
Adjustment to Foreign Changes in Trade Policy Under the WTO System

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1. INTRODUCTION

How do domestic economies adjust when other countries change their trade policies? This question is increasingly important for at least two reasons associated with the current state of the global economy and its rules-based trading system. First, the global economy is highly integrated through foreign direct investment, supply chains, and international trade flows. These are the result of decades of multilateral negotiations under the GATT/WTO system, which have led the major nations to impose and legally 'bind' their import tariffs at historically low average levels. But the same rules-based system that has led to low average tariffs also allows its members to access a number of liberal trade 'exceptions' (such as safeguards and antidumping), which permit WTO members to change their trade policy in response to political-economic shocks. Given the current WTO framework, which results in both openness to foreign shocks because of liberal trade, and yet the possibility of significant changes in countries' trade policies over time, there is an important need for research to improve our understanding of how trade flows, industries, firms, and factors of production adjust to foreign changes in trade policy.

The lack of understanding of how domestic economies adjust to changes in foreign market access and trade policy abroad is not because theorists have failed to motivate the importance of the issue. Terms of trade theory has long suggested that whenever a policy-changing country is 'large' and thus able to affect international prices, a policy change is expected to feed back into the domestic economy of trading partners, thus imposing an adjustment process on their economies as well. Indeed, a now dominant strand of the theoretical literature on trade agreements (Bagwell and Staiger, 1999; 2002) identifies a fundamental *raison d'être* of the WTO as the necessity to confront the international cost-shifting motive of large country members whose policy changes affect other economies via their impact on the terms of trade (exporter-received prices), or equivalently, the terms of export market access (export sales volumes), holding all else constant.

While the international externality implications of trade policy changes have a long history in the theoretical literature, the first round of empirical support for

these theories has only recently emerged. In particular, Broda, Limão, and Weinstein (2008) is the first evidence consistent with the theory that, when unconstrained by WTO rules, countries set import tariffs with terms of trade considerations (and hence international cost-shifting motives) in mind.¹ From our perspective, this line of research motivates the need for additional work to examine the process by which domestic economies adjust to frequent changes in trade policies abroad. The Broda, Limão, and Weinstein (2008) evidence suggests that such trade policy changes are likely to have important international externality implications.

Any new literature on domestic adjustment to changes in export market access can be expected to draw substantially on the well-established parallel research literature on the process of adjustment to new import competition. Indeed, most of the relevant empirical research examining how trade policy affects the adjustment process has focused largely on the 'own' environment—that is, how a country's change in its own trade policy affects its own imports, domestic industries, domestic firms, and domestic factors of production. This research typically investigates the adjustment experience of a trade liberalization episode that increased the domestic economy's own openness to imports.² An extensive and impressive literature has examined various aspects of the domestic adjustment experiences associated with trade liberalization shocks across a diverse set of countries and time periods.³

Why has the research on changes in export-market access that would be the natural parallel to the literature on import-market access liberalization not yet materialized? The paucity of research on the response to changes in export-market access can be explained at least partially by the challenges that confront researchers attempting to estimate the adjustment impact of other countries' changes to trade policy. The first challenge is to create the same sort of 'natural experiment' testing environments analogous to import-market access shocks (exogenous, unilateral trade liberalizations) on the export side of the market, which is necessary to identify the causal link between changing conditions of export-market access and the process of adjustment. Partly because of a lack of sufficiently detailed data needed to control for other factors, researchers have so far not used most of the same exogenous and large-scale import-market access trade liberalization episodes of the parallel literature to examine the adjustment process

¹ See also the empirical evidence of Bagwell and Staiger (forthcoming).

² In one of the few research papers examining the domestic effects of a country's liberalization of exports, Edmonds and Pavcnik (2006) examine the micro-level impacts of Vietnam's removal of restrictions on rice exports in the 1990s. The research that we motivate and describe in more detail below also examines the adjustment process of those associated with exporting, but through the alternative channel of foreign changes in trade policy, not the change in the exporting country's own policy.

