Cooperation in Hard Times: Self-RestRAINT of Trade Protection

July 26, 2013

Abstract

Hard times give rise to greater demand for protection. International trade rules include provisions that allow for raising barriers to aid industries when they suffer economic injury. Yet widespread use of flexibility measures may undermine the trade system and worsen economic conditions. How do states balance these conflicting pressures? This article assesses the effect of crises on cooperation in trade. We hypothesize that governments impose less protectionism during economic crisis when economic troubles are widespread than when they face crisis in isolation. The lesson of Smoot-Hawley and coordination through international economic institutions represent mechanisms of informal governance that encourage cooperation to avoid a spiral of protectionism. Analysis of industry level data on protection measures for the period from 1997 to 2009 provides support for our claim that under conditions of shared hard times, states exercise strategic self-restraint to avoid beggar-thy-neighbor policies.

Word count approximately 9941
1 Introduction

“What I am saying here is that not only do we need the resolve to respect WTO obligations, but also restraint in exercising WTO rights.” — Pascal Lamy, July 22nd, 2009.

When do countries turn to trade protection? The usual answers emphasize the state of the domestic economy and the constraining effect of international legal rules. This paper demonstrates that such explanations fall short of accounting for a puzzling degree of restraint in protectionism during widespread crises. We show first that this restraint extends to areas unconstrained by formal rules; something beyond legal commitments must dissuade states from using trade barriers. And secondly, while conventional explanations look to domestic economic conditions, we show that conditions abroad play at least as great a role. Whereas crises at home increase the demand for protection, hard times abroad lead governments to temper their protectionist response to their own domestic hard times. In an information-rich environment where international economic organizations use monitoring and policy advice to encourage coordinated restraint, hard times can generate greater cooperation.

Even as international trade rules constrain state behavior, they allow considerable room to maneuver. An assortment of remedies, safeguards, and tariff overhang make up the “WTO rights” mentioned in the statement quoted above by Pascal Lamy, the WTO Director General. These provisions are designed to allow states to temporarily exit their commitments when faced with an exogenous shock. Although justified as policies to counter unfair pricing and import surges, in practice they provide a window for governments to accommodate demands from domestic interests for protection. Furthermore, to the extent that using these measures is contingent on demonstrating that domestic industries suffer injury, they are often invoked during economic downturns. As a result, there is sufficient flexibility available during a global crisis that states
could adopt policies that would sink the trade regime, without breaking a single rule. Regardless of whether we call these policies flexibility measures or protectionism, their effect is to raise barriers to trade, and reliance on such measures comes at a short-term cost to trade partners.

Lamy’s call on sovereign nations to exercise restraint in the exercise of their rights may appear naïve. Precisely at a time when the domestic political cost of mere compliance with the formal rules is highest, why would anyone expect states to pursue informal cooperation above and beyond compliance with legal rules? Whether realist skepticism about cooperation or arguments about how rules help states to coordinate on mutually beneficial outcomes, international relations theories would point to the challenge of informal cooperation among states. Indeed, the purpose of institutions such as the WTO is to address this challenge by providing credible third-party enforcement that ties leaders’ hands in an anarchic international environment.

Yet at the height of world economic crisis, state leaders themselves echoed these informal calls for restraint. In November 2008, a G20 meeting in Washington produced a declaration with the promise of “rejecting protectionism and not turning inward in times of financial uncertainty.” This promise was reaffirmed in April 2009 in London, where states further called on international bodies to ramp up monitoring of protectionist policies. In Toronto, the following year, the G20 reaffirmed to uphold this promise for another three years. In December 2011, a group of 23 WTO members made “an additional pledge to fight all forms of protectionism in the strongest terms.”

And all available evidence suggests that states did refrain from using trade policy as a tool to protect their weakened economies during the recent crisis. Compliance with multilateral trade


3See for example IMF staff position note (Gregory et al. 2010), OECD trade policy study (Trade and Economic)
rules appears high; the number of complaints against violations of the rules has remained steady.\footnote{Within the WTO, an average of 17 complaints were filed per year over the three years 2008-2010, which is the same as the average complaints filed per year over the three years 2005-2006. There were only 13 complaints in 2007, and it is unclear whether this has any relationship to crisis or whether this year should be counted as pre- or post-crisis.}

Even with regards to legal flexibility measures, such as trade remedies, the scope of measures was limited, and originated mostly from developing countries, such that the absolute import volumes affected were quite small (Bown, 2009). In his analysis of the eleven top remedy users, Bown (2011, p. 26) finds only three countries increased the share of their imports covered by temporary barriers in 2009, relative to their pre-crisis behavior.\footnote{See also Bown and Crowley (2012) for further evidence from quarterly data of five industrialized economies to document that trade policy response to the Great Recession represents a distinct break from the historical pattern for protection to rise during economic downturns.}

Ruddy (2010, p. 489) surveys four different sources monitoring trade policies and concludes that there has not been significant increase in protection. The May 2010 OECD Ministerial Council Meeting conclusions note that “[d]espite the crisis, protectionism has not spread as widely as many had feared, not least as a result of our coordinated international efforts.”

Our research addresses the resulting puzzle: in hard times such as the recent economic crisis, why would states facing a major economic downturn not only remain largely in compliance with WTO rules, but also show restraint in exercising their “WTO rights”, by limiting their reliance on legal flexibility measures?

We develop a theory to explain the conditions under which economic crises promote international cooperation. We contend that while economic hard times increase demand for protection within the country, the pervasiveness of hard times across countries induces offsetting pressures.\footnote{OECD, “2010 Ministerial Conclusions” adopted at the Council Meeting at Ministerial Level on 28 May 2010.}
through an increased risk of retaliation. When hard times are widespread, any sign of a shift to protection is more likely to precipitate similar actions by other countries. Monitoring provided by institutions raises the expectation that protection will be observed and met with equivalent response. The consequences of retaliation are also more severe for weakened economies that need trade to restore growth. Information provided by institutions reinforces the lessons of history about negative consequences. As a result, the average country facing an isolated crisis uses discretionary flexibility measures to protect industries at a higher rate than when the same crisis is shared by its trade partners.

We test our argument using a large dataset of trade remedies and tariff measures for the period between 1997 and 2009. We control for import flows at the specific product level and control for exchange rates, which allows us to focus on how crisis impacts trade policy independent of changing trade volumes and currency swings. Our findings demonstrate that hard times correlate with trade restrictions, but that the pervasiveness of crisis abroad reduces the protectionist response to crisis at home. This pattern is also evident when looking at the more aggregate national level of total annual remedies filed. Furthermore, we extend the analysis to examine tariff hikes instead of remedy usage and find strong support for our argument. The hypothesized effect of shared crises not only accounts for restraint during the Great Recession, but also shows the same pattern at work for years prior to 2008. In the United States, we observe that comments reflecting fear of rampant protectionism respond to the level of crises abroad, rather than at home. Yet our findings are not limited to the behavior of the United States and Europe - many countries join in the restraint of protection during widespread global downturn. We conclude that hard times may lead to more, not less, cooperation.
2 A Theory of Conflicting Pressures from Crisis

Crisis are by definition unexpected events. As described by Kahler and Lake (2013, p. 10), the characteristics of crises include an element of surprise, significant threat, and compressed decision-making that “produce greater than usual uncertainty about the causes and consequences of action.” We emphasize that pervasive crisis compounds this challenge as many countries experience a similar shock. While a large literature examines the effect of crises on regime stability and policy reform, our interest lies in the area of trade protection. The tension between commitments and flexibility lies at the heart of debates about institutions, and crises test their robustness. We examine this grey area of cooperation where states must balance competing interests under extraordinary circumstances.

