Trade liberalization, antidumping, and safeguards: Evidence from India's tariff reform

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A R T I C L E   I N F O

A B S T R A C T

This paper is the first to use product-level data to examine empirically whether countries use antidumping and safeguard exceptions to unwind commitments to lower tariffs in the face of domestic political–economic pressure. We focus on the case of India, a country that underwent a major exogenous tariff reform program in the early 1990s and subsequently initiated substantial use of safeguard and antidumping import restrictions. We first estimate structural determinants of India's import protection using the Grossman and Helpman (1994) model and provide evidence from its pre-reform tariff data of 1990 that is consistent with the theory. We then re-estimate the model on the Indian tariff data after the trade liberalization is complete and find that the model no longer fits, a result consistent with theory and evidence provided in other settings that India's 1991–1992 IMF arrangement can be interpreted as resulting in an exogenous shock to India's tariff policy. However, when we re-estimate the model on data from 2000–2002 that more completely reflects India's cross-product variation in import protection by including *both* its post-reform tariffs *and* its additional non-tariff barriers of antidumping and safeguard import protection, the significance of the Grossman and Helpman model determinant estimates is restored. We interpret these combined results as evidence that India unwound its commitment to reduce tariffs through use of antidumping and safeguard protection in the face of political-economic pressure. The estimates are also economically important and provide one explanation for separate results in the literature that the magnitude of import reduction associated with India's use of antidumping is similar to the initial import expansion associated with its tariff reform. Finally, we interpret the implications of our results for the burgeoning research literature examining the effects of liberalization on India's micro-level development.

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1. Introduction

India undertook a substantial episode of unilateral trade liberalization beginning in 1991–1992, one in which it dramatically cut its import tariffs in a process that continued until 1997. Its import-weighted average tariff declined from 87.0% in 1990–1991 to 24.6% in 1996–1997. Before 1992, India had never resorted to using the "safeguard" exceptions embodied in many trade agreements, such as antidumping or a global safeguard, to implement import restrictions that are common alternatives to tariffs. By the period 1997–2002, however, India had transformed from a non-user to become the WTO system's most prolific user of these alternative, non-tariff barriers to trade. In the case of antidumping, the vast majority of Indian investigations resulted in the imposition of new import restrictions, and most of them remained in effect for five years or more. As Fig. 1 indicates, by 2002, India had enough new antidumping trade barriers in place to cover 132 different 6-digit Harmonized System tariff lines.

Combined, the potential exogeneity of India's import tariff cut and the fact that it had no history of using antidumping or safeguard trade restrictions before the liberalization episode make the Indian experience a relatively unique testing environment in which to examine whether there is a relationship between tariff liberalization and the subsequent imposition of these non-tariff barriers to trade. This paper introduces a new approach to examine empirically the extent to which India used antidumping and safeguard exceptions to unwind its commitment to lower tariffs in the face of domestic political–economic pressure.

India is an excellent setting to test for this relationship for a number of reasons that we detail further in Section 2. Following the initiation of its tariff reform program in 1991, India transformed from being a non-user of policy exceptions such as antidumping and safeguards to becoming the WTO system's most frequent user (WTO, 2009a,b) of both types of import restrictions over the next decade. Nevertheless, while the response to the Indian tariff reform program appears well timed with the subsequent rise in filings and implementation of these safeguards and antidumping policy exceptions, is there a *product-level* link? Fig. 2 illustrates suggestive evidence of the basic relationship between the relative sizes of the 1990s tariff cuts and subsequent antidumping use. The figure indicates that products that sought and were granted antidumping protection in effect by 2002, on average started with higher tariffs and received larger tariff cuts between 1990

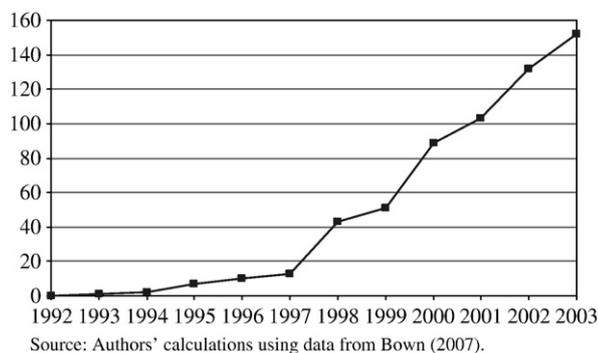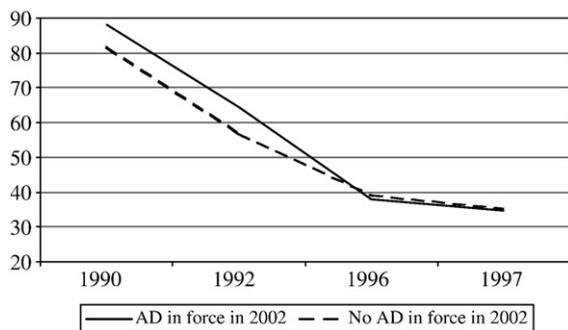Source: Authors' calculations using data from Bown (2007).

Fig. 1. Number of 6-digit HS products with Indian antidumping measures in force.

Source: Authors' calculations using AD data from Bown (2007) and tariff
data from TRAINS and the WTO's IDB.