³ Examples of countries and trade liberalization environments frequently studied in this context include Brazil, Canada, Chile, Cote d'Ivoire, India, Mexico, and Turkey. For recent surveys, Tybout (2000) and Erdem and Tybout (2004) examine the responses of domestic import-competing firms and industries to these types of shocks, while Goldberg and Pavcnik (2005; 2007) respectively examine the literature on the effects on poverty rates and income inequality of import market liberalization.

from the perspective of the exporters abroad.⁴ Improvements in data availability are making these sorts of approaches more plausible, and in Section 3 we describe a number of research approaches that adapt the identification strategy to exploit a smaller-scale approach.⁵ In particular, several papers take advantage of product-specific or industry-specific exogenous changes in foreign market access as part of an identification strategy to estimate the impact of policy changes abroad on the domestic adjustment process.

Before turning to these specific examples of research, the next section briefly describes the most relevant features of the WTO: the foundation of the current rules-based trading system. Section 2 therefore describes the key elements of the WTO that establish the exceptions and procedures, that is, the WTO features that national governments use and those which create the identification opportunities that the research described in Section 3 exploits. More than 60 years of GATT/WTO negotiations have resulted in a WTO agreement that is largely responsible both for today's liberal trading environment and the rules under which certain forms of trade policy changes occur. Given the lack of major reform proposals in the ongoing Doha Round of WTO negotiations, these rules and procedures governing how the current system accommodates national changes in trade policy at the industry or product level are likely to become even more relevant in the future.⁶ Especially as more developing countries increase their openness to trade and are encouraged to adopt the WTO system's approach to accommodating national changes in trade policy through 'exceptions' such as safeguards and antidumping, research in this area is increasingly important and relevant for policy.

2. INSTITUTIONAL BACKGROUND: USING THE WTO SYSTEM FOR IDENTIFICATION

In this section we briefly describe two elements of the current WTO system that may provide fertile testing environments for research on how foreign trade pol-

⁴ To see one important part of the problem, consider the case of an exporting firm that serves two or more foreign markets. If all of the foreign markets don't make their detailed trade policy data easy to observe (and collect), the data problem can become insurmountable, as it is impossible to control for other foreign countries' trade policy changes that may equally affect the exporting firm's adjustment process.

⁵ Papers such as Trefler (2004) and Lileeva and Trefler (forthcoming) for the Canada-US Free Trade Agreement, and Bustos (forthcoming) for MERCOSUR do exploit the fact that certain countries' exports may be highly concentrated toward one foreign market, and thus when that foreign market undertakes additional (and preferential) import liberalization, the concern of not having access to data on trade policy changes in other foreign markets is less problematic. However, a secondary concern for even these types of studies could be that the export market access changes embodied in these trade agreements may not have been exogenous or unanticipated, which may lead to additional challenges for identification.

⁶ This assumes there is no large-scale protectionist retreat associated with the global financial crisis. While the severity of the global recession caused by the crisis remains uncertain, as is the extent of an associated protectionist response, early evidence from policy changes during the crisis indicates that countries may be refraining from large-scale protectionism. Bown (2009a) presents some evidence of a moderate increase in the use of new import restrictions in the form of antidumping and safeguards, at least through the first quarter of 2009, associated with the crisis. On more general trends in protectionism during the crisis, see the other contributions in Evenett and Hoekman (2009).

icy changes affect the domestic adjustment process.⁷ The first is how WTO exceptions such as antidumping and safeguards allow countries to change the conditions of trading partners' export market access via imposition of new trade restrictions. The second is how WTO dispute-settlement provisions facilitate changes in the conditions of export market access via removal of partners' trade-distorting policies.

Before turning to this discussion, it is important to note that other WTO rules are likely to affect each of these areas in ways that may ultimately influence the identification strategies that researchers use in econometric applications. One important WTO principle is most-favored-nation (MFN) treatment, by which the WTO system requires its members to apply nondiscriminatory treatment across trading partners.

2.1 Imposition of new trade barriers under WTO exceptions

Under the GATT/WTO system, many of the major economies have relatively low average tariffs as well as applied tariff rates that are quite close to their bound rates. Table 15.1 documents this for economies such as the United States, the European Union, and Japan, which have legally bound virtually all of their import tariff lines under the WTO and have applied and bound rates on manufactures imports, if not necessarily agriculture, in the range of only 2 to 4 per cent on average. Even China, despite being a developing economy, has average tariffs that are relatively low and applied tariff rates that are close to the binding levels of its tariffs, especially compared to other emerging economies such as Brazil and India.