2.1 Flexibility and Cooperation in Trade

One key function of institutions like the WTO is to alleviate a terms-of-trade prisoner’s dilemma (e.g. Bagwell and Staiger, 2002; Broda, Limao and Weinstein, 2008). States can improve their terms-of-trade at the expense of other nations, which produces the familiar pattern whereby individually rational actions result in a suboptimal outcome. For this reason, countries create institutions to make enforcement credible by raising the individual cost of beggar-thy-neighbor policies. If these costs are sufficiently high, cooperation grows more likely. This theory applies to states whose individual actions could impact world prices, but it is important to note this is not limited to only a handful of large states. In addition, political economy theories account for the terms-of-trade theory and find supporting evidence across countries and across goods within countries. They demonstrate that market power impacts tariff-setting policies of United States as well as 15 countries including developing countries. They conclude that the market power necessary to
why domestic political goals such as favoring influential groups lead to protection (Grossman and Helpman 1994; Goldberg and Maggi 1999). The terms-of-trade and political economy motivations account for variation across goods and countries in the level of protection as a function of market influence and lobbying power.

To accommodate the need for enforcement and flexibility, institutions allow countries to temporarily exit their commitments when they face an unexpected shock (Downs and Rocke 1995; Rosendorff and Milner 2001). These provisions explicitly acknowledge that under some circumstances protection will be necessary. A sudden surge of imports, for instance, can inflict significant injury on a domestic import-competing industry, leading to demands for temporary trade barriers. As states face uncertainty over when they may need to impose protection, they bargain for the discretion to respond to such demands. It has been shown that flexibility provisions make states both more likely to join international institutions and to make deep commitments (Kucik and Reinhardt 2008). Trade remedies such as antidumping and countervailing duties, and safeguards, are standard in modern trade agreements. Large gaps between the maximum tariffs countries can legally set (bound rates) and the duties actually levied at the border (applied rates) are also common practice among many WTO members. The WTO estimates the rate at which countries use this “binding overhang” as comparable to that of trade remedies.

Since flexibility increases import barriers, its use imposes a cost on trade partners. States have to decide whether to exercise this option. One observes tit-for-tat dynamics as industries and states targeted by a particular flexibility measure, such as antidumping, become more likely to induce terms-of-trade behavior is not limited to what might conventionally be considered “large” countries.

8 According to the WTO, between 2005 and 2006, the membership exercised just over 150 trade remedies, while relying on increases of applied tariffs greater or equal to 15 percent 560 times (WTO World Trade Report 2009, 136).
use such instruments in turn (Kucik and Reinhardt, 2008). States hold considerable discretion in their reliance on flexibility measures—in the sense that they do not exercise every opportunity of doing so, but rather make strategic decisions based in part on the expected future behavior of trade partners.

Institutions monitor the use of flexibility measures. Members have recourse to dispute settlement to challenge them if they violate the regulations that specify conditions for use of remedies. Nearly one-third of WTO disputes consist of challenges against remedies. States must report all anti-dumping and safeguards measures to the WTO at an early stage in the process. The Committee on Anti-Dumping Practices reviews semi-annual reports of antidumping actions and pointedly criticizes specific countries and investigations. Trade Policy Reviews also serve as a venue to highlight problems with trade remedy procedures and practice by the country reviewed. Nevertheless, such monitoring takes place against the backdrop reality that trade remedies are an accepted part of the contract for liberalization with flexibility.

The potential import relief that can be obtained through WTO-sanctioned flexibility measures is immense. Trade remedies may set prohibitively high tariffs that remain in place for years. Illustrative is the case of U.S. steel, which experienced a serious industry-wide crisis during the late 1990s and received remedy protection such that 20 percent of all steel imports were covered by remedy measures during the years 1999 to 2002 (Prusa, 2011 p. 71). The use of binding overhang, which is in effect a tariff hike, also holds potential to close markets. One study estimates that if countries reset their tariffs at the allowable bound levels, world trade would drop 7.7 percent, representing $350 billion in welfare costs, not including the retaliation that could follow. In other words, WTO-consistent global protection could compromise the trade regime.

---

9 Bouet and Laborde 2009; WTO Trade Negotiations Committee (TN/C/M/29, paras. 188-89).
2.2 Hard Times and Protectionism

State discretion over flexibility is conditional on the existence of some observable evidence of hard times. Much of variation in protection over time is expected to be a function of economic conditions. Indicators such as import surges, rising unemployment, and dwindling revenue are all indicators of injury that justify restricting trade as one way to provide relief to an industry. This means that one expects states to use remedies more frequently during an economic downturn because the formal requirements behind flexibility rules are more likely to be satisfied.

Endogenous protection theories link declining fortunes of industry with rising political demand for protection. Through the interface of political coalitions and institutions, hard times impact national policies (Gourevitch 1986; Simmons 1994; Kahler and Lake 2013). Trade policy directly addresses the demands of narrow interest groups harmed by trade. It also offers political response to discontent arising from economic crisis, whether effective or not as economic policy tool. Slow economic growth and rising unemployment generally lead to an increase in protection. Magee, Brock and Young (1989, p. 186) describe the connection between hard times and protection as a compensation effect that occurs when income declines lead factors to shift effort from economic activity to political lobbying that is rewarded by protection. McKeown (1983) presents a political-business cycle theory for protection in which leaders can afford liberalization during periods of prosperity, when they enjoy high popularity, and use tariff increases to win favor when unpopular during recessions. He finds that the expected positive relationship between income growth and trade has increased following WWII (McKeown 1991). Empirical studies of tariff and non-tariff measures commonly control for economic growth and unemployment (e.g. Ray and Marvel 1984; Mansfield and Busch 1995). Macroeconomic downturns have also been shown to increase the use of antidumping duties and safeguards (Takacs 1981; Blonigen and Bown 2003; Knetter and
These studies assume that only a country’s own economic situation matters.

To explain the business cycle theory of protection policies at international level, Bagwell and Staiger (2003) argue that free trade is more sustainable during high growth periods, and shocks that reduce trade volume during a recession may result in an increase of protection. In their theory of trade policy, governments raise import and export tariffs to improve their terms of trade, but refrain from doing so when the cost of retaliation would be so great that free trade becomes self-enforcing. In the context of business cycles and international trade, they model governments as having more to lose from retaliation during boom times when trade volumes are high, and less to lose from retaliation during recession periods because trade volumes are lower. This argument addresses how economic downturn for either partner or at systemic level changes incentives for protection. Amidst declining trade volumes, the threat of raising trade barriers would be less effective as a tool to deter protection by other states. But their theory would predict a major increase of protection during the Asian Financial Crisis and the recent Great Recession. The moderate level of protection during the largest economic downturn since the Great Depression thus remains a puzzle, and leads us to question anew the relationship between trade protection and hard times.

When the collapse of Bretton Woods monetary system and rising trade friction in the 1970s failed to trigger the breakdown of the trading system along the lines of the 1930s, scholars searched for an explanation. International institutions and especially the GATT were credited with helping states to uphold their commitments to free trade and avoid the negative spiral into protection (Keohane, 1984; Winham, 1986; Bagwell and Staiger, 2002). Yet binding institutional commitments cannot explain restraint in the area of legal escape clauses that are built into institutions exactly for the purpose of gaining relief during extraordinary circumstances. Other studies empha-
size that changes in underlying structure of interests through the emergence of new export sectors, multinational firms, and global production networks have reduced demand for protection (Milner 1988; Kahler 2013). While important for the comparison the Depression and Great Recession, these broader shifts cannot account for why even within globalized economy there occurs variation in response to crises. In particular, local crises continue to produce protectionist response and the challenge is to explain why this does not worsen under scenario of global crisis.

