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# Cooperation in Hard Times: Self-restraint of Trade Protection

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**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 across countries 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 1996 to 2011 provides support for our claim that under conditions of shared hard times, states exercise strategic self-restraint to avoid beggar-thy-neighbor policies.

**Keywords**

international cooperation, international institutions, trade interdependence, trade

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*"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 (2009)

When do countries turn to trade protection? The usual answers emphasize the state of the domestic economy, political pressures, and the constraining effect of international legal rules. This article 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 second, 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 earlier by Pascal Lamy, the World Trade Organization (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 naive. 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 twenty-three 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.[1] Compliance with multilateral trade rules appears high; the number of complaints against violations of the rules has remained steady.[2] Even with regard 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, 26) finds only three countries increased the share of their imports covered by temporary barriers in 2009, relative to their precrisis behavior.[3] Ruddy (2010, 489) surveys four different sources monitoring trade policies and concludes that there has not been significant increase in protection. The May 2010 Organization for Economic Cooperation and Development (OECD 2010a) 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 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. Our theory highlights an area where informal coordination based on self-interest, rather than legal obligation or formal enforcement actions, motivates restraint.

We test our argument using a large data set of trade remedies and tariff measures for the period between 1996 and 2011. This allows us to compare variation across a fifteen-year period for a broader test than studies that have focused exclusively on the 2008 crisis. 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 after conditioning on changing trade volumes and currency swings. Controlling for both the

level and type of exchange rate policy is important to address the possibility that currency policy could substitute for trade protection measures. 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.

## A Theory of Conflicting Pressures from Crisis

Crises are by definition unexpected events. As described by Kahler and Lake (2013, 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 gray area of cooperation where states must balance competing interests under extraordinary circumstances.

### *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.[4] In addition, domestic political goals such as favoring influential groups lead to protection (Grossman and Helpman 1994; Goldberg and Maggi 1999). Framing the public interest and the context of political institutions shapes how these biases influence trade policies (McGillivray 2004; Naoi and Kume 2011; Rickard 2012). 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 confront 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 a 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.[5]

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 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 antidumping and safeguard measures to the WTO at an early stage in the process. The Committee on Antidumping Practices reviews semiannual 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 US 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, 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 US$350 billion in welfare costs, not including the retaliation that could follow (Bouet and Laborde 2009; WTO Trade Negotiations Committee [TN/C/M/29, paras. 188-89]). In other words, WTO-consistent global protection could compromise the trade regime.

## *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, 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 World War II (McKeown 1991). Empirical studies of tariff and nontariff 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 Prusa 2003). 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 in 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. Amid 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.

It could be that countries no longer seek protectionism. Indeed, Rose (2013) declares that economics has won—he attributes the weakening association between macroeconomics and trade policy as the victory of free trade ideas advocated by economists. Gawande, Hoekman, and Cui (2014) contend that changing structure of trade through vertical specialization has led to a steady decline in the demand for protection and offer this as an explanation for the lack of a protectionist surge during the 2008 crisis. Yet if this were the case, then one would not observe the ongoing turn to protection during the isolated domestic crises. These theories help account for general downward trend in trade barriers over time, but not the differential pattern in use of remedy measures across crises. Recent research shows protection continues to rise during economic downturns. Bown and Crowley (2014) examine thirteen emerging markets to show the countercyclical pattern of economic shocks with import restrictions. Furthermore, when countries did resort to protection barriers during the Great Recession, they followed expected patterns to favor politically influential sectors. Kang and Park (2011) find that the industry targeting of Korean trade barriers favors the politically organized sectors, although there was no surge in the number of antidumping and safeguard initiations during the 2008 crisis. Argentina is one of the emerging market economies that increased its use of protection during the crisis with both more initiations and higher value of imports affected by measures (Moore 2011). The use of trade barriers to protect industries during crises is not obsolete, and so the question remains to explain why widespread crisis has not led to a correspondingly widespread resort to protectionism.

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 General Agreement on Tariffs and Trade 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). Strong legal enforcement through the WTO dispute settlement system has helped states to manage domestic political pressures (Davis 2012). 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 emphasize 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 of the Depression and Great Recession, these broader shifts cannot account for why even within a globalized economy there occurs variation in response to crises. In particular, local crises continue to produce a protectionist response and the challenge is to explain why this does not worsen under the scenario of a global crisis.

