

# Institutions, Information, and Trade Policy in Times of Crisis<sup>1</sup>

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## Abstract

The paper examines the role of international institutions in preventing the rise of protectionism in times of crisis. Economic crisis exacerbates uncertainty in the conduct of commercial relations and thus makes it more likely for countries to resort to “beggar-thy-neighbor” trade policies. The historical record of the Great Depression supports this argument, where global trade suffered a downward spiral as governments pursued protectionist trade policies as a response to domestic pressures. This paper argues that the current era of globalization is distinguishable from its earlier counterparts by the presence of an extensive network of international institutions, which serve as conveyors of information that help to mitigate the information problem that prevails in prisoner’s dilemma settings. Specifically, international institutions such as the WTO, preferential trade agreements (PTAs) and other international economic organizations increase the flow of information among countries. In doing so, they alleviate coordination problems as well as facilitate the detection of violations in commitments to maintaining a liberal trade regime. We suggest that this mechanism may explain why the current crisis is not replicating the pattern of the Great Depression. Moreover, we explore the combined effect of membership in international organization and political variables, the latter including democracy, veto players, partisanship of government, and government effectiveness. We test this argument using a newly-compiled dataset of trade policies during the current economic crisis and membership in international organizations. The paper finds strong support for the informational role of international institutions as a key factor preventing the rise of protectionism in times of crisis. Conversely, there is mixed evidence that the combining effect of international organizations and domestic political variables matters in explaining protectionism during this crisis.

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## **Introduction**

The current global economic crisis is widely regarded as the most serious setback for the international economy since the Great Depression and one which has brought a host of governance issues to the fore, ranging from reform of banking regulations to reform of the International Monetary Fund (IMF). The impact of the crisis has not been limited to the financial sector in which it originated but has extended to virtually all areas of international economic interactions. Among the casualties has been international trade, which saw a historic and steep drop in the months following the outbreak of the crisis. The “great trade collapse” (Baldwin 2009) reflects the trade policy choices of countries that are deeply integrated into the global trading system but have shifted their orientation in favor of protectionist measures in an effort to cushion the blow of the crisis to their national economies. Measures such as import restrictions, export subsidies, anti-dumping measures, and state aid, to name a few, are examples of “beggar-thy-neighbor” policies adopted by states threaten to lead to an unraveling of liberal global trade. While many countries have appealed to such measures, not all have done so, and this pattern of state choices informs the main question underlying this paper: what explains the trade policy choices of countries in times of crisis?

In addressing this question, this paper highlights the political context of international commercial exchange and focuses on the role of international institutions, especially international economic organizations, as purveyors of information in times of crisis. The network of international institutions or organizations that span a wide range of issues are a distinct feature of the political landscape of the last century since the Great Depression and are important for understanding governance in this globalization era. We advance the argument that international institutions mitigate the uncertainty inherent to sustaining the optimal outcome of liberal trade and in times

of crisis, when the uncertainty problem is especially acute, institutions provide information and transparency regarding state choices in trade policy and, in doing so, take on an important role in the continuation of a liberal trading system. The main hypothesis of our empirical analysis tests this argument by analyzing the impact of membership in international organizations on the use of protectionist trade policies.

We carry out a quantitative analysis using data provided by Global Trade Alert, which monitors and provides real-time information on government measures taken during the current global crisis that are likely to affect international trade. We analyze the impact of international institutions on the intensity of protectionism of membership in international organizations, controlling for other factors that may also affect the adoption and implementation of protectionist measures. In addition to controls for economic variables, the analysis explores the impact of international organization on protectionism as a function of domestic political factors that strongly act on the push and pull over trade policy. These include democracy as a proxy for regime type, partisanship of the government in power, veto players, and government effectiveness. The analysis distinguishes between the effects of membership in international economic and political organizations and also between interventionist and non-interventionist organizations. This paper finds that membership in international economic organizations and in preferential trade agreements reduce the likelihood and extent of adopting protectionist trade measures. We also find that neither membership in political international organizations nor the institutional capacity for enforcement distinguishing interventionist and non-interventionist organizations has any significant impact on the adoption of protectionism. Rather, our findings suggest strong support for the informational and commitment functions of international economic institutions and its role in preventing the rise of protectionism in times of crisis.

Finally, there is mixed evidence that the combining effect of international organizations and domestic political variables matters in explaining protectionism during this crisis.

Immediately below we provide the theoretical framework of our paper, including the major points of comparison between the Great Depression and the current crisis and our main argument on the role of institutions in international trade. The research design section discusses case selection, model specification and data. The subsequent section reports the findings of the analysis and we conclude with a discussion of the implications of the paper for understanding trade policy choices in times of crisis.

### **Institutions, Information, and Trade Policy in Times of Crisis**

The 1930s Depression era saw the “Contracting Spiral of World Trade,” as reported by the League of Nations’ *Economic Survey* for 1932-1933 (Eichengreen and Irwin 1995, 4-5), as countries turned their backs on the liberal trading order and appealed instead to “beggar-thy-neighbor” policies that sought to shield national economies from the economic crisis. By 1932, the volume of world trade had fallen by 40 percent (Irwin 1993, 112). World trade disintegrated as countries put in place higher tariffs, the most notable example of this being the adoption of the famous Smoot-Hawley tariff of 1930 in the United States. Countries imposed import quotas, subsidies, licensing requirements as well as exchange controls. Bilateralism was rampant in this period (Culbertson 1937, Snyder 1940), as bilateral trade agreements were concluded to balance trade on a case-by-case basis and to preserve hard currency or gain political advantage. Trade became increasingly concentrated in blocs through arrangements such as the Ottawa Agreement of 1932 that created Imperial Preference in Great Britain’s trade with its dominions or through currency blocs linking one large economy with a set of smaller economies (Feinstein, Temin, and

Toniolo 1997; Pomfret 1988, Chapter 3). Exchange controls and clearing arrangements to stabilize exchange rates promoted intra-bloc trade while actively discriminating against those outside the bloc. Thus the 1930s was, according to Douglas Irwin, a “disaster in the field of commercial policy” (1995, 324), and the trade and exchange rate policies pursued in this period dismantled what little remained of the system of liberal trade that had been in decline since the late 19<sup>th</sup> century.

The record of international trade during the Depression era prompts comparison to the possible consequences for international trade of the current global economic crisis, widely recognized as the most serious economic crisis in the seventy years that have passed since then. Concerns about the consequences of the global economic crisis for international trade is what prompted figures such as Pascal Lamy, director-general of the WTO, to urge countries not to adopt protectionist trade policy as a way to insulate national economies from the effects of the crisis, warning that, as the Great Depression illustrates, “protectionism and economic isolationism do not work” (2008).<sup>2</sup> Indeed, the current global crisis, as Baldwin notes, led to “the great trade collapse,” a “sudden, severe, and synchronized” fall in global trade between the third quarter of 2008 and the second quarter of 2009, when global trade flows were 15% below their previous year’s levels (2009).<sup>3</sup> Though not as great in magnitude as that of the Great Depression, “the treat of trade collapse” was steeper, falling in the span of nine months what took 24 months during the Great Depression. Overall, this was the steepest decline in global trade on record and greatest in magnitude since the Great Depression.

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<sup>2</sup>“Lamy warns against protectionism amid financial crisis,” 24 September 2008. [http://www.wto.org/english/news\\_e/sppl\\_e/sppl101\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl101_e.htm).

<sup>3</sup> <http://www.voxeu.org/index.php?q=node/4304>. Accessed 7 January 2010.

In understanding the link between economic crisis and trade policy in this globalization era, and especially the prospects for sustaining a liberal trade system in a time of global economic crisis, we direct attention to a key variable in the political environment of international trade: international institutions. We argue that the current era is distinguishable from that of the Great Depression by the presence of an extensive network of international institutions that provide governance functions in the international economy.<sup>4</sup> Chief among such international institutions is the World Trade Organization (WTO), and, as one study argues, the absence of such a multilateral institution to “constrain” states led to the adoption of restrictive trade policies during the Depression era (Gregory, Henn, MacDonald and Saito 2010, 7). Even in the case of preferential trade agreements, which have seen a rapid rise in recent years, their configuration, in contrast to the trade and currency “bloc” formation of the 1930s that was also highly regionalized, is more akin to a “spaghetti bowl” (Bhagwati, 1995) with numerous overlapping memberships in trade agreements that are not solely regional but often link states in different regions.

The trading system of the interwar years was a “nonsystem” (Irwin 1995, 324), lacking any institutional mechanism comparable to what exists now to promote the reduction of the trade barriers. In contrast, the great power politics that has shaped the course of global trade since the end of World War II has centered on a “constitutional order” founded on strategic restraint on the part of the winning state—the United States—and institutional binding of less powerful states (Ikenberry 2001). While earlier eras of globalization were driven largely by private economic actors, the globalization of the post-World War II era has proceeded within a vast and extensive

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<sup>4</sup> Eichengreen and Irwin (2009) argue that the current global crisis also differs from the Great Depression in terms of the policy instruments available to governments..

network of state-led institutions that have managed political and economic relations among countries. It is this expressly political aspect of the international economy that is the focus of this paper on how states fashion trade policy in times of crisis.

### **Institutions and Information**

The protectionist policies of the interwar Depression era demonstrate the dominant tendency of states to “defect” from a liberal trading order as a response to heightened uncertainty in times of economic crisis. Government policies responded with protectionism not only in the Great Depression of the interwar years but also in the earlier Great Depression of 1873 when prices of agricultural goods fell on the international market, threatening the gold standard in affected countries (Frieden 2006, 8-9). The turn to protectionism as a response to economic crisis illustrates prominently the collaboration problem inherent in maintaining a liberal trading system, represented in the classic single-shot Prisoners’ Dilemma. In the absence of a central authority such as a hegemon or an institutional mechanism to enforce the optimal outcome of liberal trade, actors left to their own rational devices will “defect” from this outcome by pursuing protectionist policies without regard to its impact on the international system. Such defections have the effect of devolving throughout the international economy as countries retaliate in response to others’ “beggar-thy-neighbor” policies, thus reducing aggregate welfare, precluding the gains that can accrue from liberal trade, and leaving everyone in a worse position than before such policies were adopted.

In the case of the Great Depression, this global crisis coincided with the decline of Pax Britannica, in which the age of golden age capitalism led by Great Britain and its adherence to the gold standard saw a decline that began in the late 19<sup>th</sup> century that was reinforced after World

War I. As Kindleberger argues in his classic volume on the Great Depression, the international trading system lacked a strong central actor to uphold a liberal trading order (1973[1986]), and by the time of the Great Depression international trade centered in Europe had degenerated into a network of discriminatory trading blocs.