2.3 Pervasive Hard Times

Given high levels of economic integration, exogenous shocks that threaten to injure domestic industries often extend beyond one country. When many countries are hit by a common shock, the demand to exercise flexibility options increases for many actors at once. Since the legal basis for using flexibility measures is partly contingent on injury to industries, the total availability of flexibility rises in hard times. The states affected by crisis thus face a greater incentive to offer import relief, and greater means of doing so. Yet they also confront the heightened likelihood of being targeted by protectionist measures imposed by other states in similar circumstances. The relevant feature of crises for our argument is their pervasiveness, that is, the extent to which they are shared by a large number of countries.

Strategic Self-Restraint

There are two ways in which a pervasive crisis raises the stakes for any single decision to protect domestic industries. First, the presence of common economic hardship in trade partners increases the likelihood of retaliation. These other states facing hard times all come up against the same factors that render them *ex ante* more likely to impose a remedy measure, because their industries
suffer injury in a legal sense and mobilize for protection. As all actors are credibly on the brink of imposing remedies, any nudge may push them to respond in kind. Second, the consequences of a trade conflict, were it to arise, grow more dire during crisis. In the face of declining domestic demand, states often turn to export markets to restore growth. When markets close, this strategy will fail. To the extent that the remedies imposed by trade partners affect other industries, the trade war will spread the economic hardship from the declining industry that sought the remedy to adversely impact the most productive firms engaging in exports. Without any outlet for growth, production levels and confidence further decline.

As a result, states have an incentive to temper their response to domestic troubles if those hard times are shared by others. Altruism plays no role here: a self-interested state can recognize that the odds of retaliation are a function of pressure for relief in other countries that also face downturn. What we refer to as “strategic self-restraint” occurs when the home country preference to impose import relief during crisis is offset by the fear that hard times abroad will trigger foreign country retaliation. This resembles patterns of behavior when creditors may resist increasing the risk premia of a troubled debtor in order to avoid pushing the debtor into default (Akemann and Kanczuk, 2005; Chapman and Reinhardt, 2013). In normal times, trade remedies or rate hikes play an important role to punish those that dump cheap goods or engage in poor management. But when balance sheets are in the red, an actor may decide they cannot afford to risk the possible trade war or default that could result from such actions. Our emphasis on the sensitivity of trade policy to foreign country economic conditions augments studies that have largely seen probability of retaliation as function of trade dependence and market size (Blonigen and Bown, 2003).

Further, it is not simply a bilateral fear of tit-for-tat retaliation that motivates restraint. Governments in a network of trading partners with cross-cutting dependencies on trade are closely
connected to know what other states are doing and anticipate future repercussions. The tariff raised by country A against country B impacts third countries that fear trade diversion effects flooding their own markets and future policies that will target their own exports. Once protectionism becomes the default response to hard times, other states will not wait to get caught as the last open market and will instead pre-emptively move to raise barriers. This is the specter haunting governments during the double crisis of economic downturn at home and abroad—their own decision to increase protection could be the tipping point leading to widespread actions by other governments to close markets.

**Informal Coordination**

In pervasive hard times, all states thus share a strong incentive to coordinate on restraint in trade policy. Yet how does such informal coordination actually take place? As we mention, it is unlikely that legal enforcement is responsible, given that the observed restraint extends to flexibility mechanisms that are formally allowed under the rules. Instead, our focus is on informal coordination. We face an analytical challenge, since formal third-party enforcement is far easier to measure than its informal analogue, which occurs at the level of leader interaction and monitoring by institutions.

One way in which we can observe coordination at work is in the public invocation of lessons of the past as part of the effort to persuade own legislatures and trade partners to exercise caution. And no other historical event is as clear a marker of the dangers of trade protection during hard times as the Smoot Hawley tariff of 1930, which is widely regarded as the greatest breakdown of cooperation over trade in history. Economic hardship provided impetus for diverse groups to join together in a log-roll for higher protection, which in turn triggered retaliatory tariffs and
the formation of exclusive trade blocs (Eichengreen 1989; Conybeare 1987). In part a reaction to economic crisis, the Smoot Hawley tariff and the trade war it instigated have been widely cited alongside currency devaluation as the kind of beggar-thy-neighbor economic policies that deepened the Great Depression. The lesson of the Smoot-Hawley tariff is referenced at nearly every emergency trade meeting. Lamy himself famously displays in his office a photo of the two authors of the legislation, and tells visitors that “[t]his picture is a reminder about rises in beggar-thy-neighbour trade responses which can quickly spiral out of control, as we saw in the 1930s.”[10] The U.S. Congress made repeated references to Smoot-Hawley Tariff during the debates over responses to the Asian Financial Crisis and the Great Recession. Figure 1 shows the sharp rise in attention to this precedent during these two main economic crises since the WTO’s inception.[11] The attention to this historical focal point extends beyond the U.S. Congress. Bown (2011, 10) examines Google Trends time series data of internet searches for “Protectionism,” and documents a sharp worldwide increase of references in the period from October 2008 through the second quarter of 2009. Such rhetoric offers no binding authority, but provides information and applies normative pressure that may lead policymakers to think carefully about the possible wider consequences from protectionist measures. The importance of the Smoot-Hawley tariff is the way in which it has come to represent a “lesson” to political leaders, regardless of whether it is the correct one.[12]

This lesson is not only about the economic consequences of trade protection, but more specifically


[11] The data were compiled through search of congressional records to count the number of floor speeches in House and Senate that include one or more reference to Smoot and Hawley for the years 1995-2011. Sources: [http://www.gpoaccess.gov/crecord/advanced.html](http://www.gpoaccess.gov/crecord/advanced.html)

[12] Irwin (2011) documents that the tariff was neither as large nor as devastating in economic impact as commonly portrayed.
Figure 1: The Lesson of Smoot-Hawley: The figure displays the number of mentions to Smoot-Hawley during floor testimony in the Senate and House of the U.S. Congress.

Irwin (2011, p. 151) contends that the greatest damage to U.S. economic interests from the Smoot-Hawley tariff arose not directly from the tariff but rather from the discriminatory trade measures taken by other countries, which resented the bad timing as the U.S. closed off its markets while they were also falling into recession. In its contemporary usage, we observe high correlation between reference to Smoot-Hawley as a historical analogy and the incidence of global downturn. Figure 1 reveals that the Great Recession and East Asian Financial Crisis, which both represent periods when the global economy experienced common shock, correspond to the two largest spikes in U.S. Congress references to Smoot-Hawley in 1997 and 2009, while the U.S. recession in 2001 had no association
with the use of this lesson. As a focal point, Smoot-Hawley highlights the risk of adopting trade protection during global economic crisis.

Informal coordination is also promoted by the monitoring role of institutions that promote awareness about the risk of retaliation and the cost of a trade war. The WTO promotes transparency about the use of remedies through reporting requirements that focus attention on unusual policy trends. The recent 2008-09 recession led to several new monitoring initiatives including a public list of trade measures imposed during the crisis issued by the WTO Secretariat, ongoing efforts by the World Bank to monitor antidumping, and the start of the Global Trade Alert as a watchdog on a range of trade measures that could impede trade (Bown, 2011, p.11-13). WTO ministerial meetings and trade policy reviews offer fora for members to criticize those who are seen as abusing remedy measures. Improper use of remedies may be challenged in dispute settlement. More generally, the WTO and other economic organizations such as OECD raise awareness about the severity of crisis conditions in other countries and highlight the lesson of Smoot-Hawley to assure that this remains the focal point in the mind of policy-makers. Such pressures for restraint constitute examples of informal governance that can become most important when stakes are high and agreed upon rules prove inadequate. Cowhey (2013, p.216) highlights that even for the United States, the monitoring reports of the G-20 and other institutions along with USTR played key role to shape expectations that other countries were not turning to protection during the Great Recession, which was an important condition for the Obama administration in 2008 to move forward on a trade liberalization agenda. Given that treaty provisions explicitly allow the use of remedies, monitoring and pledges must act as primary mechanism by which international institutions constrain and inform behavior.