## *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 have 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 and reduce trade volume, grow more dire during crisis. As domestic demand declines, 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 experience an economic 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 preemptively 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 coordination actually take place? It is unlikely that legal enforcement through WTO dispute settlement is responsible for the restraint in use of flexibility mechanisms because they are formally allowed under the rules.[6] 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 logroll 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 displayed in his office a photo of the two authors of the legislation and told 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". The US Congress made repeated references to Smoot–Hawley tariff during the debates over responses to the Asian Financial Crisis and the Great

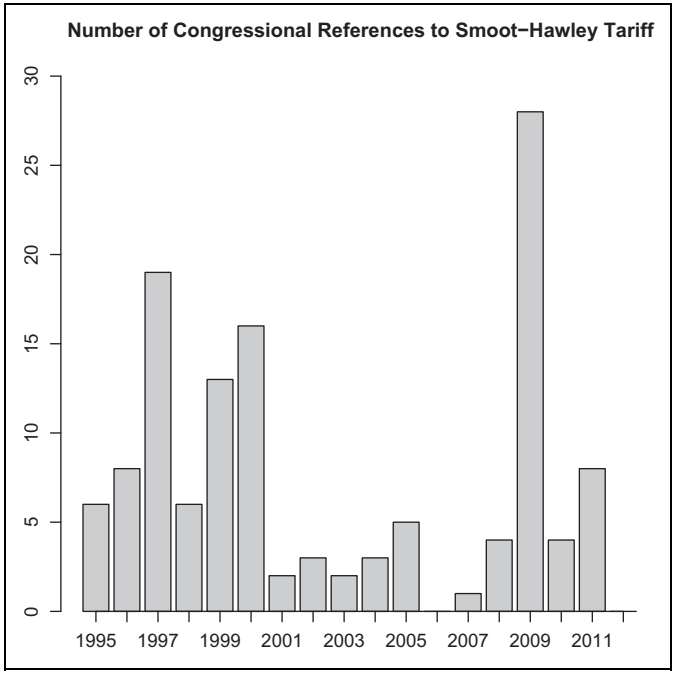


**Figure 1.** The lesson of Smoot–Hawley: the figure displays the number of mentions to Smoot–Hawley during floor testimony in the Senate and House of the US Congress.

Recession. Figure 1 shows the sharp rise in attention to this precedent during these two main economic crises since the WTO's inception.[7] The attention to this historical focal point extends beyond the US 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.[8]

This lesson is not only about the economic consequences of trade protection but more specifically about the danger of closing markets when other countries are facing similar hardship. Here, the historical analogy may also be more appropriate in its general application. Irwin (2011, 151) contends that the greatest damage to US 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 United States 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 US Congress references to Smoot–Hawley in 1997 and 2009, while the US 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.

In the references to the Smoot–Hawley lesson, Congressional representatives emphasized the connection to the risk of retaliation. A review of statements at the House of Representatives, March 12, 2009, Hearing on "U.S. Foreign Economic Policy in the Global Crisis" is illustrative. Two representatives engaged in debate over the appropriate use of the Smoot–Hawley lesson. First, Representative Brad Sherman, a democrat who represents the thirtieth district in Orange County California, defensively noted that the measures proposed to help US industries were different from the Smoot–Hawley tariffs and accused Canada and the European Union (EU) of being hypocritical in warning about a trade war. Representative Ed Royce, a Republican who represents the twenty-ninth district in Orange County California, responded, "Of course Smoot–Hawley, with the 200 percent increases in tariffs is not identical to some of the initiatives being pushed today. But what we are talking about when we are talking about Smoot–Hawley is the blowback from our trade partners. The reaction in Europe, in terms of the trade barriers that went up: the reaction in Latin America, in Chile, and in other countries, that then impose trade barriers, and the fact that once that happened, economic decline put a very severe recession into a great national depression worldwide" ("U.S. Foreign Economic Policy in the Global Crisis" 2009). Controlling for similar district interests in this case, both representatives took predictable positions reflecting partisan orientations toward trade. Yet more importantly, the prospect of trade war loomed large on both sides of the debate.

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 to 2009 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, 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 policymakers. Such pressures for restraint

constitute examples of informal governance that can become most important when stakes are high and agreed upon rules prove inadequate.[9] Cowhey (2013, 216) highlights that even for the United States, the monitoring reports of the G-20 and other institutions along with the US Trade Representative played a 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. The WTO's legal obligations and its dispute settlement system provide a backstop against egregious forms of protectionism that violate legal commitments, but our theory points to a degree of restraint that goes beyond the formal commitments contained in WTO agreements. In this process, the WTO functions as one of several venues for states to achieve informal coordination.

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 public references 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 mentioned 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.

## Analysis of Protectionism in Crisis

Our outcome of interest is that 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.[10] In this article, 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, refers 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.[11]

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, 5) note that in Australia and the EU, ministerial oversight of the determination of antidumping duties makes 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 mid 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.

