Exchange Rates and Protectionism

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Abstract: The recent confrontation between China and the United States over currency policy illustrates a broader phenomenon: exchange-rate misalignments tend to increase trade protectionism. I demonstrate the effects of exchange rates on protectionism in several ways. First, I show that aggregate protectionist activity in the United States (as measured anti-dumping petitions and trade legislation in Congress) is positively related to the level of the real exchange rate. Second, I show that the protectionist response to exchange rates varies by industry. I argue that the combination of four industry-specific characteristics shape whether an industry favors (opposes) industry-specific protection during appreciations: the share of exports in industry revenue, the share of imports in domestic consumption, the share of imported intermediate inputs in total costs, and the level of exchange rate "pass through." The steel industry, for example, is very sensitive to exchange rate movements because pass through is low in metals processing industries and firms must absorb the costs of exchange rate changes in their profit margins. Third, I show that lobbying and congressional voting patterns on H.R. 2378, *The Currency Reform for Fair Trade Act*, which would impose trade barriers on nations with misaligned currencies, reflects the differential impact of exchange rates across industries: exporters and import-competing industries explicitly lobbied for the legislation while non-traded good producers, importers, and users of imported intermediate products lobbied against it. I also show that campaign contributions from supporting industries have a large and significant effect on the likelihood that a member of Congress voted "yes" on the bill.

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Introduction

Currency policy and trade policy are functional equivalents: a 10 percent depreciation of the home currency has the same effect on international competitiveness as a 10 percent tariff (subsidy) on all imports (exports).[1] In fact, if currency policy is used deliberately to enhance the competitiveness of the traded goods sector, it is regarded as a *form* of protectionism (Corden 1982). The link between protectionism and exchange rates is evident historically. During the Great Depression, beggar-thy-neighbor devaluations by some countries caused other nations to increase their trade barriers, as a means of maintaining competitiveness (Eichengreen and Irwin 2009). In the early 1980s, the appreciation of the dollar prompted severe protectionist pressures and policies (Bergsten and Williamson 1983; Grilli 1988). The recent controversy between China and the United States over currency policy is but the latest instance in which exchange rates have spilled over into trade policy. On September 29, 2010, the House of Representatives passed *The Currency Reform for Fair Trade Act* (H.R. 2378), which would allow the U.S. to impose anti-dumping injunctions against China and other countries that maintain "fundamentally undervalued" currencies.

Why do exchange rate pressures tend to find expression in the trade policies of nations? This is puzzling since the factors that determine exchange rates are macroeconomic while trade politics and policies tend to determined at the industry level. The reason why exchange rates implicate trade policy and not macroeconomic policy is that exchange rates have cross-cutting and complex *industry-level* effects within nations. When the home currency appreciates, some domestic industries are harmed, others benefit, and still others are indifferent. This diversity of positions and sensitivities to exchange rates means that there is no single aggregate

[1] See, among others, McKinnon and Fung (1993: 235).

macroeconomic policy that will placate all industries. Trade policy, by contrast, can be targeted narrowly to accommodate the demands of specific industries. My claim is that policymakers substitute trade policies for aggregate macroeconomic policy adjustments during currency misalignments precisely because trade policy provides industry-specific instruments while macroeconomic policy does not.

I evaluate the argument is several ways. In Section 2, I establish the link between exchange rates and trade policy at the aggregate (national) level of analysis. That is, I show that overall protectionist activity in the United States is positively related to the level of the real exchange rate over time. I use two indicators of aggregate protectionism: anti-dumping cases initiated at the International Trade Commission between 1979 and 2009, and protectionist trade bills proposed in the U.S. House of Representatives between 1974 and 2010. In each case, I find a meaningful and statistically significant positive relationship between the level of the real exchange rate and aggregate protectionism.

In Section 3, I examine the relationship between exchange rates and protectionism at the industry level of analysis. While currency values affect the aggregate level of protection, industry-level characteristics determine the extent to which the profits and performance of a particular industry are affected by currency movements. A large economics literature shows that changes in the value of the home currency differentially affect industries' profitability and performance (e.g. equity prices, investment, labor market conditions). Simply put, how the exchange rate affects an industry depends crucially on what the industry does. For example, exchange rate fluctuations can cause price changes that: (1) reallocate resources and profits between traded and non-traded goods industries; (2) alter the competitiveness of export industries and import competing industries; (3) change the input costs of industries that use

imported intermediate inputs; (4) alter the input prices of firms that import foreign goods for resale in the domestic market; and (5) change the value of assets denominated in foreign currencies. Thus, whether an industry produces traded or non-traded goods, exports or imports, relies on imported inputs, or engages in foreign investment can all affect its *position*—harmed or helped—by exchange rate movements (Frieden 1991; Broz and Frieden 2006).

But industries also differ in their *sensitivity* to exchange rates. The key consideration here is the amount of exchange rate pass though in an industry. Exchange rate "pass through" refers to the percentage change in the market price of a tradeable good that occurs when the exchange rate changes. If a particular industry cannot pass through exchange rate changes to consumer prices, then that industry is especially sensitive to exchange rate changes since firms must absorb any losses caused by such changes in their profit margins.

In Section 4, I draw inferences about which industries are likely to favor (oppose) trade protection in response to changes in currency values and then test these inferences with an industry-level indicator of protection: anti-dumping filings initiated by industries aggregated at the two-digit Standard Industrial Classification (SIC) level. For example, I find that industries with high share of exports relative to total sales demand more anti-dumping investigations when the real exchange rate appreciates, but only if they are industries that produce standardized products (e.g., SIC 33, Primary Metals Fabrication) where exchange rate pass through is low. By contrast, export industries with high pass through file fewer anti-dumping petitions when the dollar appreciates. For import-competing industries, the level of pass through also has a powerful and predictable effect on the responsiveness of anti-dumping investigations to exchange rates. Where pass through is low, import-competing industries file more anti-dumping

cases as the dollar strengthens; where pass through is high, import competers tend to file fewer anti-dumping petitions during appreciations.

In Section 5, I show that lobbying and congressional voting patterns on *The Currency Reform for Fair Trade Act* (H.R. 2378), which passed the House of Representatives on September 29, 2010, were influenced by the differential effects of exchange rates across industries. The Act would impose trade barriers on China and other nations found to have currencies that are "fundamentally misaligned." I show that industries that explicitly supported the legislation were the most vulnerable to an undervalued yuan: U.S. exporters with low pass through and import-competing industries. By the same token, industries that opposed the bill tended to be non-traded goods producers, importers, and industries that depend on imported intermediate inputs from China. I also show that campaign contributions from supporting (opposing) industries are correlated with House member voting on the bill: contributions from supporters (opponents) increase (decrease) the likelihood that a member voted "yes" ("no"). The final section concludes with some analytical and policy implications.

2. The Protectionism-Exchange Rate Relationship

A number of studies have examined the impact of currency appreciation on protectionism. Eichengreen and Irwin (2009) show that protectionism during the Great Depression was the favored policy response in countries that kept their currencies fixed to gold, once partner countries devalued their own currencies. Oatley (2010) examines "waves" of protectionism in six industrialized countries since the 1970s and connects these protectionist cycles to movements in real exchange rates. Knetter and Prusa (2003) provide similar evidence for four countries: the the United States, the European Union, Australia and Canada. Their estimates suggest that a one-standard deviation real appreciation of the domestic currency

increases anti-dumping filings by 33 percent. The relationship between exchange-rate disequilibria and protectionism in the European Community is examined by Pearce and Sutton (1985). Gunnar and Francois (2006) explore administered protectionism in Mexico and find that antidumping complaints are systematically related to exchange rate and current account movements. Bergsten and Williamson (1983), Grilli (1989), and Irwin (2005) show that in the United States, protectionist legislation and anti-dumping petitions vary with the exchange rate.

The conflict with China is the most recent instance where exchange rates have generated negative trade policy "externalities" (Frieden and Broz, forthcoming). Since the late 1990s, there have been indications that the weak yuan was inflaming Congressional protectionism, and these sentiments were only moderated when the dollar began to depreciate against other currencies. In an earlier era, the dramatic appreciation of the U.S. dollar in the early 1980s led to major protectionist legislation in the U. S. Congress, and to an unprecedented spike in complaints to the International Trade Commission (ITC), the quasi-judicial Federal agency that conducts antidumping and countervailing duty investigations. Anti-dumping cases tripled from an annual average of 18 between 1979 and 1981, to an annual average of 56 between 1982 and 1984.

In was not only in the early 1980s that exchange rates spilled into the trade arena: from the late 1970s to the present, protectionist activity in the United States has been positively related to the level of the real effective exchange rate.[2] **Figure 1** plots the association between the real effective exchange rate (REER) of the U.S. dollar and anti-dumping cases investigated by the ITC. Anti-dumping investigations provide a direct indicator of year-to-year variation in protectionist demands since U.S. industries must petition the government for relief from "unfair"

[2] The real effective exchange rate is the proper measure of a currency for this purpose. The REER weights a country's exchange rate in terms of the currencies of its major trading partners, which makes it "effective" as opposed to bilateral. It also adjusts for domestic prices differences between a country and its trading partners, to make it "real" rather than nominal.

foreign competition. These data clearly indicate that the number of anti-dumping cases investigated by the ITC increases with the appreciation of the U.S. dollar. The one outlier—1992—is the exception that tests the rule. On July 8, 1992, the steel industry filed 47 separate anti-dumping petitions on various countries for four types of steel products. If we reduce these 47 cases to four—since this flurry of steel-related cases weren't really separate—the significance of the relationship moves to $t = 3.85$ from $t = 2.74$ and the fit of the model improves to $R^2 = 0.31$ from $R^2 = 0.20$.

