Economic Sanctions and Demand for Protection

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Abstract

How do the distributional consequences of economic sanctions impact future trade policy? Regardless of whether sanctions are effective in achieving concessions, sanctions restrict international trade flows, creating rents for import-competing producers, who are protected from international competition. These rents can then be used to pressure the government to implement protectionist policies. Thus, while the lifting of sanctions directly facilitates some international transactions, sanctions also have an indirect effect. They create powerful domestic interest groups in the sanctioned country who seek market protection. I use multiple estimators to evaluate the effect of trade sanctions on tariff rates. The evidence is consistent with the argument that sanctions increase market protection in both the short- and long-run.

On March 18th, 2014, Russian President Vladimir Putin annexed the Crimean Peninsula from Ukraine. The United States and European Union immediately condemned the annexation arguing that Russia violated Ukraine's territorial sovereignty. They then instituted sanctions against Russia, and more particularly against Russians who are part of Putin's "inner circle." According to the U.S. Department of the Treasury (2014), "Yuri Kovalchuk [one of the sanction targets] is the largest single shareholder of Bank Rossiya and is also the personal banker for senior officials of the Russian Federation including Putin."' The sanctions targeted at Kovalchuk prevent Visa and Mastercard from processing payments to Rossiya Bank, Russia's 15th largest bank, which controls an estimated $12 billion dollars in assets. In response to the sanctions, Putin announced that Russia will develop its own credit card system and cut foreign competitors out of the market (Anishchuk 2014).

Putin's decision to respond to the sanctions by building up domestic substitutes for international services points to an often overlooked consequence of international economic sanctions. Because economic sanctions restrict access to foreign products in the sanctioned country, sanctions increase domestic demand for domestic products. In limiting foreign access to the market and thereby removing foreign competition, sanctions encourage the domestic provision of goods and services in which the sanctioned country lacks comparative advantage. In fact, domestic industrial products emerged to replace imports, and industrial production actually increased under sanctions in countries as diverse as South Africa, Iraq and Yugoslavia (Selden 1999). The intuition behind the effect of sanctions is similar to the logic often applied to tariffs: They raise domestic prices and protect domestic producers who would otherwise be unable to compete with foreign producers.

This article integrates research on economic sanctions and trade policy to assess the impact of sanctions on tariff rates. By fostering domestic production of comparatively disadvantaged goods, sanctions create and empower a group of producers who seek market protection through tariffs. It is only through protection that uncompetitive firms maintain their market share. Furthermore, because sanctions often target politically important actors, sanction targets have the disproportionate ability to influence political leaders and obtain that protection. The Russian example provides a timely illustration. If Putin and his financiers plan to create a domestic credit card system, will it be competitive with global providers? The long record of import substitution industrialization

demonstrates that industries created under stringent market protection are seldom competitive (e.g., Panagariya 2004). If they are uncompetitive, what will happen to the operators of the Russian credit card system once the sanctions are lifted? Will they lose market share or stop providing credit card services? Their loss of market share is unlikely. It is more likely that they will successfully pressure the Russian government for privileged access to the Russian market. After all, the U.S. and E.U. targeted them precisely because of their political importance to the Russian regime.

I argue that sanctions directly impact markets in the short-term and thereby influence economic policies long after the sanctions are lifted. Sanctions immediately limit trade flows into and out of the target country. This cessation of trade is thought to be extremely costly in its own right, enabling the government to crack down on the political opposition; undermining economic stability, particularly for women and children; and harming the environment (Lopez and Cortright 1995, Weiss et al. 1997, Allen 2008, Peksen and Drury 2010, Drury and Peksen 2012). While the immediate impact of sanctions is clearly important, existing literature neglects the long-term economic effects of sanctions. When trade flows are restricted by sanctions, exporters in the sanctioned country are no longer able to reach foreign markets, and import-competing firms no longer compete with foreign firms. Sanctions have effects analogous to domestic trade barriers in the sanctioned country: They benefit import-competing firms at the expense of export firms and consumers. Consequently, sanctions redirect production away from the global market and toward meeting the demands of the domestic market. These changes increase production in comparatively disadvantaged sectors.

This distortion of production towards internationally uncompetitive industries enables producers to charge more for their products, creating rents for certain producers, who are protected from foreign competition. Protected producers may then use their rents to pressure the government to implement market restrictions, thereby protecting and perhaps even furthering their market rents in the future. In particular, import-competing firms and the owners of scarce factors seek to substitute the protection afforded by sanctions with protective policies. Furthermore, these firms demonstrate their importance during the sanction period; they provide employment and growth during a time when many export firms are floundering. Thus, while the removal of sanctions di-

rectly facilitates cross-border trade, sanctions also have an indirect effect that may undermine these flows. Sanctions create a powerful domestic interest group in the target country who benefits from market protection and has the economic resources and political clout to secure that protection.

The paper first develops a theory of how sanctions impact market restrictions. A decision theoretic model shows how sanctions lead to market distortions that increase the production of import-competing goods and decrease the production of export goods. A game theoretic model then illustrates how import-competing firms pressure the government for market protection. The theory is evaluated using an autoregressive distributed lag model. The model provides estimates of the short- and long-term effects of sanctions, which is particularly important here because it is unclear precisely when the market protection will be implemented. The empirical section provides evidence consistent with the protection-inducing power of sanctions in a time-series, cross-sectional sample. The results are robust to the use of a weighted, time-series model. The paper concludes with implications for future research.

Economic Sanctions and Market Protection

Economic sanctions are threats that entail economic costs, often by limiting trade or financial flows, if the sanctioned country does not concede to some demand by the sanctioning country. Based on standard economic theories, countries should export goods that they produce more efficiently than other countries and import goods that are more efficiently produced elsewhere. In other words, countries export comparative advantaged goods. Accordingly, sanctions, which restrict the flow of goods and services across borders, reduce the production of comparative advantaged products and increase the production of comparative disadvantaged products in the sanctioned country. Restrictions, therefore, prevent countries from reaping the benefits of specialization. More specifically then, trade sanctions reduce competition for *import-competing producers*. Import-competing producers often lack comparative advantage in production, either because they lack technology or the production of their products intensively uses scarce factors of production,[1] and they have higher

[1] These interpretations of comparative advantage are attributed to Ricardo-Viner and Heckscher-Ohlin respectively.

production costs than foreign producers. Sanctions, particularly those that provide protection from imports, benefit those producers who lack comparative advantage. Economic sanctions have an effect similar to the effect of tariffs: they reduce competition and increase prices.