## Data

We compiled a large data set of trade barriers and trade flows from 1995 to 2012 at the product level (six-digit Harmonized System).[12] We analyze two dependent variables: our main analysis focuses on initiation of remedy investigations, and a secondary analysis examines tariff policies. For the analysis of remedy policies, we 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. Our sample of countries that meet these criteria and have data available on our measures include twenty-nine countries, with the EU being treated as single country because remedies are measured at the EU level.[13] There is no restriction on the target countries.

We examine the country-product-year unit of analysis in our main specification. This inflates the number of observations since each country may trade as many as 5,000 products at the six-digit level. Controlling for product-level imports represents a major advance relative to country-level aggregation because we can ascertain that changes in trade volume alone do not account for the varied observation in remedy use. For our main analysis, we estimate the probability that a state initiates at least one remedy investigation for a country-product-year observation. We use a conditional logit regression, which limits the sample to the most relevant observations, 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. By using a dichotomous indicator for whether any remedy investigation was initiated, we purposefully avoid focusing on the level of the duty or the number of targeted partners.[14] As a

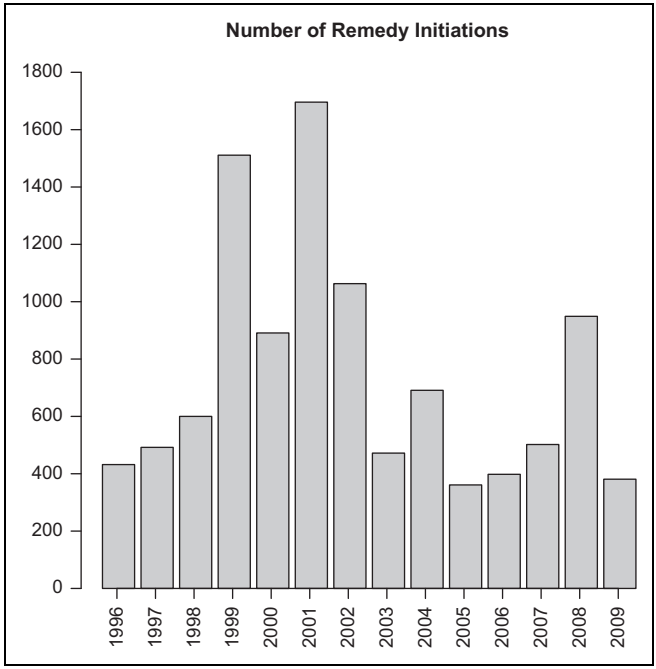


**Figure 2.** Remedy investigations: the figure shows the number of investigations initiated each year for all of the countries in the data set including antidumping, countervailing, and safeguard investigations.

robustness check, we also include analysis of the total number of remedy investigations. We lag all explanatory variables one year to reduce simultaneity. Because of the lag, our main analysis of remedy usage covers the period 1996 to 2011. In a separate specification, we collapse the product data for analysis of a single country-year unit of analysis. Finally, when using alternative measures, we are able to use full data set for period from 1996 to 2012.

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 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.[15] 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 wake of the 1997 to 1998 Asian financial crisis produce more protection than the

crisis itself? And why would the small economic downturn of 2001 (following the burst of the dot-com technology bubble) be accompanied by more protection than the Great Recession? Our explanation focuses on why pervasive crises dampen protection relative to more isolated local problems.

We measure our independent variables for crises using data from Reinhart and Rogoff (2009), time, 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 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. Later, we use unemployment and recession as alternative measures of crisis.

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 gross domestic product (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.[16] The trend for this measure shown in Figure 3 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.[17] 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. Given

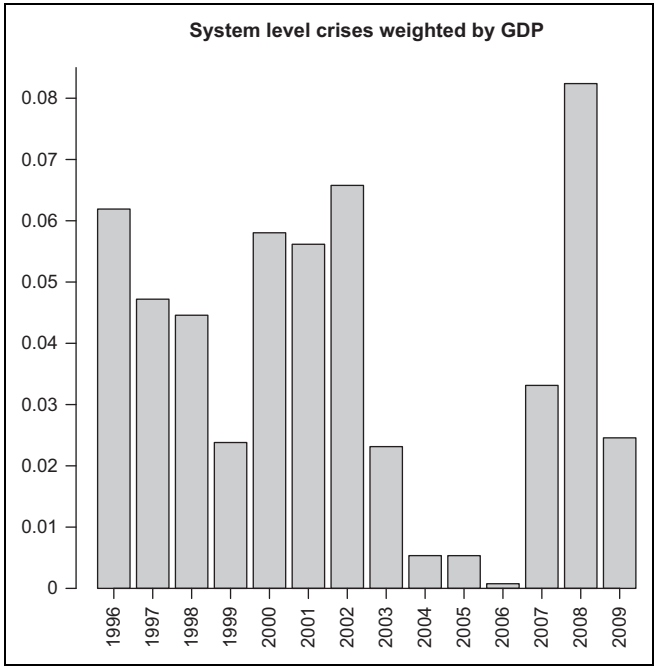


**Figure 3.** World Crisis Tally: the figure shows the average level of our measure of crisis among all countries in our data sample, when the crisis index is weighted by the relative gross domestic product size of the country in crisis.

potential complementarity or substitution between trade and currency policies, we control for the level of the real exchange rate and include an indicator for fixed exchange rate policy. 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.