Fig. 2. Average tariffs by year for Indian imported products with and without AD measures in force in 2002.

and 1997. Our econometric analysis investigates whether this suggestive evidence of a relationship between the size of the trade liberalization and subsequent resort to these policy exceptions is economically and statistically important when estimated in a more formal political–economy modeling framework. Our approach is to use the Indian setting and exploit variation at the industry and *product level* to examine whether there is evidence of political–economic pressure to backslide on market opening commitments through resort to global safeguard and antidumping trade restrictions, which themselves are relatively substitutable forms of import protection.[2]

In Section 3 we present our econometric approach which adopts the Grossman and Helpman (1994) model to estimate structural determinants of India's import protection. In Section 4, we present our results. We first estimate the model on India's pre-reform tariff data from 1990 and find results that are broadly consistent with the theory and evidence from other countries and trade policy settings.[3] As a second step we re-estimate the Grossman and Helpman model on the Indian tariff data

from years after its trade liberalization is complete. We find that the trade liberalization resulted in cross-product variation in the new level of Indian import tariffs that can no longer be explained by political–economic determinants of the model. The fact that the model no longer fits the tariff data is consistent with theory and evidence provided in other settings that India's 1991–1992 IMF stand-by arrangement can be interpreted as resulting in an exogenous shock to India's tariff policy. As a third step, we then re-estimate the Grossman and Helpman model on data from 2000 to 2002 that more completely reflects India's cross-product variation in import protection. When we measure India's 2000–2002 protection by including *both* its post-reform tariffs *and* its additional non-tariff barriers of antidumping and safeguard import protection in effect during that period, the evidence indicates a restoration of the significant determinants of the Grossman and Helpman model.[4] The combined results indicate that, while tariff levels moved away from the Grossman–Helpman equilibrium with the trade reform, antidumping and safeguards were used in a way that brought India's overall level of protection back to a new (post-reform) political–economy equilibrium consistent with the Grossman and Helpman model, which in turn suggests that those policies were used as substitutes for tariffs.

In our sensitivity analysis, we document how these results continue to hold even after controlling for other factors that the previous literature on antidumping and safeguards suggest is likely to affect India's heterogeneous use of such policies across products. In particular, import protection that is inclusive of use of these particular policy instruments may also be affected by the possibility of future retaliation as well as the need to document evidence of industry "injury" and "dumping" to access these policy instruments. Including such determinants into the analysis does not affect our main results.

The economic significance of our exercise is further highlighted by the evidence that our results are driven by product-level variation within relatively important Indian industries such as iron, steel, fabricated metal products, chemicals, food products, and transport equipment. These industries comprise both a large share of India's manufacturing imports and a major fraction of all Indian use of antidumping and safeguards. Moreover, we find that the estimated coefficients are statistically different (larger in absolute value) in 2000–2002 than in 1990. They imply a lower—although still high—value of the weight that the government places on social welfare relative to political contributions, and a higher fraction of the population that is organized into a lobby in the later period than in 1990. They also imply that on average an organized sector with similar characteristics would receive less protection after the trade reform. Our estimates also provide one explanation for separate results in the literature that the magnitude of import reduction associated with India's use of antidumping is similar to the initial import expansion associated with its tariff reform.[5] Finally, in

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[2] Despite substantial legal differences between safeguards and antidumping, they have been shown in many contexts to be relatively substitutable instruments of import protection, given the lax enforcement rules regulating how these policies are implemented. See, for example, Bown (2004), Bown and McCulloch (2003) and also the discussion in Hoekman and Kostecki (2001). Nevertheless, our estimation approach controls for the most important differences (e.g., antidumping is country-specific and discriminatory, safeguards are nondiscriminatory) between them as we describe in substantial detail below. For comprehensive surveys of economic research in the antidumping literature see Blonigen and Prusa (2003) and for the safeguard literature, see Bown and Crowley (2005).

[3] The first papers to estimate structural versions of the Grossman and Helpman model on data for the United States include Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000). While there are too many studies in the subsequent literature to cite here, Cadot et al. (2008) is the first paper of which we are aware to apply the Grossman and Helpman model to determinants of Indian import protection. Nevertheless their study does not examine the questions of interest of this paper — i.e., specifically whether the model can be used to understand the cross-sectional determinants of India's import protection when including tariffs and particular trade policies like antidumping and safeguards.

[4] The "natural experiment" setting created by India's exogenously-mandated tariff reform program of the 1990s may also help us to overcome at least two potential endogeneity concerns associated with examination of the relationship between trade liberalization and the resort to new protection under safeguard exceptions. One concern is that a country's trade liberalization is typically not itself an exogenous event, but instead is part of a negotiated preferential or multilateral trade agreement. In such cases, endogenous factors may determine both the level of initial liberalization and subsequent resort to exceptions for new protection. A second endogeneity concern may arise if the trade liberalizing country is simultaneously negotiating the terms of the "exceptions" in the writing of the trade agreement — i.e., not only the question of whether to have any exceptions at all, but also the legal and economic evidentiary criterion that must be met in order to trigger the exceptions. This is also not of concern for our context as India's accession to the WTO was part of the "Single Undertaking," which meant India would be subject to established GATT/WTO rules governing antidumping and safeguard exceptions.

[5] The size of our estimates for India that link trade policies (tariffs and antidumping/safeguards) over time indicate economically important implication for trade flows and provide evidence consistent with Vandenbussche and Zanardi (forthcoming), whose gravity model estimates find that the trade decrease resulting from India's antidumping policy is of the same magnitude as the trade increase that resulted from its earlier trade liberalization.