Whereas economic crisis exacerbates uncertainty in the conduct of commercial relations, institutions serve as conveyors of information that help to mitigate the information problem that prevails in prisoner's dilemma settings. International institutions promote cooperation among participants and thus mitigate the collaboration problem of liberal international trade in several ways. In trade, institutions such as the WTO create expectations of repeated interaction and thus render participants more aware of the "shadow of the future" and the long-term costs of defection. International institutions also reduce transaction costs as they provide negotiating fora through regular meetings and a set of common rules for behavior. Most relevant to this paper, institutions provide transparency and information regarding participants' policies, and for multilateral trade cooperation, such characteristics enable countries to pursue reciprocity strategies when cheating occurs and to enforce the institution's rules (Oye 1986). Institutions specifically devoted to trade liberalization, such as preferential trade agreements (PTAs) and the World Trade Organization, also have the effect of locking-in commitments that make renegeing less likely, even in times of crisis.

Institutions are one type of international regime, defined in the classic volume on the subject as "principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area" (Krasner 1983, 1). In the area of commercial exchange, institutions transform trade from a single-play Prisoners' Dilemma to an iterated game in which



the “shadow of the future” figures strongly in the behavioral choices of actors. In doing so, institutions reduce uncertainty about the behavior of participating actors and the risks of making agreements. Institutions reduce uncertainty by providing information about participant behavior and preferences. Indeed, as a mechanism to redress market-failure problems, Keohane (1984) emphasizes that the most important of an institution’s functions may be informational (92), that is, in providing transparency regarding the preferences and behavior of participating actors.

In addition, the informational function of institutions takes place within a set of mechanisms that include formal legal procedures and rules that “lock in” state commitments and create strong expectations about future behavior. By providing mechanisms for resolving disputes, formal channels of communication and consultation, and rules for decision-making, institutions allow for greater communication among participants, making it difficult for participants to renege on their institutional obligations without incurring great political costs. Institutions also create transgovernmental “connections, routines, and coalitions” that promote the continuity of state policies consistent with institutional obligations and also generate an institutional “spillover” process that may reinforce policy orientations outside an institution’s particular scope (Ikenberry 2001, 66-68).

In spite of the importance of an institution’s informational function in reducing uncertainty, the uncertainty problem of international cooperation is greatly exacerbated in times of economic crisis, as the crisis is attended by a lack of information about how actors will address its effects on individual economies and some are increasingly pressured from within to “defect” from a liberal trading order and enact protectionist trade policy. Heightened uncertainty in times of economic crisis, therefore, threatens to unravel the current liberal trading order. We advance the argument that institutions are important in preventing states from pursuing protectionist policies

in times of economic crisis and to maintaining a liberal trading system. Institutions continue to reduce uncertainty through two key functions. First, institutions continue to function as conduits of information and thus enhance transparency in the preferences and behavior of institutional participants. Second, institutions, as they “lock in” particular policies, tend to exhibit “stickiness” even in times of crisis and high uncertainty, thus making it difficult for sudden policy changes to occur.

In the current economic crisis, international institutions have indeed taken on an important role in providing information and monitoring states’ trade policies. The Group of 20 (G-20) countries, for example, pledged publicly and explicitly in November 2008 to “refrain from raising new barriers to investment or to trade in goods and services, imposing new export restrictions, or implementing WTO-inconsistent measures to stimulate exports” (in Gregory et al. 2010, 10). They reiterated their commitment to “resist protectionism and promote global trade” in summits in April and September 2009. They also mandated the WTO, Organization for Economic Cooperation and Development (OECD), and the United Nations Conference on Trade and Development (UNCTAD) to provide monitoring functions to ensure their adherence and “to report publicly” on their trade and investment activities.<sup>5</sup> These public pronouncements comprise valuable pieces of information for other actors in the global economy, as they express the continued commitment of the world’s largest and most important economies to open trade during these uncertain times and their intention not to adopt protectionist policies.

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<sup>5</sup> [http://www.oecd.org/document/41/0,3343,en\\_2649\\_34887\\_44939305\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/41/0,3343,en_2649_34887_44939305_1_1_1_1,00.html). Accessed 1 September 2010.

In response to the request of the G-20 countries, the WTO, OECD, and UNCTAD have provided on a regular basis their “Report on G-20 Trade and Investment Measures.”<sup>6</sup> The most recent of these reports, released in June 2010, found that the G-20 countries continued to adhere to their commitment not to raise restrictions on trade and investment.<sup>7</sup> The WTO for its part, as the most important international institution devoted trade governance, issued in November 2009 at its Seventh WTO Ministerial Conference (Geneva) its annual “Overview of Developments in the International Trading Environment,” which highlighted the impact of the global economic crisis on the trade and trade-related developments in 2009.<sup>8</sup> The report is a survey prepared by the WTO Secretariat that provides a descriptive analysis of key trade and trade-related measures of all its member countries.<sup>9</sup> As did the joint report by the WTO, OECD, and UNCTAD, the WTO report found that “no WTO Member has retreated into widespread trade restriction or protectionism,” and that for the most part, the global economy remains as open as it was at the start of the crisis (3). In addition to these official multilateral organizations, other unofficial entities such as the Global Trade Alert (GTA), with ties to the Centre for Economic and Policy Research and the World Bank and is the organization from which we draw the data for this study, also provide important monitoring activities to detect and provide information about “defections” from the current trade regime.

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<sup>6</sup> As of this writing, three reports have been issued: September 2009, March 2010, and June 2010.

<sup>7</sup> [http://www.oecd.org/document/41/0,3343,en\\_2649\\_34887\\_44939305\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/41/0,3343,en_2649_34887_44939305_1_1_1_1,00.html). Accessed 1 September 2010.

<sup>8</sup> WT/TPR/OV/12 (18 November 2009).

<sup>9</sup> The report includes sections tariffs, trade remedy measures, sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBT), measures affecting trade in services, trade policy reviews, and regional trade agreements.

## **Transparency and Commitment: the Role of International Organizations**

We test our argument on the informational function of institutions by analyzing the impact of membership in international organizations on states' trade policies during the current global economic crisis. In order to capture the effects of transparency and of commitments, the analysis relies on two aspects of international organizations in formulating the hypotheses of interest. First, the number of international organizations to which a country belongs indicates the degree of transparency that attends its actions. Though not indicative of the variation in degrees of transparency across international organizations, the number of international organization memberships reflects the degree to which a country's actions are "visible" outside its borders and thus makes it an appropriate proxy for transparency that is attributable to international organization membership. The analysis, detailed in the sections to follow, includes both political and economic international organizations and their impact on state behavior. Our main hypothesis is that countries with more memberships in international organization are less likely to enact trade politics that "defect" from a liberal trading order:

*Hypothesis 1: the higher the number of international organization membership, the lower the frequency of a country's adoption of protectionist trade policies.*

In testing this hypothesis, the analysis differentiates between political and economic international organizations, which are expected to differ in their relative impact. While political organizations are important in the non-economic arena, we expect that international organizations devoted to economic issues are far more relevant in their informational function in

times of crisis and thus more effective in preventing the adoption of protectionist trade policies.<sup>10</sup>

In addition, the analysis also distinguishes between interventionist and non-interventionist international organizations, in which the former are characterized by the institutional capacity to enforce organizational obligations.

Second, if institutions “lock-in” commitments to a liberal trade policy, then those institutional arrangements specifically devoted to trade liberalization are key indicators of states’ commitment to liberal trade. To capture this effect of states’ commitments, the analysis utilizes participation in PTAs and the World Trade Organization (WTO) as indicators of commitment to liberal trade, and hence a commitment not to resort to protectionism. Such commitments are especially important in preventing protectionism in times of crisis. Institutions such as PTAs and the WTO provide important information about trade policy behavior on the part of participants and thus functioning as institutional mechanisms for greater transparency. More important and relevant for the second hypothesis of this paper, these institutions also embody and affirm the commitment to liberal trade through their very substantive provisions. Moreover, these trade agreements have the force of law, carrying, to varying degrees, legal obligation on the part of participants to abide by agreement terms. Therefore, this hypothesis highlights the commitment function of trade agreements as a particular form of international institution devoted to maintaining liberal trade and thus eschewing protectionist trade policies that violate participants’ commitments, which is applicable also to times of crisis:

*Hypothesis 2: the higher the number of PTA membership and/or the WTO, the lower frequency of participant states’ adoption of protectionist trade policies.*

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<sup>10</sup> For a similar distinction see Mansfield and Pevehouse (2008).

*Joint Effects: International Organization Membership and Domestic Politics*

We also advance the argument that the transparency and commitment functions of international institutions and the degree to which they prevent discriminatory state measures is significantly mediated by the presence of domestic political conditions. Countries that are deeply integrated into the network of international organizations are expected to demonstrate more trade cooperation and thus fewer incidences of resorting to protectionism in trade policy. At the same time, this effect of international organizations also depends on whether the domestic political features of a country make trade cooperation feasible. The analysis therefore tests the interaction effects of international organization membership with four domestic politics variables: democracy, veto players, partisanship, and government effectiveness.

Where governments are more susceptible to interest group pressures and bear directly on trade policy formation, we would expect that protectionism is more likely and more frequent, even in the presence of extensive obligations and commitments to international institutions.

Governments in democracies, in contrast to autocracies, are less insulated from societal pressures, and thus in times of crisis, may be more likely to adopt protectionist policies as a result of their susceptibility to lobbying by domestic special interest groups. To capture this dimension of the domestic political dimension of trade protectionism, the analysis tests the joint effect of international organization membership and democracy on protectionism. We also test the interaction effect of international organization membership and partisanship, along the lines of Grieco, Gelpi, and Warren (2009) that finds that shifts to the left in the partisanship of government are associated with lower compliance with international treaty commitments and Ehrlich (2007) that finds left-wing governments to be associated with more protectionism (598). The analysis examines the mirror version of this argument and highlights the role of right-wing

governments in complying with commitments to liberal trade policy. We expect that right-wing governments with extensive international organization memberships will be less likely to institute protectionist trade policies and therefore will be associated with fewer incidences of such “defections:”

In addition to the above domestic politics variables of interest, we consider also interaction effects of international organization membership with veto players and with government effectiveness. We expect that the greater the number of veto players, combined with extensive international organization membership, the less likely that governments would be able to adopt protectionist measures. A greater number of veto players would be strongly suggestive of a wide range of divergent preferences regarding trade policy that both pushes and pulls the government from adopting protectionist measure. Hence the policy outcome is unlikely to veer much away from the status quo, thus resulting in lower incidences of protectionism relative to other governments with fewer veto players. We consider the joint effect of international organization membership with government effectiveness, the latter as a measure that indicates the capacity of a country to manage its economy effectively in times of crisis. The expectation is that for countries with high levels of international organization membership, the more effective governments will also be more “successful” at staving off protectionist pressures and thus be associated with fewer incidences of protectionist measures.