## *Findings*

First, we examine the conventional wisdom. Scholars expect that when hard times hit, governments will make more use of import relief. The first column of Table 1 shows exactly that in the year following a localized crisis, the odds of observing a higher number of trade remedy actions 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.

**Table 1.** Effect of Shared Crises on Trade Protection.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Domestic crisis | 0.062*** (0.020) | 0.282*** (0.051) | 0.022** (0.010) | 0.291*** (0.041) | 0.356*** (0.044) |
| ROW crisis | | 10.673*** (0.968) | 0.965*** (0.263) | 10.927*** (0.877) | 11.475*** (0.919) |
| Domestic × ROW crisis | | −5.035*** (0.717) | −0.403** (0.154) | −5.203*** (0.625) | −5.972*** (0.645) |
| Log of GDP | −2.996*** (0.239) | −2.631*** (0.239) | −0.227*** (0.075) | 0.343*** (0.019) | −0.192*** (0.040) |
| Log of GDP per capita | 1.888*** (0.282) | 1.477*** (0.285) | 0.127 (0.075) | −0.561*** (0.029) | 0.010 (0.068) |
| Regime type | 0.050*** (0.019) | 0.058*** (0.020) | 0.006 (0.007) | 0.156*** (0.009) | 0.082*** (0.016) |
| Tariff rate | −0.025*** (0.006) | −0.022*** (0.006) | −0.002 (0.002) | 0.002*** (0.001) | −0.001 (0.005) |
| Log of product imports | 0.245*** (0.026) | 0.239*** (0.026) | 0.022*** (0.003) | 0.305*** (0.010) | 0.127*** (0.017) |
| Real exchange rate | 0.024*** (0.002) | 0.022*** (0.002) | 0.002** (0.001) | 0.013*** (0.001) | 0.012*** (0.001) |
| Exchange rate regime | −0.312** (0.146) | −0.181 (0.151) | −0.020 (0.029) | 0.685*** (0.101) | 0.227* (0.124) |
| Constant | | | 4.771*** (1.462) | −18.008*** (0.405) | −1.726** (0.829) |
| *N* | 31,890 | 31,890 | 31,890 | 1,581,755 | 31,890 |

*Note:* Dependent variable is measure of trade remedy usage. Columns (1) and (2) show conditional logit estimates. Column (3) shows ordinary least squares regression with robust standard errors clustered on country. Column (4) shows random effects logit estimation. Column (5) shows negative binomial count model of the number of trade remedy investigations. All explanatory variables lagged one year. GDP = gross domestic product; ROW = rest of the world.
*$p < .10$. **$p < .05$. ***$p < .01$.

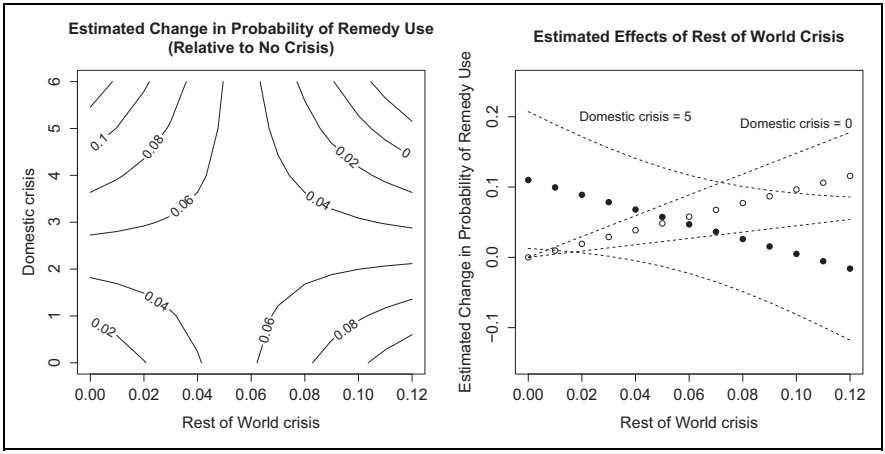


**Figure 4.** Estimated interaction effect between domestic and world crisis levels: the two graphs present estimates from linear fixed effects model shown in Table 1. The contour plot (left) shows the estimated effect over each combination of values for crises at home and abroad while the line plot (right) graphs the estimated effect of world crisis at the maximum and minimum values of domestic crisis with 95 percent confidence intervals.