In addition, economic sanctions limit the external market for export-oriented producers. Export-oriented producers often have a comparative advantage in their production, and they are able to compete with foreign producers. They are often large firms that sell their products to domestic and foreign markets (Melitz 2003). Trade sanctions restrict exports from the sanctioned country. When the sanctions are effective in limiting trade flows, export-oriented producers lose access to foreign markets. They may go out of business or substitute their normally competitive production for the production of a high-priced, protected good in which the country lacks comparative advantage. In sum, producers who compete with imports will benefit, as sanctions increase domestic prices and their profits, while exporters and consumers will be harmed, as sanctions decrease or even eliminate access to export markets and increase prices. Thus, the market distortions produced by sanctions are remarkably similar to distortions produced by tariffs (Selden 1999, Kaempfer and Lowenberg 1999). The following decision-theoretic model illustrates the impact of sanctions on export and import-competing sectors.

Market Distortions

In the model, there is one domestic producer of two goods. The goods are either import-competing or export goods.[2] For simplicity, the two goods and their production processes are unrelated. The firm's profits are determined by quantity competition.[3] The firm determines the optimal quantity of each good to maximize its profit. The firm is a price-taker, and sanctions affect the quantities produced in the model. The firm's profit function is: $\Pi = q_i(p_i + s - c_i q_i) + q_e(p_e - s - c_e q_e)$, where subscripts, e and i, denote whether the good is an export good or an import-competing good. q

[2]The logic is similar to Ricardo's well-known example of cloth and wine production in England and Portugal. Both countries may produce both goods, but the relative cost of cloth production is lower in England and the relative cost of wine production is lower in Portugal. At the time, England had a comparative advantage in cloth production, and cloth was an export product. England could not efficiently produce wine, so wine was an import-competing product.

[3]The model is similar to a Cournot model of quantity competition.

is the quantity of the good produced, p is the price of the good, s is the amount of sanctions in place, and c is the cost of production. Note that sanctions increase the return to import-competing goods, as they prevent foreign goods from entering the market in the sanctioned country. At the same time, sanctions decrease the return to export goods, as they often prevent the export of goods from the sanctioned country.

The firm chooses the quantities of import-competing and export goods to maximize the profit function: $\max_{q_i,q_e}\{q_i(p_i+s-c_iq_i)+q_e(p_e-s-c_eq_e)\}$. The firm's maximization yields the following equilibrium quantities: $q_i^* = \frac{p_i+s}{2c_i}$ and $q_e^* = \frac{p_e-s}{2c_e}$. These quantities define the amount of import-competing goods and export-oriented goods that yield the largest profit for the firm. Unsurprisingly, as the price of either good increases or the cost decreases, the production of that good increases. The effect of sanctions for quantity produced depends on whether the good is produced for domestic or foreign sale. The quantity of import-competing goods produced increases when sanctions are in place, while the quantity of export goods decreases. Intuitively, the divergent effects are caused by sanctions' divergent impact. Sanctions increase the demand for import-competing goods produced in the sanctioned country, as they decrease or eliminate imports that would have helped satisfy domestic demand. Conversely, sanctions decrease the demand for export goods produced in the sanctioned country, because many of those goods can no longer reach consumers in other countries.

Proposition 1. *Sanctions increase the production of import-competing goods and decrease the production of export goods.*

Proof. The derivative of the equilibrium import-competing quantity produced with respect to sanctions, $\frac{\partial q_i^*}{\partial s} = \frac{1}{2c}$, is always positive. The derivative of the equilibrium export quantity produced with respect to sanctions, $\frac{\partial q_e^*}{\partial s} = -\frac{1}{2c}$, is always negative. □

Proposition 1 shows how sanctions distort the market. A sanctioned country will produce more products for consumption by the domestic market and fewer products for consumption abroad. This often means that they will produce more goods in which the country does not have a comparative advantage. The model provides a micro-foundation for the work by Selden (1999), which shows that sanctions stimulate the production of manufactured products. Many developing coun-

tries, who are often targeted by economic sanctions, do not have a comparative advantage in the production of manufactured goods, which may rely on advanced technology and intensive capital investment. Because the sanctions restrict the import of manufactured goods from other countries, the sanctioned country begins to produce them, albeit in an often less-efficient way than the foreign source. Sanctions are not the only kind of market protection that benefits import-competing producers. Tariffs are also an important source of market protection. The next section turns to the interaction between producers and policymakers under sanctions.

Lobbying for Protection

A second model explores the relationship between import-competing producers and policymakers. Import-competing producers are generally assumed to pressure the government for market protection, as they are less efficient than foreign producers. Sanctions increase the profits of import-competing producers, who may then use their profits to lobby for market protection. Producers in uncompetitive industries seek to replace the market protection afforded by sanctions with market protection provided by their own government. The game has two actors, the government and an import-competing firm. The market determines the amount of resources firms have for consumption, as well as for lobbying the government. The firm selects political donations, and the government selects protectionist policies. The sequence of play is as follows:

Period I

1. Nature determines the level of sanctions: $s \in \mathbb{R}^+$
2. Firm maximizes its first period profit by selecting quantity: $max_q\{\Pi_s = q(p + s - cq)\}$
3. Firm selects political donations, $d \in \mathbb{R}^+$, to maximize both period profits
4. Firm consumes all profit that was earned in Period I less political donations

Period II

1. Sanctions are no longer in place in the second period, $s = 0$
2. Government determines tariff level, $t \in \mathbb{R}^+$, which depends on Period I donations
3. Firm maximizes second period profit by selecting quantity: $max_q\{\Pi_t = q(p + t - cq)\}$

4. Firm consumes all profit that was earned in Period II

Note that the structure of the game enables firms to substitute tariffs for sanctions. In the first period, the firm benefits from the imposition of sanctions and can use its increased profit to lobby the government for tariffs. In the second period, the sanctions are lifted and the firm's profits are increased by the tariffs it purchased in the first period. Although the sequencing of the model provides theoretical clarity, in reality firms may be uncertain about when sanctions will be lifted. Therefore, they are likely to lobby for protection while sanctions are in place *and* after they are lifted. Because the sanctions have an effect over time, the empirical specifications will make few assumptions about timing and will instead isolate short-term, long-term and cumulative effects of sanctions.

In the first model only sanctions increased profits; in the second model profits are increased by both sanctions and tariffs, as we focus exclusively on an import-competing firm. The profit of the firm in both periods is denoted: $\Pi_x = q(p + x - cq)$, where q is the quantity produced by the firm, c is the cost of production, and p is the baseline price of the good produced. In the above equation, x denotes the amount of sanctions or tariffs in place in a given period: $x \in \{s, t\}$. When sanctions are in place, $x = s$; when tariffs are in place, $x = t$. The subscripts on the profit function, Π_s or Π_t, are used to denote whether sanctions or tariffs are implemented in the period when profits are realized (first or second periods respectively). The firm's profit is increasing in both sanctions and tariffs. In the first period, only sanctions may be in place; in the second period, the size of the tariffs depends on the political contributions from the first period. The profit function is positive at low values of q, but as q becomes very large, production becomes increasingly expensive, and eventually profits become negative. This method for modeling production costs is similar to more general convex cost functions, and it ensures an explicit solution to the firm's profit maximization.

