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Abstract

In this paper, I test the theory that weak economic conditions in a foreign economy cause cyclical dumping, i.e., the temporary sale of products in a trading partner's economy at a price below average total cost. In order to test this theory, the econometrician would like to have the information on prices and costs available to two agents, the domestic industry seeking protection and the government that makes a dumping determination. Because this information is not available to the econometrician, I utilize a novel strategy to try to uncover evidence of cyclical dumping. Using country-specific information on foreign economic shocks in manufacturing industries, I estimate a joint model of filing decisions by the US industry and antidumping decisions by the US government.

I identify strong evidence of cyclical dumping - economic weakness in a foreign industry is associated with an increase in the probability of antidumping protection. After controlling for other factors that likely drive industry filing and government decisions, I find that a one standard deviation fall in the growth of employment in a foreign economy's manufacturing industry (a measure of the strength of demand) increases the joint probability that the US industry will file an antidumping petition and the US government will impose a preliminary (temporary) antidumping measure by a factor of 3 to 10, depending on the exact model specification. Further, a one standard deviation fall in foreign employment growth doubles to quadruples, depending on specification, the joint probability that a petition will be filed and a final (long-lasting) antidumping measure will be imposed. In finding that US trade policy is applied counter-cyclically to foreign economic fluctuations, the paper suggests that trade policy may reduce the extent of business cycle transmission across countries.

JEL Codes: F12, F13

Keywords: dumping, anti-dumping, counter-cyclical policy

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1 Introduction

Under the GATT-WTO system, countries which have negotiated reductions in tariffs and other trade barriers have limited ability to institute new trade barriers. However, the GATT includes provisions which allow countries to reintroduce trade barriers if specific economic criteria are met. Antidumping duties, permitted under the GATT's agreement on dumping, have become extremely popular among WTO members around the world (Miranda, Torres and Ruiz, 1998). According to the GATT, antidumping duties may be imposed if a country's trading partners are selling products at "dumped" prices and if there is evidence that the country's domestic industry is injured by this dumping.

In this paper, I test the theory that weak economic conditions in a foreign economy can induce a particular type of dumping prohibited by the GATT, cyclical dumping or temporarily pricing below the average total cost of production.[2] Models of cyclical dumping (Ethier, 1982; Staiger and Wolak, 1992; Crowley, 2007) predict that declines in the demand for a product in a foreign market will lead to increased exports sold at a price in the importing country that is below the average total cost of production. Although I am unable to observe prices or costs directly, a novel identification strategy allows me to uncover evidence of cyclical dumping. Using country-specific information on foreign economic shocks in manufacturing industries, I estimate a joint model of filing decisions by the US industry and antidumping decisions by the US government. I identify strong evidence of cyclical dumping - economic weakness in a foreign industry is associated with an increase in the probability of antidumping protection. After controlling for other political and economic factors that likely drive industry filing and government decisions, I find that a one standard deviation fall in the growth of employment in a foreign economy's manufacturing industry (a measure of the strength of demand) increases the joint probability that the US industry will file an antidumping petition and the US government will impose a preliminary (temporary) antidumping measure by a factor of 3 to 10, depending on the exact model specification. Interestingly, the use of final (long-lasting) antidumping measures to counter foreign economic fluctuations is relatively muted. A one standard deviation fall in foreign employment growth doubles to quadruples, depending on specification, the joint probability that a petition will be filed and a final (long-lasting) antidumping measure will be imposed.

[2]Clarida (1996) presents estimates from a variety of sources that the definition of dumping as pricing below the average total cost of production is used in about 2/3 of US antidumping cases.

By estimating empirical models of the preliminary and final outcomes separately, I can distinguish between the economic variables that drive the government's decisions to apply short-term preliminary measures and long-lasting final antidumping measures. In estimating a binary model of the government's preliminary protection decision with industry selection into the antidumping process, I find that the growth rate of employment in the foreign industry (a measure of the strength of demand) is an important determinant of the government's decision to apply a preliminary antidumping measure. Conditional on an industry filing a request for antidumping protection, a one standard deviation fall in the growth of industry-level foreign employment in the year prior to the filing of the petition is associated with an increase in the probability of a preliminary measure ranging from 0.4 to 4.5 percentage points. More importantly, a one standard deviation fall in foreign employment growth is associated with substantial increase in the joint probability that a petition will be filed and a preliminary measure will be imposed from 0.14% to estimates ranging from 0.41% to 1.41%.

An interesting difference arises in estimating the role of foreign demand shocks on the government's final determination of whether or not to impose a final measure jointly with the industry's decision to file a petition. In the final decision, which takes place between 235 and 295 days after the filing of a petition[3], the lagged growth of industry-level foreign employment is not a statistically significant determinant of the government's decision to impose a final long-lasting antidumping measure. However, because a one standard deviation fall in the growth of foreign employment is a significant determinant of industry filings, a one standard deviation fall in foreign employment growth increases the joint probability of a filing and a final measure from 0.09% to estimates ranging from 0.20% to 0.87%.

This difference between the government's decision rule in the preliminary phase and the final phase could be due to changes in the data over time or due to differences in data availability for the preliminary versus final decision. For example, if the foreign demand shock that induced cyclical dumping is temporary, the shock may end and the dumping may abate by the time the final dumping determination is made. Alternatively, the foreign firms engaging in cyclical dumping at date $t-1$ and accused of dumping at date t may cease dumping in $t+1$ to avoid or minimize the magnitude of a final antidumping duty. Because the preliminary investigation would have relied on data from

[3]The final dumping determination takes place between 235 and 295 days after the filing of a petition in normal cases, but can be delayed to a time range of 285 to 345 days in special circumstances. The final injury decision takes place 280-340 days after the filing of a petition in normal cases and 330-390 days in special circumstances.

dates $t-1$ and t while the final investigation could utilize new information from $t+1$, the difference in the estimated government decision rules for the preliminary and final investigations could be understood to reflect a change in foreign firm behavior induced by the strong threat of a final antidumping measure.[4] Another possibility is that the tight time schedule required for preliminary determinations might lead the US government to utilize publicly available foreign industry data (such as the variables used in estimating this model) rather than micro data from foreign firms for the preliminary stage of the investigation, but by the time of the final determination, firm level data would have been supplied to the US government by foreign firms hoping to avoid a long-lasting final antidumping duty.

This is the first paper that I am aware of to show empirically that US trade policy responds to adverse economic fluctuations in a foreign economy. Moreover, by separately estimating the government's decision rule in the preliminary and final phases of an antidumping investigation, the empirical findings suggest that the threat of antidumping protection could induce high frequency (less than one year) changes in the pricing behavior of foreign firms accused of dumping.

This paper shares similarities with earlier work by Knetter and Prusa (2003) on the macroeconomic factors underlying antidumping filing in that both papers exploit inter-temporal variation to identify the relationship between economic fluctuations and antidumping. Consistent with their findings and those of Feinberg (2005) and Jallab, Sandretto, and Gbakou (2006), I find that the probability of filing is increasing with an appreciation of the importing country's real exchange rate. However, my analysis differs from Knetter and Prusa (2003) by utilizing country and industry-specific inter-temporal variation to explain differences in filing behavior across accused countries and industries. While Knetter and Prusa found no statistically significant relationship between filing rates aggregated across industries and across accused countries and an aggregate measure of rest-of-world GDP growth over the 3 years prior to filing, my analysis finds that higher frequency, annual fluctuations in the foreign economy's industry in the year prior to filing are an important determinant of filing.

Among theoretical models of dumping, the literature has developed into two strands that yield opposing predictions about the relationship between economic fluctuations in the foreign economy and the existence of dumping. Beginning with the seminal contribution of Ethier (1982), a number of papers (Staiger and Wolak, 1992, 1994; Crowley, 2007) model a realization of weak foreign

[4]Blonigen and Park (2004) make a similar point in their paper on dumping margins reported in administrative reviews. They find that antidumping duties induce changes in foreign firms' pricing behavior.

demand as the driving force behind dumping. In contrast, Clarida (1993) develops a competitive model of entry and firm learning about technology to show that dumping can arise during periods of high worldwide demand. Similarly, Hartigan (1996) builds a duopoly model in which dumping occurs when foreign demand is high. The contribution of the current paper is that provides empirical support to models in which weak foreign demand drives dumping.

Previous empirical research on the determinants of antidumping filings and the outcomes in investigations has emphasized political factors (Hansen, 1990; Moore, 1992; Hansen and Prusa, 1997), specific aspects of the legal/bureaucratic institutional framework (Hansen and Prusa, 1996; Blonigen, 2006), trade policy retaliation (Blonigen and Bown, 2003[5]; Prusa and Skeath, 2002; Feinberg and Reynolds, 2006) or economic factors (Moore, 1992; Baldwin and Steagall, 1994; Staiger and Wolak, 1994; and Knetter and Prusa, 2003). The approach here builds on the previous empirical literature but utilizes a previously unexploited source of variation to identify a relationship between foreign economic fluctuations and dumping.

Section 2 describes the antidumping process in the United States. Section 3 presents the empirical model. Section 4 describes the data. Section 5 presents the empirical results and section 6 concludes.

2 Antidumping in the United States

This paper attempts to use information on the antidumping process in the United States over the period 1980-2001 to identify the role that industry-level cyclical economic factors in foreign economies play in dumping. In the course of an investigation that determines the existence and domestic consequences of dumping, the US government collects and analyzes private business proprietary data on prices and costs of domestic firms who make accusations of dumping and foreign firms accused of dumping. The government also analyzes a variety of publicly available data on output, imports and domestic employment that inform its decision in antidumping cases. Unfortunately, the econometrician who is interested in testing the theories of cyclical dumping cannot observe the business proprietary data on prices and costs that the government observes.

[5]Blonigen and Bown (2003) share a methodological similarity to this paper in that they exploit cross-country variation in petition filing to identify the effect of the threat of retaliation measured as foreign market size on filing decisions. Because their analysis utilizes cross-sectional data, they abstract away from the cyclical factors that theory predicts could explain time-variation in dumping behavior by foreign firms.