Next, we examine whether the pervasiveness of crisis abroad counteracts this tendency. The remainder of Table 1 shows estimates that include the three terms needed to assess our hypothesis: local crisis, ROW crisis, and interaction of local and ROW crises. The findings offer support for the hypothesis—the interaction term between foreign crises and local crises is significant and negative. While either domestic crisis in the absence of world crisis or world crisis in the absence of domestic crisis increase the probability of remedy use, their simultaneous occurrence attenuates the expected level of protection. Note that models 2 and 3 in Table 1 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.[18]

What are the effects 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) in the second column. As with the conditional logit model, fixed effects are at the country-product level. The advantage of this model, beyond its interpretability, is that we can estimate robust standard errors clustered at the country level. Based on the linear model coefficients shown in model 3 of Table 1, Figure 4 presents the estimated interaction effects 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 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 10 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 noncrisis scenario. The zero line indicates that when ROW crisis measure rises above 0.10 and the domestic crisis measure is greater than 4, there is no expected increase in remedy use relative to a no-crisis scenario, and beyond these levels one would expect negative effect on protection—the crisis interaction induces restraint.

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 percent confidence intervals. Given the wide levels of uncertainty for estimates at the two extreme ends of the measure, there are wide confidence intervals, but the underlying coefficient for the interaction term is highly significant. 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 the absence of domestic crisis.

Indeed, the marginal effect of world crisis on remedy use is quite substantial. There is a 40.0 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.[19] Conditions abroad strongly qualify domestic responses to hard times.

It is well established that exchange rate adjustments offer an alternative means for countries to respond to crisis (Broz and Frieden 2001; Pelc 2011; Copelovitch and Pevehouse 2013). 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.[20] For this reason, we include controls for exchange rates. We use the level of the real exchange rate to measure fluctuations in the value of the local currency relative to the US dollar (i.e., an increase in this variable corresponds to an appreciation of the local currency).[21] A positive coefficient would indicate that higher levels of the currency are accompanied by increased remedy use,

while a negative coefficient would indicate that higher levels of the currency reduce remedy use. To the extent that a lower currency raises the cost of imports, it can substitute for import barriers, while providing a de facto export subsidy. We also include an indicator of whether the country has a fixed exchange rate.[22] These countries are less able to use exchange rate adjustment to buffer their economy during hard times, which could increase pressure to resort to direct trade barriers. As with other covariates, we lag the exchange rate measures by one year. Our core findings are robust to these controls. The expectations of the literature are borne out: the evidence shows that exchange rate policies are connected to use of trade remedies. Countries that have a lower currency are less likely to initiate a remedy investigation throughout our four models. The evidence on the impact of a fixed exchange rate regime is more mixed, with inconsistent findings across our five models. Most importantly, our main findings are robust to the inclusion of these exchange rate controls: crises abroad make a protectionist response to domestic crisis less likely.

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. The findings, presented in model 4 of Table 1, support our hypothesized relationship between crisis and remedy use. The positive coefficient for the domestic crisis variable supports the expectation 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. Finally, in model 5, estimates from a negative binomial regression with fixed effects show the probability of remedies when modeling the dependent variable as a count of total remedy initiations for the country-product year instead of the dichotomous measure for main estimates.

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.[23] 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 noncrisis country faces more genuine cases of dumping, as crisis spreads elsewhere. To test for this possibility, we rerun our estimations from Table 1, this time with logged imports as the dependent variable.[24] We find that the healthier domestic economies (measured in terms of lower values in the Reinhart 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 of Table 1, our control variables generally support expectations. Market size consistently corresponds to lower rates of remedy use, but income with higher rates. This relationship reverses, however, for the very large sample that includes all products, even where no remedy has been initiated. Omitting the income control variable affects the magnitude of GDP but not its direction or significance, and other variables are unaffected. The positive correlation between democracy and remedy usage is robust for all specifications, except the linear specification in model 3 of Table 1. Products with higher import volume are associated with more frequent remedy investigations. At the same time, high tariffs correspond to lower use of remedies, hinting at a substitution effect between both instruments.

The prevalence of WTO membership makes it difficult to make inferences about the influence of membership on state behavior.[25] Our argument that restraint arises through informal cooperation, rather than hard enforcement, suggests that the rich information environment supported by institutions such as the WTO is important.