Under the rules of the WTO system, if such economies feel pressure to raise trade barriers because of either domestic political-economic or foreign supply-induced shocks, policymakers in these economies have relatively limited options. If their applied tariff rates are close to their binding levels, they cannot simply raise tariff rates (or impose new quantitative restrictions), as this would be in blatant violation of WTO rules. Instead, these economies can use the 'exceptions' to liberal trade that are embedded in the WTO agreements in the form of policies such as antidumping and safeguards. As the last column of Table 15.1 indicates, for example, each of these economies except Japan is also among the WTO membership's most frequent users of antidumping to impose new product-specific import-restricting trade policies. Even focusing on only the WTO member countries listed in Table 15.1, and solely on their use of antidumping, the table shows that there have been hundreds of instances in which these countries imposed new product-level import restrictions, typically for at least five years.⁸ While not shown in the table, many of these economies are also frequent users of the other major WTO-permitted exception—the global safeguard, which countries typically impose for three or four years.⁹

⁷ For an extensive introduction to and discussion of the WTO, see Hoekman and Kostecki (2009).

⁸ While only 50 to 60 per cent of the US or European Union investigations result in the imposition of new antidumping measures, the figure is over 80 per cent for India.

Table 15.1: Selected WTO Members' applied tariffs and tariff bindings in 2007 and cumulative use of antidumping since China's 2001 accession

Country/ Territory	Product Category	Binding coverage (%)	Average bound tariff (%)	Average applied tariff (%)	Number of antidumping initiations, 2002–2008 (WTO rank)
US	All	100	3.5	3.5	162 (2)
	Agriculture	na	5.0	5.5	
	Non-agriculture	100	3.3	3.2	
EU	All	100	5.4	5.2	145 (3)
	Agriculture	na	15.1	15.0	
	Non-agriculture	100	3.9	3.8	
Japan	All	99.6	5.1	5.1	4 (26)
	Agriculture	na	22.7	21.8	
	Non-agriculture	99.6	2.4	2.6	
China	All	100	10.0	9.9	131 (4)
	Agriculture	na	15.8	15.8	
	Non-agriculture	100	9.1	9.0	
Brazil	All	100	31.4	12.2	74 (7)
	Agriculture	na	35.5	10.3	
	Non-agriculture	100	30.8	12.5	
India	All	73.8	50.2	14.5	312 (1)
	Agriculture	na	114.2	34.4	
	Non-agriculture	69.8	38.2	11.5	

Source: compiled by the author from WTO's *World Tariff Profiles 2008*. The entry 'na' indicates not available. Binding coverage is defined as share of HS six-digit subheadings containing at least one bound tariff line. Simple averages are of the *ad valorem* (*ad valorem* equivalent) six-digit HS duty averages.

WTO rules require tariffs to be applied on an MFN basis, that is, in a way that does not discriminate across foreign export sources; nevertheless, countries frequently impose new trade barriers such as antidumping and global safeguards in a discriminatory way. While global safeguards especially are supposed to be imposed on an MFN basis, countries sometimes apply the policy so as to exempt certain exporters. Some of the research described in the next section exploits this discriminatory behavior. And while antidumping investigations are carried out at the level of a single foreign exporting country, the new trade restrictions can actually be applied on an exporting firm-specific basis, allowing policy-imposing countries to discriminate even across firms if they determine that different firms had different dumping (or pricing at 'less than fair value') margins.

In cases in which these policies change in a discriminatory manner, the adjustment is then not necessarily limited to the two countries directly impacted—that

⁹ Bown (2009b) provides detailed data on WTO member use of antidumping, global safeguards, countervailing duties, and China-specific safeguards. For policies such as antidumping, for some countries this database also includes information on the size of the firm-specific new trade barriers.

is, the policy-imposing country's import-competing firms and the firms in the exporting country targeted by the trade restriction—but it likely affects firms in other exporting countries as well. The discriminatory imposition of a new trade barrier against one foreign export source but not another creates an implicit preference for exporters not subject to the policy. From the perspective of the econometrician looking for identification, this group of non-targeted exporters may be an especially interesting cohort to examine. If it turns out that they are not a cause of the 'problem,' a policy change affecting other foreign suppliers to the same export market may be viewed as an exogenous event from their perspective.¹⁰