The firm maximizes the profit function with respect to quantity: $\max_q\{\Pi_x = q(p + x - cq)\}$. The equilibrium quantity produced by the firm is: $q^* = \frac{p+x}{2c}$ and its equilibrium profit is: $\Pi_x = \frac{(p+x)^2}{4c}$. The subscript x denotes that this is a general solution, and we need only plug s or t in for x to obtain the equilibrium profit of the firm when sanctions or tariffs are in place. The firm-owners

derive utility from consumption in the first and second period: $U_f = \ln c_1 + \delta \ln c_2$, where c_1 is first period consumption, c_2 is second period consumption, and δ is the firm's discount rate. The firm-owners cannot consume more than they produce however, so: $c_1 \leq \Pi_s - d$, where d is the amount of campaign donations they provide to the government, and $c_2 \leq \Pi_t$.[4] The firm-owner's utility function is concave - increasing at a decreasing rate - in each period; this functional form is selected for ease of derivation, but many utility functions are assumed to be concave.[5]

The government derives utility from political donations, d, which it receives in exchange for implementing tariffs, t. One need not think that d always takes the form of money. d may also represent political support, in which case, the cost should be thought of in terms of effort and the expenses associated with effort, including opportunity cost or even functional costs like transportation and materials. Tariffs are also costly for the domestic population, as they raise prices for consumers. The government's utility function takes the following form: $U_g = ln(\alpha dt - t^2)$, where α is the weight that the government places on political donations, d are political donations, and t is the tariff rate selected by the government. The government derives positive utility from small amounts of tariffs (due to their association with donations), but at some point, the negative effects of tariffs for the overall population and economy as a whole overwhelm the benefits. These negative effects are captured by the $-t^2$ in the government's utility function.

Model Solution

The solution concept is subgame perfect Nash equilibrium, which is appropriate when the game is sequential, as it ensures that individually rational strategies are played at every node. To solve the game, I proceed by backward induction. In the second period, the firm selects q to maximize profits: $q^* = \frac{p+t^*}{2c}$ and consumes everything: $c_2 = \Pi_{t^*} = \frac{(p+t^*)^2}{4c}$.

The government selects the tariff rate to maximize his utility function: $\max_t \{U_g = ln(\alpha dt -$

[4]There is no reason to give donations in the second period, as this is just a two-period model, and the donations would not yield greater protection until the subsequent period, which does not exist here.

[5]When a linear utility function is used, a corner solution results. The firm either expends all his income on donations or expends none (depending on whether consumption is larger in the future when tariffs may be implemented or consumption is larger in the present, because the cost of waiting or the price of tariffs is prohibitively high). The natural log ensures an interior solution, and it is analytically attractive here, because the solution is again explicit.

$t^2)\}$.[6] The equilibrium tariff rate is: $t^* = \frac{\alpha d}{2}$. The results of this simple derivation are consistent with much of the trade literature. Tariffs are increasing in the weight that the government places on donations, α, and in donations themselves, d. The intuition for the result is a little different than the standard Grossman and Helpman (1994, 2001) model, where the government pursues protection, as it values the firm's utility. Here, the government pursues protection, because it receives political support in exchange for protection.[7]

There is no commitment problem in the model. I assume that the firm takes the government price for tariffs (in terms of campaign donations) and maximizes its utility. The firm maximizes: $\max_d\{U_f = \ln c_1 + \delta \ln c_2\}$, subject to the following conditions: $t = \frac{\alpha d}{2}$, $c_1 \leq \Pi_x - d$ and $c_2 \leq \Pi_t$. The first condition comes from the price that the government charges for the tariffs. The second and third conditions are similar to budget constraints: The firm-owners may not consume more than the firm earns. Both the inequalities are met with equality because firm utility is increasing in consumption, so it would not discard any profit. Because they are met with equality, the conditions may be substituted into the maximization problem: $\max_d\{U_f = \ln[\frac{(p+s)^2}{4c} - d] + \delta \ln[\frac{(2p+\alpha d)^2}{16c}]\}$. The equilibrium amount of campaign donations is: $d^* = \frac{\delta\alpha(p+s)^2 - 8cp}{4\alpha c(1+2\delta)}$. The main proposition follows.

Proposition 2. *Market protection is increasing in economic sanctions.*

Proof. Recall that $t^* = \frac{\alpha d^*}{2}$ and $d^* = \frac{\delta\alpha(p+s)^2 - 8cp}{4\alpha c(1+2\delta)}$. By substitution, we know: $t^* = \frac{\delta\alpha(p+s)^2 - 8cp}{8c(1+2\delta)}$ Tariffs are increasing in sanctions: $\frac{\partial t^*}{\partial s} = \frac{\delta\alpha(p+s)}{4c(1+2\delta)}$. □

Proposition 2 provides a ceteris paribus result: Given an existing balance of bargaining power between the import-competing firms, who prefer increased protection, and the country's citizens, who prefer less protection, sanctions increase the bargaining power of the import competing-firms through their impact on profits. Import-competing firms increase their profits under sanctions, because they no longer have to compete with foreign producers, and they use these excess profits to

[6] The natural log in the utility function is unimportant here. It is included for consistency with the firm's utility function.

[7] In addition, the standard model focuses on protection in democracies. Many of the countries targeted by sanctions are weak democracies or autocracies. Policymakers in undemocratic institutional settings should be more susceptible to particularist protectionist pressure than their counterparts in democracies (e.g., Mansfield, Milner and Rosendorff 2000, Bueno de Mesquita et al. 2003, Milner and Kubota 2005).

lobby the government for more protection. The model provides an estimate of baseline protection without sanctions, $t^* = \frac{\delta\alpha p^2 - 8cp}{8c(1+2\delta)}$, which loosely represents the government's balancing act between the benefits of higher prices for import competing producers and the cost of higher prices for consumers. Sanctions, then, increase this baseline by the following rate: $\frac{\partial t^*}{\partial s} = \frac{\delta\alpha(p+s)}{4c(1+2\delta)}$.