Nevertheless, I can observe industry and government decisions at several stages in the antidumping process. Furthermore, I have several measures that can proxy for the strength of demand in a foreign country's industry. The growth of output, the growth of employment, and the growth of imports into the foreign country should all be highly correlated with the strength of demand in industry i in country j. According to cyclical dumping models, weakness in any of these variables in industry i, country j in year t induces (1) pricing below average total cost and (2) injury to the domestic import-competing industry (i.e., increased imports, lower domestic market share, lower domestic capacity utilization). Because weakness in foreign demand precipitates conditions that satisfy the legal definition of dumping, it should be associated with an increase in the probability of a petition by the domestic industry and an increase in the probability of protection.

Figure 1 presents by antidumping petition status, the mean growth of foreign industry variables in the year before an antidumping petition is filed for 3 digit ISIC manufacturing industries for 49 countries between 1980-2001.[6] The top panel presents mean foreign industry employment growth and the bottom panel presents mean foreign industry output growth. Beginning with the top panel, it appears that negative employment growth in a foreign industry is correlated with an antidumping case being filed and is also correlated with the imposition of a preliminary antidumping duty. The lower panel shows that cases are filed and preliminary duties are imposed for foreign industries whose growth is relatively weak. Somewhat surprisingly, the pattern appears reversed for final antidumping duties. In brief, this simple figure suggest that foreign economic conditions are relevant to antidumping duties. The empirical strategy in the paper is to use cross-industry cross-country and inter-temporal variation in protection decisions and in foreign output, foreign employment and foreign import growth to identify if cyclical dumping induced by weak foreign demand occurs and, if so, to quantify the increase in the probability of protection associated with economic weakness in foreign countries.

Identification of the effect of foreign demand strength on filings and outcomes comes from three sources of variation in the domestic-industry-foreign-country-year (ijt) panel data. First, within an industry i in year t, there is variation across countries j both in whether or not they are included in an antidumping petition and in the government's determination of injury and dumping. Second, within a year t, there is variation across industries i in filing and protection decisions. Finally, there is intertemporal variation for industry i and country j in the timing of petition-filing by industries and the protection decisions by governments.

[6]The data used in these graphs are described in detail in section 4.

The US antidumping process can be broken into three distinct phases, each with its own data requirements: 1. initiation of a case, 2. a preliminary phase with a determination as to whether or not dumped imports are causing or threatening to cause injury to the domestic industry and a preliminary determination about the existence and magnitude of dumping, and 3. a final phase with determination about the existence and magnitude of dumping and a final injury determination. [7]

In the first step, a domestic industry i that produces a product (also denoted i[8]) must initiate or file a petition with the US Department of Commerce (DOC) and the US International Trade Commission (USITC) that claims that the industry is being materially injured or threatened with materially injury by reason of imports of good i at a price that is "less than fair value" from a single country j or multiple countries $j = 1, 2, 3....$ Thus, the first margin of cross-country within-industry and within-year variation comes in the filing decision.[9]

Table 1 presents the frequency of filing a petition in industry i against country j in year t for the 256,129 industry-country-year observations in the unbalanced panel of 439 industries, 49 countries and 22 years used in this paper. The first important observation is that antidumping petitions are a rare event, with a frequency in the sample of less than 0.2% (508/256129). Second, the variable "case could have been filed" captures the high degree of cross-country variation in petition filing. A "case could have been filed" against a country j with positive exports to the US in industry i year t that was not listed in an actual antidumping petition, if the domestic US industry i filed a petition against any other country j in year t. Thus, while only 508 petitions were filed in the

[7] A detailed description of the current antidumping process and a brief history of the evolution of US antidumping law since 1916 can be found in the *Antidumping and Countervailing Duty Handbook* published by the US International Trade Commission (2007). Although US trade law has been revised a number of times since the start of my data sample in 1980, the antidumping process is largely unchanged with one important exception. Beginning in 1984, the rule to cumulate imports from all countries listed in petition during the injury investigation led to super-additivity in USITC decisions and a 20-30% increase in the probability of protection (Hansen and Prusa, 1996). However, as Hansen and Prusa (1996) note, "the ITC always makes its decisions on a country-by-country basis, even if imports from a set of countries are cumulated."

[8] In practice, the definition of the domestic "like product" is part of the investigation process. In general, the USITC definition of the "like product" is only a subset of the output of the 4 digit SIC 1987 industries that are the most finely disaggregated units available for a cross-sectional analysis in the US.

[9] Prusa (1997) and Benton (2001) exploit this variation to show that the country-specificity of antidumping protection leads to increased imports into the US (Prusa) and EU (Benton) from countries that are not specifically targeted by the antidumping measure.

unbalanced manufacturing panel, an additional 6534 petitions *would have been filed* if the domestic industry had indiscriminately listed every country j that exported industry i's output to the US in year t. It thus appears that domestic industries are somewhat selective in their accusations of dumping.[10]

This selectivity is likely influenced by the economic and financial data which are included in an industry's antidumping petition. In addition to data on the domestic industry itself (capacity, production, domestic sales, export sales, inventories, the number of production and non-supervisory workers, and income and loss data), a petition must include data on the foreign firms and countries accused of dumping. First, it must include the quantity and value of "less-than-fair-value" imports from each supplying country for the most recent 3 years. Second, it must include data directly related to the determination of dumping; i.e., the price charged by foreign firms in the US for the "dumped" product and the domestic firms' price for the same product for the most recent 5 quarters.[11]

If a petition contains all the necessary information, the preliminary phase of the investigation begins. During the preliminary phase, the US International Trade Commission makes a preliminary determination of injury and/or threat of injury due to dumped imports for each country j listed in the petition. In making its decision, the USITC relies on information obtained through questionnaires sent to domestic producers, importers and foreign producers.[12] If the preliminary injury determination by the USITC is negative, the case ends with no antidumping duty. If the preliminary injury determination is affirmative, then the case proceeds to the US Department of Commerce for a preliminary dumping determination.[13]

[10] Blonigen and Bown (2003) explain this selectivity as partially due to a US industry's fear of foreign retaliation.

[11] The International Trade Administration Form ITA-357P (OMB Control # 0625-0105) provides a detailed guideline of the price and cost information that must be included in a petition for antidumping protection.

[12] Domestic producers' questionnaires request economic data on capacity, production, inventories, commercial shipments, export shipments, internal consumption, company transfers, employment, hours worked, wages, as well as financial data on income, losses, capital expenditures and sales prices. Importer questionnaires request data on the quantity and value of imports and sales prices. Finally, foreign producers' questionnaires inquire about the firm's capacity, production, home-market shipments, exports, and inventories.

[13] Although it is uncommon, the USITC occasionally splits its preliminary decision across countries. For example, in the 1993 case of phthalic anhydride (731-TA-664-668), only one of the five countries accused of dumping was found to be injuring the domestic US industry during the preliminary investigation. Similarly, in the 1995 case of polyvinyl alcohol (731-TA-726-729), only three of the four countries accused of dumping were found to be a cause of injury during the preliminary investigation.

During the second part of the preliminary phase, the US Department of Commerce makes a preliminary determination of dumping against each country j listed in a petition[14] The dumping margin for country j is calculated as the difference between the US and country j market price, the US and a third market price or the difference between the US price and the average total cost of production of a firm in country j. Preliminary dumping margins vary considerably across countries listed within a petition, with the USDOC occasionally finding that there is no evidence of dumping by some countries that have been found guilty of causing injury.[15]

To summarize the preliminary phase, a preliminary antidumping measure is imposed if both the USITC and the USDOC come to affirmative preliminary determinations. Cross-country variation in the application of a preliminary antidumping duty within a case can arise from cross-country variation in the injury decision or in the dumping determination. Interestingly, when petitions against individual countries are clustered into multicountry cases, we observe that roughly 73% of multi-country cases have outcomes in which all countries were found guilty of dumping and injury or no countries were found guilty of both dumping and injury. In the other 26% of cases, at least one country had a preliminary outcome that differed from that of the other countries accused in the multi-country case.

Table 2 provides evidence of this cross-country variation in preliminary outcomes for antidumping cases filed by US manufacturing industries between 1980 and 2001. The preliminary outcome is defined as affirmative if the US ITC finds preliminary evidence of injury or threat of injury and the USDOC finds preliminary evidence of dumping. The preliminary outcome is defined as negative if either agency makes a negative determination. The first column reports the number of countries named in an antidumping case, the second column lists the number of multicountry-cases, the third column lists the number cases in which all the accused countries faced a preliminary antidumping measure, and column 4 lists the number of multicountry cases in which no accused country faced a preliminary antidumping measure. Column 5 reports the number of cases in which some accused countries faced preliminary measures and some did not. Overall, in about 26% of antidumping cases at least one country had a preliminary outcome that was different from its accused peers.

[14]This determination is made within 115 days of the USITC's preliminary determination. Therefore, the total elapsed time from initiation to a preliminary measure is 160 days in normal cases.

[15]See, for example, the splits in preliminary dumping determinations in oil country tubular goods in 1994 (731-TA-711-717), stainless steel round wire in 1997 (731-TA-781-786), low enriched uranium in 2000 (731-TA-909-912), and structural steel beams in 2001 (731-TA-935-942).

If the preliminary injury investigation found evidence of injury caused by "dumped" imports, the case proceeds to the final phase. In the final phase, the USITC again sends questionnaires to the domestic firms, importers, and foreign firms that reported production and/or imports during the preliminary phase. Final questionnaires request generally the same data as preliminary questionnaires, but *add data from the most recent period.* One difference with the preliminary investigation is that questionnaires are sent to purchasers of the product requesting data on the value of purchases of the product manufactured domestically, by foreign firms accused of dumping and by other foreign firms. Purchasers are also asked to compare foreign and domestic products in terms of price, quality, service, delivery, etc. The US Department of Commerce makes a final dumping determination according to the price and cost data available. As in the preliminary phase, there is considerable variation across countries in the magnitude of the final duty with Commerce finding no evidence of dumping in some cases. Differences in the magnitudes of preliminary and final dumping margins can arise because more recent data on prices and costs have become available or because data obtained in the final questionnaires may obtain revisions to data obtained in the preliminary questionnaire.