2.2 Removal of trade barriers under WTO dispute settlement

A second important institutional aspect of the WTO that results in members changing their trade policy in ways likely to affect the adjustment process in foreign countries is through formal dispute settlement.¹¹ The chain of events associated with a typical WTO dispute is the following. One WTO member country—ultimately the defendant—imposes a WTO-illegal policy or refuses to live to up to a commitment negotiated in an earlier negotiating round that infringes on the export market access for which another WTO member country negotiated. The infringement may be the result of a newly imposed, but WTO-inconsistent, antidumping or safeguard policy such as those described in the last section, or it may be an illegal subsidy, a standards barrier, or some other non-tariff barrier to trade. The WTO dispute settlement process typically results in the defendant country removing its WTO-inconsistent policy. There have been over 400 disputes of this type since the WTO's inception in 1995.

The identifiable and discrete nature of the removal of the WTO-inconsistent policy may provide a useful environment in which to study the adjustment process. Analogous to the cases described in the previous section, because of the WTO's MFN principle, the restoration of market access available to exporters in the complaining country in the dispute is also likely to impact exporters (and hence the adjustment process) in other WTO member countries that export the same product as the one under dispute. If the initial WTO violation being eliminated was itself applied on an MFN basis, the exogenous (from the perspective of third countries) removal of the policy would be expected to have a positive market-access impact and thus positive implications for adjustment by the supplying sector in such third countries. But if the initial WTO violation was applied on a discriminatory basis (and thus afforded implicit preferential access to the third countries), the exogenous removal of the policy would be expected to have

¹⁰ By not part of the problem, we mean did they not contribute to a surge in imports that may have been the shock triggering the new demand for import protection resulting in a change in foreign market access.

¹¹ Bown (2009c) provides an analysis of WTO dispute settlement from the perspective of developing countries in particular. Bown (2009d) presents a taxonomic approach that identifies the ways in which various types of and resolutions to WTO disputes can be expected to cause third country trade flows to adjust.

a negative market-access impact and implications for adjustment within such third countries.

While the adjustment process in such a trade dispute context has been subject to only limited empirical analysis, micro-level studies in this area, in the flavor of those that we review in Section 3.2, would seem to be an important component of some high-profile WTO disputes.¹² These include cases challenging European Community policies over imported bananas and sugar, policies which afforded large initial (but WTO-violating) discriminatory preferences for many developing countries. These affected countries would have then been forced to adjust when the European Union removed the violations and restored basic MFN treatment.

3. RESEARCH ON ECONOMIC ADJUSTMENT TO FOREIGN CHANGES IN TRADE POLICY

The previous section identified how WTO rules and exceptions establish a number of testing environments that researchers may find create differential treatment of the kind useful for identification. First is the application of new barriers under the agreement's exceptions (such as safeguards and antidumping) that eliminate foreign market access for some countries and, in the case of discriminatory application of the new policy, potentially create implicit preferential market access for other (non-targeted) exporters. Second is the removal of these and other similar barriers through the WTO's formal dispute settlement procedures, which can create (or at least restore) foreign market access for some exporters and, along the same lines, may also eliminate (implicit) preferential market access that other exporters had enjoyed due to violations of the rules on nondiscrimination.

In the next two subsections we explore examples of how in practice researchers are exploiting these sorts of testing environments to assess the impact of foreign changes in trade policy on the adjustment process. First we examine the more direct impact through the effect on trade flows, and we then describe how research is looking beyond trade flows to adjustments taking place at the micro level of individuals, households, or firms.

3.1 Trade-flow adjustment to foreign changes in trade policy

Bown and Crowley (2007) empirically examine whether a country's use of an import-restricting trade policy distorts a second country's exports to third markets. As in Figure 15.1, they first develop a theoretical model of trade between three countries (A, B, C), in which the imposition of tariffs by one country (A) causes

¹² The only empirical study of which we are aware that examines even the third country trade flow impact of WTO dispute settlement decisions and outcomes is Bown (2004a). That paper uses a sample of GATT/WTO disputes over the 1991–98 period to assess the extent to which product-specific trade liberalization that the defendant country extends to the complaining country after an economically successful trade dispute is also extended to (non-complaining) third country exporters of the same product under the MFN rule.

domestic consumption of the affected good in country B, which then crowds out B's imports from C, a phenomenon termed 'trade depression.'