Like most trade policy research, the model presented here focuses on the unilateral selection of trade policy, where governments set trade policy in response to pressure from import-competing, domestic interest groups and consumers. Researchers have begun to evaluate the impact of multilateral institutions, which make exporters relevant to trade policy (Betz 2014, Gilligan 1997). If trade policy is set through reciprocity in multilateral negotiations, then exporters may pressure the government to concede to foreign demands for market liberalization in exchange for reciprocal liberalization elsewhere that enables the exporters to more easily serve the foreign market. Proposition 1 shows that sanctions increase the returns to production for the domestic market and decrease returns to production for foreign markets. This means that import-competing firms gain resources, while exporters lose resources under sanctions. If exporters are integral to trade liberalization as Betz (2014) and Gilligan (1997) argue, then sanctions produce market protection through yet another channel: Exporters, who are relatively less powerful than before the sanctions were implemented, will have less influence to counter the protectionist pressure from the import competing firms.

Perhaps one of the clearest examples of the protection-producing effect of sanctions comes from the Corn Laws in the United Kingdom. Although most seminal work (e.g., Schonhardt-Bailey 2006) addresses the repeal of the Corn Laws in 1846, an equally important question is how the Corn Laws became so severe in the first place. The intensification of agricultural protection in the U.K. was at least partially driven by American trade sanctions. The United States attempted to remain neutral during the Napoleonic Wars, reaping the gains from trade with both the U.K. and France. However, British forces seized American merchant ships and forced the seamen into the armed services. The violations of neutrality led to the implementation of the U.S. Embargo Act of 1807. The embargo is an example of a sanction that forbade trade between the U.S. and U.K. It therefore provided protection for Britain's landed elite, who could not compete with American

wheat (which is called "corn" in the U.K.). Because of the protection "furnished by war", and particularly by the American embargo, corn prices in the U.K. mounted: from an average of 83 shillings from 1794-1813 to 92 shillings from 1804-1813 and finally to 108 shillings from 1809-1813 (Schonhardt-Bailey 1997, p. 69). The price jump was largely due to the break in trade between the U.S. and U.K.

When the boycott was lifted in 1809 and the war over in 1815, the British agriculturalists sought trade protection. The Corn Law of 1815 significantly deepened agricultural protection. The law prevented trade whenever the price of corn dropped below 80 shillings. The initial law solely prevented trade, it did not garner any government revenue. In 1828, the Corn Laws were amended again, providing for tariffs on imports, which produced both protection and revenue (Schonhardt-Bailey 1997, p. 5-6). In short, the American boycott protected British agricultural producers, driving up the cost of wheat in the U.K. Once the boycott was lifted, the producers sought trade restrictions to protect their market position. The boycott strengthened the landed elite in Britain, particularly relative to the industrialists who suffered from their inability to reach the American market. The enhanced power of the landed elite helped them obtain more stringent protection in 1815.

Many scholars have identified a selection problem inherent in the implementation of sanctions: when sanctions are effective, the target country backs down before the sanctions are put in place and the sanctions are not actually observed (e.g., Smith 1996, Nooruddin 2002, Lacy and Niou 2004, Kaempfer and Lowenberg 2007). When sanctions are actually implemented, we know that the threatened sanctions were not costly enough, or the interest groups that are negatively effected by the sanctions were not important enough, to force the target to back down.[8]

The fact that observed sanctions have already failed to elicit concessions likely strengthens the

[8]In assessing the effectiveness of sanctions, many scholars have used [Heckman] selection models, because their data samples are 'incidentally truncated' (Greene 2008, p. 883). The samples are truncated, because they only include implemented sanctions, which failed to garner concessions when they were threatened. Those sanctions that were effective immediately are excluded from their samples. The selection model is not appropriate here, because sanctioned and unsanctioned countries are included in the sample, and I do not expect the threat of sanctions, absent their implementation, to affect market protection. That said, the empirical results are robust to the use of a selection model (results are available from the author).

impact of sanctions on market protection. There are two possibilities: the sanction may target (1) politically important actors or (2) politically unimportant actors. If the sanction targets politically important actors, as most sanctioners claim they do, and the consequences are sufficiently dire, then the sanctioned country will make the demanded concession and the sanction will never actually be implemented. This case does not show up in the data and has led scholars to conclude that sanctions, which are realized, are likely to target politically unimportant actors (Becker 1995, Kaempfer and Lowenberg 2007). However, sanctions may still target politically important actors, as most sanctioning countries claim, *and* fail to elicit concessions. If policymakers in the sanctioned country are able to compensate the politically important actors, who bear the brunt of the sanctions, then the sanctioned country may not concede even when their political supporters are hurt by the sanctions. Sanctions themselves provide policymakers with a unique opportunity: They can compensate their supporters with preferential access to the domestic market, and, particularly when targeted actors are politically important, market protection is likely to endure long after the sanctions are lifted.

When the actors who bear the cost of sanctions are not politically important, policymakers in the target country are unlikely to concede to the demands of the sanctioning country. Because competitive sectors are disproportionately hurt by sanctions, their lack of political influence also means that they will not be able to obtain their preferred trade and financial policy, which is likely more liberal than the policies preferred by their uncompetitive counterparts. In the case of the Corn Laws, the landed elite in the U.K. were more politically powerful than the industrialists at the end of the 18th century.[9] If "protection [is] for sale" (Grossman and Helpman 1994), sanctions create a potent buyer: Sanctions increase the profit of uncompetitive, politically important firms.

[9]In fact, the transition of greater political and economic power to industrialists and workers with the 1832 Reform Act was one of the major causes of the eventual dismantling of the Corn Laws (Schonhardt-Bailey 2006).

Evidence for Sanctions and Market Protection

This section provides an empirical assessment of the hypothesis that trade sanctions are associated with higher trade protection. Trade sanction is the independent variable of interest. The Threat and Imposition of Sanctions (TIES) database details every sanction implemented between 1945 and 2010 (Morgan, Bapat and Kobayashi 2013).[10] TIES extends the prominent study conducted by Hufbauer, Schott and Elliott (2007) and provides extensive information on the sanction type. I code new trade sanction variables for those sanctions that include a total economic embargo, a partial economic embargo, an import restriction, an export restriction, or a blockade. The variables identify those sanctions that restrict the flow of goods between countries. I code two sanctions variables: Trade Sanction Count sums up the number of trade sanctions in place in a given target-country year, while Trade Sanction Binary is zero in country years without sanctions and one in country years with sanctions. The tariff rate is the dependent variable. Tariff data come from the World Bank World Development Indicators and include data from 1988 to 2012 (World Bank 2013). They are the average mean tariffs weighted by the product import shares. Table 1 provides a summary of the data.[11]

Autoregressive Distributed Lag Model

The model and preceding discussion raise important questions regarding the impact of sanctions: when are the effects of sanctions realized and how long do the effects endure? Recall that the U.S. embargo of the U.K. did not immediately increase protection, but it eventually lead to an intensification of the Corn Laws, increasing the equilibrium amount of agricultural protection. The autoregressive distributed lag model (ADL) is particularly attractive for answering duration

[10]The TIES database covers sanctions initiated between 1945 and 2005, but many sanctions in the database remain in place much longer. In prior communication, T. Clifton Morgan, the lead scholar on the data collection project, indicated that the summaries for the more recent sanctions were written later and that the sanctions data is updated until about 2010. The results are similar using a restricted sample, which ends in 2005, with the exception of the effect of trade sanctions. The weakness of the tariff results is unsurprising given that the tariff data are plagued by missing observations, particularly earlier in the sample.