This relationship is meaningful in a substantive sense as well. Simulating the effect of increasing the REER by one-standard deviation above its mean—a roughly 10 percent real appreciation of the dollar—increases the number of anti-dumping cases filed at the USTIC by 10.2 cases per year (the 95 percent confidence interval ranges from 3.4 to 17.3 cases per year). Given that only 39.5 cases are filed per year on average, this suggests that a 10 percent real appreciation leads to a 26 percent increase in anti-dumping activity.

One indication that exchange rates have different effects on different industries is the very high share of all anti-dumping petitions filed by firms in the Primary Metals Products industry (SIC 33). Firms in this industry filed 42 percent (510 of 1227) of all anti-dumping petitions submitted to ITC between 1979 and 2009. The vast majority of these investigations were from firms producing basic steel commodities: steel plate, pipe, and wire products. **Figure 2** plots the bivariate relationship between anti-dumping investigations in the Primary Metals Products industry (SIC 33) and the real effective dollar exchange rate. The relationship is again positive and significant, with a slope coefficient similar to that in Figure 1. This suggests that the anti-dumping filings in the Primary Metals Products industry are driving the results in Figure 1. Indeed, if we remove SIC 33 filings from the full sample of antidumping cases, the positive

relationship between antidumping investigations and the real exchange rate no longer holds. This is shown in **Figure 3,** which plots the relationship when all SIC 33 filings are removed from the annual count of anti-dumping investigations. While the slope estimate is still slightly positive, it is not significant (t = 1.04). This suggests that anti-dumping petitions in the primary metals industry—which comprise 42 percent of all antidumping petitions—have a strong impact on the relationship between overall anti-dumping protectionism and the real exchange rate. I explore this issue further in Section 3.

Another indicator of aggregate protectionism comes from congressional activity to restrict trade, a measure based upon proposed *legislation*. Just as anti-dumping petitions don't need to result in the actual adoption of trade-restrictive measures to distort trade (Grilli 1988), legislative proposals may also be distortive simply because they are proposed. Protectionist proposals increase uncertainty for foreign producers, which can affect their investment and production decisions. Legislative proposals may also induce foreign producers to change their pricing and trade behavior in order to avoid more serious reprisals.

To assess the relationship between efforts to legislate protectionism and the real exchange rate, I collected data on all protectionist trade legislation proposed in the House of Representatives between the 93rd (1973-74) and the 109th (2005-06) Congress.[3] I then separated out the subset of these legislative proposals that would impose trade restrictions on steel products.[4] A few select examples provide a sense of these proposals: H.R. 502 from the 106th

[3] Data on steel legislation in from *The Congressional Bills Project* (http://congressionalbills.org/index.html) which assembles and codes all congressional bills by topic since 1947. The topic category for protectionist bills is "1807: Tariff and Import Restrictions, Import Regulation."

[4] To identify the subset of bills that target steel products with import restrictions, I extracted only those bills coded 1807 that specify steel imports in their titles or summaries. I updated the

Congress (1999-00) would "impose a 3-month ban on imports of steel and steel products from Japan, Russia, South Korea, and Brazil." H.R. 2240 from the 93rd Congress (1973-74) would "provide for orderly trade in iron and steel products." H.R. 3699 from the 108th Congress would "reinstate the safeguard measures imposed on imports of certain steel products, as in effect on December 4, 2003."

Figure 4 displays the relationship between the subset of steel legislation and the REER. As with anti-dumping investigations in the primary metals industry, the association is strongly positive and significant, suggesting that the steel industry is highly sensitively to real appreciations. However, as indicated in **Figure 5**, the relationship does generalize to all traded goods industries. This figure plots the association between the REER and all protectionist trade legislation introduced in the House. Here, the slope is close to zero. As with anti-dumping protectionism, exchange rate appreciations do not appear to "cause" a general increase in protectionist legislative proposals. Rather, some industries appear to obtain legislative support while others do not. This supports the inference that exchange rates have industry-specific affects.

3. The Industry-Specific Affects of Exchange Rates

Real exchange rate fluctuations have a substantial—but uneven—impact on the profitability and performance of domestic industries (Frieden 1991; Bodner and Gentry 1993; Broz and Frieden 2006). Movements in the exchange rate may cause price changes that: (1) reallocate resources between traded and non-traded goods industries; (2) alter the competitiveness of export industries and import competing industries; (3) change the input costs of industries that use imported intermediate inputs; (4) alter the input prices of firms that import

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sample of steel bills to include the 110th and 111th Congresses, using *Thomas*, the Library of Congress search engine.

foreign goods for resale in the domestic market; and (5) change the value of assets denominated in foreign currencies. But the extent to which exchange rate fluctuations actually cause price changes depends on the degree to which producers in an industry pass through exchange rate changes to consumer prices. Because of this diverse set of influences, exchange rate movements have very different effects across industries.

To begin with, changes in the exchange rate affect non-traded goods industries differently than traded goods industries. Non-traded goods have transportation costs that are high enough to render international trade unprofitable. A real appreciation represents a rise in the relative price of non-tradable goods and thereby shifts resources from the tradables to the non-tradables sector (Dornbusch 1974). Such a real appreciation signifies an increase in the cost of producing tradable goods and a decrease in the costs of producing non-tradable goods. As such, it causes the profit and market valuation of non-traded goods industries to rise relative to the profit and market value of traded goods industries (Bodner and Gentry 1993). This suggests a positive relationship between real appreciations and the performance of non-traded goods industries.

Within the traded-goods sector, the affects of exchange rates changes are varied and depend on the particular activities of the industry and its market characteristics. Consider how a real appreciation affects three types of traded good industries: exporters, import-competing, and importers (wholesalers or retailers). An appreciation lowers the amount of home currency needed to purchase an equivalent unit of foreign currency, resulting in a lower home-currency price of foreign goods and a higher foreign-currency price of home goods. In general, this harms export and import-competing industries (as declining competitiveness at home and abroad reduces revenues) and helps import industries (as input costs decline). But the effects on export and import-competing industries are moderated by two factors: the degree to which an industry

relies on imported intermediate inputs and the level of exchange rate pass-through in an industry. For industries that depend heavily on imported intermediate inputs (high imported input costs relative to total costs), the dependence on export sales and exposure to import competition can be offset by the lower costs of imported inputs that currency appreciation brings. In fact, for some manufacturing industries, the benefits of appreciation in terms of lower input costs may outweigh the adverse revenue effects (Campa and Goldberg 1997).

As distinct from industries' *position* on currency appreciation (helped or harmed), the degree of pass through affects industries' *sensitivity* to exchange rate fluctuations. Pass-through refers to the elasticity of export market prices, home market prices, and imported input prices to changes in the real exchange rate. A traded goods industry's sensitively to the exchange rate depends on the responsiveness of these product market prices to exchange rate changes (Knetter 1993; Campa and Goldberg 1999). For example, zero pass through means that import prices do not change at all in the importer's currency and that the exporter absorbs the entire change in the exchange rate in its profit margin; complete pass through implies that import prices change one-for-one with the exchange rate. Low pass through is also referred to as "pricing-to-market" when the exchange rate changes (Krugman 1987). This pricing-to-market behavior means that when the exporter's currency appreciates against that of the importers, the exporter reduces its markups of price over marginal cost so as to stabilize prices in the local currency of importers (Knetter 1993). Industries that are exposed to low exchange rate "pass through" thus tend to be more sensitive to exchange rates than industries in which pass through is high.

The amount of exchange rate pass through depends primarily on the market characteristics of industries. Pass through tends to be low in competitive industries that produce homogenous goods where producers compete mainly on the basis of price. The presence of a

large number of producers selling similar goods provides consumers with a choice of many substitutes, making them relatively price-sensitive. Market competition and elastic demand compel producers to discipline their price behaviors and limits their ability to pass on rising costs due to exchange rate fluctuations. Thus, when the home currency appreciates, exporters avoid raising their prices in order to maintain market share. For example, exports to competitive industries in the U.S., such as autos and alcoholic beverages, show relatively high pricing-to-market and corresponding lower exchange rate pass-through, as exporters try to preserve market share (Knetter 1993). This pricing-to-market behavior (low pass through) negatively affects industry profitability, investment, and employment (Bodnar and Gentry 1993; Campa and Goldberg 1997; 1999; 2001; 2005).

By contrast, pass-through is higher in industries that produce specialized products that do not compete solely on the basis of price. If an industry is highly differentiated and producers do not face much competition for their products, then product prices are less responsive to exchange rate changes. In this situation, pricing-to-market will be lower and the corresponding pass-through will be higher. Industries with high pass-through thus will be less concerned with the exchange rate than industries with low pass-through, because they can pass the costs to consumers.

Figure 6 summarizes the effects of exchange rate changes on industries along the two dimensions discussed above: position and sensitivity. The first dimension—position—involves how an industry is affected by the level of the real exchange rate. Industries that benefit when the exchange rate is "high" (appreciated) are located in the west cells of the figure; industries that prefer a "low" (depreciated) exchange rate are positioned in the cells to the east. The second dimension—sensitivity—relates to the degree of pass through in an industry. Industries that are

more sensitive to movements in exchange rates are industries where pass through is low: industries producing standardized goods sold in competitive markets on the basis of price. Industries that are less sensitive to exchange rate movements are industries where pass through is high: industries that produce differentiated goods sold in less competitive markets where firms command some pricing power.

Overall, there is substantial diversity of positions and sensitivities on exchange rates across industries. And the impact of exchange rates is even more complex when industries are engaged in more than one activity. For example, an industry with large export markets might be so heavily dependent on imported intermediate inputs that it obtains net benefits from an appreciated currency. A more complicated analysis would capture the net effects of exchange rates on industries, taking into account such cross-cutting activities as exporting finished products but importing intermediate inputs (Campa and Goldberg 1997).