We report the findings of our analysis on the combined effects of international organization membership and domestic politics in a separate section. Immediately below we present the research design and the results of the analysis.

## Model and Case Selection

To test our hypothesis that the network of international organizations decreases states probability to implement protectionist policies, we implement a cross-sectional analysis using a newly-compiled dataset including 167 countries that have data available on. Specifically, we carry out two different analyses: a monadic analysis and a dyadic one.<sup>11</sup> The operationalization of variables presents two main challenges. On the one hand, we need a reliable and systematic way to capture state defections from trade cooperation in the current crisis. On the other hand, we need to categorize IGOs in relation to both their function, i.e. economic vs. political IGOs, and their structure, i.e. institutionalized vs. non-institutionalized IGOs. The former categorization allows us to test the claim that economic IGOs are more effective than political IGOs to inhibit state defections. The latter categorization helps us to see if IGOs impacts state behaviour during the crisis by raising information or by lock-in state commitments or both. Below we describe these variables as well as other control variables included in our models for both the monadic and dyadic analysis.

### Dependent variable

Our *monadic* dependent variable captures the number of protectionist measures taken by states during the current economic downturn that are likely to affect foreign commerce. We label this variable Protectionism. Our *dyadic* dependent variable measures the captures the number of

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<sup>11</sup> Country is the unit of observation in a monadic cross-sectional analysis, whereas pair is the unit of observation in a dyadic cross-sectional analysis. Note: we use direct dyads, so we include both the pair *ij* and *ji*. In other words, the first country in the dyad is always the one that implements protectionist policies, whereas the second country in the dyad is always the one that is targeted.



protectionist measures taken by country  $i$  against country  $j$ .<sup>12</sup> We label this variable Dyadic Protectionism. Data come from Global Trade Alert (henceforth, GTA), which is co-ordinated by the *Centre for Economic Policy Research*, an independent academic think-tank based in London, UK. GTA monitors a large number of countries in the world, drawing upon expertise from independent research institutes in seven regions. In addition, GTA identifies those trading partners that are likely to be harmed by protectionist measures, as well as the type of measures implemented, e.g. bail out measures, export subsidies, etc. Moreover, these data are up-to-date, since GTA provides real-time information, and is freely accessible.<sup>13</sup>

We collected data on protectionist measures that were implemented between January 2008 to the 26<sup>th</sup> of December 2009. We ended up with 604 protectionist measures.<sup>14</sup> In line with our theoretical framework we are interested in measuring beggar-thy-neighbor policies implemented by countries during the current crisis. Accordingly, our dependent variable captures every protectionist measure that includes nationalistic provisions distorting the market and harming trading partners exporters, investors, and workers. For instance, in December 2009 the Canadian government announced that it would provide up to 173 million Canadian dollars in loans to Bombardier Inc. to complete and deliver an order to Sweden's Scandinavian Airlines.<sup>15</sup> This measure affected several Bombardier's competitors in Brazil, France, Germany, Japan, Spain,

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<sup>12</sup> Note: the majority of protectionist policies affect more than one country. Accordingly, these multilateral protectionist policies are broken down in a bilateral fashion. See the literature on trade agreements for a similar approach (Mansfield et al., 2002).

<sup>13</sup> Data are available at [www.globaltradealert.org](http://www.globaltradealert.org).

<sup>14</sup> GTA marks each measure in *red* if it certainly discriminates against foreign commercial interests; in *amber* if it is likely to discriminate against foreign commercial interests; in *green* if it involves liberalization. We dropped these last measures from the analysis.

<sup>15</sup> Bombardier Inc. is Canada's largest aircraft producer and the third-largest civilian aircraft producer in the world. It employs approximately 17,000 people in Canada.

United Kingdom, and the US. Similarly, in September 2008 Germany notified rescue aid for Delitzscher Schokoladen GmbH, a company active in the manufacture and trade of cocoa, chocolate, and sugar confectionery.<sup>16</sup> This measure discriminates against the foreign commercial interests of the other EU member countries.

Figure 1 shows the five countries that implemented the largest number of unfair trade practices in our sample. There are three main considerations to take into account here. First, the biggest countries cheat the most. This is not surprising since big countries have a large number of trade partners, operate commercially in almost every sector, and often have a high level of bargaining power internationally. Second, large developing countries take the lead in cheating. In particular, BRIC countries are responsible for almost a third of the total number of measures implemented during the period under investigation. This result is a testament to the increasing power of these states. Third, and somewhat surprisingly, European countries cheated less than other large and powerful states in this new round of protectionism. Germany is the only European country placed in the first ten positions (ranking 10<sup>th</sup>).<sup>17</sup> Finally, these three features are consistent with trade-damaging measures tracked by the WTO, adding plausibility to the reliability of our dependent variable.<sup>18</sup>

[FIGURE 1 ABOUT HERE]

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<sup>16</sup> Delitzscher Schokoladen GmbH was originally established in 1894 and its main customers are numerous German food retail chains as well as European and international trade companies.

<sup>17</sup> Italy and UK are in the first 20 position, respectively 19<sup>th</sup> and 20<sup>th</sup> position. However, they are below countries such as Kazakhstan, Australia, Turkey, South Africa, Japan, and South Korea.

<sup>18</sup> See The Economist , January 2<sup>nd</sup>-8<sup>th</sup> 2010, page 26.

Figure 2 shows the five countries against which the largest number of unfair trade practices was implemented in our sample. In line with Figure 1, large countries are more likely to be a target for protectionist policies. However, differently from what stated above, developed countries are more likely to be targeted by protectionist policies. Indeed, the top “targeted” countries are usually European countries or the US. China is the only developing country that appears among the top 15 “targets”.

[FIGURE 2 ABOUT HERE]

As the figure below shows, the majority of unfair measures concerns anti-dumping provisions. Specifically, countries impose definitive antidumping duties on imports to protect strategic sectors. This finding is in keeping with the trade literature. As Prusa argues, “anti-dumping laws have nothing to do with economically harmful practices; rather, anti-dumping is just a cleverly designed form of protectionism” (2005: 683-684). Tariff increases, safeguard measures, and state aid to troubled industries represent, respectively, 23, 16, and 10 percent of the total amount of measures. Surprisingly, there are only five cases of subsidies granted to sectors that face difficulties: i) subsidies for the fruits and vegetables sector (France); ii) wage subsidies for firms in financial distress (Poland); iii) interest rate subsidies for the construction sector (UK); iv) subsidies for electric cars and batteries (US); v) “black liquor” subsidies to the paper industry (US).<sup>19</sup> Finally, it is important to remark that several of these protectionist policies are only weakly related to trade policies *stricto sensu*. Indeed, there cases of visa restriction, modification of standard, etc. Thus, it is the whole international system to be affect by these policies.

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<sup>19</sup> Several measures are categorized by GTA as “State aid in the form of direct grants, loans, interest rate subsidies, and guarantees”. In drawing Figure 3, we include them in the category “state aid”.

[TABLE 3 ABOUT HERE]

### **Main Explanatory Variables**

Our main *monadic* independent variable is the number of IGOs joined by each country. We label this variable IGOs. Our main *dyadic* independent variable is the number of joint membership in IGOs between country *i* and country *j*. We label this variable Dyadic IGOs. IGO membership captures the amount of information available to each state during the current crisis. Data comes from International Governmental Organization (IGO) Data (Pevehouse, Nordstrom, and Warnke, 2004), which is available up to 2000. The total number of IGOs in our sample is 383. European states are the most integrated in IGOs (Pevehouse et al. 2004, 113). Among the countries in our sample, France, Spain, Italy, Germany, and Netherlands joined the largest number of IGOs. Moreover, European countries share also the largest number of joint dyadic membership in IGOs. Conversely, the least integrated countries in IGOs are usually either small, autocratic developing countries or controversial states, such as Taiwan, whose independence is contested in diplomatic circles.

In order to test their impact on trade cooperation, we differentiate among types of IGOs in two ways. First, different IGOs have different functions. Building upon Ingram et al.'s (2005) categorization, we divide IGOs into two groups: economic IGOs and political IGOs. There are 109 of the former, which include organizations such as the WDO, the IMF. Note: since we have an *ad hoc* variable for trade agreements (see below), we do not include them in this category. There are 278 of the latter, which include organizations that deal with military, political, and

social issues.<sup>20</sup> Second, we divide IGOs into interventionist and non-interventionist organizations (Ingram et al., 2005). The former contain mechanisms for mediation, arbitration, and adjudication and other means to coerce state decisions, e.g. withholding of loans or aid, as well as means of enforcement of IGO provisions. The latter have no institutional capacity to coerce member states' policy choices. There are 39 interventionist IGOs, whereas there are 344 non-interventionist IGOs.

To assess the “commitment” aspect of international institutions devoted to trade cooperation, we also take into account membership in preferential trade agreements (PTAs). PTAs are bilateral and plurilateral arrangements among countries that decide to decrease tariffs, e.g. the European Union, NAFTA, Asean Pact. During the past 20 years, PTAs have dramatically proliferated. Thus, PTAs are currently among the most important instruments of international economic policy (Limao, 2007). Due to their emphasis on trade liberalization and their enforcement mechanisms, PTAs should be the perfect candidates to show whether or not international institutions convey information among countries during the current crisis. In the *monadic* analysis we measure the number of PTAs to which each country belongs to. We label this variable PTAs. Conversely, Dyadic PTAs scores 1 if country i and country j are member of the same agreement; 0, otherwise.<sup>21</sup> Data on PTAs comes from Baccini and Dür (2010). Finally, we include the variable WTO separately since it is by far the most important international trade organization. In the *monadic* analysis WTO score 1 if country i is a WTO member; 0 otherwise.

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<sup>20</sup> We took a conservative approach in selection organizations into the variable Economic IGOs. For instance, in contrast to other studies (Cao, 2009), we do not include into economic IGOs organizations that rules on standardization.

<sup>21</sup> Some dyads form more than one PTA mainly because member countries deepen an existing agreement, e.g. the EU. Our coding does not capture this event, i.e. our operationalization is strictly dichotomous.

In the dyadic analysis we include the variable WTO for both the country that cheats and the country that is targeted by protectionism policies. Data on WTO membership comes from Baccini and Dür (2011).

### **Control variables**

Since other factors are likely to influence the chances of a country implementing protectionist measures, we include a series of characteristics of states under analysis. Doing so is vital to avoid overestimating the effect of the main explanatory variables, as parallel policy choices may be a result of correlated unit-level factors or exogenous shocks that are common to various countries. We hence include several economic and political control variables in our model.<sup>22</sup> Note: regarding the monadic variables we include both the variable of the country that cheats and the variable of the country that is targeted by protectionism.