[11]The controls and derivation of the summed sanction variables will be described in the corresponding empirical sections.

questions. The ADL provides an estimate of the impact of sanctions in both the short-term and the long-term. The ADL is a general version of a static model: By including a lag structure for both the independent and dependent variables, it imposes fewer restrictions on the relationship between them (Beck and Katz 2011, p. 346). I estimate the model:

$$Protection_{it} = \alpha_0 + \alpha_1 Protection_{i,t-1} + \beta_0 Sanction_{it} + \beta_1 Sanction_{i,t-1} + \epsilon_{i,t} \quad (1)$$

where $Protection_{it}$ is the tariff rate and $Sanction_{it}$ is the number of sanctions in place in country i at time t. Equation 1 allows us to estimate the correlation between sanctions in the current period and protection, β_0, as well as the correlation between sanctions from the previous period and protection, β_1, while controlling for the level of protection in the previous period, α_1. The longterm impact, or long-run multiplier (LRM), is: $k_1 = \frac{\beta_0+\beta_1}{1-\alpha_1}$. The multiplier literally divides the effect in the current and previous periods over the per-period effect of the change in the dependent variable: "the LRM is the total effect X_t has on Y_t distributed over future time periods" (De Boef and Keele 2008, p. 191).[12]

I control for the regime type of the country from the Polity index (Marshall, Jaggers and Gurr 2013),[13] because sanctions and tariffs could be associated with regime type.[14] I also control for the number of checks [and balances] in the political system and for government turnover (Beck et al. 2001).[15] Checks helps capture veto player arguments about policy stasis. Turnover provides a particularly hard test for the theory, because sanctions could affect economic policy by undermining political support for economically liberal leaders. I control for GDP per capita (purchasing power parity converted to GDP per capita in thousands of dollars, derived from growth rates, at 2005 constant prices) from the Penn World Tables (Heston, Summers and Aten 2012), as wealthy

[12]The variance of k_1 is computed using the delta method. The results for the variance are indistinguishable from using the formula in De Boef and Keele (2008). The ADL is equivalent to the error correction model (ECM).

[13]I use the polity 2 measure, because it converts periods of "interruption", including foreign occupations; "interregnum" or periods of government failure; and "transition" to conventional polity scores between -10 and 10.

[14]Sanctions could be more effective against democracies, as the political leaders are accountable to a larger segment of the population (Bueno de Mesquita et al. 2003). Democracies may be less likely to use military force against one another, and sanctions could substitute for military conflict. Democracies are also likely to have lower tariff rates and to trade with one another.

[15]Government turnover is coded using the years in office variable from Beck et al. (2001). Turnover takes on a value of one during a government's first year in office.

countries might be particularly costly sanction targets. I also control for membership in the World Trade Organization (WTO website).

Table 2 reports the results from numerous specifications. Column 1 reports the results from a static model, which includes the lagged dependent variable, but only includes the sanctions variable from the present period, and, thus, does not allow the impact of sanctions to accumulate over time. Column 2 reports the static model with a number of controls. Columns 3 and 4 report the results from feasible generalized least squares models, which account for heteroskedasticity and autocorrelation. Columns 5 and 6 report the results of the ADL model (minimalist and with controls respectively), and the LRM is included at the bottom of the table. In all models, trade sanctions are positively correlated with tariff rates, and the correlation holds in the ADL models both in the short- and long-run. The long-run multiplier of trade sanctions is significant at the five percent level in the model with controls. We can think of the LRM as the total effect that sanctions have on tariff rates. Here the total effect is significant and not insubstantial. An increase of one trade sanction is correlated with an increase in the tariff level by over 0.5 percentage points in the model with controls. The average tariff level in the sample is 7.6 percent. Thus, a one-unit increase in trade sanctions increases average tariff rates by almost 7 percent. The within country standard deviation in the tariff rate is 7.14 percent. One sanction is correlated with an increase in the tariff rate in the long-run by one-fourteenth of a standard deviation. Figure 1 provides a graphic representation of the effects of sanctions over time. The graph shows that the estimated effect of trade sanctions is quite rapid: Most of the increase in tariffs associated with trade sanctions is felt in the first period. The consequences of trade sanctions may be particularly prompt, because governments can quickly manipulate tariff rates.

Weighted, Time-Series Model

This section assesses the robustness of the ADL results using an alternative specification suggested by Blackwell and Glynn (2013) and Robins, Hernán and Brumback (2000). The discussion of the method will adhere to the experimental terminology used by the authors, where treatment is the

presence of a trade sanction and control is the absence of a sanction. First, the authors recommend weighing the treatment variable by the inverse probability of treatment, which transforms the sample population to replicate the actual population and helps account for confounding variables. Second, they recommend calculating two treatment variables: a 'blip' variable that captures the effect of one treatment period and a 'cumulative' variable that captures the effect of a treatment that is in place for an extended period. The coefficient on the cumulative variable captures the effect of one more year of sanctions given that sanctions have already been in place for a number of years. These estimates are particularly useful, because they have similar substantive interpretations to the short- and long-run effects from the ADL but are computed differently.

The inverse probability of treatment is used to weigh the treatment in the estimate of the treatment's impact on the dependent variable. In the analysis here, the dependent variable is the tariff rate in the sanctioned country. $\widehat{SW}_i$ is the inverse probability of treatment:

$$\widehat{SW}_i = \prod_{t=1}^{T} \frac{\widehat{Pr}[Sanction_{it}|\underline{Sanction}_{i,t-1};\hat{\gamma}]}{\widehat{Pr}[Sanction_{it}|\underline{Sanction}_{i,t-1},\underline{Controls}_{it};\hat{\alpha}]} \tag{2}$$

The numerator in Equation 2 gives the probability of treatment, sanctions here, conditional on a treatment history for the estimator ($\hat{\gamma}$) in a specific period. The denominator is similar, except it also conditions the probability of treatment on a set of covariates for the estimator ($\hat{\alpha}$). The product of the ratios over a country's history up to the current time period captures the probability of treatment for that history.[16]

I use a logistic regression model to estimate the binary probability of treatment:

$$Sanction_{it} = f(Sanction_{i,t-1}, Sanction_{i,t-2}, Controls_{it}) \tag{3}$$

I include the following controls, $Controls_{it}$, when estimating the denominator of $\widehat{SW}_i$, and exclude them when estimating the numerator. Economic controls include GDP per capita and total trade

[16]Missing treatment probabilities take the probability of treatment from the previous year. This assumption reduces the problem of missing data and is unlikely to bias results, as the treatment probabilities are unlikely to change substantially from year to year, given the relative stability of the predictors.