The political economy implication of this analysis is that a macroeconomic policy response to currency misalignments is unlikely. The diversity of industry positions and sensitivities to exchange rates suggests that there is no consensus macroeconomic policy that would satisfy the demands of all interest groups. Trade policy, by contrast, is targetable at the industry level and capable of accommodating the demands of specific industries. In the next section, I test to see if policymakers actually do substitute industry-level trade policies for aggregate macroeconomic policy adjustments during currency misalignments.

4. Exchange Rates and Industry Demands for Trade Protection

In this section, I use the preceding analysis to draw inferences about (1) the industries are likely to favor (oppose) trade protection in response to changes in currency values, and (2) the industries that will lobby harder (less hard) for trade barriers when the currency moves

against them. I then test these inferences with an industry-level indicator of protection: anti-dumping petitions aggregated at the two-digit Standard Industrial Classification (SIC) level.

To illustrate the positions of industries on trade protection, I refer to **Figure 6** and assume the currency has appreciated. Industries that are heavily dependent on exports (high export revenues relative to total revenues) and industries that compete with foreign producers in domestic markets (imports compose a large share of domestic consumption) tend to be harmed by currency appreciation and can be expected to lobby for protection (NE and SE cells). But because pass through differs across industries, I expect exporters and import-competing industries that produce standardized products (SE cell) to be more sensitive to exchange rates and therefore lobby harder for protection than exporters and import-competers that produce differentiated goods (NE cell).

The opponents of trade protection during appreciations are located in the NW and SW cells of **Figure 6**. Since the degree of pass through also affects the extent to which exchange rate changes work their way through to changes in domestic product prices, the preference intensity of importers and users of imported intermediate products also varies. Industries that import standardized goods—either for final sale or as intermediate inputs—are more sensitive to the benefits of appreciation and therefore more likely to lobby against trade protection on the goods they import.

These predictions can be evaluated empirically with data on antidumping filings. Since antidumping cases are initiated by firms in an industry, the number filings submitted by an industry in a year can proxy for an industry's demand for protection over time. I coded all anti-dumping cases by industry, at the two-digit SIC level, and constructed an industry-year panel

dataset covering 20 SIC industries over the 1979-2009 period.[5] The dependant variable is the number of antidumping cases filed at the ITC by industry *i* in year *t*. **Appendix A** provides summary statistics of the dependant variable at the industry level.

To make full use of the panel, I would need annual data on the degree to which each industry (1) depends on exports, (2) competes with imports, (3) both exports and competes with imports, and (4) uses imported intermediate inputs. I would also need industry-year data on (5) pass through to estimate the conditional effect of exchange rates on the demand for antidumping investigations. Unfortunately annual data are not available for the entire sample period. However, some partial series exist that allow for a somewhat cruder test.

Campa and Goldberg (1997) provide measures of export shares and import shares for two-digit SIC industries on three dates: 1975, 1985, and 1995. Since the time series is so incomplete, I take the average of the three available years and create a dummy variable equal to one if an industry is above the median in that category. For example, EXPORT SHARE equals "one" if the ratio of industry export revenues to total industry revenues is above the median ratio of all industries; zero otherwise. IMPORT SHARE is coded "one" if the ratio of imports to total national consumption—a measure of an industry's competition with imports—lies above the median ratio. TRADE SHARE is coded "one" if the sum of export share and import share is greater than the sample median. In each case, an industry that is coded "one" has relatively more at stake in terms of exchange rate changes than an industry that lies below the median. I use these "high" and "low" stakes indicators to estimate the complex conditional effects of

[5] The NBER provides access to Bruce Blonigen's SIC information for antidumping cases from 1979 to 1995 (available at http://www.nber.org/antidump/). Blonigen provides the 1987 SIC for each case by concording TSUSA and HTS codes to the 1987 SIC code. I updated SIC codings for the rest of the antidumping cases in my sample (1996-2009) using the same concordance procedure.

exchange rates on anti-dumping initiations. I follow the same procedure for the pass through data, which is from Yang (1998). PASS THROUGH equals "one" if an industry is below the median (has low pass through). This indicates that the industry is highly sensitive to exchange rate changes since producers must absorb the costs in their profit margins. Unfortunately, I have no similar measure of imported intermediate input usage by industry. **Appendix B** provides information on which industries lie above and below the median value for each of these variables.

My main variable of interest, the real effective exchange rate, is available not only for every year but also for every industry in the sample. The Federal Reserve Bank of New York provides *industry-specific* REER indexes (Goldberg 2004) that are more appropriate to my analysis than broad indexes.[6] Industry-specific real exchange rates give a more accurate picture of the competitive issues facing an industry than board indexes. While broad indexes use the weights of each partner country in the total international trade activity of the entire U.S. economy, industry-specific exchange rates are constructed by weighting partner currencies by the shares of partners in U.S. trade in a specific industry. Adding even more precision, separate industry-specific indexes are provided using (1) export partner weights by industry, (2) import partner weights by industry, and (3) an average of export and import weights by industry. I call these variables MEER, XEER, and TEER, respectively.

I follow standard practice and use negative binomial models since the dependent variable is a non-negative count variable with evidence of overdispersion. My argument is that the affect of the real exchange rate on industry demands for protection is conditioned by (1) the nature of the industry's engagement with the world economy (export share, import share, total trade

[6] The data are online at
http://www.ny.frb.org/research/global_economy/industry_specific_exrates.html

share), and by (2) the degree of pass through in an industry. Rather than run a triple interaction using time-invariant dummy variables for pass through and industry trade characteristics, I group industries by their "high" and "low" indicators of these variables and then regress the count of antidumping filings on the appropriate industry-specific real exchange rate series. For example, I expect a positive relationship between industry antidumping filings and the value of the real exchange rate when industry export shares are high (above the median) and pass through is low (below median). However, when the export share is high and pass through is high (meaning that exporters are able to pass through the cost of the dollar's appreciation to their foreign customers), anti-dumping cases should fall. This is exactly what I find.

Table 1 presents the results of regressions that estimate the effects of the real exchange rate on antidumping filings by conditioning (grouping) industries by their position and sensitively to exchange rates. Models 1 and 2 condition on pass through and export dependence. In Model 1, antidumping cases are regressed on the export-weighted real exchange rate (XEER) for industries with "low" pass through and "high" export shares. As expected, the sign is positive and significant [ADD SUBSTANTIVE EFFECTS]. Export-dependent industries are prone to file more anti-dumping petitions when pass through is low and exporters must absorb exchange rate changes in their profit margins. Model 2 tests to see if the effect is the opposite when exporters can pass on currency appreciations to foreign customers by raising prices (i.e., industries where pass through is "high"). The negative sign indicates fewer antidumping initiations when export industries are less sensitive to exchange rates.

Models 3 and 4 perform the same procedure for import-competers, using the import-weighted, industry-specific real exchange rate (MEER). Model 2 conditions the effect of exchange rates on industries with high import shares and low pass through. As with exporters,

industries that face high levels of import competition and low levels of pass through tend to file more anti-dumping petitions when the currency appreciates. Appreciation puts import-competing industries in the United States at a disadvantage with foreign producers who earn greater profits (in foreign currency terms) when the dollar appreciates and there is little change in import prices. In Model 4, the effect is negative (but not significant) when pass through is high, which suggests that import-competing industries in the U.S. may reduce their demands for anti-dumping protection when foreign producers don't price to market.

Models 5 and 6 condition on pass through for industries with combined high export shares and high import shares using the TEER index (which uses an average of industry-specific export and import weights). When pass through is low, these highly exposed traded goods industries demand more anti-dumping relief (Model 5). But when pass through is high, the tendency is for these industries to reduce their petitions for administered protectionism.

The analysis of anti-dumping actions provides support for the argument that exchange rates influence industry-specific demands for protection. In the next section, I examine another type of evidence: lobbying and voting on congressional legislation to impose trade sanctions on nations deemed to be manipulating their currencies.

6. Lobbying and Voting on *The Currency Reform for Fair Trade Act*

Exchange rates cause trade tensions even with trading partners that limit the movement of their currencies. For years, China's policy of restraining the appreciation of its currency by pegging to the U.S. dollar had inflamed Congressional protectionism, and these sentiments were only moderated when the Chinese let the yuan appreciate by about 15 percent after 2005. The continued rise in the U.S. trade deficit with China, and complaints from U.S. manufacturing industries and workers over the competitive challenges posed by the undervaluation of the yuan

led some members of Congress to call for more aggressive policies toward China. A number of bills have been introduced in Congress to pressure China to adopt a more flexible currency policy and allow thereby allow the yuan appreciate (Morrison and LaBonte 2008). Among these bills, H.R. 2378: *The Currency Reform for Fair Trade Act* has received the most congressional support, having passed the House by a roll-call vote of 348-79 on September 29, 2010.

The Currency Reform for Fair Trade Act provides a mechanism to (1) determine when a foreign country is engaging in currency manipulation, and to (2) impose U.S. trade policy remedies as offsets to such currency manipulation. The criteria for determining currency manipulation are based on a number of factors, including whether the real effective exchange rate of the country's currency is undervalued by an average of at least 5 percent during the preceding 18 months; whether the country is engaged in large-scale intervention in foreign exchange markets during that 18 month period; and whether the country holds foreign currency reserves greater than the amount of the country's foreign debt obligations that are due within the next year. If the administering authority—the International Trade Administration (ITA) in the Commerce Department—determines that manipulation has occurred, it can impose an antidumping duty or a countervailing subsidy to correct for undervaluation. It is not clear whether this enforcement mechanism violates WTO guidelines.