The main contribution of Bown and Crowley (2007) is to provide a first empirical test of these third market effects on trade flows of trade deflection and trade depression. The paper investigates the effect of US antidumping and safeguards import restrictions on Japanese exports of nearly 5000 6-digit Harmonized System (HS) products to 37 countries between 1992 and 2001. Their evidence suggests that application of new US import restrictions both deflected and depressed Japanese trade with third countries during the period. Imposition of a US antidumping measure against Japan deflected trade; the average antidumping duty on Japanese exports to the United States led to a 5 to 7 per cent increase in Japanese exports of the same product to the average third-country market. The imposition of a US antidumping measure against a third country depressed Japan's trade with that country; the average US duty imposed on a third country led to a 5 to 19 per cent decrease in Japanese exports of that same product to the average third-country market.

Bown and Crowley (2006) present an extension to the study that looks in depth at the international externalities associated with US use of antidumping (AD) against Japanese exports to the United States and the European Union over the 1992–2001 period.¹³ Following Prusa (1997; 2001), this paper first examines the trade destruction and trade diversion associated with the US AD duties on Japanese exports to the US market, and then documents sizeable trade deflection and trade depression in the European Union market resulting from the new US import restrictions. Model estimates indicate that, on average, roughly one quarter to one third of the value of Japanese exports to the United States apparently destroyed by US antidumping was actually deflected to the European Union in the form of a contemporaneous increase in exports. The paper also presents new evidence that US antidumping causes terms of trade externalities in non-targeted markets. New US tariffs on Japanese exports are associated with a substantial reduction of Japanese prices of these exports in the European Union market.

In a third paper in this line of research, Bown and Crowley (forthcoming) look for evidence of trade deflection in the context of China's historical exports. This particular empirical application was motivated by China's 2001 accession to the WTO, which allowed for current members to deviate from core WTO principles of reciprocity and MFN treatment by introducing access to a discriminatory, import-restricting 'China safeguard' that could be triggered by the mere threat of trade deflection. An *ex post* assessment on use of this safeguard indicates that between 2002 and 2009, industries in at least 10 different WTO members sought access to this particular import-restricting policy on more than 25 different occasions (Bown, 2009b).

Bown and Crowley (forthcoming) examine whether there is historical evidence that imposing discriminatory trade restrictions against China during its pre-WTO

¹³ In related work, Staiger and Wolak (1994) study the 'own' impact of US policy on micro-level activity; part of their examination focuses on the US industry-level activity associated with US use of antidumping.

accession period led to Chinese exports surging to alternative markets. They construct a data set of product-level, discriminatory trade policy actions imposed on Chinese exports to two of its largest destination markets during 1992–2001. Perhaps surprisingly, they find no systematic evidence that either US or EU imposition of such import restrictions during this period deflected Chinese exports to alternative export destinations. To the contrary, there is evidence that such import restrictions may have had a chilling effect on China's exports of these products to alternative markets. The conditional mean US antidumping duty on China is associated with a 20 percentage point reduction in the relative growth rate of China's targeted exports to alternative markets during this period.

The question of the third-country effects of discriminatory use of trade policies under permitted WTO exceptions has also been the subject of a number of other papers that focus on global trade in particular products or industries. For example, Durling and Prusa (2006) focus exclusively on the global hot rolled steel market. They examine the impact in this particular product market of the use of such import barriers during the 'antidumping epidemic' of new trade restrictions during 1996–2001. Similarly, Debaere (2010) focuses on the global market for shrimp, which he uses to examine how the EU's discriminatory trade policy change (revocation of preferential tariff treatment for Thai exporters under the Generalized System of Preferences) affects the trade volumes and prices of traded shrimp in a third-country import market like the United States.

Table 15.2 summarizes the research described in this section. The literature provides evidence that the rules (and exceptions) of the WTO-based trading system lead countries to make trade-policy changes with economically significant impacts on the resulting exports and trade flows to non-targeted third country markets.¹⁴ Using the terminology of Bown and Crowley (2007), sometimes affected exporters are able to deflect trade and sometimes they are not; sometimes trade is depressed, while sometimes it is not. The impact on third-country trade flows implies a likely need for the industries, firms, and factors of production that underlie these trade flows to adjust as well—a level of analysis that is just beginning to be taken up by formal empirical research. Research movements in this direction are described in Section 3.2.

