic regressions in Table 3.

Table 5: Protectionist Reactions to Import Shocks: Linear Probability Model

	New AD Measures				
	(1)	(2)	(3)	(4)	(5)
ΔM_{ckt-1}	0.00902*	0.0114**	0.00866*	0.0108**	0.00211
	(0.00393)	(0.00386)	(0.00400)	(0.00390)	(0.00343)
P_{ck}	0.0346***	0.0344***	0.0349***	0.0346***	0.0159***
	(0.00700)	(0.00700)	(0.00699)	(0.00700)	(0.00426)
$s_{ck}(\Delta M)$	-0.0196***	-0.0184***	-0.0195***	-0.0184***	-0.0120***
	(0.00414)	(0.00409)	(0.00412)	(0.00407)	(0.00280)
eW_{ckt}	-0.00131***	-0.00103***	-0.00129***	-0.00103***	-0.000248
	(0.000292)	(0.000272)	(0.000289)	(0.000271)	(0.000430)
FoR_{ckt}	-0.000127***	-0.000262	-0.0000793	0.000222	0.000277
	(0.000186)	(0.000195)	(0.000187)	(0.000195)	(0.000186)
Observations	1,221,970	1,221,970	1,221,914	1,221,914	1,214,468
R-squared	0.012	0.021	0.041	0.051	0.156
Year FE	YES				
Country FE	YES		YES		
Sector 4-digit FE	YES	YES			
Year × Country FE		YES		YES	YES
Year × Sector FE			YES	YES	YES
Country × Sector FE					YES

Notes: The table reports marginal effects, which take into account interactions at the means of variables. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix D: List of WTO Members in Dataset

Tables 6-8 list the WTO members used in your dataset and indicate whether they belong to the subsample of 24 acceded members.

Table 6: WTO Members in Dataset

WTO Member	**Post-Uruguay Round Accession**
Albania	YES
Angola	
Antigua and Barbuda	
Argentina	
Armenia	YES
Australia	
Bahrain	
Bangladesh	
Barbados	
Belize	
Benin	
Bolivia, Plurinational State of	
Botswana	
Brazil	
Brunei Darussalam	
Bulgaria	YES
Burkina Faso	
Burundi	
Cabo Verde	YES
Cambodia	YES
Cameroon	
Canada	
Central African Republic	
Chad	
Chile	
China	YES
Colombia	
Congo	
Costa Rica	
Côte d'Ivoire	
Croatia	YES
Cuba	
Cyprus	
Czech Republic	
Democratic Republic of the Congo	
Djibouti	
Dominica	
Dominican Republic	
Ecuador	YES
Egypt	
El Salvador	
Estonia	YES
European Union	
Fiji	

Table 7: WTO Members in Dataset (Continued)

WTO Member	**Post-Uruguay Round Accession**
Gabon	
Gambia	
Georgia	YES
Ghana	
Grenada	
Guatemala	
Guinea	
Guinea-Bissau	
Guyana	
Haiti	
Honduras	
Hungary	
Iceland	
India	
Indonesia	
Israel	
Jamaica	
Japan	
Jordan	YES
Kenya	
Korea, Republic of	
Kuwait	
Kyrgyz Republic	YES
Latvia	YES
Lesotho	
Lithuania	YES
Madagascar	
Malawi	
Malaysia	
Maldives	
Mali	
Malta	
Mauritania	
Mauritius	
Mexico	
Moldova	YES
Mongolia	YES
Morocco	
Mozambique	
Myanmar	
Namibia	

Table 8: WTO Members in Dataset (Continued)

WTO Member	**Post-Uruguay Round Accession**
Nepal	YES
New Zealand	
Nicaragua	
Niger	
Nigeria	
North Macedonia	YES
Norway	
Oman	YES
Pakistan	
Panama	YES
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	
Qatar	
Romania	
Rwanda	
Saint Kitts and Nevis	
Saint Lucia	
Saint Vincent and the Grenadines	
Saudi Arabia	YES
Senegal	
Slovak Republic	
Slovenia	
South Africa	
Sri Lanka	
Suriname	
Swaziland	
Chinese Taipei	YES
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	YES
United States	
Uruguay	
Venezuela, Bolivarian Republic of	
Viet Nam	YES
Zambia	
Zimbabwe	