(Barbieri, Keshk and Pollins 2009, Barbieri and Keshk 2012).[17] Political controls again include polity, checks [and balances] and turnover. International controls include membership in the WTO, as well as the presence of a Militarized International Dispute (Ghosn, Palmer and Bremer 2004, Jones, Bremer and Singer 1996). MID provides a useful predictor of sanctions, because sanctions are aimed at changing the sanctioned country's policy and often result from a dispute.

I then use the weighted regression to estimate the impact of sanctions on market protection:

$$Protection_{i,t} = \beta_0 + \beta_1 Sanction_{i,t} + \beta_2 Sum\ Sanction_{i,t-1} + \epsilon \tag{4}$$

Like Blackwell and Glynn (2013), I am interested in both the immediate and cumulative effects of sanctions, and I retain the individual sanctions variable, $Sanction_{i,t}$, in the regression, as well as a cumulative variable, $Sum\ Sanction_{i,t} = \sum_{k=1}^{t} Sanction_{i,k}$, where $Sanction_{i,k}$=1 when one or more sanctions are in place against country i at time k and $Sanction_{i,k}$=0 when no sanction is in place. $Sum\ Sanction_{i,t}$ is the sum of past sanction periods in the current sanction period. The sum starts anew when a new sanction period begins. The variable captures the cumulative effect of past sanctions in the current sanction period.

The results of the weighted, time-series model are displayed in Table 3. Column (1) reports the findings from the logistic regression model used to compute the denominator of the weights. Column (2) reports the weighted regression of trade sanctions on tariff rates. The immediate or blip effect of trade sanctions on tariffs is positive, but the effect is insignificant by conventional standards. The cumulative effect of trade sanctions is also positive and is significant at the five percent level. In order to estimate the total effect of sanctions, one would need to sum up the blip (2.50) and cumulative effect (0.32) for each year sanctions are in place (on average, they are in place for 5.3 years). The total effect of trade sanctions based on the weighted model is to increase the tariff rate by 3.88 percent,[18] which is a 50 percent increase in the average tariff rate (7.64 percent

[17] Total trade is the sum of all imports and exports in thousands of dollars. Total trade is not included in the previous models, because the impact of sanctions on tariff rates is expected to accrue through sanctions' impact on trade. Total trade is included in the weight calculation, because trade could effect the attractiveness of a specific sanction target.

[18] The calculation is: 2.50+0.32*4.3 = 3.88.

is the average tariff in the sample). Thus, using two distinct empirical specifications, sanctions are correlated with higher tariff rates. Although the estimated impact of trade sanctions is about seven times larger in the weighted model than the LRM in the ECM, both findings are consistent with the hypothesis that trade sanctions produce greater market protection.

Conclusion

This paper identifies several negative consequences of sanctions. Sanctions directly decrease trade flows with targeted countries, which reduces competition and access to the global market. The reduction in foreign competition in the targeted country results in economic distortions that are similar to those induced by tariffs: Producers shift production to comparatively disadvantaged sectors, and profits accrue to uncompetitive producers, who are no longer forced to compete with international producers. At the same time, the reduction in access to the global market harms exporters and consumers. The distributional consequences of sanctions impact the relative bargaining power of interest groups within the sanctioned country, creating new and empowering existing special interest groups that seek market protection. Empirical models provide evidence that is consistent with the theory. Trade sanctions are correlated with higher tariff rates.

The protection inducing effect of sanctions is particularly problematic in light of overwhelming evidence that international trade provides economic benefits to countries as a whole. David Ricardo laid the theoretical foundation for the benefits of free trade centuries ago: "Under a system of perfectly free commerce, each country naturally devotes its capital and labor to such employments as are most beneficial to each. This pursuit of individual advantage is admirably connected with the universal good of the whole" (Ricardo 1817, p. 133-134). More recently, scholars have tried to quantify the size of these benefits. Using geography as an instrument for trade flows to exclude confounding variables and isolate the direct effect of trade, Frankel and Romer find that a one percentage point increase in trade raises per person income by two percent (Frankel and Romer 1999, p. 387). The benefits of trade are now widely accepted,[19] and increasing international trade

[19]Scholars have turned to assessing the causes of trade protection. For example, see Schattschneider (1935),

liberalization has become an important foreign policy goal in its own right. This paper provides evidence that sanctions undermine liberalization, as they create political incentives for increased market protection.

In addition to the negative effects of trade restrictions associated with economic sanctions, political scientists have reached a consensus that observed economic sanctions are unlikely to succeed. In fact, sanctions fail to elicit concessions between 65 and 95 percent of the time (Hufbauer, Schott and Elliott 2007, Pape 1997). Sanctions are successful, when the sanctioned country concedes to the demands of the sanctioning country. These sanctions are often unobservable, because the concession is made before the sanction is actually implemented. Few policymakers expect observed sanctions, particularly those that endure for many years, to succeed in achieving concessions. Instead, these sanctions are implemented, because the leaders of the sanctioning country benefit politically from the sanctions (Smith 1996). Unsuccessful sanctions are implemented for largely "symbolic" reasons (Lindsay 1986), particularly when the media publicizes human rights abuses (Peksen, Peterson and Drury 2014) and citizens demand action but are unwilling to pay the cost of military intervention.

Economic sanctions are often thought to be attractive policy tools, because they are perceived as less costly than other alternatives for the sanctioning country (Lopez and Cortright 1995). However, it is likely that policymakers have underestimated the cost of sanctions. Economic sanctions are not only costly due to their immediate restriction of trade flows, they also lead to long-term restrictions in international economic relations. According to most modern economic theories, increased market protection is detrimental to competition, efficiency and growth. In deciding whether to implement sanctions, policymakers must consider how effective the sanctions are likely to be in achieving policy concessions, as well as the costs of the sanctions for producers and consumers, not only while the sanctions are in place, but long after the sanctions are lifted. These costs may outweigh the benefits of the sanction, particularly in those cases where the sanctions are largely symbolic and carry little hope of success.

Rogowski (1987), Grossman and Helpman (1994), Milner (1999), McGillivray (2004).

References

Allen, Susan Hannah. 2008. "The Domestic Political Costs of Economic Sanctions." *Journal of Conflict Resolution* 52(6):916–944.