For a recent treatment of the importance of informal governance, see Stone (2011).
Flexibility measures were designed to deal with the hard times of economic crisis, but pervasive hard times across countries present a special risk. We argue that during widespread crises, policymakers have an incentive to pull back and encourage others to do the same. They rely on focal points, such as the rhetorical reference to the lesson of the Smoot-Hawley tariff, and monitoring reports from international institutions to produce convergent expectations about the response to crisis. The above reasoning leads to our hypothesis: a country facing an economic crisis will be less likely to impose protectionism when other countries also experience economic crisis.

3 Analysis of Protectionism in Crisis

Our outcome of interest is trade protection countries deliver through flexibility measures. This choice allows us to focus on informal cooperation, because these measures represent forms of protection recognized as legal within trade agreements. In this paper we focus on the use of trade remedies and tariff rates, controlling for imports at the product level and exchange rates.

Our primary policy instrument of interest, trade remedies, refer to safeguards, countervailing duties, and antidumping duties. While they differ in their specifics—safeguards are taken purely in reaction to domestic exigency, while antidumping and countervailing duties are taken in reaction to foreign trade actions—all trade remedies share similar requirements. In order to exercise any remedy, countries must demonstrate “serious injury or threat thereof” to an industry as a result of trade.

---

14 In application, many flexibility measures are challenged in dispute settlement as a violation of treaty commitments. We are not claiming that trade rules do not regulate the use of remedies but rather that states can typically make prima facie case for legality of their use.

15 In terms of the number of affected industries, antidumping actions constitute by far the greatest proportion of remedy usage, representing 78% of investigations in our data. Countervailing duties form 12% of the actions,
Governments influence remedy levels in several ways. First, firms file petitions for relief claiming that they have suffered injury from imports. Detailed statutory rules set guidelines for the approval of an investigation in response to a petition and for the determination of whether to impose duties based on the calculation of fair prices and injury. Nevertheless, the agency approval process is vulnerable to outside influence. Research shows that decision making reflects political contributions to members of trade oversight committees in congress and location of firms in the district of these members [Hansen and Prusa (1997), Knetter and Prusa (2003) p. 5] note that in Australia and the EU ministerial oversight of the determination of antidumping duties make their process “subject to more direct political interference” than even the United States. Furthermore, petitions can respond to the political environment. Firms receive signals from the media coverage of declarations by leaders calling for restraint of protectionism in the midst of crisis or advocating stronger measures to protect domestic industry. Their contacts with political representatives and legal advisors offer an additional conduit for information that can shape expectations about whether investing resources in filing a petition is worthwhile. As a result, the decisions of firms and the supervising agencies are based on shifting economic conditions that impact the occurrence of dumping and injury, but they also have room to take into account whether the political climate encourages or discourages use of the measures at a particular time.

and safeguards represent the remaining 10%. However, the latter significantly understates the impact of these measures, since safeguards are not targeted remedies, that is, they affect all countries trading a given product. By comparison, both AD and CVD actions single out one or a few countries.
3.1 Data

We compiled a large dataset of trade barriers and trade flows from 1996 to 2009 at the product level (six-digit Harmonized System). We then restrict the sample to include only countries that use remedies, meaning they have established an antidumping law (Kucik and Reinhardt, 2008) and have used one of the three remedies at least once. This keeps the focus on the set of countries for which flexibility measures represent a potential policy response. Using conditional logit to estimate the use of remedy for a given country-product unit further restricts the sample as the fixed effects specification drops observations where the country-product panel has never experienced use of remedies over the period. This approach allows us to control for much of the heterogeneity at the product and country level (e.g. factor productivity, political organization of the industry) that theory tells us influences demand for protection but are effectively unobservable.

We lag all explanatory variables one year to reduce simultaneity, and estimate the probability that a state initiates at least one remedy investigation for a country-product-year observation. We first examine investigations by a subset of OECD member countries, and then the larger sample that

---

16 The number of products with data available varies by country and in any given year. For the United States there are 392 product categories included in the conditional logit estimation sample displayed in table 2. The six-digit products are quite specific (e.g. fresh apples, or refrigerators). All our trade and tariff data come from the World Integrated Trade Solution (WITS), hosted by the World Bank: https://wits.worldbank.org/WITS/, last accessed Dec. 5th, 2012.

17 We later expand the sample to all WTO members when looking at behavior over tariffs. Note that Japan is excluded from the restricted sample even though it meets both criterion because the antidumping dataset does not include product level data for Japan. Japan stands out as an infrequent user of remedies among all OECD members.
Figure 2: Remedy Investigations: The figure shows the number of investigations initiated each year for all of the countries in the dataset including antidumping, countervailing, and safeguard investigations.

includes developing countries. There is no restriction on the sample of target countries.

We use the information about remedies that Chad Bown collected, the World Bank Temporary Trade Barriers Database. It is the most authoritative data source of trade remedy actions available. It includes antidumping, countervailing, and safeguard investigations coded at the country-product-year level. We code remedy actions as when the government responds to a petition for import relief with a formal investigation, because investigations depress trade regardless

\footnote{We have data for Australia, Canada, EU, Korea, Mexico, New Zealand, Turkey, and United States in the OECD sample. Remedies are measured at the EU level, and for national level variables such as polity score we calculate the average of EU members. The larger sample adds Argentina, Brazil, Chile, China, Colombia, Costa Rica, Ecuador, El Salvador, India, Indonesia, Malaysia, Peru, Philippines, South Africa, Uruguay, and Venezuela.}
of whether they lead to a decision to grant import relief. This is consistent with the WTO practice of counting new investigations as benchmark measure of remedy activity.\footnote{Bown (2011) also examines removal of remedy measures and shows that the overall stock of temporary barriers currently in place closely tracks the trend for new initiations for most countries. A notable exception is Mexico, which reduced protection in 2008 through removal of longstanding barriers against China and the absence of new investigations.} Figure 2 shows the pattern of remedies. Clearly, 1999 and 2001 stand out as the worst years for remedy use and make the increase in 2008 look modest in comparison. Why would the relatively less severe downturn of 2001 (the burst of dot-com technology bubble) and the aftermath of the Asian financial crisis in 1999 produce more protection than the great recession? Our explanation focuses on differences in the pervasiveness of the crises.

We measure our independent variables for crises using data from \textit{Reinhart and Rogoff (2009)}, which covers several categories of economic hardship. The data include indicator variables for whether a given country-year has experienced a crisis in the realm of banking, currency, domestic default (or restructuring), external default (or restructuring), inflation, and stock market. Each dimension captures a problem that has the potential to ripple throughout the economy. Even crises primarily located in financial markets impact firm profits and employment levels through tightening credit. We sum these to create a “crisis index” with a range from 0 to 6 for any given country year. For example, the United States receives a score of 2 in 2008 for having both banking and stock crisis, and a score of 1 in 2009 for ongoing banking crisis. Indonesia receives a score of 6 in 1998 during Asian Financial Crisis, and Argentina receives a score of 5 in 2002 at the height of its crisis. The index allows for a broad definition of crisis that captures many sources of economic problems. It also incorporates variation in the severity and breadth of the economic crisis more than would be true of a separate measure such as single dimension of crisis or a dichotomous
Figure 3: World Crisis Tally: The figure shows the average level of our measure of crisis among all countries in our data sample, when the crisis index is weighted by the relative GDP size of the country in crisis.

recession variable. For example, when bad news extends across banking, stocks, currency, and debt as was experienced by Indonesia and Argentina, the crisis is more severe than what might otherwise be an ‘ordinary’ recession. For the home government and especially for the logic that trade partners will take into account the economic circumstances of other countries, these are important distinctions.