To conclude the final phase of the investigation, the US ITC makes a final injury determination.[16] The USITC generally groups all countries j that have proceeded to the final phase together in its injury decision, but split decisions are possible if some countries are being investigated for a threat of injury (as opposed to actual injury). If there is evidence of injury and dumping, the government imposes a final antidumping duty.[17] In summary, during the final phase of an investigation, cross-country variation in which countries ultimately face antidumping duties can arise from variation in the outcome of the dumping determination or the injury (or threat of injury) determination.

Table 3 presents evidence on the cross-country variation in final determinations for antidumping cases brought by US manufacturers between 1980 and 2001. The structure of the table is the same as table 2. Again we observe that in the final stage of an antidumping investigation, the government

[16]This determination is made within 120 days of the US DOC's preliminary dumping determination or 45 days of its final dumping determination, whichever date is later. Consequently, the total elapsed time from initiation of a petition to the final determination can range from 280 to 340 days in normal cases.

[17]See Blonigen and Haynes (2002) and Blonigen and Park (2004) for a detailed discussion of the dynamics of antidumping duties after imposition. Since 1995, GATT rules limit the duration of antidumping measures to 5 years. However, Cadot, de Melo, and Tumurchudur (2007) find that US compliance with the WTO's sunset review policy is weak at best and likely has had no impact on the duration of US antidumping duties.

split its decision across countries accused of dumping in one quarter of multi-country cases.

3 Empirical Model

To evaluate if foreign economic fluctuations lead to cyclical dumping, I estimate a binary model with selection (Van de Ven and Van Praag (1981)) - a binary model of industry i petitions for antidumping protection against countries j and a binary model of the government's decision to impose antidumping measures. The empirical model is a two stage process. In the first stage, in every period t an industry i makes a binary decision to file for protection or not to file against each foreign country j that exports i's product to the US. In the second stage, if an industry has filed for protection, the government makes a binary decision of whether or not to impose an antidumping measure against each country j accused of dumping.

To simplify the analysis, in the second stage, I estimate a binary model of the government's decision to impose a preliminary antidumping measure in which the injury determination by the USITC and the dumping determination by the USDOC are collapsed into a single outcome variable which is affirmative if both agency decisions are affirmative. Similarly, the binary model of the final decision is collapsed into a single outcome variable which is affirmative if there is evidence of both dumping and injury. See figures 2 and 3.

In the second stage, the government's latent measure of injury and dumping d^*_{ijt} is unobserved, but takes the form $d^*_{ijt} = \beta' x_{ijt} + \varepsilon_{ijt}$ where i denotes the industry in which dumping is alleged to occur, j denotes the foreign country accused of dumping, and t denotes the time period in which the complaint is filed. The variables in x_{ijt} are described in detail in the next section. In brief, this vector includes a measure of the state of industry demand in both the accused foreign country and in the importing country and lagged measures of injury to the importing country's industry. Although I do not observe the latent measure of injury and dumping, I observe the importing government's decision of whether ($d_{ijt} = 1$) or not ($d_{ijt} = 0$) to impose antidumping protection conditional on an industry filing for protection.

$$d_{ijt} = \begin{cases} 1 & \text{if } d^*_{ijt} > 0 \\ 0 & \text{if } d^*_{ijt} \leq 0 \end{cases} \tag{1}$$

Assuming $\varepsilon_{ijt} \backsim N(0,1)$, then the likelihood for the selected sub-sample is

$$L = \Pi\Big[\Phi(\beta' x_{ijt})\Big]^{d_{ijt}} \Pi\Big[1 - \Phi(\beta' x_{ijt})\Big]^{1-d_{ijt}} \tag{2}$$

where Φ is the standard normal cdf.

An antidumping case is only considered by the government if a domestic industry chooses to file a petition for protection. If an industry's decision to apply for protection and the government's decision to grant protection are correlated, then estimates of β will be inconsistent.

In the first stage, the industry's latent measure of selection, y^*_{ijt}, is unobserved, but takes the form $y^*_{ijt} = \gamma' z_{ijt} + \nu_{ijt}$, where z_{ijt} is a vector that includes a measure of the state of industry demand in the foreign country and foreign and domestic industry characteristics that are predetermined at time t, $E(\nu_{ijt}|z_{ijt}) = 0$, and $V(\nu_{ijt}|z_{ijt}) = 1$. Further, the error, ν_{ijt}, is assumed to be uncorrelated across time, but may be correlated across industries.

The industry's decision to petition ($y_{ijt} = 1$) can be written

$$y_{ijt} = \begin{cases} 1 & \text{if } y^*_{ijt} > 0 \\ 0 & \text{if } y^*_{ijt} \leq 0 \end{cases} \tag{3}$$

Assuming that the errors from stage 1 and 2 are distributed bivariate normal with correlation coefficient ρ , variance 1, and CDF $\Phi(\cdot)$, then the expectation of the government's latent variable in the second stage can be written:

$$E(d^*_{ijt}|x_{ijt}, y^*_{ijt} > 0) = E(\beta' x_{ijt}|x_{ijt}, \nu_{ijt} > -\gamma' z_{ijt}) + \rho \frac{\phi(-\gamma z_{ijt})}{\Phi(\gamma' z_{ijt})} \tag{4}$$

and the government's latent variable is given by:

$$d^*_{ijt} = \beta' x_{ijt} + \rho \frac{\phi(-\gamma z_{ijt})}{\Phi(\gamma' z_{ijt})} + \tilde{\varepsilon}_{ijt} \tag{5}$$

where $E(\tilde{\varepsilon}_{ijt}|y^*_{ijt} > 0) = 0$ and $E(\tilde{\varepsilon}^2_{ijt}|y^*_{ijt} > 0) = 1 - \rho^2 \lambda_{ijt}(-\gamma' z_{ijt} - \lambda_{ijt})$ and where $\lambda_{ijt} = \phi(-\gamma' z_{ijt})/\Phi(\gamma z_{ijt})$.

Renormalizing d^*_{ijt} so that the variance of the censored error, $\tilde{\varepsilon}_{ijt}$, is equal to one, allows us to derive the likelihood for the full model as:

$$L = \Pi\Big[\Phi(\beta' x_{ijt}, \gamma' z_{ijt}, \rho)\Big]^{d_{ijt} y_{ijt}} \Pi\Big[\Phi(-\beta' x_{ijt}, \gamma' z_{ijt}, \rho)\Big]^{(1-d_{ijt}) y_{ijt}} \Pi\Big[\Phi(-\gamma' z_{ijt})\Big]^{1-y_{ijt}} \tag{6}$$

Identification of the effect of foreign demand strength on filings and outcomes comes from three sources of variation in the ijt panel data. First, within an industry i in year t, there is variation across countries j both in whether or not they are included in an antidumping petition and in the government's determination of injury and dumping. Second, within a year t, there is variation across industries i in filing and protection decisions. Finally, there is intertemporal variation for industry i and country j in the timing of petition-filing by industries and the protection decisions by governments.

Marginal effects derived from coefficient estimates obtained from maximizing the log of the likelihood (6) are reported in tables 6-9. The maximum likelihood coefficient estimates are reported in appendix tables A- G.

As a robustness check, I estimate the government's decision rule (1) under the assumption that $\rho = 0$. That is, that the errors from the first and second stage are uncorrelated. These estimates are reported in the final columns of tables 7 and 9.

4 Data

I estimate the empirical model using a panel dataset constructed from three main data sources: (1) the World Bank's Trade, Production and Protection Data, (2) the NBER Trade and Manufacturing Databases, and (3) the Global Antidumping Database maintained by Chad Bown. Finally, data on US GDP growth comes from the US Bureau of Economic Analysis. Annual bilateral real exchange rates in foreign currency per US dollar come from the USDA Economic Research Service. Summary statistics for all variables in the dataset are reported in Table 5.

The focus of the empirical work is to identify cyclical dumping by quantifying the role that foreign demand shocks play in industry petitioning and the government's decision rule for antidumping protection. The World Bank's Trade, Production and Protection Data compiled by Alessandro Nicita and Marcelo Olarreaga provides information on output, imports and employment for 28 3 digit ISIC Rev. 2 manufacturing industries from 1980-2001 for 49 developed and developing economies.[18] Countries included in the dataset are listed in table 4. Because US antidumping duties are imposed against countries and not customs unions or free trade areas, the

[18]Twenty-two years of disaggregated manufacturing data are available for almost all of the countries in the dataset. Important targets of US antidumping duties with fewer than twenty-two years of available data include: the People's Republic of China (1980-1998), Germany (1992-2001), and Brazil (1993-1996).

analysis treats each country of the EU as a separate observation with country-level, rather than Union-level data used in the analysis. The logged level of output, imports and employment serve as proxies for the size of the foreign industry while fluctuations are measured as the growth rate of output, imports and employment. Because the current value of these variables could be endogenous to filing behavior by US industries, I use the first lag of all foreign variables in estimating the model. Given the cross-country nature of these data, we might expect that employment, measured as the number of people employed in an industry, is the most reliable of the variables available.

The NBER Trade and Manufacturing Databases provide data on imports, shipments, prices, employment, real capital stock and value added for about 450 manufacturing industries. These data were concorded to 439 1987 4 digit SIC codes using the industry concordance provided by the NBER-CES Manufacturing Industry Database and the original data from 1979-1994 were extended through 2001. Nominal values of imports and shipments (a measure of domestic output) were deflated to real 1987 dollars using industry specific price indices.