Vesting authority for currency matters in the ITA reinforces the point that exchange rates have distributional effects that fall along industry lines. The ITA is the government agency that grants "administered protection" to domestic industries.[7] That is, it carries out antidumping and countervailing duty investigations upon the request of domestic industries, and, in conjunction

[7] "Administered protectionism" means that legislative approval is not required to implement a specific trade barrier. However, legislative consent *is* required for executive agencies like the ITA and ITC to exercise their quasi-judicial powers.

with the International Trade Commission, decides whether or not to grant protection to those industries. Previous research has shown that the ITA and ITC are highly susceptible to demands for protectionism from specific industries (Hansen 1990; Hansen and Park 1995).

In this section, I consider whether lobbying and congressional voting on H.R. 2378 are responsive to the cross-cutting and diverse industry pressures that I associate with an appreciated exchange rate. Since H.R. 2378 aims to combat the undervaluation policies of China (or other nations) with trade remedies, I expect patterns of lobbying and voting to reflect the industrial winners and losers of dollar appreciation. When China engages in sterilized intervention and accumulates foreign reserves, the yuan becomes less expensive than it would be if its value were determined by market forces. This causes Chinese exports to the United States to be relatively inexpensive (and therefore to increase) and U.S. exports to China to be relatively expensive (and therefore to fall). I expect U.S. export industries and import-competing industries in the U.S. to lobby in support of H.R. 2378.

An overvalued Chinese currency also provides benefits to certain U.S. industries. At the broadest level, the non-traded goods sector gains from the undervalued yuan, as the price of non-traded goods increases relative to the price of traded goods. Producers of services, housing, finance and other non-traded goods should oppose H.R 2378. In addition, industries that import Chinese products for retail or wholesale distribution should oppose the legislation. Importers gain from a weak yuan (strong dollar) since appreciation reduces the domestic currency cost of purchasing imports. Since a large share of Chinese imports to the U.S. are labor-intensive consumer goods such as textiles and apparel, toys and games, and consumer electronics, I expect importers and retailers of these goods to oppose H.R. 2378.

Table 2 provides a list of the lobby organizations that explicitly voiced a position on H.R. 2378. This information is from MAPLight.org, a nonprofit, nonpartisan research organization that provides data on the influence of money on politics. To identify the positions of interest groups and industries on H.R. 2378, the research staff at Maplight.org searched public documents, congressional testimony, industry web sites, and news databases. When researchers found an industry group that registered explicit support or opposition to the legislation, they posted the original source material to their website. **Table 2** contains links to this documentation.

As illustrated in the table, the supporters of H.R. 2378 disproportionally represent industries involved in metals fabrication: The American Iron & Steel Institute, which represents U.S. steel manufacturers; the United Steelworkers representing labor in this industry, and the Aluminum Extruders Council, the trade association of the aluminum processing industry. Another supporter, the Alliance for American Manufacturing, is a coalition of manufacturers, primarily in metals processing industries, and the United Steelworkers. It is noteworthy that these industries belong to the same SIC category (33, Primary Metal Fabrication) that is so heavily overrepresented in anti-dumping petitions. However, two labor organizations that represent workers in many industries, the AFL-CIO and the International Association of Machinists and Aerospace Workers, also voiced support for the bill.

The organizations that oppose H.R. 2378 represent a diverse but largely predictable group of industries. Non-tradable industries are well represented here: the Coalition of Service Industries, the Financial Services Roundtable, and the Securities Industry & Financial Markets Association. So are import industries that distribute labor-intensive Chinese goods to U.S consumers: the American Apparel & Footwear Association, the National Retail Federation, the Pacific Coast Council of Customs Brokers & Freight Forwarders, and the Sporting Goods

Manufacturers Association. TechAmerica, the leading U.S. based trade association for the high-tech sector, represents industries that have large investments in China and use inputs from China in global sourcing operations. An undervalued yuan probably benefits these industries..

The large showing of farm sector organizations opposing the bill is not consistent with my argument, however. These farm organizations represent export industries that produce homogenous commodities, such as soybeans, grains, and beef, that compete in China on the basis of price. Since exchange rate pass through is typically low for standardized goods, the yuan's peg to the dollar at an artificially low rate harms American farmers since it raises the cost of U.S. farm goods to consumers in China and creates more competition for U.S. exports from other food exporting countries.

The "explanation" for the farm sector's opposition to of H.R. 2378 is that the bill's enforcement mechanism—imposing antidumping duties on Chinese imports to induce a more flexible currency policy—would likely result in retaliatory barriers by China on U.S. farm imports. China is the second largest export market for U.S. agricultural products and American farm organizations express concerns that currency tensions might provoke a trade war. As the American Soybean Association noted in its letter to Congress opposing H.R. 2378: "Legislating antidumping duties or CVDs to remedy currency policies will not get us any closer to the goal of market-driven exchange rates. China is unlikely to proceed more quickly with currency reforms if threatened with this action. Additionally, China could mount a successful challenge to U.S. actions in the WTO, which could shift the international community's focus from China's trade policies to ours, and potentially threaten U.S. exports into our fastest growing foreign market."[8]

[8] American Soybean Association, (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China Business Council.

At a time when agricultural prices are rising and the U.S. farm sector is good health, American farmers appear to be unwilling to provoke China on the currency issue.

Overall, the lobbying activity on this currency bill provides substantial support for my argument. Furthermore, industry pressures in the legislative arena are similar to those that drive anti-dumping protectionism in the executive branch, especially in regard to the overrepresentation of metal producing industries. But does lobbying "matter" in the sense of influencing how members of Congress voted on H.R. 2378? To evaluate this question, I correlate campaign contributions data from industry supporters (opponents) with the yea (nay) votes of members of Congress on the bill.

Table 3 presents preliminary support for the argument that House members are more likely to vote for (against) H.R. 2378l, the more campaign contributions they receive from industries that support (oppose) the legislation. The table combines three types of data: (1) Contributions: Campaign contributions given to each member of Congress in the two years prior to the vote on H.R. 2378 (September 1, 2008 – August 31, 2010).[9] (2) Votes: How each member of Congress voted on every bill.[10] (3) Support/opposition: Which industry groups support and oppose H.R.2378.[11] To obtain the support/opposition data, the MAPlight.org research team searched public records (e.g., Congressional testimony, news databases, and trade associations' websites) to identify interest groups that took positions on the bill, and then categorized these groups according to the industry in which they operate. The contributions data are then mapped to the support/opposition data by way of the industry of the donor, which is provided by the Center for Responsive Politics for all donations over $200.

[9] Contributions data are from the Center for Responsive Politics.
[10] House Vote data are from GovTrack.us
[11] The source for support/opposition data is MAPLight.org)

The top part of **Table 3** indicates that House members voting "yes" on H.R. 2378 received about 7 times more in contributions from industry groups that supported the legislation on average than members that voted "no." The difference in means between the two samples is very highly significant (t = 6.78), suggesting that the correlation is not due to chance. Similarly, the table at the bottom indicates that members voting "no" on H.R. 2378 received about $11,000 more in contributions on average from industry opponents of the legislation than members that voted "yes." The difference in means between these samples is also highly significant (t = -3.20). Greater contributions from industry groups that support/oppose this currency legislation correlate significantly with member voting.

To control for factors that may influence member voting and be correlated with industry contributions, I present results of multivariate probit regressions in **Table 4.** Model 1 includes just the contributions data; the results are significant in the expected directions. Model 2 adds the variable DW Nominate, to control for the personal ideology of the member (higher values indicate a more right-wing ideology). The negative sign on the estimate suggests that right-leaning members were less likely to vote in favor of the bill. Model 3 adds controls for constituency characteristics. The variable, "Percent Employed in Manufacturing" is the share of district population aged 16 and over employed in the manufacturing sector. The coefficient is positive and significant at the 10 percent level, indicating that members with more manufacturing workers in their districts were more likely to vote "yes" on H.R. 2378. However, the estimate on "Percent Employed in Agriculture" is negative but not significant, providing somewhat weaker evidence that American farmers oppose using trade remedies against China—the nation that is fast becoming their largest export market. The variable "Percent Employed in FIRE" is the share of district population employed in finance, insurance, and real estate—a crude proxy for the

importance of the non-traded goods sector in districts. I expected this variable to have a negative sign since non-traded goods industries usually benefit from currency appreciation. The estimate, however, is positive but not significant.

Including these controls does affect my variables of interest, but only slightly. The estimate on "Contributions from Industry Supporters" is positive and significant in all models. "Contributions from Industry Opponents" is negative in all models but not significant in the Models 2 and 3.

In **Table 5**, I provide a substantive interpretation of these probit results. I simulated the predicted probability of observing a vote in favor of H.R. 2378 from Model 3 above, and then examined how the predicted probabilities *change* as the contributions variables are increased by one standard deviation above their means, holding other variables at their mean values.[12] The effects are substantively meaningful. Increasing contributions from industries that support the bill by one standard deviation—about $11,500—increases the likelihood that a member will vote "yes" on the bill by about 6 percentage points. The 95 percent confidence interval around this estimate, indicated by the whiskers, does not overlap zero. Increasing contributions from industries that oppose the bill by one standard deviation—about $29,000—increases the likelihood that a member will vote "no" on the bill by about 2 percentage points. However, the confidence interval overlaps zero, indicating that the negative sign may be due to chance.

7. Conclusions and Implications

Exchange rate movements and misalignments influence trade policy as opposed to macroeconomic policy because the influence of exchange rates is highly differentiated across industries. Unlike the blunt instruments of macroeconomic policy, trade policies can be targeted

[12] The simulations were performed with "Clarify" software developed by Tomz, Wittenberg and King (1998).

to satisfy the uneven and cross-cutting lobbying pressures that stem from the diversity of industry positions and sensitivities to exchange rates.