*Country-level aggregate analysis of remedy use.* 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 countries that are remedy users during the period of analysis 1996 to 2011.[26] At the highest level, the United States imposed 903 remedy investigations in 2001. The sample mean, however, is much lower, at 23 investigations per year. The year with the highest average usage across all countries was 2001, when the sample mean rose to 61 investigations. Given the count nature of the outcome of interest (a binary indicator would register little variation, since most countries initiated at least one remedy in most years), we estimate the probability of remedy use with a negative binomial regression panel model and include country fixed effects. At this level of aggregation, imports represent total imports, and we do not include the product-specific measure of the applied tariff rate. As mentioned earlier, all independent variables are lagged by one year.

The results are shown in Table 2. Our findings at the country level are highly consistent—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 of remedy initiation across all products. The first

**Table 2.** Effect of Shared Hard Times on Protection (Country Level).

| | (1) | (2) |
|---|---|---|
| Domestic crisis | 0.210 (0.134) | 0.236* (0.120) |
| ROW crisis | 6.566** (2.559) | 5.151** (2.137) |
| Domestic × ROW crisis | −4.650** (2.037) | −4.304** (1.610) |
| Log of GDP | 0.410*** (0.099) | −1.879* (1.077) |
| Log of GDP per capita | −0.149 (0.119) | 2.607* (1.332) |
| Regime type | 0.050* (0.027) | 0.043 (0.037) |
| Log of imports | −0.110 (0.098) | 0.193 (0.128) |
| Tariff rate | −0.059*** (0.019) | −0.012 (0.019) |
| Real exchange rate | 0.011** (0.005) | 0.014** (0.006) |
| Exchange rate regime | 0.753** (0.313) | 0.606 (0.368) |
| Constant | −10.787*** (2.051) | 25.200 (19.237) |
| *N* | 415 | 415 |

*Note:* Dependent variable is a count of trade remedy actions in a given country year. Column (1) shows country-level negative binomial panel regression. Column (2) shows country-level ordinary least squares regression on the logged count of remedies with robust standard errors clustered on country. All explanatory variables are lagged by one year. GDP = gross domestic product; ROW = rest of the world.
*$p < .10$. **$p < .05$. ***$p < .01$.

column shows the negative binomial model, while the second column shows an ordinary least squares (OLS) model. The relationship with the real exchange rate remains the same, with lower levels of the exchange rate being associated with lower reliance on trade remedy protection and fixed exchange rate regimes being associated with greater use of trade remedies. 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.* Next, we test our expectations on an alternative form of legal trade flexibility. Many states have negotiated higher bound tariff rates while actually levying a lower rate on a most favored nation basis. The resulting 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 percent across the WTO membership, meaning that the average traded product could have its tariff rate raised by 18 percent overnight without any violation of WTO obligations.[27] 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 in an applied tariff can be accomplished quickly through a direct policy change by the tariff authority within government. Binding overhang

**Table 3.** Effect of Shared Crises on Tariffs.

| | (1) | (2) |
|---|---|---|
| Domestic crisis | 0.801*** (0.045) | |
| ROW crisis | 15.618*** (0.835) | |
| Domestic × ROW crisis | −4.930*** (0.627) | |
| Domestic recession | | −0.840*** (0.179) |
| ROW recession | | 1.316*** (0.195) |
| Domestic × ROW recession | | −5.213*** (1.141) |
| Log of GDP | −0.417*** (0.028) | 0.007 (0.018) |
| Log of GDP per capita | 0.646*** (0.039) | −0.089*** (0.024) |
| Regime type | −0.093*** (0.007) | −0.037*** (0.005) |
| Tariff rate | −0.016*** (0.002) | −0.026*** (0.002) |
| Log of product imports | 0.039*** (0.012) | 0.043*** (0.010) |
| Real exchange rate | −0.006*** (0.002) | −0.008*** (0.001) |
| Exchange rate regime | 0.306** (0.129) | −0.737*** (0.091) |
| Constant | −5.845*** (0.619) | −8.856*** (0.403) |
| *N* | 955,774 | 1,343,396 |

*Note:* Each model estimates the decision at six-digit product level to hike applied tariffs by 15 percent or more for those products where tariff hike would be compliant with World Trade Organization tariff schedule. Both columns show results of random effects logit estimation. All explanatory variables are lagged by one year. GDP = gross domestic product; ROW = rest of the world.
*$p < .05$. **$p < .01$. ***$p < .001$.

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.[28]

In Table 3, 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 of overhang to usage of trade remedies (see WTO 2009, 136). 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 percent within the legal commitments of their WTO tariff schedule. We have data for forty-three countries that have tariff overhang exceeding 15 percent on some products.