Industry characteristics used to estimate the selection equation include political and economic measures that may affect an industry's propensity to file but are thought to be unrelated to the government's determination of dumping. Some industries may be more likely to file for protection than others. For example, large industries may be better able to assume the large legal fixed cost of filing a petition. Industries in which the level of imports relative to total domestic consumption is high may be more familiar with trade protection policies and thus, more likely to file. The vertical structure of an industry may matter; industries that are further downstream may file more petitions because they are more sensitive to industry price changes. Thus, a measure of industry size, the level of employment; the real import penetration ratio (real imports/(real imports + real domestic shipments)); and a proxy for the vertical structure of an industry, the value-added to output ratio are used to estimate the selection equation. The selection equation also includes three measures of injury which US law suggests should be important to the government's decision; the capacity utilization rate (real shipments/real capital stock), the percent change in the import penetration ratio and the change in employment. Because the current values of industry specific variables and the choice of whether to petition for protection may be endogenous, I use lagged values of these variables in z_{ijt}.

Data on antidumping cases from 1979 through 2001 come from Global Antidumping Database Version 3.0 compiled by Chad Bown at Brandeis University. The US files in the database provide detailed information on the date a petition was filed, the identity of the country accused of dumping,

tariff line information on the products involved, various outcome dates, and the outcome variables: the preliminary and final dumping determination.

The three datasets used in the paper provide information on industries at three different levels of aggregation: 3 digit foreign industries, 4 digit US industries, and 5, 7, 8, or 10 digit antidumping *cases*. In order to merge these three datasets together, the 439 4 digit SIC87 manufacturing industries were mapped into 28 ISIC R. 2 manufacturing industries by the author. Similarly, the tariff-line level antidumping case data were also mapped into 439 4 digit SIC87 industries by the author. Because the US and foreign industry data used in the analysis are more aggregated than the industries investigated in antidumping cases, we might expect parameter estimates based on these aggregated variables to underestimate the true effect of domestic and foreign factors on antidumping outcomes.

5 Empirical Results

The empirical results reported in tables 6-9 provide strong evidence that foreign economic fluctuations, measured as lagged employment growth in the foreign industry, lead to antidumping duties. This suggests that foreign economic fluctuations cause cyclical dumping. Tables 6 and 7 report the marginal increase in the probability that an industry i will file an antidumping petition against country j in year t and in the probability that the US government will impose a preliminary antidumping measure associated with measures of foreign demand and foreign market size. Tables 8 and 9 presents marginal effects for the probability of petition filing and the probability that the US government will impose a final antidumping measure. Maximum likelihood coefficients for all variables in the empirical models of preliminary and final antidumping measures are reported in appendix tables A through H.

Table 6 presents estimates of the two-stage model of the US industry's filing decision and government's decision to impose a preliminary antidumping measure. The top panel of table 6 reports the marginal increase in the probability that the US government will impose a preliminary measure associated with changes in measures of foreign demand and the size of the foreign industry. The bottom panel reports the marginal increase in the probability of filing associated with these same variables.

Column 1 presents results for the basic specification of the model. A one-unit increase in the growth of foreign employment in industry i country j in the year before the antidumping petition

was filed is associated with a reduction in the probability of an preliminary antidumping measure of 9.3% after controlling for other factors (the lagged size of the foreign industry, lagged domestic industry characteristics, lagged country-specific import penetration, lagged US GDP growth, and the lagged bilateral exchange rate) and the domestic industry's first-stage decision to file an antidumping petition. The economic significance of this effect is substantial. Lagged employment growth in a foreign industry that is one standard deviation below the mean translates into a increase in the probability of a preliminary antidumping measure of 1.8% above the sample's mean probability of a preliminary measure of 72.4%.

Turning attention to the lower panel of table 6 column 1, a one unit increase in the lagged growth of foreign employment is associated with a 1.8% decrease in the probability that a domestic industry will file an antidumping petition. This means that a one standard deviation fall in lagged foreign employment growth increases the probability that that country's industry will face an antidumping petition by 0.35%. This is an economically significant increase relative to the unconditional mean filing rate in the sample of 0.20%. Combining estimates from the two stages of the model, the joint probability that a petition will be filed and the government will impose a preliminary measure associated with a one standard deviation fall in lagged foreign employment growth is 0.41%, roughly 3 times the mean joint probability in the sample of 0.14%.

While the empirical results suggest that foreign cyclical factors are an important force behind dumping, it is also interesting to note that the sheer size of the foreign industry is important.[19] A one standard deviation increase in the log level of foreign employment in industry i country j in the year before the petition is filed increases the probability that a petition will be filed by a huge 1.02 percentage points. A one standard deviation increase in the lagged log level of foreign employment also increases the probability of a preliminary measure conditional on a filing by 2.6 percentage point. Thus, a one standard deviation increase in the lagged log level of foreign employment increases the joint probability that a petition will be filed and a preliminary measure will be imposed almost seven-fold, from a mean of 0.14% to 0.92%.

Moving across the columns of table 1 we find that the strength of foreign demand, measured as lagged employment growth in foreign country j's industry i, is robust to the inclusion of additional controls for foreign demand and to different refinements of the estimation sample. Column 2 shows that adding another control for foreign demand to the model, the lagged growth of imports

[19]This is consistent with the idea that the foreign firm's capacity is an important determinant of the threat of injury.

of industry i's output into foreign country j, results in an increase in the coefficient estimate on lagged foreign employment growth. In this specification, a one standard deviation increase in lagged foreign employment growth increases the conditional probability of a preliminary measure by 2.4%, the probability of filing by 0.68% and the joint probability of a filing and a preliminary measure to 0.63%. Continuing to column 3, substituting lagged industry output growth for import growth yields results similar to the basic specification.

Columns 4 and 5 present estimates of the basic specification on two different subsamples. In column 4, the panel dataset is restricted to the 4 digit SIC87 industries that have filed at least one antidumping petition against any country j between 1980 and 2001. In this specification, which relies more heavily on time series variation for identification, a one standard deviation in the lagged growth of foreign employment is associated with a decrease in the probability of preliminary protection of 1.5%. Column 5 attempts to control for the fact that small exporters are not subject to antidumping duties.[20] This sample drops all country-product-year observations in which a country's share of the US import market is less than 1% of a 4 digit SIC87 industry. After omitting these smaller exporters, a one standard deviation fall in lagged foreign industry employment growth (0.17 in this smaller sample) is associated with an increase in the probability of a preliminary antidumping measure of 4.5%, a 1.2% increase in the probability of filing, and an overall joint probability of a filing that results in a preliminary antidumping duty of 1.41%. This is more than three times as large as the joint probability of a filing and preliminary measure in this "large exporter" sample of 0.44%.

The coefficient estimates of other variables (the growth of lagged import penetration, the lagged level of import penetration, the lagged growth of employment in the domestic industry, the lagged level of domestic employment, the lagged level of capacity utilization, the lagged growth of US GDP, and the lagged level of the bilateral real exchange rate) are generally in line with previous research and are reported in the appendix tables A and B which report the maximum likelihood coefficients for all variables in the joint model of the government's second-stage protection decision and the industry's first-stage filing decision, respectively. Consistent with the findings of Knetter

[20]The WTO's antidumping code states that any country which is the source of less than 3% of the imports of a product that is subject to an antidumping investigation is a "negligible" supplier and cannot be subject to antidumping duties. Because my analysis uses industry definitions at the 4 digit SIC87 level which are more aggregated than the product definitions used in antidumping cases, I restrict the "large exporter" sample to countries with an import market share greater than 1% of the 4 digit industry. Results are robust to modest changes in this definition.

and Prusa (2003), Feinberg (2005) and Jallab, Sandretto and Gbakou (2006) all of whom estimate negative binomial models of filing rates, a real appreciation of the dollar is associated with an increase in the probability of antidumping filings. The signs of domestic industry variables (the level of employment, capacity utilization, and the value added to output ratio in the year prior to the filing of the petition) are the same as those reported by Staiger and Wolak (1994) who estimate a negative binomial model of US industry's filing rates.

Table 7 continues table 6 by presenting estimates of the two-stage model of the US industry's filing decision and government decision to impose a preliminary antidumping measure for four additional specifications. Each column presents the same specification as column 1 of table 6 but adds at least one additional control variable. The specification in column 6 seeks to identify if antidumping investigations that involve more than one country are more or less likely to face a preliminary antidumping duty that single-country investigations. The estimate on the multicountry case dummy is not statistically significant, suggesting that multicountry cases are not more likely to result in preliminary antidumping measures than single country cases after controlling for other factors. Interestingly, the addition of the multicountry dummy results in the marginal effect of the lagged growth of foreign employment increasing slightly relative to the basic specification in column 1. A one standard deviation fall in lagged foreign employment growth is associated with an increase in the probability of a preliminary measure of 2.4% and a joint probability of filing and a preliminary measure of 0.47%.

Proceeding across to column 7, because the steel industry is such an important user of antidumping protection, this specification adds an indicator variable for the steel industry. The steel industry is more likely than other industries to receive a preliminary antidumping measure (the marginal increase in the probability of a preliminary measure is 1.8%) and inclusion of this variable reduces the magnitude of the effect of lagged foreign employment growth. After controlling for the steel industry, a one standard deviation fall in lagged foreign employment growth increases the probability of a preliminary measure by only 0.4%. However, in column 8 the addition of a full set of 2 digit SIC87 industry fixed effects to the government's preliminary decision equation results in a substantial increase in the magnitude of the effect of lagged foreign employment growth on the probability of a preliminary measure. After controlling for industry characteristics with fixed effects, a one standard deviation fall in the lagged growth of foreign employment results in an increase in the probability of a preliminary measure of 3.7%. Moreover, after controlling for industry fixed effects, a one standard deviation fall in lagged foreign employment growth quintuples

the joint probability of a filing and a preliminary measure to 0.70%. Finally, column 9 of table 7 adds a dummy for cases against China to the basic specification in column 1.[21] Here, inclusion of a dummy for China shows that the anti-China bias of US trade policy is strong. Cases against China face an increase in the probability of a preliminary measure of 25.5% relative to non-China countries. Furthermore, after controlling for cases against China, the effect of lagged foreign employment growth is very large; a one standard deviation fall in lagged foreign employment growth increases the probability of a preliminary measure 4.4%. Further, the joint probability of a case being filed and a preliminary measure being imposed is 0.71% for a one standard deviation fall in lagged foreign employment growth relative to its mean level.