We use this crisis index to create a Rest of the World (ROW) crisis indicator, which corresponds to the average level of crisis of all countries, excluding the country under observation. Because the impact of crises on others should be proportionate to market size, we weigh crises using the ratio of a country’s GDP over the largest country GDP of that year. We then construct an
interaction term between the local and the (GDP weighted) ROW crises indicators. The trend for this measure shown in Figure reveals that it captures known trends in the level of world crisis. Our hypothesis suggests the interaction term will be negative as widespread crises reduce the protectionist response to hard times at home.

In addition to the fixed effect at country-product unit in our main conditional logit estimates, we add control variables for time-varying factors at country and product level. We include GDP and income (per capita GDP), which are both standard variables in analysis of trade policy based on expected importance of market size and level of development. Because the trade literature devotes considerable attention to the role of democracy, we include the Polity IV measure of regime type. On the one hand, democracies are thought to attach greater importance to aggregate welfare and support free trade, but are also more vulnerable to interest group pressure. We include the applied tariff rate for the country-year-product under observation as a measure of existing protection. We also include the log of country-year-product level imports, which both proxies for the size of the industry and whether rising imports justify prima facie case for remedies. It is important to control for imports given the possibility that declining imports during a slowdown of the world economy could provide an alternative route that would depress remedy use.

3.2 Findings

First, we examine the conventional wisdom. Scholars expect that when hard times hit, governments will make more use of import relief. Table shows exactly this pattern for the sample of eight OECD countries (1089 distinct country-product groups, EU treated as single country): in the year following a localized crisis, the odds of observing a higher number of trade remedy actions

---

20 The local crisis measure is unweighted because we control for GDP separately.
21 Both variables are measured in constant U.S. dollars, and we take the log to smooth values.
Table 1: Effect of Domestic Hard Times on Trade Protection: *Conditional logit estimation results for remedy investigation by OECD members testing the impact of local crisis.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>(Std. Err.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Crisis</td>
<td>0.149**</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Log GDP</td>
<td>-1.782**</td>
<td>(0.394)</td>
</tr>
<tr>
<td>Log Income</td>
<td>0.887*</td>
<td>(0.427)</td>
</tr>
<tr>
<td>Regime Type</td>
<td>0.091</td>
<td>(0.100)</td>
</tr>
<tr>
<td>Applied Tariff</td>
<td>0.126**</td>
<td>(0.021)</td>
</tr>
<tr>
<td>Log Imports</td>
<td>0.267**</td>
<td>(0.052)</td>
</tr>
</tbody>
</table>

| N                   | 13,178      |
| Log-likelihood      | -3221.661   |
| $\chi^2_{(6)}$      | 123.836     |

Significance levels: †: 10%  *: 5%  **: 1%

Table 1: Effect of Domestic Hard Times on Trade Protection: *Conditional logit estimation results for remedy investigation by OECD members testing the impact of local crisis.*

grow significantly. In other words, local crises increase the likelihood of protection. We gain confidence in our measure of economic crisis because it produces the expected positive relationship between economic hard times at home and greater use of trade remedies.

Next we examine whether the pervasiveness of crisis abroad counteracts this tendency. Table 2 shows the estimates including the three terms to assess our hypothesis: local crisis, rest of world (ROW) crisis, and interaction of local and ROW crisis. The findings offer support for our hypothesis—the interaction term between foreign crises and local crises is significant and negative. While either domestic crisis in absence of world crisis or world crisis in absence of domestic crisis increase the probability of remedy use, their simultaneous occurrence attenuates the expected level of protection. Note that both estimations include fixed effects for country-product, which has the result of restricting our sample to only those industries within each country that have filed a successful petition to initiate a remedy investigation at least once during the period. This approach is useful as a conservative test of our hypothesis, but the conditional logit coefficients are difficult to interpret.\footnote{To avoid the incidental parameter problem, we use the conditional logit model which estimates all the coefficients but not the fixed effects. The disadvantage of this model, however, is that it lacks a baseline for the}
<table>
<thead>
<tr>
<th>Variables</th>
<th>Conditional Logit Coefficient (Std. Err.)</th>
<th>Linear Fixed Effects Coefficient (Std. Err.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Crisis</td>
<td>0.366 ** (0.090)</td>
<td>0.032 ** (0.009)</td>
</tr>
<tr>
<td>ROW Crisis</td>
<td>7.887 ** (1.591)</td>
<td>0.762 ** (0.156)</td>
</tr>
<tr>
<td>Domestic X ROW Crisis</td>
<td>-4.866 ** (1.334)</td>
<td>-0.457 ** (0.133)</td>
</tr>
<tr>
<td>Log GDP</td>
<td>-0.596 (0.461)</td>
<td>-0.048 (0.045)</td>
</tr>
<tr>
<td>Log Income</td>
<td>0.775 (0.425)</td>
<td>0.062 (0.040)</td>
</tr>
<tr>
<td>Regime Type</td>
<td>-0.021 (0.104)</td>
<td>-0.001 (0.011)</td>
</tr>
<tr>
<td>Applied Tariff</td>
<td>0.115 ** (0.021)</td>
<td>0.013 ** (0.002)</td>
</tr>
<tr>
<td>Log Imports</td>
<td>0.258 ** (0.052)</td>
<td>0.025 ** (0.005)</td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td>0.511 (1.158)</td>
</tr>
</tbody>
</table>

N=13,178
Log-likelihood -3209.369
χ²(s) 148.42

Table 2: Effect of Shared Crises on Trade Protection (OECD sample): The first two columns show conditional fixed effects logistic regression coefficients and standard errors for remedy investigation by OECD members testing the interaction of economic conditions at home and abroad. The second two columns show linear fixed effects regression model coefficients and standard errors estimated using the sample defined by the conditional model.

What is the marginal effect of the domestic and world crises contingent on the interactive relationship specified in our argument? In order to discuss substantive effects, we show the estimates from a linear fixed effects regression on the sample from our estimation of the conditional logistic regression (i.e. dropping observations with zero variation on outcome in the panel). As with the conditional logit model, fixed effects are at the country-product level. Based on the linear model coefficients shown in right-hand columns of Table 2, Figure 4 presents the estimated effects of the interaction between domestic and international crisis levels on the probability of remedy use when compared with the probability of remedy use in the absence of crisis. The contour plot on the left presents these estimates as a function of both world crisis (horizontal axis) and domestic crisis (vertical axis). The contour lines display the highest increase in predicted probability of country-product effect and hence we cannot calculate marginal effects for this specification. The coefficients are useful primarily to test for direction of effect.
Figure 4: Estimated Marginal Effect of Interaction between Domestic and World Crisis levels: the two graphs present estimates from linear fixed effects model shown in Table 2. The contour plot (left) shows the estimated effect over each combination of values for crises at home and abroad while the line plot (right) graphs the estimated effect of world crisis at the maximum and minimum values of domestic crisis with 95 percent confidence intervals.

remedy usage in the upper left corner. Where domestic crisis is at its peak value and world crisis at its minimum, the probability of adopting a remedy increases by 14 percent relative to situations in which no crises exist. The lower right corner shows an increase of 8 percent in the predicted probability of remedy use when other countries in the world are experiencing crisis and domestic crisis is low. Our surprising result is found in the upper right corner, which displays the shift that occurs when moving from zero crisis to simultaneous domestic and foreign crises. Rather than magnifying the protectionist tendency, the combination of high levels of crisis at home and abroad leads to a small reduction of two percentage points in the probability of remedy use, relative to a non-crisis scenario. The graph on the right examines predicted probabilities of remedy use under two scenarios: the line of solid circles displays estimates for high domestic crisis (5) over the range
of values for world crisis; the line of open circles displays estimates for zero domestic crisis over
the range of values for world crisis levels. Dashed lines represent 95% confidence intervals. The
graph shows that under conditions of high domestic crisis the expected probability of remedy use
declines as the measure of world crisis grows higher, and this directly contrasts with the positive
effect of world crisis on the estimated probability of remedy use in absence of domestic crisis.