Anishchuk, Alexei. 2014. "Putin tells West Russia will develop own card payment system." *Reuters* March 27.
URL: *http://www.reuters.com/article/2014/03/27/us-ukraine-russia-putin-payments-idUSBREA2Q0TU20140327*

Barbieri, Katherine and Omar Keshk. 2012. "Correlates of War Project Trade Data Set Codebook, Version 3.0." Online.

Barbieri, Katherine, Omar Keshk and Brian Pollins. 2009. "TRADING DATA: Evaluating our Assumptions and Coding Rules." *Conflict Management and Peace Science* 26(5):471–491.

Beck, Nathaniel and Jonathan N. Katz. 2011. "Modeling Dynamics in Time-series-cross-section Political Economy Data." *Annual Review of Political Science* 14:331–352.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer and Patrick Walsh. 2001. "New tools in comparative political economy: The Database of Political Institutions." *World Bank Economic Review* 15(1):165–176.

Becker, Gary S. 1995. "Public Policies, Pressure Groups, and Dead Weight Costs." *Journal of Public Economics* 28(3):329–347.

Betz, Timm. 2014. "Trading Interests: Domestic Institutions, International Negotiations, and the Politics of Trade." *Working Paper* Presented at MPSA's Annual Conference.

Blackwell, Matthew and Adam Glynn. 2013. "How to Make Causal Inferences with Time-Series Cross-Sectional Data." *Working Paper presented at the Society for Political Methodology Annual Meeting* pp. 1–22.

Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson and James D. Morrow. 2003. *The Logic of Political Survival.* Cambridge, MA: MIT Press.

De Boef, Suzanna and Luke Keele. 2008. "Taking Time Seriously." *American Journal of Political Science* 52(2):184–200.

Drury, A. Cooper and Dursun Peksen. 2012. "Women and Economic Statecraft: The Negative Impact International Economic Sanctions Visit on Women." *European Journal of International Relations* 0(0):1–28.

Frankel, Jeffrey A. and David Romer. 1999. "Does Trade Cause Growth?" *The American Economic Review* 89(3):379–399.

Ghosn, Faten, Glenn Palmer and Stuart Bremer. 2004. "The MID3 Data Set, 1993–2001: Procedures, Coding Rules, and Description." *Conflict Management and Peace Science* 21:133–154.

Gilligan, Michael J. 1997. *Empowering exporters : reciprocity, delegation, and collective action in American trade policy*. Ann Arbor, M.I.: The University of Michigan Press.

Greene, William H. 2008. *Econometric analysis*. Upper Saddle River, N.J.: Pearson/Prentice Hall.

Grossman, Gene M. and Elhanan Helpman. 1994. "Protection for Sale." *American Economic Review* 84(4):833–850.

Grossman, Gene M. and Elhanan Helpman. 2001. *Special Interest Politics*. Cambridge, M.A.: MIT Press.

Heston, Alan, Robert Summers and Bettina Aten. 2012. *Penn World Table Version 7.1*. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.

Hufbauer, Gary Clyde, Jeffrey J. Schott and Kimberly Ann Elliott. 2007. *Economic sanctions reconsidered*. Washington, DC: Peterson Institute for International Economics.

Jones, Daniel M., Stuart A. Bremer and J. David Singer. 1996. "Militarized Interstate Disputes, 1816-1992: Rationale, Coding Rules, and Empirical Patterns." *Conflict Management and Peace Science* 15(2):163–213.

Kaempfer, William H. and Anton D. Lowenberg. 1999. "Unilateral versus multilateral international sanctions: A public choice perspective." *International Studies Quarterly* 43(1):37–58.

Kaempfer, William H. and Anton D. Lowenberg. 2007. The Political Economy of Economic Sanctions. In *Handbook of Defense Economics*, ed. Todd Sandler and Keith Hartley. Vol. 2 B.V.: Elsevier chapter 27, pp. 879–883.

Lacy, Dean and Emerson M. S. Niou. 2004. "A theory of economic sanctions and issue linkage: The roles of preferences, information, and threats." *Journal of Politics* 66(1):25–42.

Lindsay, James M. 1986. "Trade Sanctions as Policy Instruments: A Re-examination." *International Studies Quarterly* 30:153–173.

Lopez, George A. and David Cortright. 1995. "The sanctions era: an alternative to military intervention." *Fletcher Forum of World Affairs* 19(2):65–85.

Mansfield, Edward D., Helen V. Milner and B. Peter Rosendorff. 2000. "Free to Trade: Democracies, Autocracies, and International Trade." *The American Political Science Review* 94(2):305–321.

Marshall, Monty G., Keith Jaggers and Ted Robert Gurr. 2013. "Polity IV Project: Political Regime Charateristics and Transitions 1800-2011." *Dataset* available online: http://www.systemicpeace.org/polity/polity4.htm.

McGillivray, Fiona. 2004. *Privileging industry : the comparative politics of trade and industrial policy*. Princeton, N.J.: Princeton University Press.

Melitz, Marc J. 2003. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity." *Econometrica* 71(6):1695–1725.

Milner, Helen V. 1999. "The Political Economy of International Trade." *Annual Review of Political Science* 2:91–114.

Milner, Helen V. and Keiko Kubota. 2005. "Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries." *International Organization* 59:157–193.

Morgan, T. Clifton, Navin A. Bapat and Yoshiharu Kobayashi. 2013. "Threat and Imposition of Sanctions (TIES) Data 4.0." *TIES Database* available at: http://www.unc.edu/ bapat/TIES.htm.

Nooruddin, Irfan. 2002. "Modeling selection bias in studies of sanctions efficacy." *International Interactions* 28:59–75.

Panagariya, Arvind. 2004. "Miracles and Debacles: In Defence of Trade Openness." *The World Economy* 27(8):1149–1171.

Pape, Robert A. 1997. "Why Economic Sanctions do not Work." *International Security* 22(2):90–136.

Peksen, Dursun and A. Cooper Drury. 2010. "Coercive or Corrosive: The Negative Impact of Economic Sanctions on Democracy." *International Interactions* 36:240–264.

Peksen, Dursun, Timothy M. Peterson and A. Cooper Drury. 2014. "Media-driven Humanitarianism? News Media Coverage of Human Rights Abuses and the Use of Economic Sanctions." *International Studies Quarterly* Forthcoming:1–12.

Ricardo, David. 1817. *Principles of political economy and taxation.* London: John Murray.

Robins, James M., Miguel Ángel Hernán and Babette Brumback. 2000. "Marginal Structural Models and Causal Inference in Epidemiology." *Epidemiology* 11(5):550–560.