The last column of table 7 presents the marginal effects of the explanatory variables on the government's decision to impose a preliminary antidumping measure without controlling for the industry's first-stage filing decision. In this specification, we see that failure to control for the factors that drive the industry's filing decision leads to an overestimate of the effect of lagged foreign employment growth on the probability of a preliminary measure.

In summary, weak growth in employment in foreign industries is a powerful predictor of a preliminary antidumping measure. After controlling for the domestic industry's first-stage filing decision, a one standard deviation fall in the lagged growth of foreign employment is associated with an increase in the probability of a preliminary antidumping measure between 0.4% and 4.5%. Furthermore, lagged foreign employment growth is a powerful predictor of the US industry's decision to file an antidumping petition against a country. Overall, a one standard deviation fall in lagged foreign employment growth yields estimates of the joint probability that a domestic industry files a petition and the US government imposes a preliminary measure between 0.41% and 1.41%. Thus, a one standard deviation fall in lagged employment growth increases the joint probability of a filing and a preliminary measure by a factor of roughly 3 to 10. In conclusion, temporary US trade policies are strongly driven by foreign economic fluctuations.

Table 8 presents marginal effects for the model of industry filing and the government's decision to impose final antidumping measures. Interestingly, after controlling for industry selection, foreign economic variables at the industry level are not significant determinants of the government's decision to impose final (long-lasting) antidumping measures in any of the specifications presented here.

[21] Previous studies (Bown, Crowley, McCulloch, and Nakajima, 2005; Bown and Crowley, 2007; and Bown, 2007) have documented that China's treatment by antidumping authorities is unique; either because of its non-market-economy status, because of the perceived threat of its relatively large export capacity, or for other reasons.

This could be due to changes in the data over time or due to differences in data availability for the preliminary versus final decision. For example, when the industry initially filed its petition, the foreign economy could have been very weak, but because recessions are fairly short, by the time the government made its final determination, cyclical dumping by many economies could have been on the wane. Alternatively, the strong threat of a final antidumping measure could have led foreign firms to raise their US prices after the petition was filed in order to avoid or minimize the final antidumping duty. Another possibility is that the tight time schedule required for preliminary determinations might lead the US ITC to utilize publicly available foreign industry data (such as the variables used in estimating this model) rather than micro data from foreign firms for the preliminary stage of the investigation, but by the time of the final determination, firm level data would have been supplied to the USITC by foreign firms hoping to avoid a long-lasting final antidumping duty.

Although foreign demand factors appear to have no statistically significant effect on the marginal probability of a final antidumping measure, there is still evidence that foreign economic fluctuations are an important predictor of the overall likelihood of a final antidumping duty. The lower panel of table 8 shows that the lagged growth of foreign employment is an economically significant determinant of industry filing behavior. Beginning with the basic specification in column 11, a one standard deviation fall in foreign employment growth increases the probability that a petition will be filed by 0.28 percentage points from a mean of 0.2%. While a change in employment growth has no statistically significant effect on the probability of a final measure conditional on a petition, it still has a large effect on the joint probability that a petition will be filed and a final measure imposed. Given that the mean probability that a final measure will be imposed conditional on filing is 46%, I find that a one standard deviation fall in foreign employment growth increases the joint probability of a filing and a final measure to 0.22%, more than twice as large as the mean joint probability in the sample of 0.09%.

Continuing across table 8, estimates from column 12 indicate that a one standard deviation fall in lagged foreign employment growth more than doubles the joint probability of a filing and final measure to 0.20%. In column 13, the addition of the lagged growth of foreign output reduces the statistical significance of the coefficient estimate on lagged foreign employment growth in the filing equation below the 10% level. Column 14 presents estimates obtained from a sample restricted to 4 digit SIC87 industries that filed at least one antidumping petition during the sample period. Again, a one standard deviation fall in lagged foreign employment growth increases the joint probability

of a filing and a final measure by a factor of roughly 2 to 0.21%. Finally, the last column of table 8 restricts the sample to large exporters as defined above. Within this sample of large exporters, a one standard deviation fall in lagged foreign employment growth has a huge impact on the joint probability of a filing and a final measure, increasing it to 0.87% from a mean in this sample of 0.27%.

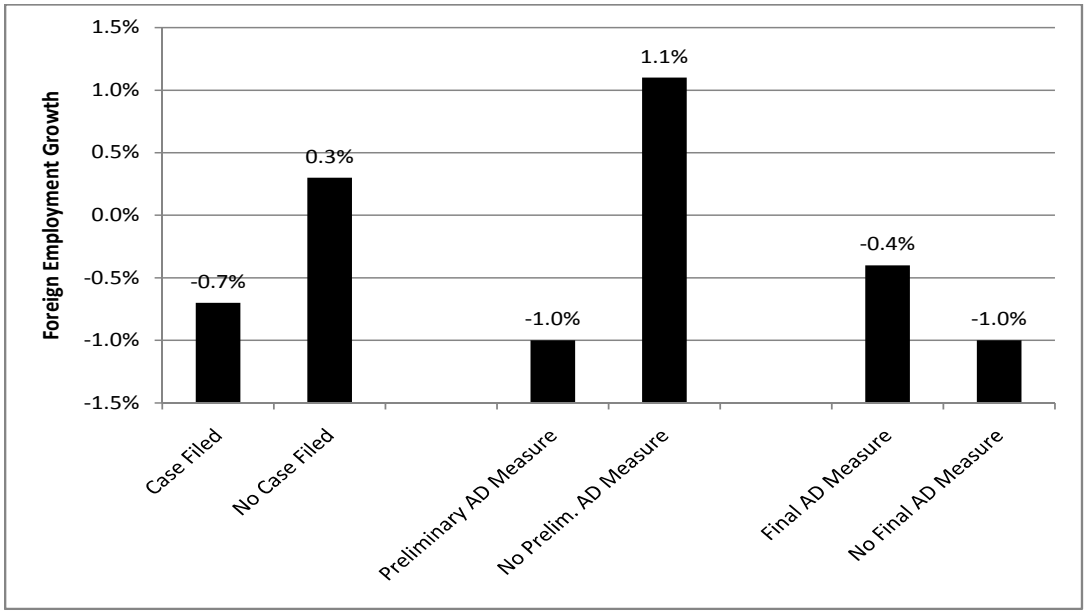
Table 9 presents additional specifications of the model of final antidumping duties to check the robustness of the results. In these additional specifications, the effect of lagged foreign employment growth has no statistically significant effect on the marginal probability that the government will impose a final measure, but continues to affect the joint probability of an industry filing and a final antidumping measure in an important way. Specification 16 adds a multicountry case dummy to the government's decision rule and yields an estimate of the joint probability of a filing and a final measure associated with a one standard deviation fall in lagged foreign employment growth of 0.30%. Similarly, inclusion of a steel dummy in specification 17 yields an estimate of the joint probability of 0.25% in response to weak foreign employment growth . Moving on to column 18, the inclusion of 2 digit industry fixed effects results in even larger effect of foreign demand on the probability of a final antidumping duty. A one standard deviation fall in lagged foreign employment growth yields an estimate of the joint probability of filing and a final antidumping measure of 0.52%, a more than five-fold increase above the mean joint probability in the sample of 0.09%. Finally, the anti-China bias in US antidumping policy is apparent in the government's final antidumping decision in column 19. Cases against China face an increase in the marginal probability of a final measure of 15.4%. The effect of lagged foreign employment growth on the joint probability of a filing and a final antidumping duty is of roughly the same magnitude as other specifications with a one standard deviation fall in this variable associated with a joint probability of 0.34%. Finally, the last column of table 9 reports the marginal effects of foreign demand and market size variables on the government's final antidumping decision without controlling for industry petitioning behavior.

To summarize tables 8 and 9, economic weakness in foreign industries is a strong predictor of final antidumping measures. However, the mechanism by which these variables influence the outcome is different for final (long-lasting) antidumping duties and preliminary (temporary) measures. While measures of economic weakness in a foreign industry directly impact both the government's preliminary antidumping decision rule and the domestic industry's filing rule, for final antidumping duties, measures of foreign demand only affect the ultimate outcome through the domestic industry's filing decision. That said, weakness in a foreign industry is still a good predictor of a final

antidumping measure. Depending on the exact specification of the model, a one standard deviation fall in foreign employment growth doubles to quadruples the joint probability that an industry will file an antidumping petition and the US government will impose a final antidumping duty.

6 Conclusion

In this paper, I test the theory that weak economic conditions in a foreign economy cause cyclical dumping, i.e., the temporary sale of products in a trading partner's economy at a price below average total cost. In order to test this theory, the econometrician would like to have the information on prices and costs available to two agents, the domestic industry seeking protection and the government making a dumping determination. Because this information is private to firms and, consequently, redacted from publicly released documents, I utilize a novel strategy to try to uncover evidence of cyclical dumping. I estimate a model of industry filing and government decisions to try to identify if economic weakness in a foreign economy is associated with an increased probability of antidumping protection. Because the pricing below average total cost that occurs under cyclical dumping is one of the economic criteria the US government uses in its dumping determination, I can identify evidence of cyclical dumping even though I cannot directly observe prices or costs. After controlling for other economic and political variables, I find that a one standard deviation fall in the growth of employment in a foreign economy's manufacturing industry increases by a factor of 3 to 10 the joint probability that the US industry will file an antidumping petition and the US government will impose a preliminary (temporary) antidumping measure. Further, a one standard deviation fall in foreign employment growth doubles to quadruples the joint probability that a petition will be filed and a final (long-lasting) antidumping measure will be imposed.