Concerning economic variables, we include the variable (logarithm of) GDP from IMF (2008). As previously shown, big countries are more likely to implement protectionist measures. Furthermore, we include per capita GDP to measure the level of development of a country. The more developed a country is, the easier it should find dealing with a crisis without relying on protectionist policies. Indeed, a developed country is in a better position to compensate societal groups that face losses arising from the economic downturn. This data is collected by the IMF (2008). Moreover, in the *monadic* analysis we include the variable Trade Openness (trade/GDP) to capture the importance of trade for a country.<sup>23</sup> The prediction of this variable sign is ambivalent. On the one hand, open countries are more to lose from a race to increase tariffs and

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<sup>22</sup> We use Ehrlich's model (2007) as baseline model.

<sup>23</sup> We have not included Trade Openness in the dyadic analysis, since both trade and GDP appears already in the equation. This decision does not affect our main results.

so it should be less likely to implement beggar-thy-neighbor policies. On the other hand, more globalized countries have been hit harder by the crisis and so they are more likely to protect those sectors harmed by the economic downturn. Data for this variable are from the WDI (2008). Furthermore, in the *dyadic* analysis we also include the (logarithm of) bilateral trade flows between country  $i$  and country  $j$  (Trade). Our expectation is that demand of protectionism arises only in the actual presence of trade with the targeted countries. Thus, we expect a positive sign for the coefficient of this variable. Finally, we include the dummy variable, Exchange Rate, that scores one if country  $i$  has a floating exchange rate regime. According to Eichengreen and Irwin (2009), countries that were free to devalue their currencies were less likely to implement protectionist policies during the Great Depression. Data were obtained from Reinhart and Rogoff (2004).

The extent to which transparency and commitment through international organizations is effective in preventing the rise of protectionism during economic crisis is expected to be strongly mediated and perhaps even conditioned by the domestic politics of trade policy formation, in which governments are subject to pressures for protection from special interest groups. This pressure is likely to be especially acute in times of crisis, as sectors suffering from the effects of the economic crisis are likely to lobby the government for protection. The analysis captures this important dynamic behind trade policy formation by examining the effects of four domestic politics variables: democracy, partisanship, veto players, and government effectiveness. In investigating the importance of these domestic politics variables, the analysis considers their main effects and, in a separate section, their joint effects with international organization membership.

The analysis employs the Polity IV (2009) scale to measure the type of regime of each country (Type of Regime). The advantage of Polity IV over others is that it covers all of the countries in our dataset and provides values for up to and including 2008.<sup>24</sup> This variable controls for the claim that democracies behave differently from autocracies in the international system (Fearon, 1997; McGillivray and Smith, 2008). We also control for the number of veto players (Henisz, 2000) that has been found to be an important determinant of trade policy during economic downturns (Henisz and Mansfield, 2006). We also control for partisanship, utilizing data from DPI (Beck et al.).<sup>25</sup> Finally, the analysis includes the variable Government Effectiveness to control for the credibility of a government's commitment to the policies that have been formulated and implemented. We expect that high levels of government effectiveness should increase the capability of executives to deal with the crisis and therefore decrease the need to implement unfair policies. The data were obtained from Kaufmann, Art, and Mastruzzi (2006). Univariate summary statistics and data sources for all of these monadic and dyadic variables are available in Table 1.

[TABLE 1 ABOUT HERE]

## **Method**

In order to test the previous hypotheses, we consider the possibility of selection effects, i.e. unobserved factors that control whether or not a country implements “unfair trade policies”,

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<sup>24</sup> Results do not change if we replace Polity IV with Freedom of House, another widely used indicator of the type of regime.

<sup>25</sup> We do not include this variable in the main model since data is available for a small number of countries decreasing substantively our sample.



which could introduce systematic bias. For example, only large countries or export-oriented countries might employ beggar-thy-neighbor policies, resulting in a flawed interpretation of the relative significance of these variables. The sample of unfair trade practices is not random if there is a selection process that predetermines whether countries take these practices in the first place. To deal with these issues, we use the following specification of Heckman selection model known as the HECKIT model (Grier, Minger, and Brian., 1994; Heckman, 1979) in the *monadic analysis*.

$$Y_i = \alpha_1 X_i + \alpha_2 V_i + \varepsilon_1 \quad (1)$$

$$Z_i = \gamma + \beta_1 U_i + \varepsilon_2 \quad (2)$$

$Y$  is the dependent variable of the outcome equation,  $X$  and  $V$  are matrices including respectively the main explanatory variables and the control variables of the outcome equation. All these variables have been described above. Moreover,  $Z$  is the dependent variable of the selection equation. Specifically,  $Z$  scores 1 if a country implemented at least one protectionist policies in the period under investigation; 0 otherwise. 82 (on 167) countries in our sample score 1.  $U$  is the matrix containing the specification of the selection equation: the natural logarithm of population to control for the salience and size of the country and GDP growth.<sup>26</sup> Finally,  $\gamma$  is the constant,  $\alpha_1$ ,  $\alpha_2$ , and  $\beta_1$  are vectors of parameters, and  $\varepsilon_1$  and  $\varepsilon_2$  are *i.i.d.* error terms with a constant mean and infinite variance.

Similarly, in the *dyadic* analysis we use the following specification of Heckman selection.

$$Y_{ij} = \alpha_1 X_{ij} + \alpha_2 V_{ij} + \varepsilon_1 \quad (3)$$

$$Z_{ij} = \gamma + \beta_1 U_{ij} + \varepsilon_2 \quad (4)$$

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<sup>26</sup> We use Population instead of GDP in the selection equation so that at least one variable that is included in the selection equation *does not appear* in the outcome equation (a so-called *exclusion restriction*). As said, we do not include GDP Growth in the outcome equation since GDP appears several times in the equation. This choice does not affect our results.

All the variables are the same than the ones described above. 1635 (on 27,278) dyads implement at least 1 protectionist policy in our sample. Note: since we deal with directed dyads, monadic variables refer always to country *i*, i.e. first country, in the dyad.

In sum, our estimation strategy is to endogenize the probability of a country to implement at least one protectionist provision using some economic variables. The estimated probability of selection is then used as a regressor in the second stage for analyzing the impact of IGOs on the number of unfair measures implemented by states. The econometric logic of the Heckman model allows conditioning the estimated mean function in the second stage on the selection process in the first stage. Moreover, it takes into account that for each state the probability of implementing at least one unfair trade policy affects the likelihood of cooperating or defecting during the crisis. Finally, since the data are organized as a cross-section, to control for potential heteroskedasticity across countries, we employ robust (Huber-White) standard errors for every estimation.

## **Main Results**

### **Monadic Analysis**

Table 2 shows the results of the main models. Model 1 contains a general measurement of IGO membership, i.e. without differentiating among types of IGOs. Model 2 distinguishes between Economic IGOs, Political IGOs, PTAs, and the WTO. Finally, Model 3 distinguishes between Minimal IGOs, Structured IGOs, and Interventionist IGOs.

[TABLE 2 ABOUT HERE]

Model 1 shows that there is no evidence that countries that joined a high number of IGOs are more likely to cooperate, i.e. to not implement unfair measures. The reason we get this result is clear from Model 2. Indeed, on the one hand, countries that joined a large number of economic IGOs are less likely to implement protectionist policies during this economic crisis. On the other hand, countries that are members of a large number of political IGOs are more likely to pursue uncooperative behaviors. The latter finding may be explained by the fact that big countries are usually members of a large number of political IGOs.<sup>27</sup> Thus, as the next section will show, India, Russia, and the US are driving this result. Moreover, countries that are members of a large number of PTAs are less likely to pursue beggar-thy-neighbor policies, whereas WTO is not statistically significant. Finally, there is no evidence that IGOs structure impacts the probability of cooperation in trade (Model 3).

These results confirm the hypothesis that networks of IGOs reduce the probability of defecting by cooperation during this severe economic downturn. Not every IGO has this effect, rather only those that have an economic scope or are constituted by trade agreements. We claim that the explanation lies with the capability of IGOs to convey information, thereby mitigating the prisoner dilemma trap. Our results seem to suggest that only economic IGOs are able to convey such information. Moreover, the fact that the structure of IGOs is not statistically significant (and the sign is actually positive) seems to imply that information matters more than enforceability in relation to IGOs. Specifically, the crucial element here is that economic IGOs membership and PTA membership allow countries to collect large amounts of information. In turn, this helps to overpass the coordination problem that is particularly severe in a period of economic crisis.

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<sup>27</sup> The correlation between Population and Political IGO is .50.

Conversely, there is no evidence that IGOs constrain countries' behaviors due to the presence of sanctioning mechanisms.

The results of our main variables are not only statistically significant, but they are also substantively large. Table 3 shows that Economic IGOs has the largest impact on the dependent variables among all the covariates. Specifically, moving from the minimal value to the maximum value of this variable decreases the number of protectionist measures by 19. Bearing in mind that the maximum value of the dependent variable is 51, the magnitude of this result is quite impressive. For instance, since European countries are members of several Economic IGOs, this contributes to explaining why they are behaving better than other big countries in terms of trade policies during the current crisis. Moreover, although the variable No. of PTAs has the smallest impact on the dependent variable among the statistically significant covariates, moving from the minimal value to the maximum value of this variable decreases the number of protectionist measures by 5. This result is noteworthy, considering that the average number of unfair trade policies is 3.5 (see Table 1). In sum, international organizations play an important role in reducing unfair trade policies, though other economic and political variables are admittedly (and not surprisingly) more important.

[TABLE 3 ABOUT HERE]

Regarding the control variables, almost every control covariate that is statistically significant has the predicted sign, adding plausibility to our results. Specifically, the size and salience of a country strongly affect the probability of implementing protectionist policies (even controlling for the selection effect). Moreover, effective governments are less likely to cheat. The only

exception is the variable Type of Regime, which is positive, though statistically significant only in Model 3. Thus, democracies are actually more likely to implement protectionist trade policies according to our analysis. This finding goes against the claim that democratic regimes comply more than autocratic regime internationally. A possible explanation of this result is that democratic leaders are sensitive to interest groups and to voters who usually ask protection during economic downturn (Henisz and Mansfield, 2006). Furthermore, Veto Players and Exchange rate are not statistically significant in any of the three models. Finally, regarding the selection equation, GDP is by far the strongest predictor, always positive and statistically significant, whereas the positive sign of Trade Openness shows that the more open a country is, the more likely it is to implement at least one protectionist policy.

### **Dyadic Analysis**

As Table 4 shows, the main results hold also for the dyadic analysis. Specifically, Dyadic IGOs has the opposite sign than expected (Model 4). Thus, by pooling all IGOs together there is no evidence that they have a positive impact in reducing the number of protectionist policies.