I have presented a framework for indentifying these positions and sensitivities (see **Figure 6**) and tested these predictions with industry-specific data on anti-dumping policy and legislative policy. I found that export and import-competing industries initiate more anti-dumping investigations when the real exchange rate appreciates, but only if they produce standardized products where pass through is low. By contrast, I found that these industries file fewer anti-dumping petitions when the dollar appreciates and pass through is high. With respect to legislative policy, I found that industry lobbying positions and congressional voting patterns on H.R. 2378, *The Currency Reform for Fair Trade Act,* support my arguments. Industries that lobbied in support of the bill were the most vulnerable to China's undervalued currency: export and import-competing industries with low pass through. Industries that opposed the bill were non-traded goods producers, importers, and industries that depend on imported intermediate inputs from China. I also found that campaign contributions from industries that supported the bill correlate strongly and significantly with House member voting on the bill: contributions from supporters increase the likelihood that a member voted in favor of the bill.

The controversy with China over its currency policy demonstrates the central point of this paper: exchange rates tend to provoke targeted trade policy responses because exchange rates have different effects on different industries. If H.R.2378 or a similar bill becomes law, it would extend the range of the administered protectionism to include currency misalignments. The process of imposing administered trade remedies on China (or any nation deemed to be have manipulated its currency) would then follow the industry-specific procedures that currently guide antidumping and CVD protectionism.

I have shown that since 1979 the metals processing industry (SIC 33) has been the most active user of administered protectionism. I have also shown that the steel industry stands out among manufacturing industries for its active lobbying in support of H.R. 2378. If this bill becomes law, my prediction is that we will see a rise in anti-dumping and CVD protection in the metals processing industry but not an across-the-board increase in protection on manufactured goods. The diversity of industry positions and sensitivities to exchange rates in the United States militates against a generalized increase in protection on goods from China (and elsewhere).

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Table 1: Anti-dumping Investigations, Pass Through, and Industry-Specific Real Exchange Rates

	1 Industries with *low* pass through and *high* export shares	2 Industries with *high* pass through and *high* export shares	3 Industries with *low* pass through and *high* import shares	4 Industries with *high* pass through and *high* import shares	5 Industries with *low* pass through and *high* trade shares	6 Industries with *high* pass through and *high* trade shares
XEER	0.031	-0.02				
	(0.012)**	(0.010)*				
MEER			0.033	-0.009		
			(0.007)***	(0.006)		
TEER					0.037	-0.015
					(0.013)***	(0.009)*
Constant	-1.713	2.401	-2.445	1.197	-2.565	1.866
	-1.26	(0.982)**	(1.044)**	(0.619)*	(1.501)*	(0.805)**
Observations	124	124	155	124	155	124

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: The dependant variable is the number of antidumping cases filed at the USITC by industry *i* in year *t*. The estimates are from negative binomial regressions with robust standard errors clustered by SIC code in parentheses.

Table 2: Lobby Organizations that Support and Oppose H.R. 2378

Support H.R. 2378	*Oppose H.R. 2378*
American Iron & Steel Institute United Steelworkers Aluminum Extruders Council Alliance for American Manufacturing AFL-CIO International Association of Machinists and Aerospace Workers	American Apparel & Footwear Association American Meat Institute American Soybean Association Coalition of Service Industries Financial Services Roundtable International Dairy Foods Association National Cattleman's Beef Association National Council of Farmer Cooperatives National Fisheries Institute National Retail Federation Pacific Coast Council of Customs Brokers & Freight Forwarders Securities Industry & Financial Markets Asso. Sporting Goods Manufacturers Association TechAmerica U.S. Chamber of Commerce USA Poultry & Egg Export Council

Notes: Data on these organizations, their positions on H.R. 2378, and their campaign contributions to members of Congress are from the Center for Responsive Politics (OpenSecrets.org). Supporting documents are below.

SUPPORTERS

American Iron & Steel Institute

Gibson, Thomas J. (2010, August 22). *Letter to Speaker Pelosi, Leader Hoyer & Chairman Levin*. Retrieved September 29, 2010, from Steel.

Aluminum Extruders Council

Fair Currency Coalition (2010, September 23). *Petition to House & Senate Leadership*. Retrieved September 29, 2010, from Tooling, Manufacturing & Technologies Association.

Alliance for American Manufacturing

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AFL-CIO

Parks, James (2010, September 14). *Bold Action On China Currency Would Help U.S. Economy*. Retrieved September 29, 2010, from AFL-CIO.

International Association of Machinists and Aerospace Workers

Buffenbarger, R. Thomas (2010, September 23). *Letter to Members of the U.S. House of Representatives*. Retrieved September 29, 2010, from GOIAM.

United Steelworkers

Testimony of Leo W. Gerard before the Ways and Means Committee on China's Exchange Rate Policy: Hearing before the Ways and Means. 111th Cong., 2nd Sess., (2010). (Testimony of Leo W. Gerard). Retrieved September 29, 2010, from Testimony_of_Leo_W._Gerard.pdf.

OPPONENTS

American Apparel & Footwear Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

American Meat Institute

AMI (2010, September 28). *AMI Urges Congress to Oppose Currency Reform and Fair Trade Act* . Retrieved October 5, 2010, from Meat AMI.

American Soybean Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Coalition of Service Industries

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Financial Services Roundtable

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

International Dairy Foods Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

National Cattleman's Beef Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

National Council of Farmer Cooperatives

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

National Fisheries Institute

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

National Retail Federation

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Pacific Coast Council of Customs Brokers & Freight Forwarders

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Securities Industry & Financial Markets Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Sporting Goods Manufacturers Association

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

TechAmerica

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

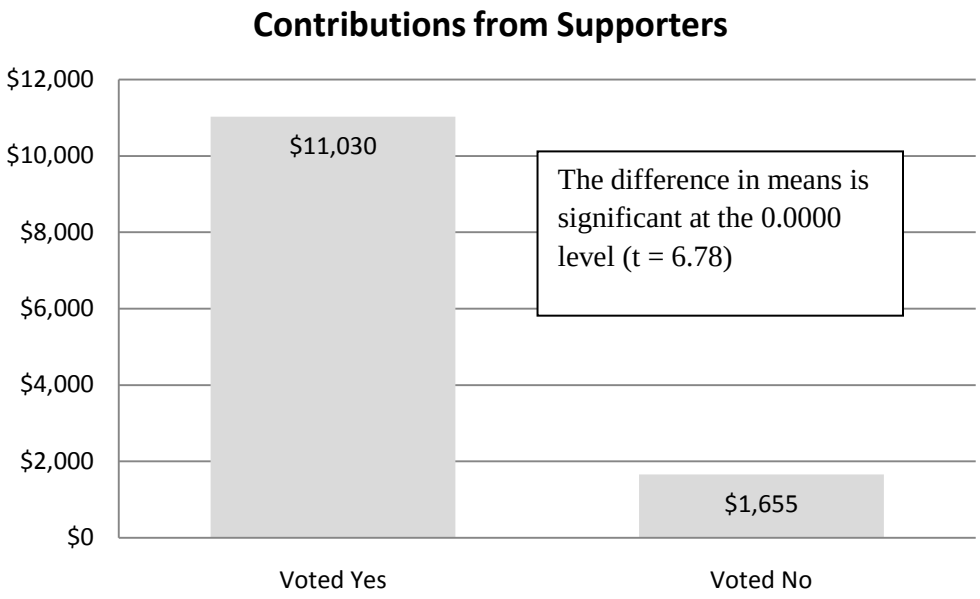
US Chamber of Commerce

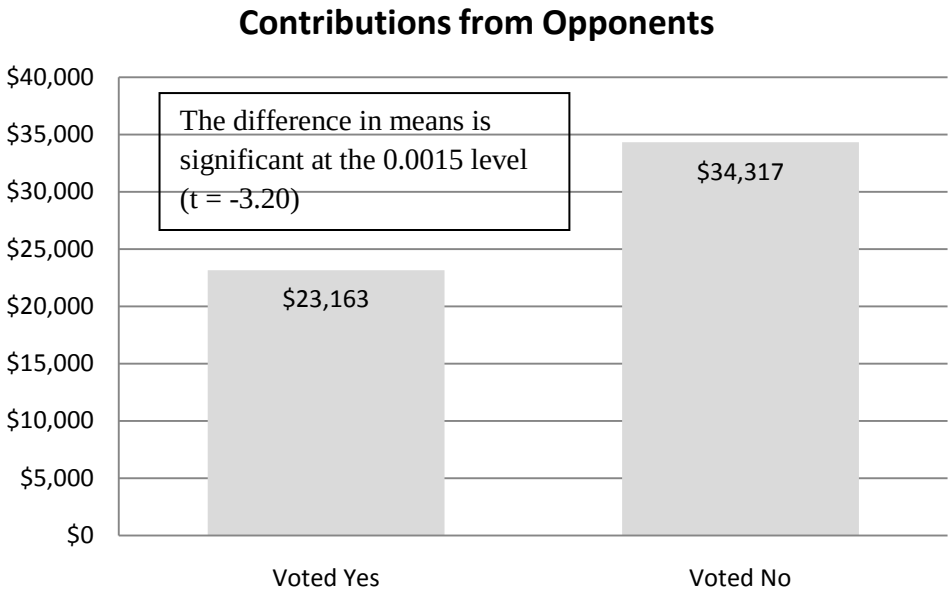
US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

USA Poultry & Egg Export Council

US China Business Council (2010, September 14). *Letter to Chairman Levin and Ranking Member Camp*. Retrieved September 29, 2010, from US China.