Expanding Sample and Adding Exchange Rate Control Variables  Next, we perform a

less restrictive test. We relax the country-product fixed effects to estimate a random effects logit
model. This substantially increases the sample by including those products that never experience
a remedy investigation. We also expand the sample to include all countries with data available
on remedies. In this larger sample, we include an indicator variable for OECD membership. The
findings presented in the first column of Table 3 support our hypothesized relationship between
crisis and remedy use. The positive coefficient for the domestic crisis variable supports the expec-
tation that hard times at home increase use of remedies. The positive coefficient for ROW crisis
indicates that in absence of domestic crisis, the pervasiveness of crisis abroad also increases the
probability of protection by the home government. Our key finding remains strong in support of
the restraint logic by which the interaction of domestic crisis and pervasive world crisis moderates
the use of remedies.

It is well established that exchange rate adjustments offer an alternative means for countries to
respond to crisis (Broz and Frieden, 2001; Copelovitch and Pevehouse, forthcoming; Pelc, 2011).
While the 1930s witnessed beggar-thy-neighbor policies on both trade and currency dimensions,
it is possible that more recent years have witnessed these policies used as substitutes.\footnote{Knetter and Prusa (2003) show that in four major remedy users during the 1980-98 period, currency appreciation increased antidumping filings and depreciation lowered average number of filings. Bown and Crowley (2012)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (1)</th>
<th>Coefficient (2)</th>
<th>Coefficient (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Crisis</td>
<td>0.115*</td>
<td>0.282**</td>
<td>0.307*</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
<td>(0.056)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>ROW Crisis</td>
<td>6.615**</td>
<td>7.520**</td>
<td>7.031**</td>
</tr>
<tr>
<td></td>
<td>(0.669)</td>
<td>(0.680)</td>
<td>(2.284)</td>
</tr>
<tr>
<td>Domestic X ROW Crisis</td>
<td>-4.155**</td>
<td>-5.672**</td>
<td>-5.346**</td>
</tr>
<tr>
<td></td>
<td>(0.694)</td>
<td>(0.292)</td>
<td>(1.930)</td>
</tr>
<tr>
<td>Log GDP</td>
<td>0.366**</td>
<td>0.345**</td>
<td>0.236**</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.020)</td>
<td>(0.075)</td>
</tr>
<tr>
<td>Log Income</td>
<td>-0.091**</td>
<td>-0.131**</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>(0.033)</td>
<td>(0.033)</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Regime Type</td>
<td>0.133**</td>
<td>0.149**</td>
<td>0.086**</td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
<td>(0.009)</td>
<td>(0.030)</td>
</tr>
<tr>
<td>Applied Tariff</td>
<td>0.011**</td>
<td>0.011**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.001)</td>
<td></td>
</tr>
<tr>
<td>Log Imports</td>
<td>0.217**</td>
<td>0.209**</td>
<td>-0.004</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>OECD</td>
<td>-1.257**</td>
<td>-1.138**</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(0.093)</td>
<td>(0.095)</td>
<td>(0.314)</td>
</tr>
<tr>
<td>Exchange Rate Change</td>
<td>-0.009**</td>
<td>-0.009*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>Fixed Exchange Rate</td>
<td>0.295**</td>
<td></td>
<td>-0.018</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td></td>
<td>(0.064)</td>
</tr>
<tr>
<td></td>
<td>(0.545)</td>
<td>(0.558)</td>
<td>(1.835)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1,065,947</td>
</tr>
<tr>
<td>Log-likelihood</td>
<td>-19,046.03</td>
</tr>
<tr>
<td>(\chi^2)</td>
<td>1,426.47</td>
</tr>
</tbody>
</table>

Significance levels: †: 10%  *: 5%  **: 1%

Table 3: The Effect of Shared Crises on Trade Protection (Full Sample): Columns (1) and (2) use random-effects logit regression to estimate the effect of shared crises on an indicator for having one or more remedy investigation. The sample consists of country-product-year level data for all remedy-user countries. Column (3) estimates a negative binomial count model of the number of trade remedy investigations in a year on the full sample aggregated to the country level. Explanatory variables with the exception of the OECD indicator variable are lagged by one year.
this reason, in the second column of Table 3, we test the model including controls for exchange rates. We use the annual change in the official exchange rate to measure fluctuations in the value of the local currency relative to the U.S. dollar (i.e. an increase in this variable corresponds to a depreciation of the local currency). A positive coefficient would indicate that currency depreciation is accompanied by increased remedy use and a negative coefficient would indicate that depreciation reduces remedy use. To the extent that currency depreciation raises the cost of imports, it can substitute for import barriers, and provides a de facto export subsidy. We also include an indicator of whether the country has a fixed exchange rate. These countries are less able to use exchange rate adjustment to buffer their economy during hard times, and would face greater pressure to resort to direct trade barriers. As with other covariates, we lag the exchange rate measures by one year. The second column in Table 3 confirms that our core findings are robust to these additional controls. The expectations of the literature are borne out: find that exchange rate movements are one factor that may have reduced protection during the Great Recession.

24 Exchange rate data series are from the World Development Indicators. We also used the World Bank measure of real effective exchange rates (REER measures the value of a currency against a weighted average of several foreign currencies divided by a price deflator or index of costs). Our crisis interaction term remains consistent in either specification of the exchange rate measure. Because the REER is available for a smaller sample and is less robust across different specifications, we present the U.S. dollar exchange rate measure in our main results.

25 The measure is based on the classification of exchange rate regimes by Reinhart and Rogoff (2009). Using their coarse classification of exchange rate regimes into six categories, we code an indicator for fixed exchange rate regime set to one for any of the following categories: no separate legal tender, pre-announced peg or currency board arrangement, pre-announced horizontal band that is narrower than or equal to +/-2 percent, or de facto peg. All other exchange rate regimes are set to zero. Their data ends in 2007, and we have imputed that the exchange rate regime remains the same in 2008 and 2009. Since we are using lagged values only one year of imputed values are in the analysis. The EU is dropped from the analysis prior to 2000, and thereafter EU is coded to have the Euro as currency level and a fixed exchange rate.
the evidence shows that exchange rate policies are connected to use of trade remedies: countries that experience depreciation are less likely to initiate a remedy investigation and those with fixed exchange rate regime are more likely to do so. Our main finding remains strong: crises abroad make a protectionist response to domestic crisis less likely.