¹⁴ Other approaches to the third-party effects of discriminatory trade policy focus on the WTO exception to MFN found under the GATT's Article XXIV allowance that members be permitted to pursue preferential trade arrangements covering 'substantially all trade' with particular trading partners. Chang and Winters (2002) examine the effects of MERCOSUR on the export prices of nonmember countries to Brazil. They find that Brazil's tariff preferences to Argentina, Paraguay, and Uruguay result in competitive pressure in which exporters in other countries significantly reduce their prices and worsen their terms of trade. Similarly, Romalis (2007) examines the impact of the Canada–US Free Trade Area (CUSFTA) and the subsequent addition of Mexico (NAFTA). This study also finds that the implicitly discriminatory treatment to non-CUSFTA/NAFTA exporters results in a substantial impact on international trade volumes through a reduction in imports from nonmember countries.

Table 15.2: *Examples of research examining the adjustment response to foreign changes in trade policy*

Foreign change in trade policy	Testing environment to examine adjustment	Paper
US imposition of antidumping and safeguards	Japan's export volumes and term of trade to third (non-US) markets	Bown and Crowley (2006, 2007)
US and EU imposition of antidumping and safeguards	China's exports to third (non-US, non-EC) markets	Bown and Crowley (forthcoming)
Global use of antidumping on hot-rolled steel trade	Multiple countries' exports to third markets in hot-rolled steel	Durling and Prusa (2006)
EU withdrawal of GSP preferences for Thai shrimp	Thailand's shrimp exports to third (US) market	Debaere (2010)
US imposition of antidumping on Vietnamese catfish	Vietnam's household decisions and domestic labor markets	Brambilla, Porto and Tarozzi (2008)
US, EU, and China's imposition of steel safeguard import restriction on non-Indian exporters	Indian steel firms' input, output, product-switching, and export responses to the unexpected implicit preference	Bown and Porto (2009)

3.2 Adjustments at the 'micro level' to foreign changes in trade policy

The first paper of which we are aware to use a testing environment created by a foreign change in trade policy (permitted under a WTO exception) to examine the domestic, micro-level adjustment process is Brambilla et al. (2008). Their study examines the Vietnamese response to the US imposition in 2003 of antidumping tariffs on imports of catfish from Vietnam. As expected, this resulted in trade destruction through a major decline of Vietnamese exports of catfish to the US market. Using panel data on Vietnamese households, the paper examines the responses of catfish producers in the Mekong Delta between 2002 and 2004 and finds income growth for households relatively more involved in catfish farming in 2002 was significantly lower than for other comparable households. They also document how the US antidumping shock triggered significant Vietnamese exit from catfish farming. The paper traces how Vietnamese households adjusted by moving into wage labor markets and agriculture, but not into other areas of aquaculture. Thus, it would appear that not only were Vietnamese households unable to deflect their catfish exports to new markets in response to the new US important restrictions, but the technology with which they had farmed catfish was not readily transferable to other forms of aquaculture (for example, shrimp) in which Vietnamese exporters may have had access to relatively open international markets.¹⁵

Bown and Porto (2009) analyze a related micro-level adjustment to a foreign market access shock. They study the micro-level response in India to US imposition of significant new 'safeguard' import restrictions on steel products in

¹⁵ Of course it would ultimately turn out that even the US import market for shrimp would not be open for much longer. In 2004, the United States initiated an antidumping investigation on shrimp imports from Vietnam and five other exporting countries, and this resulted in the imposition of new duties on Vietnamese shrimp in 2005, though mostly at a low level (4.57 per cent).

2002–03.¹⁶ However, this paper is fundamentally different from Brambilla et al. (2008) along at least two dimensions. First is the underlying nature of the shock. Unlike the negative foreign market access shock associated with the US antidumping duties on Vietnamese catfish, Bown and Porto (2009) examine a potentially positive foreign market access shock that arose because India was granted an implicit tariff preference to the US steel market, based on the way in which the United States constructed its policy.¹⁷ Second, instead of focusing on households (the unit of observation in the catfish study), the steel study focuses on the Indian firm-level response to the changing terms of market access associated with the foreign change in trade policy.

The paper provides evidence that Indian firms with historic export ties to the preference market responded more quickly to the changing market conditions in order to increase sales, exports, profits, and also to make adjustments to their use of inputs.¹⁸ The paper also explores the source of firm-level entry into these new products (product-switching) and finds evidence that it was predominantly undertaken by larger firms that had previous experience exporting other types of steel products.