Both columns of Table 3 show estimated coefficients from a random effects logit model including the same set of control variables as mentioned earlier. The first column relies on the Reinhart and Rogoff crisis index, while the second column instead measures economic hard times as recession, using a binary indicator coded as 1 if a country experiences negative GDP growth in two consecutive quarters in a given year. The larger sample size in the second column is due to the better country coverage of GDP data, as compared against Reinhart and Rogoff's crisis data. As in our estimations of trade remedy usage, widespread hard times lead to less tariff hikes than isolated hard times, regardless of whether hard times are measured with our

crisis or recession measures. Some of our controls, however, behave differently, resulting either from the broader country coverage or from the use of tariff hikes as the dependent variable. Regime type is now negatively signed across both models, suggesting democracies are less likely to rely on tariff hikes when they have the room to do so, offering support for the view that democracies prefer to allocate protection to more "opaque" instruments, such as trade remedies (Kono 2006). Higher levels of the real exchange rate appear to decrease the likelihood of tariff hikes, while the effect of fixed exchange regimes is inconsistent across both models. As in all our other specifications looking at trade remedies, the higher the imports, the more likely a tariff hike, reflecting the conventional wisdom about the domestic politics of trade. Most importantly, with regard to restraint, the picture looks much the same with tariff hikes as it does with trade remedies. Countries grow less likely to rely on tariff hikes when others also confront hard times.

*Robustness checks.* We conduct several robustness checks pertaining to our main analysis. First, we examine whether our main estimation is robust to different crisis measures. We replace the crisis measure based on Reinhart and Rogoff's data with a measure of unemployment and then a measure of recession, both drawn from World Bank data. Once again, we use conditional logit regression, which limits our sample to those country products that have experienced a remedy case during the period in our sample.[29] In both cases, we observe the restraint our theory leads us to expect: during recessions, or during periods of high unemployment, countries are less likely to engage in protectionism if other countries are facing similarly hard circumstances. Our control variables behave much as in Table 1, except for tariff rates, which have no significant effect in the model using unemployment as the measure of hard times. Importantly, however, our results appear robust to alternative measures of crisis.

Next, we rerun our analysis while restricting our crisis measures to a country's top trading partners. We confirm that all our results hold with this restricted definition of crisis. Moreover, crisis does not appear to have a more pronounced effect when using a measure of crisis in top trade partners than when using a measure of crisis across the entire WTO membership. This suggests to us that restraint arises as much from broad sense of systemic risk as it does from fear of specific partner retaliation.

To examine whether the findings are driven entirely by the two largest economies, the United States and the EU, we estimate our two main models excluding both the United States 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 United States and the EU make up a real portion of restraint, they are not the only states to do so. The national level aggregate tests (Table 2) are also robust to the omission of the United States and the EU.

The Reinhart and Rogoff (2009) data we rely on to construct our crisis index is made up of six categories. By summing these into an index, we achieve a single

measure of "hard times." Next, we assessed the different components of the index. We rerun our main estimation individually on each of Reinhart and Rogoff's crisis variables.[30] The results are broadly consistent: four crisis categories—currency, stock market, domestic debt, and external debt—exhibit the restraint that we theorize in this article. Inflation crises do not have significant effect at either domestic level or as interaction with systemic crisis. Banking crises seem to lead to more protectionism at home when they occur in isolation and have positive interaction with global level of banking crises contrary to our hypothesis. The question of why banking crises generate distinct dynamic should be explored in future research. Overall, the results suggest that the restraint countries engage in during widespread crisis is not limited to a particular type of crisis, offering further support for the use of the crisis index.

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 entirely for the pre-2008 period. This suggests the restraint we have identified is not to be limited to the exceptional circumstances of the Great Recession, as some have suggested (Bown and Crowley 2013). Rather, these findings suggest that the 2008 crisis is but one example in a broader pattern showing that widespread crises lead states to moderate their tendency to give in to protectionist demands when they face hard times at home.

## 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 1995 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 by the decline of world trade. By controlling for product-level imports, we show that the restraint on remedy use is not a by-product of declining imports. We also take into account the ability of some countries to manipulate their currency 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 toward 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. During widespread crisis, legal enforcement would be inadequate, and informal governance helps to bolster the system.

Informal coordination is by nature difficult to observe, and we are unable to directly measure this process. Instead, we examine the variation in responses across crises of varying severity, within the context of the same formal setting of the WTO. Yet by focusing on discretionary tools of protection—trade remedies and tariff hikes within the bound rate—we can offer conclusions about how systemic crises shape country restraint independent of formal institutional constraints. Insofar as institutions are generating such restraint, we offer that it is by facilitating informal coordination, since all these instruments of trade protection fall within the letter of the law. Future research should explore trade policy at the micro level to identify which pathway is the most important for coordination. Research at a more macro-historical scope could compare how countries respond to crises under fundamentally different institutional contexts.

