Reducing Uncertainty of Trade Policy: Reassessing the Value of the Doha Round in a Global CGE with Firm Heterogeneity

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Abstract

Much of the discussion surrounding the current round of Doha negotiations has focused on the potential for increasing market access; however, a successful conclusion of Doha may have value beyond simply decreasing applied barriers to trade by also reducing uncertainty, thereby creating a more robust, stable trading system. In particular, agreements by WTO members to reduce bound tariff rates and to bind previously unbound tariff lines can increase the incentives to export into these markets by reducing uncertainty over future applied tariff rates. In this paper, we aim to introduce a framework including firms heterogeneous in productivity, fixed costs to enter an export market, and uncertainty over future applied tariffs into the MIRAGE CGE model. We rely on a detailed description of global trade policy in order to estimate the effects of various trade policy shocks on trade flows and welfare, taking the effect of binding previously unbound tariff lines and reducing binding overhang into account. We ensure full consistency of our approach by providing new econometric results fully consistent with the CGE specifications, avoiding the limitations of some previous CGE studies. Our simulated trade policy shocks are based on the most recent modalities under negotiation in the Doha round, including binding previously unbound tariffs and reducing existing bound rates, and are implemented at the HS6 level. We anticipate that by including the effect of reduced uncertainty from implementing bindings and reducing binding overhang, our CGE simulation will predict gains from implementing the current modalities that are greater than those which only take into account only gains from increased market access. The changes are particularly important when assessing the concessions done by developing and least developed countries.

1 Introduction and Literature Review

There are a variety of possible explanations for why a country might choose to enter into a trade agreement with one or more trade partners. The main tool used in trade policy assessment, CGE modeling, allows economists to describe how a given trade agreement can be expected to affect trade flows and welfare, with one of the most obvious effects of an agreement being the direct impact of applied tariff liberalization. The direct benefits of such liberalization, however, cannot explain why a country would choose to enter into a trade agreement, as such liberalization could just as well be implemented on a unilateral basis. The literature provides two other economic rationales for why a country may wish to engage in a trade agreement with one or more partners. The first is the terms-of-trade argument which holds that governments engage in trade agreements in order to avoid the prisoner’s dilemma driven by the unilateral incentives to impose tariffs which are too high from a global welfare perspective. Indeed, Staiger (2011) finds empirical evidence supporting this as the primary motivation of WTO members engaged in tariff negotiations. A second explanation for why countries might choose to engage in free trade agreements is that such agreements can “lock in” previously uncertain tariffs, reducing or eliminating uncertainty over future applied tariffs. In the case of WTO trade agreements, uncertainty over future tariffs is reduced as members commit to bind tariffs at some maximum value. In cases where the negotiated bound tariff rate is equal to the applied tariff rate, uncertainty is eliminated, while in cases where the bound tariff rate is strictly greater than the applied rate (resulting in positive “binding overhang”), uncertainty is still positive, but may be reduced relative to the case where no binding is negotiated. Recently, a strand of literature has provided both theoretical motivation and empirical evidence that uncertainty over future tariffs is reduced by entering into trade agreements. Handley and Limao (2010) finds evidence of increased entry into the export market for Portuguese exporters as a
result of the reduction in uncertainty from EC accession. Handley (2011) finds evidence that product level uncertainty generated by the gap between applied and bound tariff rates, negatively impacts the level and responsiveness of exports to applied tariff reductions for exports to Australia. Deason (2012) confirms the evidence of this effect using data for multiple importers and exporters.

Some other recent papers, though less directly related to the current study, also address the uncertainty generated by the gap between applied and bound tariff rates. Foletti, Fugazza, Nicita and Olarreaga (2009) examine the extent to which countries have used policy space allowed by binding overhang during previous economic downturns and quantify how much of this policy space is meaningful. They further use their model to form a prediction of how much tariffs should be expected to increase as a result of protectionist responses to the recent global crisis, finding this to be relatively small (on the order of 8 percent of current tariff levels). Another study looking specifically at the issue of tariff uncertainty as constrained by bound tariff rates is that of Francois and Martin (2004), however, this paper focuses mainly on the theoretical welfare implications of tariff variability rather than the its impact on trade. Evenett, Gage and Kennett (2004) provide some evidence of increased exports after WTO accession to developed countries in products with lower gaps between preferential and Most Favored Nation (MFN) tariff rates, though this evidence is somewhat mixed. Sala, Schroder and Yalcin (2009) develop a purely theoretical model, using heterogeneous firms and an option value approach, and show that a reduction in bound rates can move forward export time and that we see a larger effect for “high risk” destination markets.

Though these papers are the most closely related to our work, they are not the first to address the broader issue of policy uncertainty. One of the first such works is Rodrik (1991) in which the author develops a purely theoretical model to explain how investment may respond to policy changes when there is uncertainty over the permanence of the new policy. Dixit (1989) and Pindyck (1991) develop theoretical models for the impact of uncertainty in a dynamic framework using an option value approach. These underlying theoretical models have since been applied in various settings including the impact of tax policy uncertainty on investment (Hassett and Metcalf (1999)), the impact of climate policy uncertainty on investment (Blyth, Bradley, Bunn, Clarke, Wilson and Yang (2007)), and the impact of exchange rate uncertainty on exports (Baldwin and Krugman (1989)). One study which combines the strand of literature examining policy uncertainty and that exploring cross country institutional explanations for economic outcomes is Kenyon and Naoi (2010), in which the authors use firm-level survey data on policy uncertainty across several countries and find a U-shaped relationship between this uncertainty and political regime type. That is, they find higher policy uncertainty in hybrid regimes than in either more authoritarian regimes or established liberal democracies.