Table 3: Campaign Contributions and House Member Voting on H.R. 2378





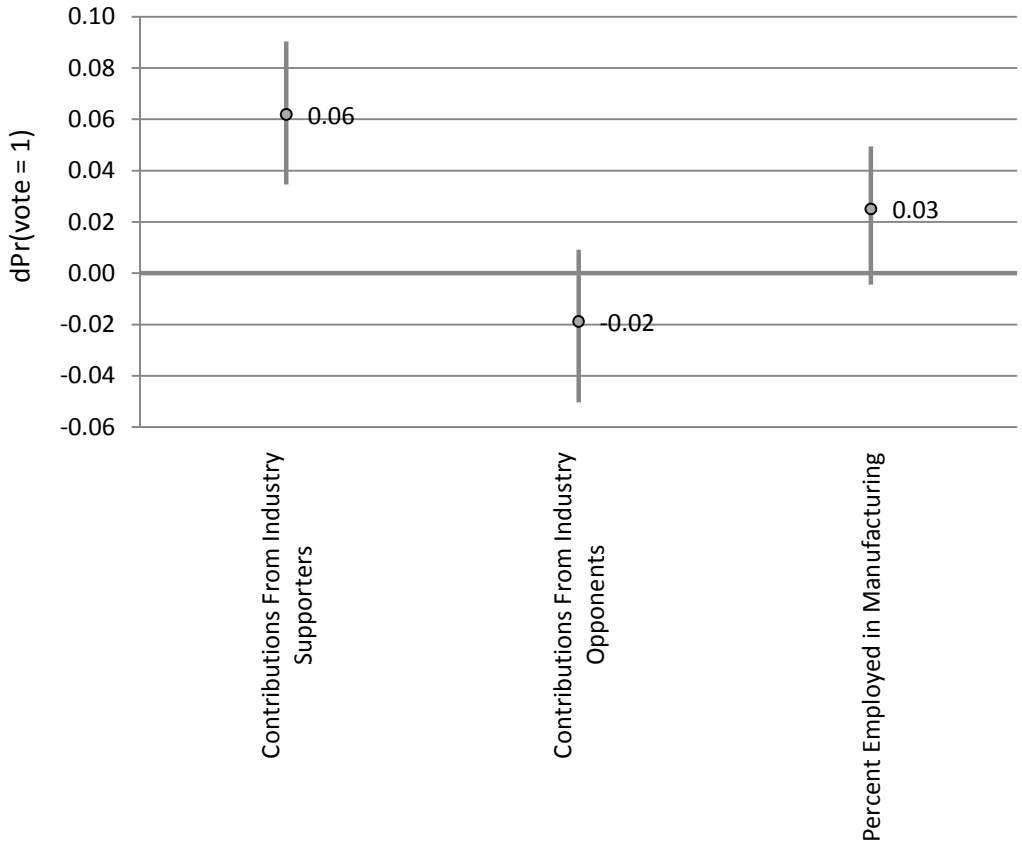
Notes: Includes contributions to congressional campaigns of House members in office on the day of vote from industry groups invested in the vote (according to Maplight.org), September 1, 2008 – August 31, 2010. Contributions data are from the Center for Responsive Politics (OpenSecrets.org). Member vote data are from GovTrack.us.

Table 4: Probit Regressions of the Vote on H.R. 2378

	(1)	(2)	(3)
Contributions from Industry Supporters	0.096	0.047	0.041
	(0.018)***	(0.014)***	(0.013)***
Contributions from Industry Opponents	-0.006	-0.004	-0.003
	(0.003)**	(0.003)	(0.003)
DW-Nominate (Member Ideology)		-1.014	-1.109
		(0.198)***	(0.206)***
Percent Employed in Manufacturing			2.643
			(1.572)*
Percent Employed in FIRE			3.766
			(4.783)
Percent Employed in Agriculture			-0.688
			(4.376)
Constant	0.549	0.943	0.372
	(0.115)***	(0.144)***	(0.522)
Observations	429	429	429
Pseudo R2	0.174	0.248	0.256

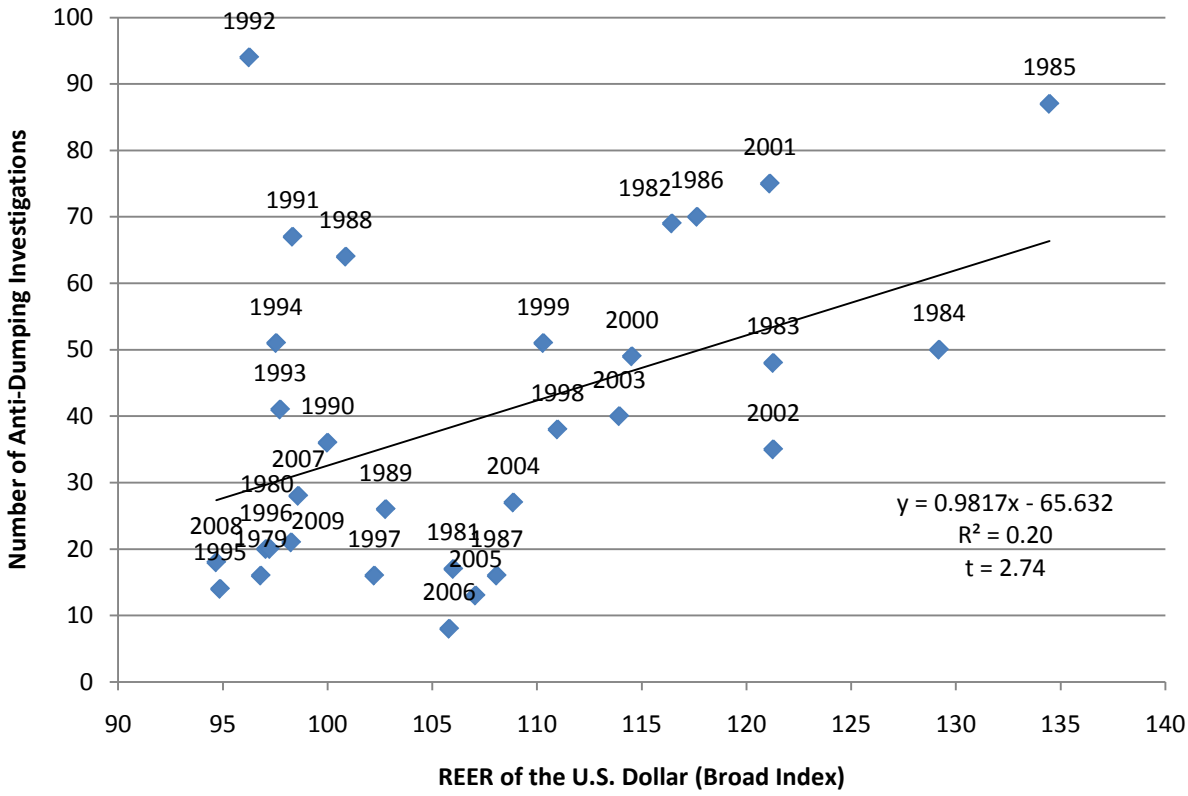
Notes: Robust standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Substantive Effects of Industry Contributions on Member Voting



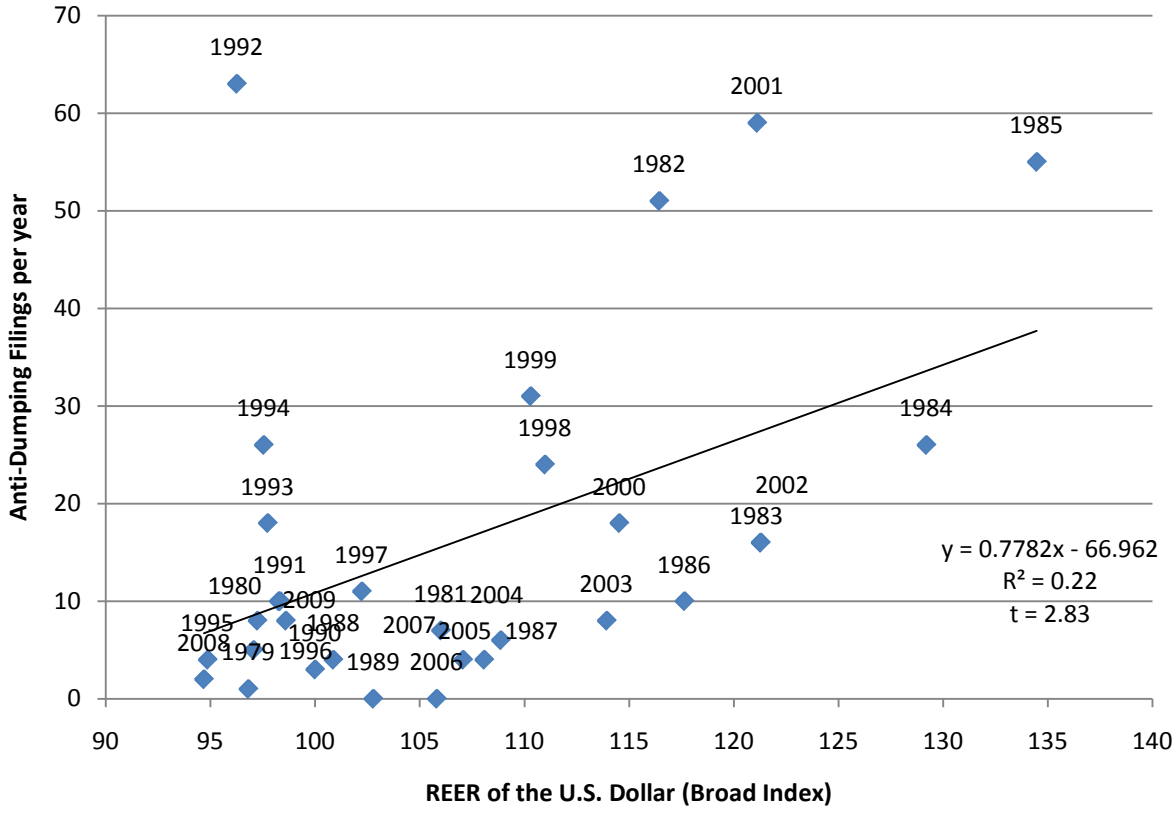
Notes: Values represent the change in the predicted probability of voting in favor of H.R. 2378 as each variable of interest is increased by one standard deviation over its mean, holding other variables at their means. Estimates are from Model 3 in Table 4. The whiskers indicate 95 percent confidence intervals.