However, in line with the previous estimations, Dyadic Econ IGOs and PTAs have both negative sign and are statistically significant at 95 percent level (Model 5). Moreover, and differently from Model 2, being both countries are member of the WTO strongly reduce the probability of implementing protectionist policies one against the other. Indeed, the coefficient of WTO is negative and statistically significant at 99 percent level. This result is not surprising from both a theoretical and methodological point of view. Theoretically, only if both countries are WTO member, we might expect that they would refrain from implementing protectionist policies either because countries share information about each other's trade policies or because they fear retaliation. Methodologically, in the monadic analysis WTO has little variation among

observations since almost every country is now a WTO member. Finally, Model 6 confirms that the type of IGOs structure has no impact upon the probability of reducing protectionist policies.

The results of our main variables are not only statistically significant, but they are also substantively large. Regarding Dyadic Econ IGOs moving from the minimal value to the maximum value of this variable decreases the number of protectionist measures by 2. Bearing in mind that the mean of the dependent variable is .17, the magnitude of this result is quite impressive. Moreover, being part of the same PTA and being member of the WTO decreases the number of protectionist measures by respectively .47 and 4.85. Especially, the result of the WTO variable is particularly noteworthy. In sum, although economic variables have a larger impact on the probability of implementing protectionist policies, the dyadic analysis confirms that international organizations played an important role in reducing unfair trade policies during the current economic crisis.

[TABLE 4 ABOUT HERE]

Regarding the control variables, GDP, GDPpc, and Gov. Effect are statistically significant and have the predicted sign, adding plausibility to our results. Furthermore, the variable Trade that is not included in the dyadic analysis has the positive sign as expected. Moreover, democracies and countries with a large number of veto powers are more likely to implement protectionist policies in line with the monadic findings above. Government Effectiveness is negative (and statistically significant) and associated with a lower incidence of protectionism in the instigating country, whereas Government Effectiveness is positive (and statistically significant) in the target country.

Furthermore, and interestingly, Exchange Rate is positive and statistically significant at 99 per cent in every dyadic model. Thus, there is no evidence that Eichengreen and Irwin's (2009) argument holds during the current crisis. To conclude, a note on the econometric model that we decided to implement is necessary. Results demonstrate the superiority of the Heckman model over competing specifications. Specifically, since  $\rho$ , which measures the correlation between the errors of the first and second stage, differs significantly from 0, a Heckman model is the only efficient and unbiased estimator in light of the theoretical framework developed in this paper.

[TABLE 5 ABOUT HERE]

## **International Organizations and Domestic Politics**

In the previous section we show that economic IGOs and PTAs impact upon the probability of implementing protectionist policies during the current economic crisis. In this section, we report the findings of our analysis on the combined effects of international organization membership with four key domestic politics variables: democracy, partisanship, veto players, and government effectiveness. Table 6 reports the results of the constitutive dyadic model with the interaction terms between economic IGOs and PTAs on the one side and domestic politics variables on the other side.<sup>28</sup> Note: since the domestic variables are highly correlated one to another, we include them separately in different model specifications.

[TABLE 6 ABOUT HERE]

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<sup>28</sup> We do not report the results of the monadic models that are very similar to the dyadic ones and that are available upon request.

The interpretation of these interaction terms is not straightforward. As Brambor et al. (2006: 72) point out, the coefficients on constitutive terms cannot be interpreted as unconditional marginal effects. Thus, to appropriately interpret results in Table 6, we use graphical support. Specifically, following the suggestion of Brambor et al. (2006: 73), we need to choose meaningful marginal effects for the domestic variables, since both these variables and Econ. IGOs are modifying variables. Accordingly, we anchor the value of Regime to seven or more than seven, i.e. democracies, the value of Veto Players to .5 or more than 0.5, i.e. large number of veto powers, and Government Effectiveness to zero or more than zero, i.e. high government effectiveness. Then, we study the marginal effect of domestic variables on the probability of implementing protectionist policies as Econ. IGOs changes their value from zero (minimum) to 19 (maximum).

The effects of the interaction terms between Econ. IGOs and domestic variables are shown in Figure 4 and Figure 5. Specifically, the impact of regime on the probability of protectionism is negative (and statistically significant at 95 percent) only as two countries share the membership of a large number of economic IGOs. We obtain similar findings for veto players, government effectiveness, and partisanship. The magnitude of the results is also striking. For instance, being both a democracy and sharing membership with country  $j$  in a large number of economic IGOs decreases by 12 the number of protectionism policies. In the case of Econ, IGOs, results of interaction terms lead to a rejection of the additive model since the combining effect of economic international organizations and domestic variables is an important predictor of the probability of protectionism.

[FIGURE 4 ABOUT HERE]



[FIGURE 5 ABOUT HERE]

Finally, the effects of the interaction terms between PTAs and domestic variables are shown in Figure 6. Note: since PTA is a dummy, we do not anchor the value of the domestic variables in this case. Specifically, we show the effect of PTA (holding PTA equals one) on protectionism modifying the value of the domestic variables. Here only the interaction term between PTA and Partisanship is statistically significant at 95 percent and negative as expected from our theory. Conversely, the interaction terms between PTA and regime, veto players, and government effectiveness are not statistically significant.<sup>29</sup> Thus, in the case of PTA, results of interaction terms lead to a rejection of the constitute model. In other words, there is little evidence that the combining effect of PTAs and domestic variables is an important predictor of the probability of protectionism.

[FIGURE 6 ABOUT HERE]

## **Robustness Checks**

To check the robustness of the empirical results, we made a series of changes to the base models and we implement matching techniques to tackle the selection bias problem. All the robustness checks described below are performed on both the monadic models and the dyadic models.

**Model specification.** First, and most importantly, since our dependent variable is a count variable, an OLS regression may be inconsistent due to the fact that the dependent variable does

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<sup>29</sup> Results for veto players and government effectiveness are not reported and are available upon request.

not have a normal distribution, i.e. the distribution is skewed to the right (Wooldridge, 2002: 52-53).<sup>30</sup> Thus, we estimate Model 2 and Model 4 using a count data regression to check if our main results still hold. To take into account the selection bias problem, we first run a probit model and we obtain the probability of states implementing at least one protectionist measures (GDP Growth and Population as explanatory variables). Then, we get the linear predictions to calculate the “inverse Mills ratio” (the  $\lambda$  coefficient), and use it in the second stage regression in which we implement a negative binomial regression.<sup>31</sup> As Table 7 shows, results are very similar to those presented in Table 2 and Table 4, confirming the validity of our previous findings for both the monadic analysis (Model 2) and the dyadic analysis (Model 5).

[TABLE 7 ABOUT HERE]

Furthermore, regarding model specification we estimate previous equations using a truncated count-data model and a zero-inflated Poisson.<sup>32</sup> Results are very similar to ones reported above. Moreover, we dropped India, Russia, and United States from the analysis to check if our results are driven by these three countries, which are responsible for a large number of protectionist measures. In addition, we use the natural logarithm of the variable Protectionism to both decrease the impact of outliers and obtain a more normally distributed dependent variable. Even with these two changes we get comparable results in the sign and level of significance of our

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<sup>30</sup> Since in the monadic analysis the mean of our dependent variable is not very close to zero, “a normal approximation and related regression may be satisfactory” (Cameron and Trivedi, 1998: 2). Conversely, the dyadic analysis raises serious concerns on the consistency of the second stage estimation in the Heckman model.

<sup>31</sup> A likelihood ratio test shows that we have a problem with over dispersion data. Thus, the ordinary Poisson cannot be used here.

<sup>32</sup> In line with the Heckman model, we predict the excessive zeroes in the outcome variable using Population.

main variables. Interestingly, Political IGOs is not statistically significant in these two last regressions. Thus, our intuition that big countries drive the result of this variable is confirmed by this further analysis.

**Matching.** The use of the Heckman model to control for the selection bias is not unproblematic (Sartori, 2003). To further check the robustness of our findings, we implement the coarsened exact matching (CEM) that “is a non-parametric method of controlling for some of or all the confounding influence of pre-treatment control variables in observational data” (Blackwell et al., 2009: 526). Put simply, matching drops observations from the data to achieve a better balance between the treated and the control groups, “meaning that the empirical distributions of the covariates ( $X_1, X_2, \dots, X_k$ ) in the groups are more similar” (Blackwell et al., 2009: 526). In sum, matching procedures allow us to accomplish a counterfactual comparison by “trimming down” the sample of states so that the “control” (i.e., not PTA and WTO members) and “treatment” (i.e., PTA and WTO members) groups are balanced on all other covariates in the model, e.g. the distribution of GDP among the treatment group in the matched samples should be very similar to that of the control group (Ho et al, 2007). Note: we are able to using the matching technique only with PTA and WTO, since they are the only treatments, i.e. dummies, among our main covariates.

The main difference between CEM and approximate matching, e.g. Mahalanobis Distance Matching (MDM) and Propensity Score Matching (PSM), is that with the former method we do not have to control further for the covariates, since they are unrelated to the treatment variable. In other words, the treatment and the control group are perfectly balanced after having implemented CEM. There are several reasons to prefer CEM to other matching methods. First, recent studies

that employ simulations in real datasets show that CEM outperforms MDM and PSM (King et al., 2010). Moreover, CEM requires fewer assumptions and has more attractive statistical properties for many applications than the other two matching methods (Blackwell et al., 2009). Finally, CEM is fast and easy to implement.

Using CEM we control the robustness of our previous results in four steps. First, we select the covariates that we use to balance the treatment group and the control group. Specifically, we use all the control variables from the outcome model. Moreover, we grouped the continuous covariates according to the quintiles of their empirical distribution, i.e. observations in the first 10 percentile of the distribution of each variable were grouped together, as were observations falling in the second 10 percentile, and so on. Regime was “coarsened” into two bins, i.e. lower than 7 and higher than 7. The dummy variable Exchange Rate could not be “coarsened” any further. Second, using the command CEM in STATA, we identify these observations that contain at least one treated and one control unit and we drop all the others. Note: we lose roughly 90 percent of the observations; this is the reasons why we are unable to use this technique in our main models. Third, we run again a negative binomial estimation on this sub-sample including only PTA and WTO as treatment. Our main findings remain unchanged with both PTA and WTO negative and statistically significant at 95 percent level.

## **Conclusion**

Nassim Nicholas Taleb and George Soros disagree probably on several economic, political, and philosophical issues, but not on the seriousness of this global economic turmoil. The former thinker defines the current crisis as “vastly worse” than the 1930s because of the interdependence

of the financial systems and economies worldwide.<sup>33</sup> The latter billionaire investor states that “the world faces the worst finance crisis since WWII”.<sup>34</sup> The two experts are not alone in this comparison. Several other scholars and policy makers, such as Bernanke, Stiglitz, and Volker, have compared the two crises in the past months. Similarly, there is an emerging consensus that the outbreak in protectionism feared at the beginning of the crisis has been avoided so far (Cali, 2009; Evenett, Hoekman, and Cattaneo, 2009). To be clear, protectionism did increase since the beginning of the crisis, as shown by Evenett (2009), but not as much as expected, and especially not as much as in 1930s.