These studies are only two examples of research that uses foreign changes in trade policy to establish ‘natural experiment’ type environments that are useful for empirical testing. In the latter example, the idea is that third country changes in policy are reasonably unanticipated and exogenous events and thus can be used to identify the effects of changes in policy on adjustment-related decisions and outcomes.

4. CONCLUSIONS

This paper highlights a promising new area of research that empirically assesses some of the domestic adjustment to foreign changes in trade policies. While we have identified a number of important issues that this research is examining, we highlight two important caveats before concluding with one final policy motivation for the importance of this line of research.

First, the applicability of research findings on the adjustment associated with foreign changes in market access is expected to have its limits. In particular, since

¹⁶ While we describe the policy as a US-imposed safeguard, in reality the testing environment in the paper is exploitable because the United States, the European Union, and China simultaneously imposed similar policies, thus granting preferential access to their markets to Indian firms over a similar set of steel products. Bown (2004b) provides evidence that the discriminatory application of the US steel safeguard in 2002–03 led to substantial trade diversion in the form of increased US imports from India and a number of other developing countries in the product categories targeted by the policy.

¹⁷ From the perspective of our motivating discussion in Section 2, India is really the third country. The United States imposed discriminatory import restrictions targeting a number of other exporting countries but not India.

¹⁸ While there is a substantial and growing empirical literature examining exporting firms and the process by which they adjust, this literature has not typically focused on the sort of environment created by an exogenous foreign market access shock studied in Bown and Porto (2009). For a recent survey of the exporting firm literature, see Bernard et al. (2007).

many of the foreign changes in trade policy being used for identification in the studies we have highlighted are product- or industry-specific, the research contributes less to our understanding of the broader general equilibrium types of issues than some of the parallel literature on the adjustment to new import competition.

Second, coming up with sufficiently 'clean' environments, such as those that the research described in Section 3 uses as identification, is not trivial and may become increasingly difficult for reasons we have not yet mentioned. Anecdotal evidence suggests that the trade policy changes that would be used for identification may be inter-related across countries, even at the product level.¹⁹ A separate line of research examines such cross-country linkages and identifies a number of possible mechanisms through which this may occur. When it comes to policies such as safeguards or antidumping, some of it may be associated with retaliation (Blonigen and Bown, 2003), a reaction to the prospect of trade deflection (Bown and Crowley, 2007), or 'cascading protection' in which new trade barriers on inputs feed into downstream demands for new protection for domestic producers that use those more costly imported inputs (Hoekman and Leidy, 1992). While the data on how countries are changing their trade policies is increasingly available, it will be important for these studies to control adequately for the possibility that multiple jurisdictions may be changing their trade policies over identical or related products almost simultaneously.

Despite these caveats, there are policy-based reasons to motivate the importance of continued research in this area. WTO dispute-settlement rulings in particular lead one country to change its policies to comply with obligations and market access interests that other complaining WTO members have brought forward. These changes affect its economic environment as well as that of the complaining countries. However, mostly overlooked is the fact that in many instances these same WTO disputes also change the competitiveness conditions and foreign market access available to third countries that were not the original complainers but that will also have the need to adjust.

Thus far very little research or policy attention has focused on the parties in these third countries, and the benefits and costs associated with their adjustment practices. On the positive side, the MFN rule implies that many of the benefits that complaining countries achieve by winning WTO disputes and getting respondent countries to remove (non-MFN-violating) trade barriers spill over to benefit other countries by improving their terms of market access as well. On the negative side, some important and high profile WTO disputes involve the elimination of WTO-inconsistent policies that may have provided implicit preferential treatment to developing countries in politically sensitive products (for example, sugar and bananas). The elimination of such preferences is thus expected to result in a nega-

¹⁹ For example, during the recent crisis period alone, Bown (2009a, Table 5) identifies more than 70 distinct 6-digit Harmonized System (HS) product codes with at least two different countries newly initiating trade remedy (antidumping, global safeguard, countervailing duty, or China-specific safeguard) investigations over the same code between 2007 and the first quarter of 2009.

tive adjustment impact on many vulnerable economies. Without a full accounting of the third-country adjustment implications of removal of trade barriers resulting from the WTO dispute settlement process, there is much that we do not know about the size of the true costs and benefits of the WTO system, under which such changes to national trade policies frequently occur.

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