Figure 1: Anti-Dumping Investigations and the Real Exchange Rate, 1979-2009



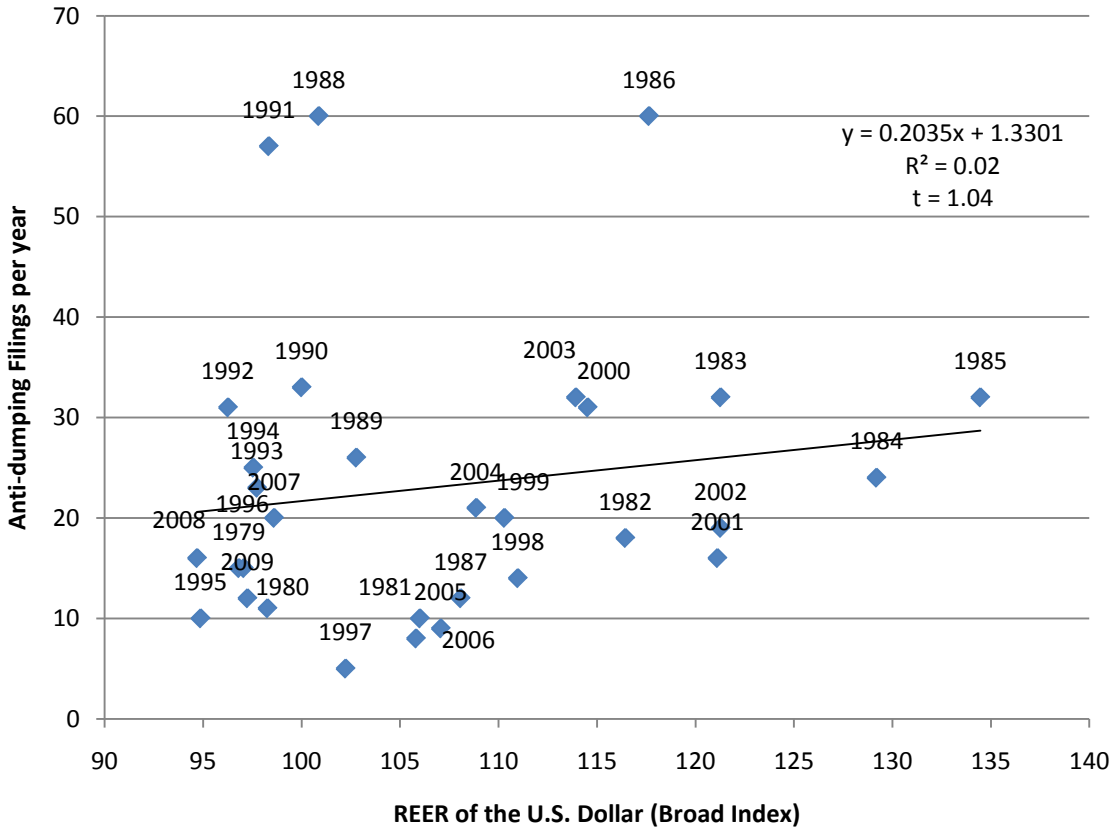
Notes: The figure plots the association between the number of anti-dumping cases investigated by the International Trade Commission and the Real Effective Exchange Rate (REER) of the U.S. dollar. Data on anti-dumping investigations are from Bown (2010). The REER data are from the Federal Reserve Board's "Broad" index. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

Figure 2: Anti-Dumping Investigations in the Primary Metals Products Industry (SIC 33)



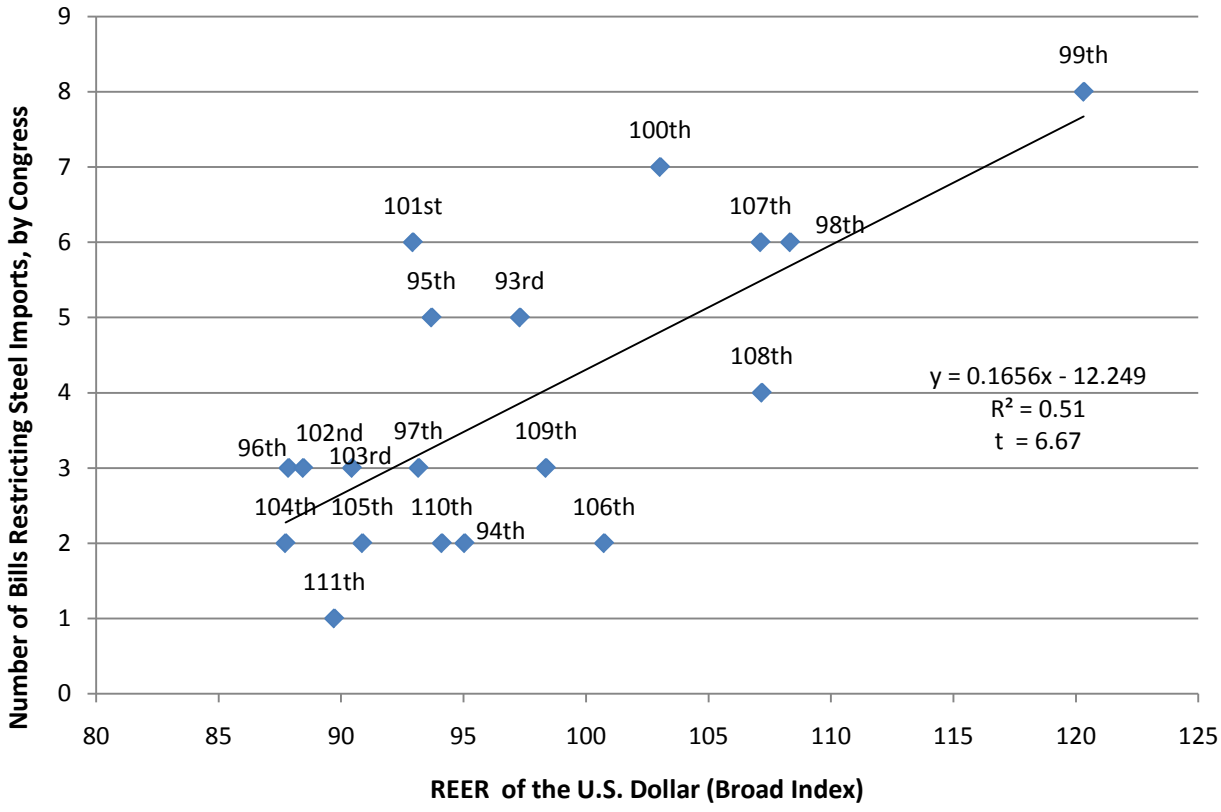
Notes: The figure plots the number of anti-dumping cases initiated by firms in Primary Metal Products industry (SIC 33) against the Real Effective Exchange Rate (REER) of the U.S. dollar. Data on anti-dumping investigations are from Bown (2010). The REER data are from the Federal Reserve Board's "Broad" index.

Figure 3: Anti-Dumping Investigations in all Industries *except* the Primary Metals Products Industry (SIC 33)



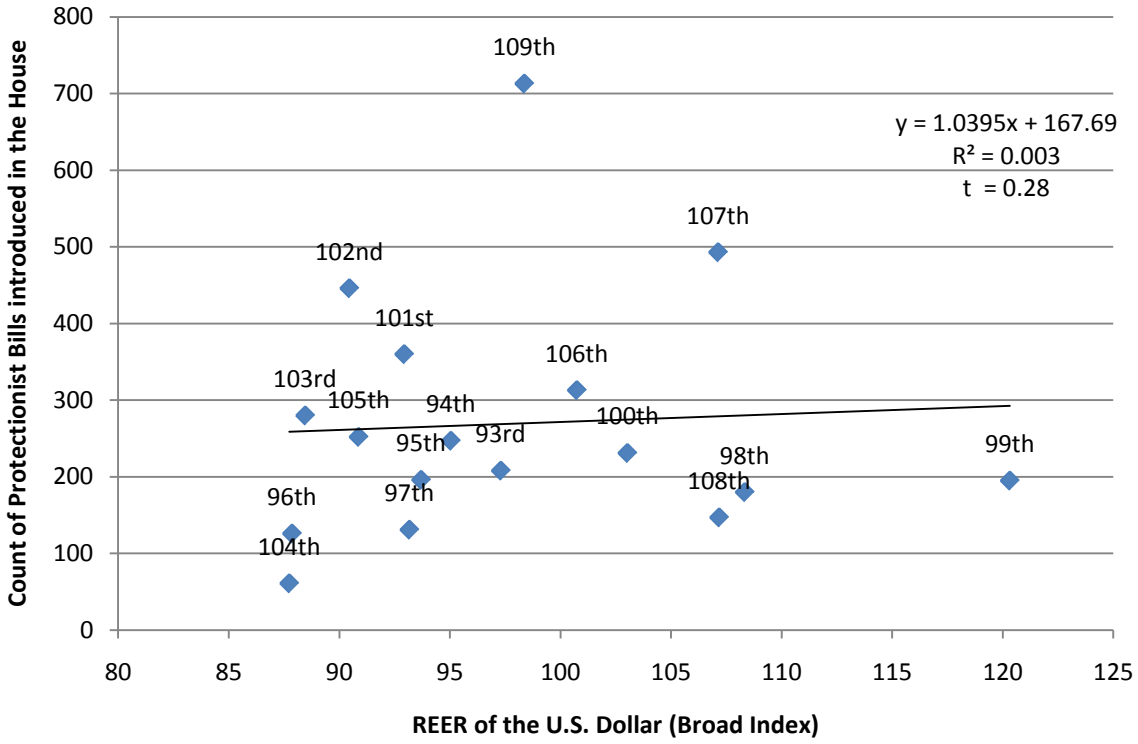
Notes: The figure plots the association between the REER and anti-dumping cases initiated by firms in all industries except the Primary Metal Products industry (SIC 33). Data on anti-dumping investigations are from Bown (2010). The REER data are from the Federal Reserve Board's "Broad" index.