In sum, the determinants of protection include economic downturns not only at home but also abroad. Rather than reinforcing pressure for protection, pervasive crisis in the global economy is shown to generate countervailing pressure for restraint in response to domestic crisis. In some cases, hard times bring more, not less, international cooperation.

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## Supplemental Material

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## Notes

1. See, for example, International Monetary Fund staff position note (Gregory et al. 2010), Organization for Cooperation and Development (OECD) trade policy study (OECD 2010b), and Kee, Neagu, and Nicita (2013).
2. Within the World Trade Organization (WTO), an average of seventeen complaints were filed per year over the three years 2008 to 2010, which is the same as the average complaints filed per year over the years 2005 to 2006. There were only thirteen complaints in 2007, and it is unclear whether this has any relationship to crisis or whether this year should be counted as pre- or postcrisis.
3. See also Bown and Crowley (2013) 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.
4. Broda, Limao, and Weinstein (2008) test 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 fifteen countries including developing countries. They conclude that the market power necessary to induce terms-of-trade behavior is not limited to what might conventionally be considered "large" countries.
5. 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 2009, 136).
6. This does not deny the significance of legal enforcement as a way by which international institutions constrain other forms of protection and help states to manage domestic political pressures (Davis 2012).
7. 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. *Source*: http://www.gpoaccess.gov/crecord/advanced.html.

8. Irwin (2011) documents that the tariff was neither as large nor as devastating in economic impact as commonly portrayed.
9. For a recent treatment of the importance of informal governance, see Stone (2011).
10. 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.
11. In terms of the number of affected industries, antidumping actions constitute by far the greatest proportion of remedy usage, representing 78 percent of investigations in our data. Countervailing duties form 12 percent of the actions, and safeguards represent the remaining 10 percent. 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 antidumping and counterveiling duties actions single out one or a few countries.
12. The number of products with data available varies by country and in any given year. For the United States, there are 484 product categories included in the conditional logit estimation sample. 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: accessed December 5, 2012, https://wits.worldbank.org/WITS/.
13. Remedies are measured at the EU level, and for national level variables such as crisis and polity score we calculate the average of EU members. The sample includes Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Ecuador, Egypt, the European Union (EU), India, Indonesia, Japan, Korea, Malaysia, Mexico, Morocco, New Zealand, Paraguay, Peru, Philippines, Poland, South Africa, Thailand, Turkey, United States, Uruguay, and Venezuela.
14. See Bown (2011) for detailed analysis of changes in the stock of remedy measures with attention to the product coverage, level, and targeted countries.
15. 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 long-standing barriers against China and the absence of new investigations.
16. The local crisis measure is unweighted because we control for gross domestic product separately.
17. Both variables are measured in constant US dollars, and we take the log to smooth values.
18. 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 country-product effect, and hence we cannot calculate marginal effects for this specification. The coefficients are useful primarily to test for direction of effect.
19. Using coefficients from the specification in model 4 in Table 1, 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 Rest of the World 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.

20. Knetter and Prusa (2003) show that in four major remedy users during the 1980 to 1998 period, currency appreciation increased antidumping filings and depreciation lowered average number of filings. Bown and Crowley (2013) find that exchange rate movements are one factor that may have reduced protection during the Great Recession.
21. We use 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).
22. 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 1 for any of the following categories: no separate legal tender, preannounced peg or currency board arrangement, preannounced horizontal band that is narrower than or equal to $\pm 2$ percent, or de facto peg. All other exchange rate regimes are set to zero. Their data end in 2007: we extend the data assuming that the exchange rate regime remains the same thereafter. Since we use lagged values, only two years of imputed values are in the analysis. The EU is dropped from the analysis prior to 2000, and thereafter the EU is coded to have the Euro as currency level and a flexible exchange rate.
23. Note that this coefficient is positive even when we omit the local crisis variable and the interaction term.
24. Estimation not shown: results available from authors.
25. 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 are limited to China in the years prior to WTO accession, when it was under heightened scrutiny as applicant.
26. Since we do not require the product-level import flows in this model, data allow including 31 countries in the sample.
27. Based on 2012 data from World Integrated Trade Solution data, hosted by the World Bank.
28. 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).
29. Results not shown due to space limitations. All our robustness results are included in the Online Appendix.
30. The low variation of the dichotomous indicator for infrequent crises in combination with conditional logit specification can give rise to estimation problems. Using the full index in the main specification of this article avoids this problem.

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