We started from these two basic observations related to the current crisis and the Great Depression, i.e. the similarity in terms of magnitude and the dissimilarity in terms of trade policy response, to propose a simple explanation on why the protectionism spiral of the 1930s did not reappear in 2009. We claimed that the presence of a thick network of IGOs, characterizing the current international system, decreases uncertainty among countries. In turn, this helps states to solve the coordination problem that is particularly severe during such a downturn. Specifically, by receiving assurance that other countries are not going to defect, each state has a low incentive to implement beggar-thy-neighbor policies in the first place, making cooperation possible even in tough times.

In this respect, our argument is similar in spirit to the one developed by Helen V. Milner (1988) in *Resisting Protectionism: Global Industries and the Politics of International Trade*. Comparing trade policy formulation in 1920s and 1970s, Milner (1988) argues that the growth of economic

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<sup>33</sup> See at <http://georgewashington2.blogspot.com/2009/05/taleb-global-crisis-vastly-worse-than.html> [consulted on January 12, 2010].

<sup>34</sup> Statement reported by Reuters on January 22, 2008.

ties among firms reduces their interest in protection by increasing its costs. Similarly, we developed the *macro version* of this claim. We argued that the presence of IGOs generates ties among countries and in turn, decreases their interest in protectionism by raising the quality and the quantity of information available to states. The empirical analysis carried out in this study supports this claim.

Our aim in this paper was to apply a theory that is firmly grounded in the international relations literature, i.e. international organizations increase information among states (Abbott and Snidal, 1998; Keohane and Nye, 1977; Morrow, 1994), to an extreme case, i.e. a very serious economic crisis, to see if there was any evidence that the theory holds. It did and that is good news for the global economic system. In developing and testing the hypotheses on the role of international institutions in times of economic crisis, we also took account of important domestic political variables, including democracy, partisanship, veto players, and government effectiveness.

The take away point from this study is that globalization that is often, and often rightly, blamed for every disease of the world economy is a double-edged sword for crises. On the one hand, globalization, through interdependence, makes crises more frequent and makes the diffusion of crises faster and wider.<sup>35</sup> On the other hand, globalization, through the presence of international organizations, produces ties among countries and may well help to mitigate the severity and the duration of crises.

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<sup>35</sup> The crisis problem was one of the dominant features of the 1990s: the EMS crisis of 1992-3, the Tequila crisis of 1994-5, the Asian crisis of 1997-8, the Brazilian crisis of 1998-9, and the Russia-LTCM affair.

Our next steps in this project include gathering of additional data on the dependent variable: protectionism in trade policy. We plan to update the data from Global Trade Alert to the end of 2010, so as to gain another year of coverage on state measures affecting trade that have been adopted during this economic crisis. The analysis will also disaggregate the various state measures, to test separately the hypotheses in this study for different types of protectionist policy that can be differentiated among tariff measures, anti-dumping measures, and safeguard mechanisms, among others. We also hope to offer a more refined categorization of international organizations in future work, by categorizing more carefully the IGOs included in this analysis and also focusing on substantive provisions of PTAs rather than their absence or presence.

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Variable	Mean	Std. Dev.	Min.	Max	Number of Obs.
<i>Protectionism</i>	3.51	8.23	0	51	167
<i>ΔGDP</i>	4.19	3.68	-14.06	16.40	167
<i>Ln(GDP Per Capita)</i>	1.69	1.20	.10	4.51	167
<i>Trade Openness</i>	.33	.76	.01	5.38	167
<i>Exchange Rate</i>	.48	.50	0	1	167
<i>Ln(Population)</i>	15.76	1.76	11.18	20.87	167
<i>Type of Regime</i>	3.42	2.15	0	10	167
<i>Veto Players</i>	.29	.21	0	.71	164
<i>Govern. Effect.</i>	2.48	.98	.29	4.7	167
<i>IGOs</i>	64.77	21.07	9	145	167
<i>Econ. IGOs</i>	9.67	3.42	2	23	167
<i>Political IGOs</i>	55.10	18.71	6	125	167
<i>Minimalist IGOs</i>	88.1	24.3	6	129	167
<i>Structured IGOs</i>	55.10	18.71	6	54	167
<i>Interventionist IGOs</i>	10.15	2.34	3	17	167
<i>No. of PTAs</i>	7.71	9.17	0	27	167
<i>WTO</i>	.83	.37	0	1	167
<i>Dyadic Protectionism</i>	.17	1.09	0	34	27390
<i>Ln(GDP) - Cheater</i>	4.23	3.67	-14.055	16.395	27390
<i>Ln(GDPpc) - Cheater</i>	1.68	1.19	.10	4.51	27390
<i>Trade</i>	3.07	2.61	0	12.67	27390
<i>Exchange Rate</i>	.48	.50	0	1	27390
<i>ΔGDP - Cheater</i>	4.23	3.67	-14.055	16.395	27390
<i>Ln(Population) - Cheater</i>	15.73	1.73	11.18	20.87	27390
<i>Type of Regime - Cheater</i>	5.39	4.06	0	10	27390
<i>Veto Players – Cheater</i>	.29	.21	0	.71	26895
<i>Govern. Effect. - Cheater</i>	2.46	.97	.29	4.7	27390
<i>Dyadic IGOs</i>	28.50	10.33	5	98	27390
<i>Dyadic Econ. IGOs</i>	4.37	2.00	0	19	27390
<i>Dyadic Political IGOs</i>	24.13	8.72	3	79	27390
<i>Dyadic Minimalist IGOs</i>	13.86	5.80	2	52	27390
<i>Dyadic Structured IGOs</i>	17.71	4.01	6	39	27390
<i>Dyadic Interventionist IGOs</i>	6.93	1.73	2	18	27390
<i>PTA</i>	.16	.36	0	1	27390
<i>Dyadic WTO</i>	.69	.46	0	1	27390

**Table 1 Descriptive statistics of the control variables in the dataset.**

Covariates	(1)	(2)	(3)
<i>IGOs</i>	.01 (.06)		
<i>Econ. IGOs</i>		-.91** (.39)	
<i>Political IGOs</i>		.15** (.07)	
<i>PTAs</i>		-.19** (.08)	
<i>WTO</i>		-3.25 4.72	
<i>Interventionist IGOs</i>			-.03 (.05)
<i>Non-Interventionist IGOs</i>			.40 (.37)
<i>Ln(GDP)</i>	1.63*** (.49)	1.43*** (.44)	1.51*** (.53)
<i>Ln(GDP Per Capita)</i>	-.51 (1.27)	-.34 (1.12)	-.67 (1.30)
<i>Trade Openness</i>	9.47 (8.15)	8.51 (6.69)	10.55 (9.64)
<i>Exchange Rate</i>	2.05 1.63	1.40 1.67	2.09 1.54
<i>Type of Regime</i>	1.42 (.90)	.95 (.73)	1.69* (.90)
<i>Veto Players</i>	-.73 4.56	.92 4.31	.40 4.55
<i>Gov. Effect.</i>	-2.70* 1.42	1.35 1.12	-3.66** 1.80
<i>ΔGDP</i>	-.01 (.04)	-.004 (.04)	-.01 (.04)
<i>Population</i>	.60*** (.12)	.59*** (.11)	.61*** (.14)
<i>Constant</i>	-2.04*** (.43)	-2.00*** (.40)	-2.08*** (.48)
<i>ρ</i>	-.84** (.16)	-.81*** (.13)	-.85** (.17)
<i>λ</i>	-9.18** (3.81)	-8.48*** (3.15)	-9.36** (4.11)
<i>Observations</i>	167	167	167
<i>Censored Obs.</i>	84	84	84
<i>(Uncensored Obs.)</i>	(83)	(83)	(83)
<i>Log likelihood</i>	-374.13	-371.84	-373.26

Robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2 Monadic Analysis. Heckman Model: The impact of IGOs and PTAs on protectionist policies.**

Variable (Model 2)	[min, max]	$[\mu-\sigma, \mu+\sigma]$
<i>Economic IGOs</i>	-19	-5
<i>No. of PTAs</i>	-5	-3
<i>Political IGOs</i>	+18	+6
<i>GDP</i>	+14	+5

**Table 3 Predicted values: The effect of Economic IGOs and PTAs on protectionist policies compared with the other statistically significant variables.**

Covariates	(4)	(5)	(6)
<i>IGOs</i>	0.0157***		
	0.00562		
<i>Econ. IGOs</i>		-0.245***	
		0.0525	
<i>Political IGOs</i>		0.123***	
		0.0166	
<i>PTA</i>		-0.470**	
		0.189	
<i>WTO – Cheater</i>		-4.848***	
		0.474	
<i>WTO – Target</i>		-0.00378	
		0.248	
<i>Interventionist IGOs</i>			0.00628
			0.0152
<i>Non-Interventionist IGOs</i>			-0.0142
			0.0262
<i>Trade</i>	0.315***	0.286***	0.318***
	0.0578	0.0517	0.0600
<i>Ln(GDPpc) – Cheater</i>	0.377***	-0.0557	0.385***
	0.0790	0.0618	0.0793
<i>Ln(GDPpc) – Target</i>	0.0591	0.0305	0.0546
	0.0768	0.0695	0.0777
<i>Ln(GDP) – Cheater</i>	0.27	0.18***	0.25
	0.39	0.03	0.41
<i>Ln(GDP) – Target</i>	3.25e-05	7.48e-05	2.37e-05
	5.92e-05	5.42e-05	5.86e-05
<i>Type Regime – Cheater</i>	0.212***	0.142***	0.191***
	0.0324	0.0255	0.0315
<i>Type Regime – Target</i>	-0.0356	-0.0541**	-0.0481*
	0.0287	0.0274	0.0284
<i>Govern. Effect – Cheater</i>	-0.971***	-0.274***	-0.961***
	0.140	0.101	0.136
<i>Govern. Effect – Target</i>	0.436***	0.490***	0.402***
	0.0989	0.0936	0.0990
<i>Veto Player – Cheater</i>	-2.525***	1.270***	-2.280***
	0.518	0.300	0.487
<i>Veto Player – Target</i>	0.859*	0.376	1.047**
	0.495	0.447	0.514
<i>Exchange Rate – Cheater</i>	0.794***	1.115***	0.838***
	0.136	0.147	0.146
<i>Exchange Rate – Target</i>	0.00909	0.222	0.0257
	0.166	0.147	0.165
<i>Ln(Population) – Cheater</i>	0.452***	0.452***	0.453***
	0.00970	0.00973	0.00967
<i>Ln(Population) – Target</i>	0.243***	0.244***	0.244***
	0.00963	0.00964	0.00962
<i>GDP Growth – Cheater</i>	-0.0345***	-0.0352***	-0.0341***
	0.00402	0.00399	0.00406