The marginal effect of world crisis on remedy use is quite substantial. There is a 56 percent decrease in the predicted probability of a remedy investigation when holding control variables constant at mean and domestic crisis at five while increasing ROW crisis by one standard deviation.\textsuperscript{26} Conditions abroad strongly qualify domestic responses to hard times.

The positive effect of the ROW crisis variable reflects how factors abroad drive the legal case for remedies at home. In the interactive model, the coefficient on ROW crisis should be interpreted as the effect of pervasive world crisis on the estimated probability of remedy use when domestic crisis equals zero.\textsuperscript{27} Under these circumstances, the industries of other countries in crisis dump excess production, which increases the defensive use of remedies by other countries. In particular, the crisis-stricken countries with declining consumption at home send their “distress goods” to those countries in better shape where demand remains high. As a result, the non-crisis country faces more genuine cases of dumping as crisis spreads elsewhere. To test for this possibility, we rerun our estimations from Table 3, this time with logged imports as the dependent variable.\textsuperscript{28}

We find that the healthier domestic economies (measured in terms of lower values in the Reinhart

\footnote{Using coefficients from the specification in the second column of table \textsuperscript{3} we calculate the marginal effects as the probability of positive outcome assuming that the random effect is zero. In the comparison of two models, we adjust both the ROW crisis variable and its interaction term values. Given the size of the aggregate sample, the base probability of remedy initiation for any given product/year is quite low, but the relative change in probability is large.}

\footnote{Note that this coefficient is positive even when we omit the local crisis variable and the interaction term.}

\footnote{Estimation not shown: results available from authors.}
and Rogoff “crisis index”) attract more imports, and crises abroad also have a significant positive effect on imports at home. This supports our expectation that distress goods are increasingly sent abroad by countries in crisis to those countries less affected by hard economic times. The flood of distress goods in home markets leads to more remedy use. If restraint on protection were sympathy for the circumstances of other countries there should be negative impact of ROW crisis, but instead we observe positive impact. Our argument about strategic restraint highlights the role of joint crisis to moderate use of protection.

Across all models, our control variables generally support expectations. Among wealthy OECD countries (Tables 1 and 2), market size consistently corresponds to lower rates of remedy use, but income with higher rates. Omitting the income control variable affects the magnitude of GDP but not its direction or significance, and other variables are unaffected. This shifts when moving to the full sample (Table 3) where we find that larger countries are more likely to initiate remedies, but income has a negative effect. The positive correlation between democracy and remedy usage is insignificant in the OECD sample where there is low variation on this measure, but reaches positive significance for the full sample in Table 3. Products with higher applied tariff rates and higher import volume are associated with more frequent remedy investigations.

Membership in the OECD reduces the frequency of remedy investigations even when controlling for GDP and income. The information provided by the organization and pressure on members to support free markets appears to have some effect. The prevalence of WTO membership makes it difficult to make inferences about the influence of membership on state behavior. Our argument

29 The data do not allow us to test whether WTO members are more restrained in their policies, since data for product-level remedy investigations by non-WTO countries is limited to China in the years prior to WTO accession, when it was under heightened scrutiny as applicant.
that restraint arises through informal cooperation, rather than hard enforcement, suggests that the rich information environment supported by institutions such as OECD and the WTO is important.

**Country-level Aggregate Analysis of Remedy Use** In the third column of Table 3, we retest our hypothesis at the country-level. The product-country-year unit of observation we employ in our main analysis allows us to provide a fine-grained analysis of remedy use with covariates for imports and fixed effects at the product level to account for unobserved variation related to industry political organization. Nonetheless, because the crises variables are measured at the country level, it is useful to examine the overall pattern of remedy usage at the higher level of aggregation for each country. We create a new dependent variable for the total number of remedy investigations across all products that were initiated by a given country each year. As in the earlier analysis, we only include the twenty-six countries that are remedy users during the period of analysis 1996-2009.\(^{30}\) At the highest level, India imposed 669 remedy investigations in 2008. The sample mean, however, is much lower, at 29 investigations per year. The year with the highest average usage across all countries was 2001, when the sample mean rose to 65 investigations. Given the count nature of the outcome of interest, we estimate the probability of remedy use with a negative binomial regression panel model, including country fixed effects. At this level of aggregation, imports represent total imports, and we do not include the product-specific measure of applied tariff rate. All independent variables are lagged by one year.

The results are shown in the third column of Table 3. Our findings are very consistent at the country level—domestic crises are associated with an increased probability of remedy investigations, and when crises are widely shared, countries exercise restraint as seen by the lower frequency

\(^{30}\)Since we do not require the product level import flows in this model, data allows including 1996 as start of time period.
of remedy initiation across all products. Having confirmed that even at the national level we can observe the predicted pattern in total remedies, we return to the disaggregated industry data for analysis of tariffs as dependent variable measuring protection.

**Estimating Crisis Effect on Tariffs**  We also test our expectations on an alternative form of legal trade flexibility. Many states have negotiated higher bound tariff rates while applying a lower rate on MFN basis. The gap, referred to as binding overhang, allows countries to temporarily increase their applied tariffs without violating the legal commitment to maintain tariffs below the bound rate. The average level of binding overhang is 18% across the WTO membership, meaning that the average traded product could have its tariff rate raised by 18% overnight without any violation of WTO obligations.\(^{31}\) This alternative protection measure represents the simplest government action to protect markets. The tariff measure expands our test to a broader range of countries and different policy-making venue. Unlike the trade remedy process that depends on interaction between industry and bureaucracy for the petition, investigation, and final approval of remedy measures, the increase of an applied tariff can be accomplished quickly through a direct policy change by the tariff authority within government. Binding overhang is thus of particular interest to our analysis, since it can be exercised quickly, cheaply, and can be used by countries that may not have the necessary bureaucratic apparatus or industry capacity to conduct remedies investigations.\(^{32}\)

In Table 4, we present results estimating an indicator of tariff hikes greater than 15 percent, which is the level of tariff rate increases that the WTO itself employs when comparing reliance

\(^{31}\) Based on 2007 data from World Integrated Trade Solution data, hosted by the World Bank.

\(^{32}\) Indeed, such substitution is often pointed to as a justification of binding overhang by WTO developing country members (e.g., Statement by the Representative of India, WTO document WT/COMTD/W/143.)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (1)</th>
<th>Coefficient (2)</th>
<th>Coefficient (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Crisis</td>
<td>0.67** (0.16)</td>
<td>0.93** (0.09)</td>
<td>0.70** (0.10)</td>
</tr>
<tr>
<td>ROW Crisis</td>
<td>5.24* (2.04)</td>
<td>9.01** (1.10)</td>
<td>8.82** (1.11)</td>
</tr>
<tr>
<td>Domestic X ROW Crisis</td>
<td>-17.11** (2.22)</td>
<td>-15.88** (1.24)</td>
<td>-13.69** (1.32)</td>
</tr>
<tr>
<td>Log GDP</td>
<td>-4.44** (1.68)</td>
<td>0.17** (0.02)</td>
<td>0.11** (0.03)</td>
</tr>
<tr>
<td>Log Income</td>
<td>10.12** (2.43)</td>
<td>-0.81** (0.04)</td>
<td>-0.88** (0.04)</td>
</tr>
<tr>
<td>Regime Type</td>
<td>0.10* (0.04)</td>
<td>-0.07** (0.01)</td>
<td>-0.08** (0.01)</td>
</tr>
<tr>
<td>Applied Tariff</td>
<td>-0.17** (0.01)</td>
<td>0.02** (0.00)</td>
<td>0.02** (0.00)</td>
</tr>
<tr>
<td>Log Imports</td>
<td>-0.05 (0.04)</td>
<td>0.002 (0.04)</td>
<td>0.02† (0.01)</td>
</tr>
<tr>
<td>OECD</td>
<td>1.92** (0.11)</td>
<td>1.95** (0.12)</td>
<td></td>
</tr>
<tr>
<td>Exchange Rate Change</td>
<td></td>
<td></td>
<td>0.003** (0.001)</td>
</tr>
<tr>
<td>Fixed Exchange Rate</td>
<td></td>
<td>-0.25† (0.13)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-6.03** (0.64)</td>
<td>-3.94** (0.67)</td>
<td></td>
</tr>
</tbody>
</table>

| N                            | 4,812           | 596,633         | 596,011         |
| Log-likelihood               | -906.22         | -8153.06        | -7848.27        |
| $\chi^2_{(8,9,11)}$         | 1457.13         | 1203.39         | 1390.27         |