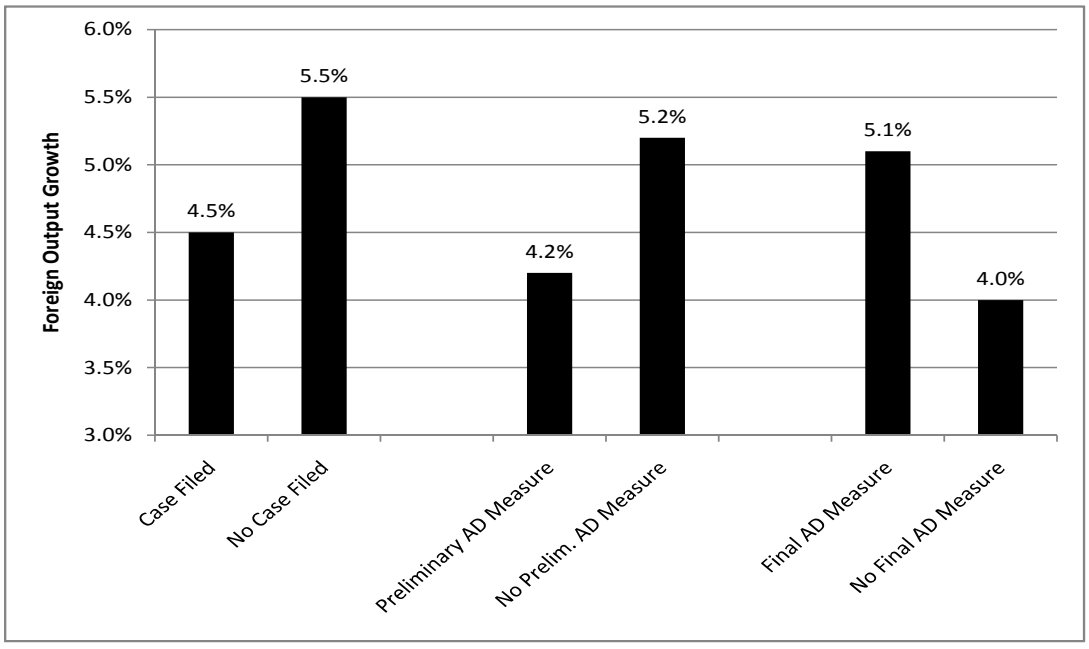


Figure 1: Mean growth in industry i country j in the year before an antidumping petition is filed

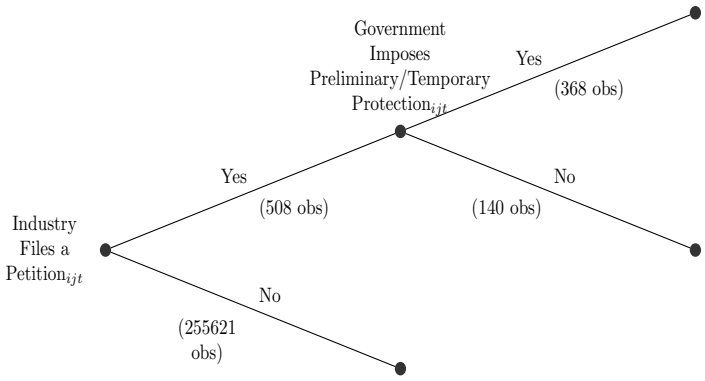


Figure 2: Decision tree for preliminary determination

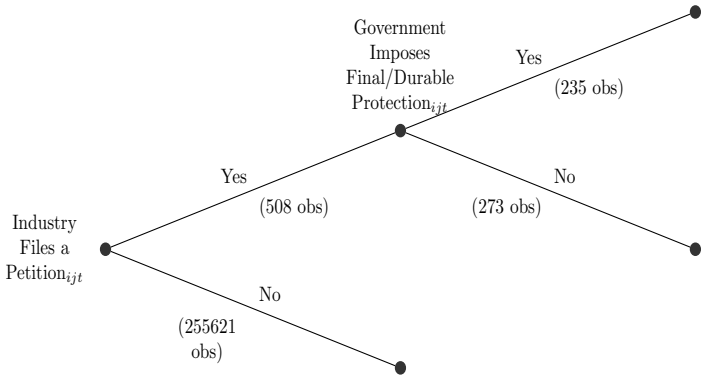


Figure 3: Decision tree for final determination

Table 1: Frequency of AD petition filings and potential filings: US Manufacturing 1980-2001

	Case could have been filed		
Case Filed	0	1	Total
0	249,097	6,534	255,621
1	0	508	508
Total	249,097	7,032	256,129

Table 2: Cross-country variation in prelim. antidumping outcome: 1980-2001

No. of countries named in case	Number of cases	Affirm. Cases	Negative Cases	Split Cases
1	171	125	46	0
2	63	39	11	13
3	22	11	4	7
4	11	7	1	3
5	7	3	0	4
6	3	2	0	1
7	4	2	1	1
8	1	0	0	1
12	1	0	1	0
Total	283	189	63	30

Table 3: Cross-country variation in final antidumping outcome: 1980-2001

No. of countries named in case	Number of cases	Affirm. Cases	Negative Cases	Split Cases
1	171	76	95	0
2	63	26	25	12
3	22	8	7	7
4	11	4	4	3
5	7	3	1	3
6	3	1	0	2
7	4	0	3	1
8	1	0	1	0
12	1	0	1	0
Total	283	118	137	28

Table 4: 49 countries included in the dataset

Argentina	Costa Rica	Hungary	Mexico	Spain
Australia	Denmark	India	Netherlands	Sweden
Austria	Ecuador	Indonesia	New Zealand	Switzerland
Bangladesh	Egypt	Ireland	Norway	Taiwan
Belgium	El Salvador	Israel	Peru	Thailand
Brazil	Finland	Italy	Philippines	Trinidad
Canada	France	Japan	Poland	Turkey
Chile	Germany	Kenya	Portugal	U. Kingdom
China	Greece	South Korea	Singapore	Venezuela
Columbia	Hong Kong	Malaysia	South Africa	

Table 5: Summary Statistics

	Mean	Std. Dev.
Dependent Variables		
Preliminary Measure =1|petition filed	0.724	0.447
Final Measure=1|petition filed	0.463	0.499
Petition Filed	0.0020	0.0445
Foreign Industry Variables		
Growth Foreign Output_ijt-1	0.055	0.259
Growth Foreign Imports_ijt-1	0.090	0.300
Growth Foreign Employment_ijt-1	0.003	0.197
Ln Level of Foreign Output_ijt-1	14.614	1.951
Ln Level of Foreign Imports_ijt-1	13.605	2.101
Ln Level of Foreing Employment_ijt-1	10.573	1.701
Foreign*Domestic Industry Variables		
Growth Import Penetration_ijt-1	0.088	1.110
Import Penetration_ijt-1	0.006	0.027
Domestic Industry Variables		
Growth US Employment_it-1	-0.013	0.095
Ln US Employment_it-1	3.203	1.029
Capacity Utilization_it-1	2.765	1.743
ValAdd/Output_t-1	0.505	0.119
Macro Variables		
Growth US GDP_t-1	0.030	0.019
Ln (Real Ex Rate)_t-1	1.995	2.621
Number of Observations	256129	

Table 6: Estimates of marginal effects for preliminary measures

	Basic specific.	Add foreign import growth to col. (1)	Add foreign output growth to col. (1)	Restrict col. (1) sample to AD filers	Restrict col. (1) sample to large exporters
	(1)	(2)	(3)	(4)	(5)
Stage 2: Government's preliminary decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.093**	-0.124*	-0.098***	-0.076*	-0.263***
	(0.049)	(0.073)	(0.048)	(0.047)	(0.107)
Growth of foreign imports_ijt-1		-0.040			
		(0.051)			
Growth of foreign output_ijt-1			0.022		
			(0.030)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.015**	0.017	0.013**	0.011	0.024
	(0.007)	(0.011)	(0.006)	(0.007)	(0.018)
Ln foreign imports_ijt-1		-0.012			
		(0.008)			-0.004
Ln foreign output_ijt-1	-0.009		-0.008	-0.008	(0.020)
	(0.008)		(0.007)	(0.007)	
Other control variables	yes	yes	yes	yes	yes
Number of uncensored observations	508	479	503	508	359
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.018**	-0.035***	-0.013	-0.018**	-0.071***
	(0.009)	(0.011)	(0.009)	(0.008)	(0.023)
Growth of foreign imports_ijt-1		-0.031***			
		(0.008)			
Growth of foreign output_ijt-1			-0.005		
			(0.008)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.006***	0.022***	0.005***	0.007***	-0.012*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.007)
Ln foreign imports_ijt-1		0.005***			
		(0.002)			
Ln foreign output_ijt-1	0.011***		0.009***	-0.009***	0.005
	(0.002)		(0.002)	(0.002)	(0.005)
Other control variables	yes	yes	yes	yes	yes
Number of Observations	256129	248986	253632	77503	60769
Rho	-0.306	-0.233	-0.333	-0.395	0.489
	(0.385)	(0.380)	(0.384)	(0.497)	(0.396)

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels. Other control variables in the stage 2: government decision include: the growth of import penetration_ijt-1, import penetration_ijt-1, the growth of domestic employment_it-1, the logged level of domestic employment_it-1, capacity utilization_it-1, the growth of US GDP_t-1, and the bilateral real exchange rate between the dollar and country j's currency_t-1. Other control variables in the stage 1: Industry filing decision include all controls in the stage 2 decison plus value added/output_it-1.