<i>GDP Growth – Target</i>	-0.0513***	-0.0515***	-0.0511***
	0.00386	0.00386	0.00387
<i>Constant</i>	-12.67***	-12.65***	-12.68***
	0.256	0.256	0.255
$\rho$	-.14769***	-.1219***	-.17873***
	.031364	.0405014	.0371896
$\lambda$	-.48079***	-.3579***	-.5834***
	.1094796	.1220696	.1242639
<i>Observations</i>	27263	27263	27263
<i>Censored Obs.</i>	25628	25628	25628
<i>Uncensored Obs.</i>	1635	1635	1635

Robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4 Dyadic Analysis. Heckman Model: The impact of IGOs and PTAs on protectionist policies.**



Variable	[min, max]	$[\mu-\sigma, \mu+\sigma]$	[0, 1]
<b>Model 2</b>			
<i>Dyadic Economic IGOs</i>	-4.75	-1	
<i>PTAs</i>			-.47
<i>WTO – Cheater</i>			-4.85
<i>Trade</i>	+3.6	+1.5	
<i>Exchange Rate - Cheater</i>			+1.1
<i>Democracy- Cheater</i>	+1.4	1.1	
<i>Gov. Effect.</i>	-1.2	-0.5	

**Table 5 Predicted values: The effect of Economic IGOs and PTAs on protectionist policies compared with the other statistically significant variables.**

Covariates	(7)	(8)	(9)	(10)
<i>PTA</i>	0.208	0.0522	0.408	0.111
	0.345	0.456	1.041	0.243
<i>Econ. IGOs</i>	0.351***	0.309***	0.971***	-0.200***
	0.0851	0.0751	0.126	0.0553
<i>PTA*Regime – Cheater</i>	-0.0111			
	0.0338			
<i>PTA*Regime – Target</i>	-0.0853*			
	0.0480			
<i>Econ. IGOs*Regime – Cheater</i>	-0.0621***			
	0.0101			
<i>Econ. IGOs*Regime – Target</i>	-0.00178			
	0.00833			
<i>Type Regime – Cheater</i>	0.489***	0.0829***	0.146***	0.178***
	0.0654	0.0243	0.0262	0.0271
<i>Type Regime – Target</i>	0.0144	-0.0245	-0.0235	-0.0361
	0.0475	0.0280	0.0270	0.0276
<i>PTA*Veto Player – Cheater</i>		0.0661		
		0.0782		
<i>PTA*Veto Player – Target</i>		-0.225**		
		0.0922		
<i>Econ. IGOs*Veto Player – Cheater</i>		-0.125***		
		0.0165		
<i>Econ. IGOs*Veto Player – Target</i>		-0.00550		
		0.0116		
<i>Veto Player – Cheater</i>	0.882***	9.511***	0.921***	1.071***
	0.313	1.133	0.306	0.318
<i>Veto Player – Target</i>	-0.0449	0.898	-0.165	0.216
	0.445	0.801	0.441	0.444
<i>PTA*Right Party – Cheater</i>				-1.121***
				0.344
<i>PTA*Right Party – Target</i>				-0.644
				0.464
<i>Econ. IGOs*Right Party – Cheater</i>				-0.0532**
				0.0226
<i>Econ. IGOs*Right Party – Target</i>				0.00805
				0.0310
<i>Right Party – Cheater</i>				-0.02516
				0.342299
<i>Right Party – Target</i>				0.418562
				0.385734
<i>Gov. Effect*PTA – Cheater</i>			0.0284	
			0.191	
<i>Gov. Effect*PTA – Target</i>			-0.194	
			0.210	
<i>Gov. Effect*Econ. IGOs – Cheater</i>			-0.197***	
			0.0265	
<i>Gov. Effect*Econ. IGOs – Target</i>			0.00117	
			0.0237	
<i>Govern. Effect – Cheater</i>	-0.273***	-0.358***	0.909***	-0.330***
	0.0886	0.0988	0.187	0.0982
<i>Govern. Effect – Target</i>	0.388***	0.398***	0.372**	0.478***

	0.0867	0.0873	0.155	0.0901
<i>Trade</i>	0.193***	0.201***	0.151***	0.275***
	0.0464	0.0462	0.0454	0.0506
<i>Ln(GDPpc) – Cheater</i>	0.0334	0.0436	0.0104	-0.0594
	0.0567	0.0621	0.0580	0.0589
<i>Ln(GDPpc) – Target</i>	0.0161	0.0177	-0.00156	0.0416
	0.0681	0.0665	0.0663	0.0683
<i>Ln(GDP) – Cheater</i>	0.15***	0.14***	0.13***	0.21***
	0.03	0.03	0.03	0.03
<i>Ln(GDP) – Target</i>	0.07	0.07	0.08	0.07
	0.05	0.05	0.05	0.05
<i>Exchange Rate – Cheater</i>	0.707***	0.662***	0.598***	1.016***
	0.129	0.128	0.130	0.144
<i>Exchange Rate – Target</i>	-0.143	-0.0559	-0.182	0.147
	0.156	0.156	0.159	0.151
<i>Political IGOs</i>	0.110***	0.117***	0.112***	0.118***
	0.0152	0.0155	0.0154	0.0163
<i>WTO – Cheater</i>	-5.269***	-5.408***	-5.344***	-4.737***
	0.499	0.510	0.492	0.465
<i>WTO – Target</i>	-0.443*	-0.425*	-0.651**	0.0296
	0.266	0.248	0.256	0.244
<i>Ln(Population) – Cheater</i>	0.451***	0.452***	0.450***	0.452***
	0.00959	0.00960	0.00958	0.00971
<i>Ln(Population) – Target</i>	0.243***	0.243***	0.242***	0.244***
	0.00958	0.00958	0.00958	0.00964
<i>GDP Growth – Cheater</i>	-0.0339***	-0.0341***	-0.0339***	-0.0350***
	0.00397	0.00398	0.00396	0.00399
<i>GDP Growth – Target</i>	-0.0514***	-0.0514***	-0.0515***	-0.0515***
	0.00385	0.00385	0.00385	0.00386
<i>Constant</i>	-12.64***	-12.65***	-12.61***	-12.66***
	0.253	0.253	0.253	0.256
$\rho$	-0.3142094	-0.29899	-0.34387	-0.14956
	0.0322237	0.032821	0.031584	0.03873
$\lambda$	-0.9275409	-0.87692	-1.01493	-0.43521
	0.1184322	0.116774	0.116413	0.117988
Observations	27263	27263	27263	6902
Censored Obs.	25628	25628	25628	6284
Uncensored Obs.	1635	1635	1635	618

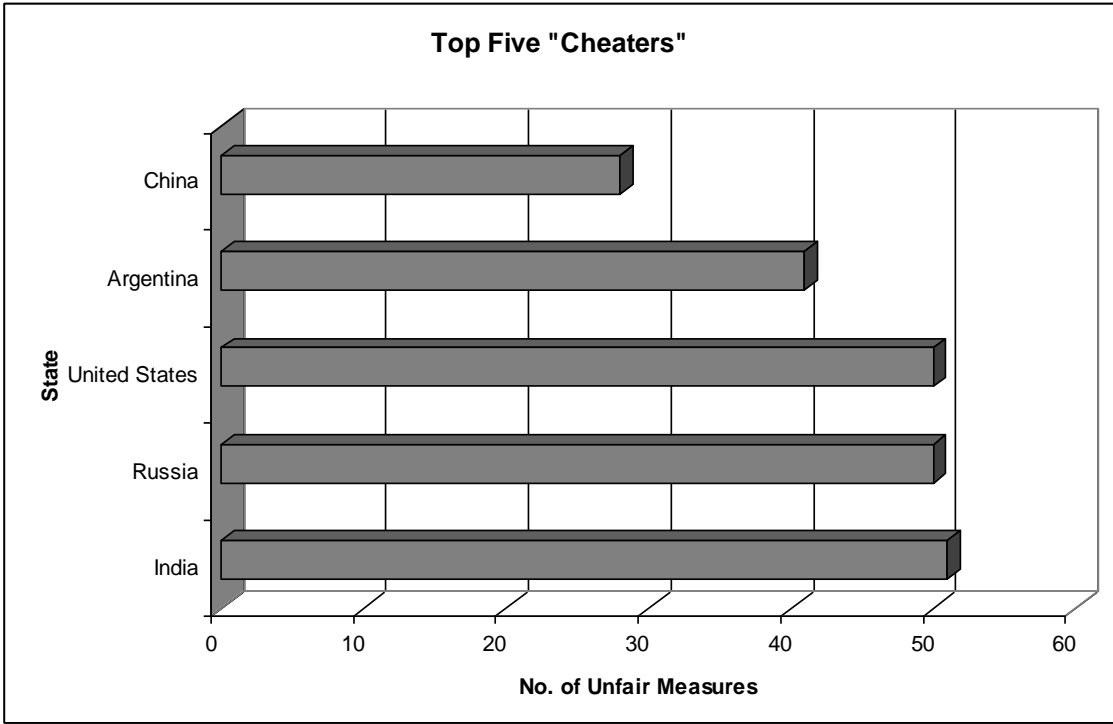
Robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6 Dyadic Analysis. Heckman Model: The impact of international institutions and domestic politics on protectionism.**

Covariates	(11)	(12)
<i>Econ. IGOs</i>	-.08***	.03**
	.03	.01
<i>Political IGOs</i>	.004	.02***
	.01	.003
<i>No. of PTAs</i>	-.02***	
	.009	
<i>PTAs</i>		-.14***
		.05
<i>WTO – Cheater</i>	-2.75	-1.34***
	3.32	.06
<i>WTO – Target</i>		.04
		.08
<i>Ln(GDP) – Cheater</i>	.23***	.40***
	.03	.01
<i>Ln(GDP) - Target</i>		.18***
		.01
<i>Ln(GDPpc) – Cheater</i>	-.08	-.01
	.07	.02
<i>Ln(GDPpc) – Target</i>		-.01
		.03
<i>Trade Openness</i>	2.21***	
	.81	
<i>Trade</i>		.08***
		.01
<i>Exchange Rate - Cheater</i>	.08	.25***
	.17	.04
<i>Exchange Rate – Target</i>		.08**
		.04
<i>Type of Regime – Cheater</i>	.03	.05***
	.06	.009
<i>Type of Regime – Target</i>		-.02***
		.008
<i>Veto Players - Cheater</i>	-.73	.65***
	.48	.16
<i>Veto Players – Target</i>		.26*
		.13
<i>Gov. Effect. - Cheater</i>	-.01	-.08**
	.12	(.036)
<i>Gov. Effect. - Target</i>		-.16***
		.03
<i>A</i>	-2.27***	-.28***
	.35	.04
<i>Observations</i>	83	1,635
<i>Log likelihood</i>	-205.71	-2901.45

Robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 7 Negative binomial regression with sample selection.**



**Figure 1 Countries with the largest number of protectionist measures implemented during the current crisis.**

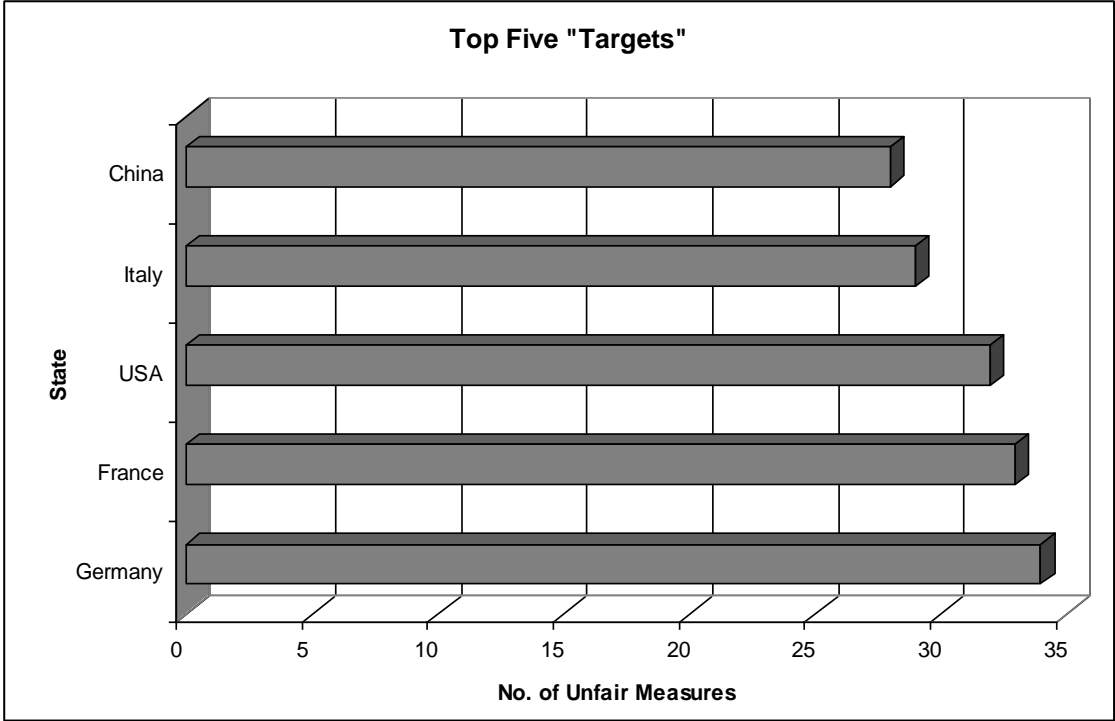
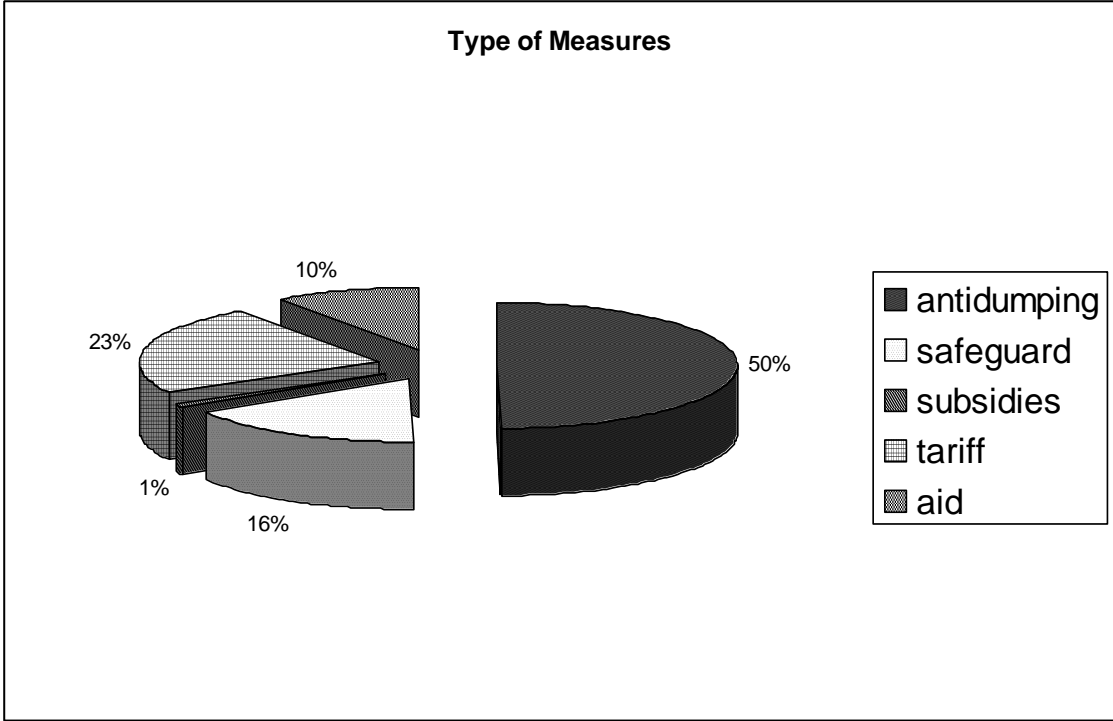
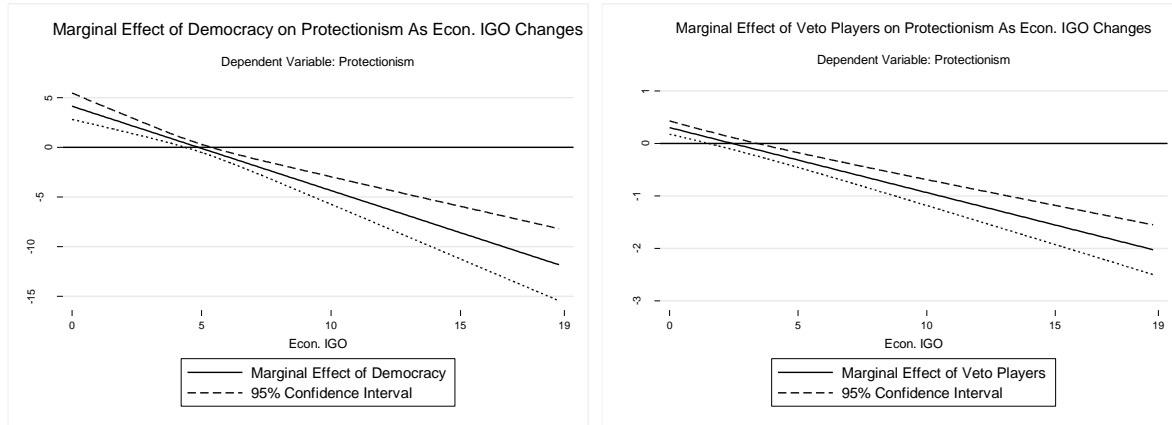


Figure 2 Countries targeted by the largest number of protectionist measures during the current crisis.

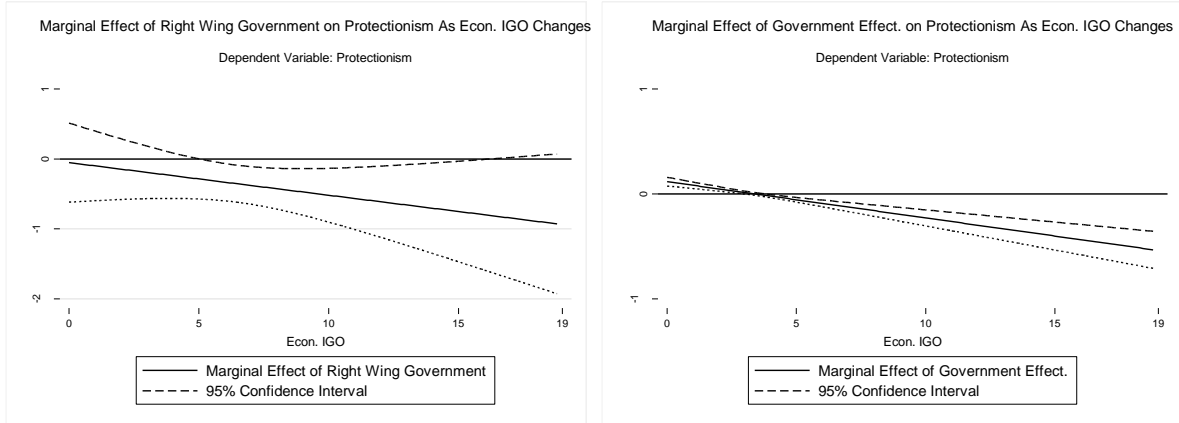


**Figure 3 Type of protectionist measures 2009.**

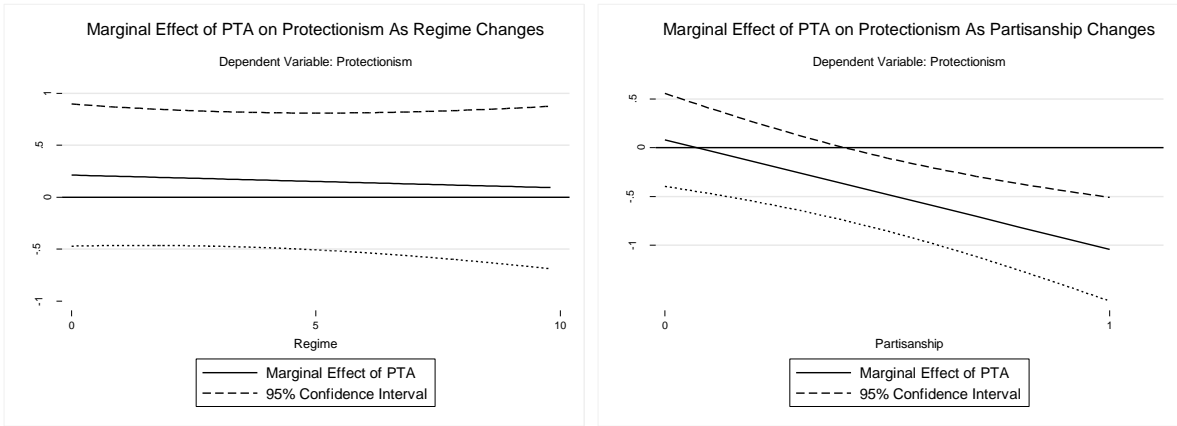


**Figure 4. The combining effect of Econ. IGOs and domestic politics: Regime and Veto Players.**





**Figure 5. The combining effect of Econ. IGOs and domestic politics: Partisanship and Government Effectiveness.**



**Figure 6. The combining effect of PTA and domestic politics: Regime and Partisanship.**