Significance levels: †: 10% *: 5% **: 1%

Table 4: The Effect of Shared Crises on Tariffs: Each model estimates the decision at 6 digit product level to hike applied tariffs by 15 percent or more for those products where tariff hike would be compliant with WTO tariff schedule. Column 1 shows results of conditional logit estimation, which drops all products that do not experience tariff hike during sample period 1997-2009; columns 2 and 3 show random effects logit estimation for full sample (products with overhang for 42 countries). All explanatory variables with exception of OECD indicator are lagged by one year.
of overhang to usage of trade remedies. Here we restrict the sample to those product lines in each country that had sufficient overhang in the prior year to allow for tariff hikes of at least 15% within the legal commitments of their WTO tariff schedule. We have data for forty-three countries that have some products with tariff overhang. The first column shows the conditional logit estimation, which has a smaller sample because all products that do not experience a tariff hike over the sample period are dropped from the analysis (this reduces countries in sample to thirty-two). Columns 2 and 3 estimate a random effects logit regression on the full sample of forty-three countries (119,127 distinct country-product groups), with the addition of the OECD indicator and foreign exchange controls in column 3. The results follow our expectations for the relationship between crisis and protection as we find that tariff hikes exhibit the same pattern we found in our main analysis of trade remedy protection. Governments increase their reliance on tariff hikes during isolated domestic crises, but are less likely to raise their tariffs when domestic crisis coincides with pervasive international crisis. We estimate the marginal effects based on the coefficients from column 3 in Table 4. When holding control variables at their mean and domestic crisis at 5, increasing the pervasiveness of world crisis by one standard deviation reduces the probability of a tariff hike for a given product by 89 percent.

Other control variables are less consistent. The regime type measure (polity score) was positive across all specifications estimating use of remedies, but becomes negative for the full sample random effects logit model estimations of tariff hikes shown in columns 2 and 3 of Table 4. The changing direction of the polity variable in the models for tariff and remedy usage may arise from preference by democratic states to rely on less transparent forms of protection such as trade remedies and other non-tariff barriers. The exchange rate controls here go against

---

our expectations, as currency depreciations increase the probability of tariff hike, in contrast to their effect to reduce the probability of trade remedy use. Although the regression results suggest OECD members use tariff hikes with greater probability than other states, this largely reflects the behavior of Mexico and Turkey, as the only two OECD members that feature many product lines with significant tariff overhang. Other members such as United States, Japan, Switzerland, and EU have so few product lines with tariff overhang that they jointly form less than one percent of the sample. For most developed countries, remedies, rather than tariff policies, constitute the primary tool of protection.

**Robustness Checks**  We conduct several robustness checks pertaining to our main analysis. First, we consider alternative estimation strategies. While we use a binary indicator for remedy usage, some country-products actually feature more than one investigation in a given year. To capture such intense remedy usage, we analyze the dependent variable as a count of total investigations. Using a poisson model to estimate total investigations supports the conclusions of the main analysis. We also confirm that results hold when we restrict the rest of the world crisis measure to a more focused measure of crises across the given country’s top export markets. To examine whether the findings are entirely driven by the two largest economies, the United States and EU, we reran our two main models excluding both the US and the EU. Our estimations for this subset of the data show a substantively smaller effect of shared crisis, but remain significant in the expected negative direction suggesting that even while the US and EU make up a real portion of restraint, they are not the only states to do so. The national level aggregate analysis (column 3, table 3) also remains strongly robust when omitting the US and EU.

Finally, we test all our findings for the period preceding the Great Recession, from 1997 to
2007. In doing so, we ask a key question: is the restraint we observe during shared crises driven by the recent Great Recession, or is it a more general phenomenon? For all estimations examining industry level remedy use and tariff policies, our results hold for the pre-2008 period. This suggests the restraint we have identified may not be limited to the exceptional circumstances of the Great Recession, as some have suggested (Bown and Crowley, 2012). Rather, the 2008 crisis is an example of a much wider phenomenon, a particular instance of widespread crises leading to restraint on the part of members in the exercise of their “WTO rights”. Throughout the WTO era, countries have shown that they are more likely to give in to protectionist demands when they face a local economic crisis, but moderate this tendency as a function of shared crisis across the system.

4 Conclusion

Political economy theory would lead us to expect rising trade protection during hard times. Yet empirical evidence on this count has been mixed. Some studies find a correlation between poor macroeconomic conditions and protection, but the worst recession since the Great Depression has generated surprisingly moderate levels of protection. We explain this apparent contradiction. Our statistical findings show that under conditions of pervasive economic crisis at the international level, states exercise more restraint than they would when facing crisis alone. These results throw light on behavior not only during the crisis, but throughout the WTO period, from 1996 to the present. One concern may be that the restraint we observe during widespread crises is actually the result of a decrease in aggregate demand, and that domestic pressure for import-relief is lessened.

34 The national level aggregate analysis (column 3, table 3) does not reach conventional significance levels for the pre-2008 period, although maintains consistent direction.
by the decline of world trade. By controlling for the product level imports, we show that *the restraint on remedy use is not a byproduct of declining imports*. We also take into account the possibility for some countries to use currency manipulation, and demonstrate that the relationship between crisis and trade protection holds independent of exchange rate policies.

Government decisions to impose costs on their trade partners by taking advantage of their legal right to use flexibility measures are driven not only by the domestic situation, but also by circumstances abroad. This can give rise to an individual incentive for strategic self-restraint towards trade partners in similar economic trouble. Under conditions of widespread crisis, government leaders fear the repercussions that their own use of trade protection may have on the behavior of trade partners at a time when they cannot afford the economic cost of a trade war. Institutions provide monitoring and a venue for leader interaction that facilitates coordination among states. Here the key function is to reinforce expectations that any move to protect industries will trigger similar moves in other countries. Such coordination often draws on shared historical analogies, such as the Smoot-Hawley lesson, which form a focal point to shape beliefs about appropriate state behavior. Much of the literature has focused on the more visible action of legal enforcement through dispute settlement, but this only captures part of the story. Our research suggests that tools of informal governance such as leader pledges, guidance from the Director-General, trade policy reviews, and plenary meetings play a real role within the trade regime. In the absence of sufficiently stringent rules over flexibility measures, compliance alone is insufficient during a global economic crisis. These circumstances trigger informal mechanisms that complement legal rules to support cooperation.

The determinants of protection include the severity of the economic downturn at home and abroad. Rather than reinforcing pressure for protection, pervasive crisis in the global economy
generates countervailing pressure for restraint in the response to domestic crisis. Our evidence shows that this dynamic occurs even for trade barriers that are fully legitimate within WTO rules. During widespread crisis, legal enforcement would be inadequate, and informal governance helps to bolster the system. In some cases, hard times bring more, not less, international cooperation.
References