Figure 4: Protectionist Steel Legislation in the House of Representatives and the REER of the U.S. Dollar



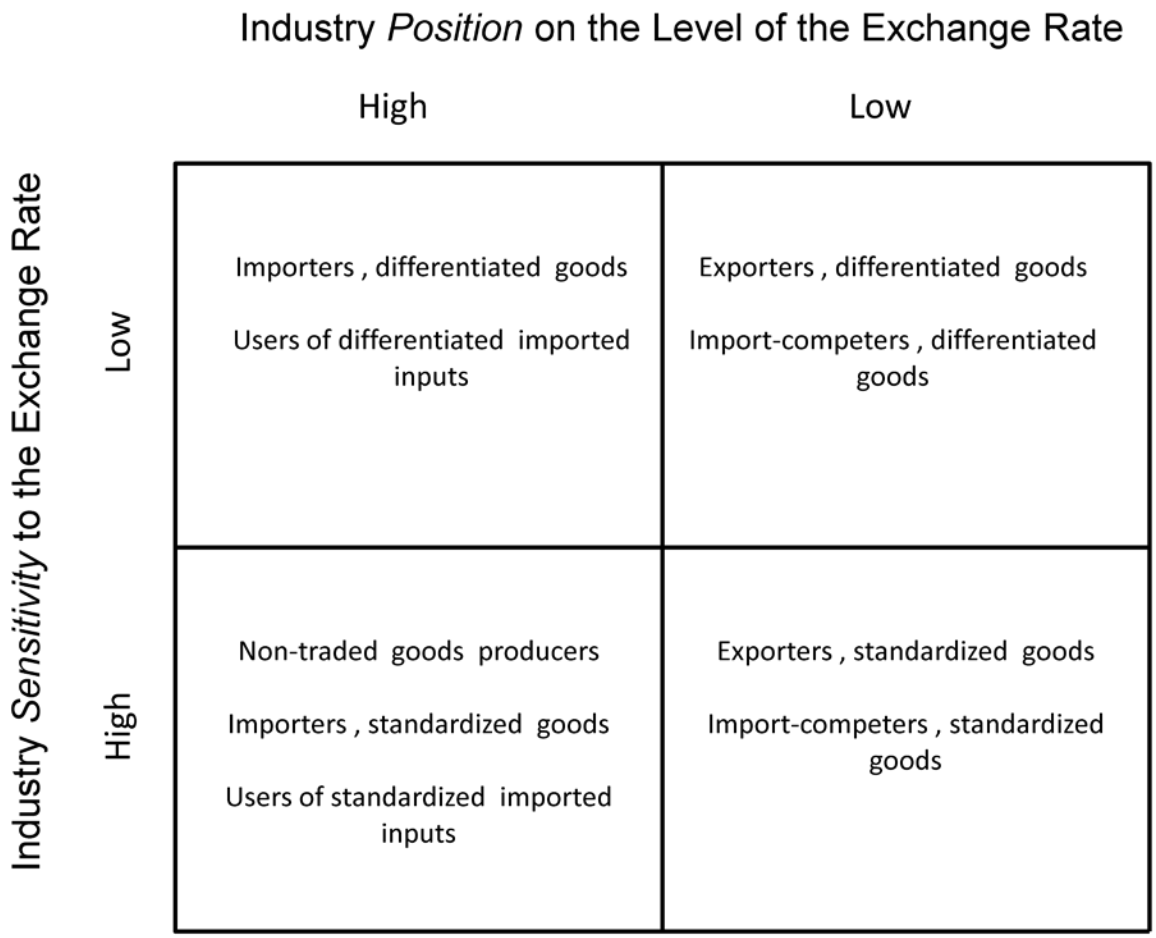
Notes: The figure plots the number of protectionist steel bills proposed in the House of Representatives against REER of the U.S. dollar. Coverage runs from the 93rd (1973-74) to the 111th (2009-10) Congress. Data on steel legislation in from *The Congressional Bills Project* and *Thomas*, the Library of Congress search engine. Dropping the extreme observation for the 99th Congress (1985-86) still results in a highly significant positive relationship ($t = 3.70$, $P > |t| = 0.002$, $R^2 = 0.35$).

Figure 5: All Protectionist Trade Legislation in the House of Representatives and the REER



Notes: The figure plots the number of protectionist trade bills proposed in the House of Representatives against REER of the U.S. dollar. Coverage runs from the 93rd (1973-74) to the 109th (2005-06) Congress. Data on trade legislation in from *The Congressional Bills Project* (http://congressionalbills.org/index.html) which assembles and codes all congressional bills by topic. These data are for topic 1807: Tariff and Import Restrictions, Import Regulation.

Figure 6: Industry Positions and Sensitivities to Real Exchange Rate Changes



Notes: The inspiration for this figure is Frieden (1991).

Appendix A: Summary Statistics of Anti-dumping Cases by SIC Industry, 1979-2009

SIC 87	SIC Industry Name	Obs	Mean	Std. Dev.	Min.	Max.
20	Food & Kindred Products	31	1.129	1.499	0	6
21	Tobacco Products	0	-	-	-	-
22	Textile Mill Products	31	0.871	1.607	0	8
23	Apparel & Other Textile Products	31	0.581	1.177	0	5
24	Lumber & Wood Products	31	0.032	0.179	0	1
25	Furniture & Fixtures	31	0.226	0.669	0	3
26	Paper & Allied Products	31	0.613	1.726	0	9
27	Printing & Publishing	31	0.129	0.499	0	2
28	Chemical & Allied Products	31	5.548	3.817	0	16
29	Petroleum & Coal Products	31	0.032	0.180	0	1
30	Rubber & Miscellaneous Plastics Products	31	1.065	1.861	0	8
31	Leather & Leather Products	0	-	-	-	-
32	Stone, Clay, & Glass Products	31	1.097	2.561	0	14
33	Primary Metal Industries	31	16.387	17.890	0	63
34	Fabricated Metal Industries	31	3.258	4.768	0	20
35	Industrial Machinery	31	2.806	6.640	0	35
36	Electronic & Other Electric Equipment	31	1.226	1.401	0	4
37	Transportation Equipment	31	0.710	1.216	0	5
38	Instruments & Related Products	31	0.516	1.262	0	6
39	Miscellaneous Manufacturing Industries	31	0.516	0.926	0	3

Appendix B: Median Industry Export Shares, Import Shares, and Pass-Through

SIC	Export Share	SIC	Import Share	SIC	Export + Import Share	SIC	Pass- Through
27	1.733	21	0.567	27	3.000		
25	2.800	27	1.267	20	8.333		
29	2.900	20	4.067	21	10.533	24	0.123
23	3.733	34	5.667	32	10.967	23	0.139
32	4.133	32	6.833	29	11.200	33	0.164
20	4.267	22	7.033	25	11.567	20	0.177
22	5.433	28	7.033	34	11.967	39	0.199
30	5.967	26	7.667	22	12.467	28	0.213
34	6.300	30	8.000	30	13.967	25	0.249
26	6.400	29	8.300	26	14.067	31	0.263
33	6.667	25	8.767	24	15.933	29	0.285
24	6.700	24	9.233	28	19.567	34	0.287
31	8.133	38	13.733	33	21.267	37	0.293
21	9.967	33	14.600	23	24.500	22	0.326
39	10.500	35	16.000	38	31.600	36	0.337
28	12.533	37	17.700	37	33.233	30	0.351
36	15.133	36	19.333	36	34.467	35	0.539
37	15.533	23	20.767	35	39.067	38	0.618
38	17.867	39	29.833	39	40.333	32	0.714
35	23.067	31	42.267	31	50.400		

Notes: Data on export and import shares are from Campa and Goldberg (1997); these values are the average of the three available years (1975, 1985, and 1995). Data on pass through is from Yang (2003). SIC industry names are below:

SIC	SIC Industry Name	SIC	SIC Industry Name
20	Food and kindred products	30	Rubber and miscellaneous products
21	Tobacco products	31	Leather and leather products
22	Textile mill products	32	Stone, clay, and glass products
23	Apparel and other textiles	33	Primary metal products
24	Lumber and wood products	34	Fabricated metal products
25	Furniture and fixtures	35	Industrial machinery and equipment
26	Paper and allied products	36	Electronic and other electric equipment
27	Printing and publishing	37	Transportation equipment
28	Chemicals and allied products	38	Instruments and related products
29	Petroleum and coal products	39	Other manufacturing