Currently, CGE models are based in a deterministic framework, abstracting away from any uncertainty over future realizations of variables, and tend to produce estimates for trade flow effects of trade agreements that are implausibly small. Bouet and Laborde (2008) makes a first step towards incorporating the information contained in bound rates into CGE analysis and quantifying their importance by simulating the outcome of a “worst-case scenario” where WTO members set applied tariffs to the maximum rate allowed under current the current WTO agreement. They find that when major economies set applied tariffs at current bound rates, world trade decreases by 7.7 percent.

In this paper, we aim to bridge the gap between the micro foundations generating a negative relationship between exports and binding overhang uncertainty and CGE modelling by including in the CGE model an ad-valorem equivalent measure of the negative incentive to export generated by binding overhang. This AVE measure is computed using econometric estimates from Deason (2012), adapted to be fully consistent with our CGE specifications, thus avoiding the limitations of some previous CGE studies. We then simulate trade policy shocks based on the most recent modalities under negotiation in the Doha round, including binding previously unbound tariffs and reducing existing bound rates at the HS6 level. We anticipate that by including the effect of reduced uncertainty from implementing bindings and reducing binding overhang, our CGE simulation will predict gains from implementing the current modalities that are greater than those which only take into account only gains from increased market access. The changes are particularly important when assessing the concessions done by developing and least developed countries.

2 Methodology and Data

This section to be completed.
2.1 Estimating Trade Elasticities of Uncertainty

The product level uncertainty due to binding overhang is measured as

\[ U_{iv} = \frac{\tau_{iv} - (\tau_{iv}^B)^{-\sigma}}{\tau_{iv}^{-\sigma}} \]  

(1)

where \( \sigma \) is the elasticity of substitution between products within an industry, \( \tau_{iv} \) is one plus the MFN ad-valorem tariff rate on good \( v \) in country \( i \), and \( \tau_{iv}^B \) is one plus the ad-valorem bound tariff rate, as derived in Handley (2011). The elasticities of trade values with respect to this uncertainty measure are estimated as in Deason (2012), using the specification

\[ \text{ImportValue}_{ijv} = b_0 + b_1 \ln \tau_{iv} + b_2 U_{iv} + b_{MFNPOS} MFNPOS_{iv} + d_{jiI} \]  

(2)

where \( i \) indexes the importer, \( j \) the exporter, \( v \) the product (at the HS6 level), and \( I \) the industry (at the HS4 level). In this specification, \( MFNPOS \) is a binary indicator for whether the applied tariff on the good is positive, and is included to account for the potentially positive relationship between tariffs and trade resulting from a lack of imports leading to zero tariff rates due to a lack of political economy incentives for a government to impose tariffs on such goods.

The trade and tariff data used in estimating (2) are obtained through the World Integrated Trading System (WITS) maintained by the World Bank. Tariff data come from both the WTO’s Integrated Database (IDB) and UNCTAD’s Trade Analysis and Information System (TRAITS) while the associated trade data come from the WTO (for countries with WTO tariff data) or from either COMTRADE or TRAINS (for countries with TRAINS tariff data).\(^1\) Import values as well as MFN, preferential and bound tariffs are obtained for all available reporters at the HS6 digit level for year 2007, and industries are defined at the HS4 subheading level, yielding 1255 industries.\(^2\)

2.2 Data on Tariff Rates Used in Simulations

The applied and bound tariff rates used in simulating various scenarios are taken from the most recent modalities under negotiation in the Doha round, as detailed in Bouet and Laborde (2011).\(^3\)

3 Simulation Results

This section to be completed. Here we will detail the results of our CGE simulation as follows:

1. The impact on trade when applied rates are changed to reflect those that would be expected under Doha agreement, taking into account only the direct effect of applied tariff liberalization.

2. The impact on trade when applied rates are changed to reflect those that would be expected under Doha agreement, now taking into account not only the direct effect of applied tariff liberalization, but also the effect of reduced uncertainty brought about by reducing bound rates and binding previously unbound lines.

3. The share of the impact in #2 above that is due to products for which only the level of uncertainty, but not the applied rate, changes.

4 Sensitivity Analysis

This section to be completed.

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\(^1\)See Deason (2012).

\(^2\)Since tariffs are actually applied at a more disaggregate level for most countries, the tariff rates reported at the 6 digit level are actually simple averages of the tariff rates of all tariff lines within that 6-digit line. Since the 6 digit level is the most disaggregate level for which product nomenclatures are standardized across countries, this is the level used for this analysis.

\(^3\)http://dev.voxeu.org/sites/default/files/file/unfinished_business_web.pdf#page=327
5 Conclusion

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