Rogowski, Ronald. 1987. "Trade and the Variety of Democratic Institutions." *International Organization* 41(2):203–223.

Schattschneider, E.E. 1935. *Politics, pressures and the tariff; a study of free private enterprise in pressure politics, as shown in the 1929-1930 revision of the tariff.* New York: Prentice Hall.

Schonhardt-Bailey, Cheryl. 1997. *The rise of free trade.* London ; New York: Routledge.

Schonhardt-Bailey, Cheryl. 2006. *From the corn laws to free trade: interests, ideas, and institutions in historical perspective.* Cambridge, Mass.: MIT Press.

Selden, Zachary A. 1999. *Economic sanctions as instruments of American foreign policy.* Westport, Conn.: Praeger.

Smith, Alastair. 1996. "The Success and Use of Economic Sanctions." *International Interactions* 21(3):229–245.

U.S. Department of the Treasury. 2014. "Treasury Sanctions Russian Officials, Members Of The Russian Leadership's Inner Circle, And An Entity For Involvement In The Situation In Ukraine." *Press Release* March 20.
URL: *http://www.treasury.gov/press-center/press-releases/Pages/jl23331.aspx*

Weiss, Thomas G., David Cortright, George A. Lopez and Larry Minear, eds. 1997. *Political Gain and Civilian Pain: Humanitarian Impacts of Economic Sanctions.* Lanham, M.D.: Rowman & Littlefield Publishers.

World Bank. 2013. "World Development Indicators." *World Bank Website* available at: http://databank.worldbank.org/.

Figure 1: Effect of Trade Sanctions Over Time

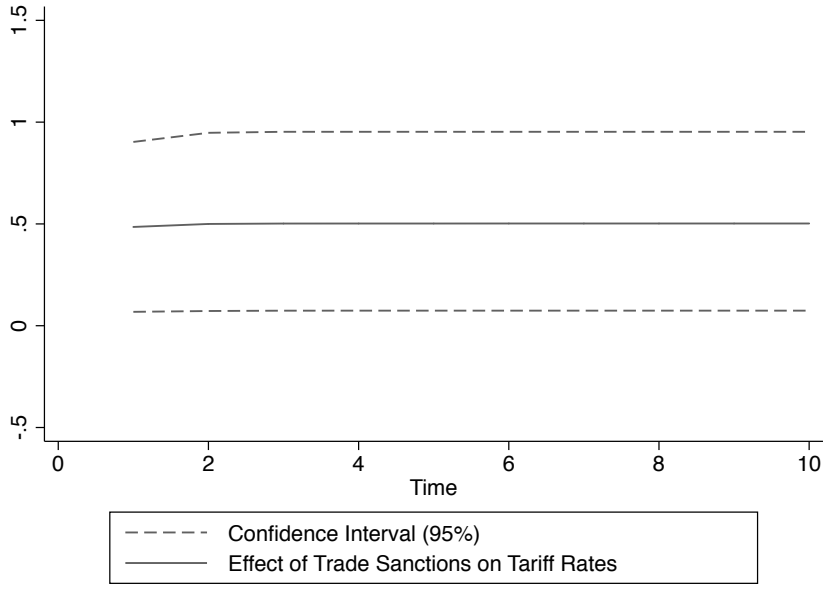

Table 1: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Year	1989.9	12.31	1966	2010	6338
Trade Sanction Count	0.26	0.67	0	11	6338
Trade Sanction Binary	0.13	0.34	0	1	6338
Sum Trade Sanction	0.70	2.52	0	30	6338
Tariff	7.64	8.95	0	254.58	1965
MID	0.26	0.44	0	1	6338
Polity	1.04	7.46	-10	10	5601
Checks	2.58	1.7	1	18	4937
Political Turnover	0.16	0.37	0	1	5102
GDP per capita	8.93	11.33	0.16	118.84	6082
WTO Member	0.32	0.47	0	1	6338
Total Trade	51.78	184.91	-0.018	3466.21	6122

Table 2: Trade Sanctions and Tariff Rates

	(1) OLS	(2) OLS	(3) FGLS	(4) FGLS	(5) ADL	(6) ADL
lag Tariff	0.0532	0.0319	0.286***	0.177***	0.0532	0.0309
	(0.68)	(0.54)	(23.36)	(21.46)	(0.68)	(0.54)
Trade Sanctions Count	0.386*	0.384**	0.0250	0.144**	0.378*	0.257
	(1.67)	(2.03)	(0.39)	(2.15)	(1.95)	(1.45)
lag Trade Sanctions Count					0.0141	0.232**
					(0.12)	(2.07)
Polity		-0.239*		-0.238***		-0.0746
		(-1.81)		(-20.10)		(-1.03)
lag Polity						-0.223**
						(-2.08)
GDP per capita		-0.209**		-0.135***		-0.0642
		(-2.50)		(-31.24)		(-0.89)
lag GDP per capita						-0.121
						(-0.99)
WTO Member		-1.135		-0.332***		0.316
		(-1.01)		(-3.19)		(0.61)
lag WTO Member						-1.714*
						(-1.66)
Checks		0.440		0.232***		0.416
		(1.21)		(15.24)		(1.57)
lag Checks						0.0973
						(0.41)
Political Turnover		0.700		0.447***		0.599
		(0.90)		(8.13)		(0.83)
lag Political Turnover						-0.655
						(-1.18)
Constant	5.768***	9.795***	4.577***	8.001***	5.765***	9.776***
	(11.95)	(10.62)	(32.89)	(78.15)	(12.04)	(10.48)
LRM					0.414	0.505**
					(1.54)	(2.30)
N	1453	1223	1440	1213	1453	1209

t statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; two-tailed test;

OLS and ADL analyses include robust standard errors, clustered by country, and country fixed effects.

FGLS specifies a heteroskedastic error structure and panel specific AR(1) autocorrelation.

Table 3: Weighted, Time-Series Model

	(1) Logistic	(2) Weighted OLS
Trade Sanction Binary		2.496
		(1.37)
lag Sum Trade Sanction Binary		0.318**
		(2.22)
lag Trade Sanction Binary	4.200***	
	(20.14)	
2-yr lag Sum Trade Sanction Binary	0.0728***	
	(2.78)	
MID	0.707***	
	(4.89)	
Polity	0.0271*	
	(1.78)	
GDP per capita	-0.0245	
	(-0.00)	
WTO Member	-0.434***	
	(-2.79)	
Checks	0.0570	
	(0.94)	
Turnover	0.509**	
	(2.39)	
Total Trade	0.728**	
	(2.31)	
Constant	-3.764***	-93982.4
	(-17.84)	(-1.56)
N	4125	1316

t statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; models include linear and quadratic time trends and use robust standard errors, clustered by country.