Table 7: Estimates of marginal effects for preliminary measures: Additional specifications

	Add a multi-country case dummy to col. (1)	Add a steel dummy to basic spec. in col. (1)	Add 2 digit industry fixed effects to col. (1)	Add a China dummy to basic spec. in col. (1)	No industry selection into filing
	(6)	(7)	(8)	(9)	(10)
Stage 2: Government's preliminary decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.120**	-0.022**	-0.187**	-0.221*	-0.303**
	(0.063)	(0.010)	(0.094)	(0.120)	(0.134)
Measures of foreign market size					
Ln foreign employ_ijt-1	0.019**	0.006***	0.056***	-0.008	0.047**
	(0.009)	(0.002)	(0.016)	(0.021)	(0.021)
Ln foreign output_ijt-1	-0.011	0.000	-0.012	0.011	-0.015
	(0.011)	(0.002)	(0.023)	(0.023)	(0.022)
Fixed effects					
Multi-country case dummy	0.006				
	(0.019)				
Steel dummy		0.018***			
		(0.004)			
China dummy				0.255***	
				(0.084)	
Industry fixed effects (2 digit SIC)			yes		
Other control variables	yes	yes	yes	yes	yes
Number of uncensored observations	508	508	508	508	508
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.023**	-0.005**	-0.036**	-0.037**	
	(0.012)	(0.003)	(0.019)	(0.020)	
Measures of foreign market size					
Ln foreign employ_ijt-1	0.008***	0.002***	0.012***	0.013***	
	(0.002)	(0.001)	(0.004)	(0.004)	
Ln foreign output_ijt-1	0.014***	0.003***	0.021***	0.022***	
	(0.002)	(0.001)	(0.004)	(0.004)	
Other control variables	yes	yes	yes	yes	
Number of Observations	256129	256129	256129	256129	
Rho	-0.271	0.718	0.372	-0.140	
	(0.390)	(0.223)	(0.599)	(0.439)	

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels. Other control variables in the stage 2: government decision include: the growth of import penetration_ijt-1, import penetration_ijt-1, the growth of domestic employment_it-1, the logged level of domestic employment_it-1, capacity utilization_it-1, the growth of US GDP_t-1, and the bilateral real exchange rate between the dollar and country j's currency_t-1. Other control variables in the stage 1: Industry filing decision include all controls in the stage 2 decison plus value added/output_it-1.

Table 8: Estimates of marginal effects for final measures

	Basic specific.	Add foreign import growth to col. (11)	Add foreign output growth to col. (11)	Restrict col. (11) sample to AD filers	Restrict col. (11) sample to large exporters
	(11)	(12)	(13)	(14)	(15)
Stage 2: Government's final decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	0.008	0.005	0.000	0.008	0.045
	(0.029)	(0.018)	(0.019)	(0.020)	(0.105)
Growth of foreign imports_ijt-1		0.015			
		(0.013)			
Growth of foreign output_ijt-1			0.009		
			(0.015)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.002	0.001	0.002	0.000	-0.002
	(0.005)	(0.003)	(0.003)	(0.003)	(0.018)
Ln foreign imports_ijt-1		-0.001			
		(0.002)			
Ln foreign output_ijt-1	0.002		0.000	0.000	0.023
	(0.006)		(0.004)	(0.005)	(0.021)
Other control variables	yes	yes	yes	yes	yes
Number of censored observations	508	479	503	508	359
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.014**	-0.012***	-0.007	-0.013**	-0.076***
	(0.008)	(0.004)	(0.005)	(0.006)	(0.024)
Growth of foreign imports_ijt-1		-0.010***			
		(0.003)			
Growth of foreign output_ijt-1			-0.003		
			(0.005)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.005***	0.007***	0.003***	0.005***	0.013*
	(0.002)	(0.001)	(0.001)	(0.001)	(0.007)
Ln foreign imports_ijt-1		0.002***			
		(0.001)			
Ln foreign output_ijt-1	0.009***		0.006***	0.006***	0.005
	(0.001)		(0.001)	(0.001)	(0.006)
Other control variables	yes	yes	yes	yes	yes
Number of Observations	256129	248986	253632	77503	60769
Rho	-0.553*	-0.623**	-0.620**	-0.689*	-0.348
	(0.252)	(0.202)	(0.222)	(0.260)	(0.428)

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels. Other control variables in the stage 2: government decision include: the growth of import penetration_ijt-1, import penetration_ijt-1, the growth of domestic employment_it-1, the logged level of domestic employment_it-1, capacity utilization_it-1, the growth of US GDP_t-1, and the bilateral real exchange rate between the dollar and country j's currency_t-1. Other control variables in the stage 1: Industry filing decision include all controls in the stage 2 decison plus value added/output_it-1.

Table 9: Estimates of marginal effects for final measures: Additional specifications

	Add a multi-country case dummy to col. (11)	Add a steel dummy to basic spec. in col. (11)	Add 2 digit industry fixed effects to col. (11)	Add a China dummy to basic spec. in col. (11)	No industry selection into filing
	(16)	(17)	(18)	(19)	(20)
Stage 2: Government's final decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	0.012	0.010	0.056	0.027	-0.003
	(0.048)	(0.034)	(0.106)	(0.061)	(0.130)
Measures of foreign market size					
Ln foreign employ_ijt-1	0.005	0.011*	0.035	-0.026*	0.017
	(0.008)	(0.006)	(0.022)	(0.014)	(0.024)
Ln foreign output_ijt-1	0.003	0.009	0.010	0.025	0.037
	(0.010)	(0.007)	(0.026)	(0.017)	(0.025)
Fixed effects					
Multi-country case dummy	0.021				
	(0.017)				
Steel dummy		0.062***			
		(0.014)			
China dummy				0.154***	
				(0.055)	
Industry fixed effects (2 digit SIC)			yes		
Other control variables	yes	yes	yes	yes	yes
Number of censored observations	508	508	508	508	508
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.023*	-0.017*	-0.047*	-0.027*	
	(0.012)	(0.009)	(0.025)	(0.014)	
Measures of foreign market size					
Ln foreign employ_ijt-1	0.008***	0.006***	0.017***	0.010***	
	(0.003)	(0.002)	(0.005)	(0.003)	
Ln foreign output_ijt-1	0.014***	0.010***	0.029***	0.016***	
	(0.002)	(0.002)	(0.005)	(0.003)	
Other control variables	yes	yes	yes	yes	
Number of Observations	256129	256129	256129	256129	
Rho	-0.536*	0.354	-0.443	0.026	
	(0.258)	(0.432)	(0.316)	(0.594)	

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels. Other control variables in the stage 2: government decision include: the growth of import penetration_ijt-1, import penetration_ijt-1, the growth of domestic employment_it-1, the logged level of domestic employment_it-1, capacity utilization_it-1, the growth of US GDP_t-1, and the bilateral real exchange rate between the dollar and country j's currency_t-1. Other control variables in the stage 1: Industry filing decision include all controls in the stage 2 decison plus value added/output_it-1.

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Appendix Table A: ML coefficient estimates for table 6: Stage 2

	Basic specific.	Add foreign import growth to col. (1)	Add foreign output growth to col. (1)	Restrict col. (1) sample to AD filers	Restrict col. (1) sample to large exporters
	(1)	(2)	(3)	(4)	(5)
Stage 2: Government's preliminary decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.826*	-0.744*	-0.997**	-0.778	-1.059**
	(0.435)	(0.436)	(0.491)	(0.478)	(0.432)
Growth of foreign imports_ijt-1		-0.240			
		(0.305)			
Growth of foreign output_ijt-1			0.222		
			(0.303)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.130**	0.100	0.138**	0.116	0.098
	(0.065)	(0.067)	(0.066)	(0.076)	(0.072)
Ln foreign imports_ijt-1		-0.070			
		(0.048)			
Ln foreign output_ijt-1	-0.077		-0.086	-0.081	-0.016
	(0.073)		(0.073)	(0.073)	(0.079)
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.012	0.019	0.013	0.007	-0.116
	(0.087)	(0.091)	(0.088)	(0.087)	(0.163)
Country j's import penetration_ijt-1	1.807	2.282	1.711	1.354	2.943*
	(2.124)	(2.265)	(2.133)	(2.444)	(1.709)
Growth of domestic employ_it-1	-0.657	-0.661	-0.693	-0.665	0.311
	(0.847)	(0.904)	(0.852)	(0.820)	(0.938)
Ln domestic employ_it-1	0.025	0.052	0.014	0.034	0.273***
	(0.108)	(0.110)	(0.107)	(0.101)	(0.090)
Capacity utiliz_it-1	0.218	0.211	0.223	0.216	-0.050
	(0.147)	(0.167)	(0.144)	(0.138)	(0.152)
Macroeconomic control variables					
Growth of US GDP_t-1	2.424	3.344	2.628	2.331	-0.794
	(2.974)	(3.286)	(2.974)	(2.935)	(3.366)
Ln (bilateral real exchange rate)_jt-1	0.000	-0.004	-0.001	-0.003	0.052*
	(0.028)	(0.028)	(0.028)	(0.030)	(0.028)
Constant	0.567	0.386	0.713	0.923	-2.694
	(2.181)	(1.968)	(2.183)	(2.647)	(1.655)
Number of Uncensored Obs.	508	479	503	508	359

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table B: ML coefficient estimates for table 6: Stage 1

	Basic specific.	Add foreign import growth to col. (1)	Add foreign output growth to col. (1)	Restrict col. (1) sample to AD filers	Restrict col. (1) sample to large exporters
	(1)	(2)	(3)	(4)	(5)
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.157**	-0.212***	-0.129	-0.186**	-0.286***
	(0.082)	(0.065)	(0.095)	(0.087)	(0.092)
Growth of foreign imports_ijt-1		-0.185***			
		(0.051)			
Growth of foreign output_ijt-1			-0.049		
			(0.079)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.055***	0.131***	0.053***	0.067***	0.049*
	(0.017)	(0.011)	(0.017)	(0.020)	(0.027)
Ln foreign imports_ijt-1		0.030***			
		(0.010)			
Ln foreign output_ijt-1	0.095***		0.0097***	0.092***	0.020
	(0.015)		(0.016)	(0.019)	(0.022)
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.033***	0.028***	0.034***	0.039***	0.047*
	(0.011)	(0.011)	(0.011)	(0.013)	(0.026)
Country j's import penetration_ijt-1	2.377***	2.622***	2.383***	2.942***	1.395***
	(0.158)	(0.168)	(0.159)	(0.320)	(0.200)
Growth of domestic employ_it-1	0.178	0.245	0.194	0.198***	0.027
	(0.172)	(0.180)	(0.173)	(0.178)	(0.220)
Ln domestic employ_it-1	0.253***	0.270***	0.251***	0.166***	0.265***
	(0.014)	(0.015)	(0.014)	(0.016)	(0.019)
Capacity utiliz_it-1	-0.341***	-0.365***	-0.337***	-0.271***	-0.290***
	(0.034)	(0.038)	(0.034)	(0.032)	(0.039)
Value added/output_it-1	-1.460***	-1.670***	-1.431***	-0.978***	-1.450***
	(0.113)	(0.148)	(0.133)	(0.164)	(0.173)
Macroeconomic control variables					
Growth of US GDP_t-1	1.420	1.409	1.309	1.093	0.525
	(0.892)	(0.916)	(0.893)	(0.985)	(1.071)
Ln (bilateral real exchange rate)_jt-1	0.039***	0.038***	0.039***	0.039***	0.049***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)
Constant	-4.560***	-4.276***	-4.574***	-4.405***	-3.155***
	(0.177)	(0.184)	(0.177)	(0.203)	(0.227)
Number of Observations	256129	248986	253632	77503	60769
	-0.306	-0.233	-0.333	-0.395	0.489
Rho	(0.385)	(0.380)	(0.384)	(0.497)	(0.396)

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table C: ML coefficient estimates for table 7: Stage 2

	Add a multi-country case dummy to col. (1)	Add a steel dummy to basic spec. in col. (1)	Add 2 digit industry fixed effects to col. (1)	Add a China dummy to basic spec. in col. (1)	No industry selection into filing
	(6)	(7)	(8)	(9)	(10)
Stage 2: Government's preliminary decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.837*	-0.651**	-0.825**	-0.929*	-0.922**
	(0.437)	(0.316)	(0.414)	(0.503)	(0.408)
Growth of foreign imports_ijt-1					
Growth of foreign output_ijt-1					
Measures of foreign market size					
Ln foreign employ_ijt-1	0.133**	0.169***	0.247***	-0.035	0.142**
	(0.066)	(0.058)	(0.073)	(0.088)	(0.063)
Ln foreign imports_ijt-1					
Ln foreign output_ijt-1	-0.077	0.009	-0.052	0.045	-0.044
	(0.073)	(0.064)	(0.101)	(0.095)	(0.068)
Fixed effects					
Multi-country case dummy	0.044				
	(0.133)				
Steel dummy		0.537***			
		(0.124)			
China dummy				1.072***	
				(0.353)	
Industry fixed effects (2 digit SIC)					
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.015	0.040	0.024	0.025	0.030
	(0.087)	(0.066)	(0.087)	(0.094)	(0.088)
Country j's import penetration_ijt-1	1.841	3.874***	5.764***	2.727	2.492
	(2.141)	(1.366)	(2.049)	(2.252)	(1.971)
Growth of domestic employ_it-1	-0.698	-0.147	-0.997	-1.188	-0.691
	(0.849)	(0.673)	(0.964)	(0.909)	(0.893)
Ln domestic employ_it-1	0.027	0.191***	0.093	0.069	0.100
	(0.108)	(0.061)	(0.138)	(0.117)	(0.062)
Capacity utiliz_it-1	0.220	-0.099	0.141	0.190	0.127
	(0.148)	(0.121)	(0.267)	(0.166)	(0.078)
Macroeconomic control variables					
Growth of US GDP_t-1	2.441	1.220	1.304	2.890	2.733
	(2.978)	(2.312)	(3.115)	(3.041)	(3.054)
Ln (bilateral real exchange rate)_jt-1	0.000	0.037	0.020	0.023	0.011
	(0.028)	(0.018)	(0.032)	(0.030)	(0.024)
Constant	0.466	-4.650	-4.482	-0.203	-1.123
	(2.212)	(1.115)	(2.751)	(2.392)	(0.701)
Number of Uncensored Observations	508	508	508	508	508

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table D: ML coefficient estimates for table 7: Stage 1

	Add a multi-country case dummy to col. (1)	Add a steel dummy to basic spec. in col. (1)	Add 2 digit industry fixed effects to col. (1)	Add a China dummy to basic spec. in col. (1)	No industry selection into filing
	(6)	(7)	(8)	(9)	(10)
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.157*	-0.157*	-0.157*	-0.157*	
	(0.082)	(0.082)	(0.082)	(0.082)	
Growth of foreign imports_ijt-1					
Growth of foreign output_ijt-1					
Measures of foreign market size					
Ln foreign employ_ijt-1	0.055***	0.055***	0.055***	0.055***	
	(0.017)	(0.017)	(0.017)	(0.017)	
Ln foreign imports_ijt-1					
Ln foreign output_ijt-1	0.095***	0.095***	0.095***	0.095***	
	(0.016)	(0.016)	(0.016)	(0.016)	
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.033***	0.033***	0.033***	0.033***	
	(0.010)	(0.011)	(0.011)	(0.011)	
Country j's import penetration_ijt-1	2.377***	2.377***	2.377***	2.377***	
	(0.142)	(0.158)	(0.158)	(0.158)	
Growth of domestic employ_it-1	0.178	0.179	0.178	0.178	
	(0.171)	(0.172)	(0.172)	(0.172)	
Ln domestic employ_it-1	0.253***	0.253***	0.253***	0.253***	
	(0.014)	(0.014)	(0.014)	(0.014)	
Capacity utiliz_it-1	-0.341***	-0.341***	-0.341***	-0.341***	
	(0.034)	(0.034)	(0.034)	(0.034)	
Value added/output_it-1	-1.460***	-1.460	-1.460***	-1.460***	
	(0.133)	(0.134)	(0.134)	(0.134)	
Macroeconomic control variables					
Growth of US GDP_t-1	1.420	1.411	1.416	1.419	
	(0.889)	(0.891)	(0.891)	(0.892)	
Ln (bilateral real exchange rate)_jt-1	0.039***	0.039***	0.039***	0.039***	
	(0.006)	(0.006)	(0.006)	(0.006)	
Constant	-4.559***	-4.559***	-4.559***	-4.559***	
	(0.176)	(0.176)	(0.177)	(0.176)	
Number of Observations	256129	256129	256129	256129	--------
Rho	-0.298	-0.718	0.372	-0.140	--------
	(0.388)	(0.223)	(0.599)	(0.439)	

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table E: ML coefficient estimates for table 8: Stage 2

	Basic specific.	Add foreign import growth to col. (11)	Add foreign output growth to col. (11)	Restrict col. (11) sample to AD filers	Restrict col. (11) sample to large exporters
	(11)	(12)	(13)	(14)	(15)
Stage 2: Government's final decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	0.089	0.091	-0.005	0.125	0.172
	(0.315)	(0.317)	(0.335)	(0.294)	(0.399)
Growth of foreign imports_ijt-1		0.274			
		(0.227)			
Growth of foreign output_ijt-1			0.152		
			(0.260)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.023	0.013	0.035	0.002	-0.007
	(0.053)	(0.050)	(0.051)	(0.051)	(0.070)
Ln foreign imports_ijt-1		-0.022			
		(0.036)			
Ln foreign output_ijt-1	0.019		-0.008	0.003	0.086
	(0.067)		(0.063)	(0.067)	(0.079)
Industry-level control variables					
Growth of country j's import pen_ijt-1	-0.146*	-0.147*	-0.157**	-0.138*	-0.221
	(0.081)	(0.076)	(0.080)	(0.074)	(0.162)
Country j's import penetration_ijt-1	-1.222	-0.907	-1.375	-1.829	-0.854
	(1.577)	(1.525)	(1.497)	(1.490)	(1.792)
Growth of domestic employ_it-1	0.362	0.333	0.221	0.270	0.769
	(0.729)	(0.745)	(0.706)	(0.664)	(0.955)
Ln domestic employ_it-1	-0.092	-0.096	-0.104	-0.072	0.021
	(0.078)	(0.073)	(0.072)	(0.063)	(0.131)
Capacity utiliz_it-1	0.206**	0.214**	0.220**	0.199**	0.092
	(0.095)	(0.090)	(0.086)	(0.079)	(0.133)
Macroeconomic control variables					
Growth of US GDP_t-1	2.357	2.168	2.691	2.031	5.244
	(2.532)	(2.626)	(2.453)	(2.350)	(3.360)
Ln (bilateral real exchange rate)_jt-1	0.013	0.019	0.008	0.005	0.029
	(0.024)	(0.024)	(0.023)	(0.025)	(0.035)
Constant	0.845	1.754	1.359	1.556	-0.847
	(1.770)	(1.318)	(1.623)	(1.870)	(2.170)
Number of uncensored Obs.	508	479	503	508	359

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table F: ML coefficient estimates for table 8: Stage 1

	Basic specific. (11)	Add foreign import growth to col. (11) (12)	Add foreign output growth to col. (11) (13)	Restrict col. (11) sample to AD filers (14)	Restrict col. (11) sample to large exporters (15)
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.157**	-0.213***	-0.130	-0.187**	-0.287***
	(0.082)	(0.065)	(0.095)	(0.087)	(0.092)
Growth of foreign imports_ijt-1		-0.185***			
		(0.051)			
Growth of foreign output_ijt-1			-0.048		
			(0.079)		
Measures of foreign market size					
Ln foreign employ_ijt-1	0.055***	0.131***	0.053***	0.068***	0.050*
	(0.017)	(0.011)	(0.017)	(0.020)	(0.027)
Ln foreign imports_ijt-1		0.030***			
		(0.010)			
Ln foreign output_ijt-1	0.095***		0.096***	0.092***	0.020
	(0.016)		(0.016)	(0.019)	(0.022)
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.033***	0.028***	0.034***	0.039***	0.047*
	(0.011)	(0.011)	(0.011)	(0.013)	(0.026)
Country j's import penetration_ijt-1	2.378***	2.623***	2.384***	2.945***	1.395***
	(0.158)	(0.168)	(0.159)	(0.320)	(0.200)
Growth of domestic employ_it-1	0.177	0.243	0.193	0.197	0.024
	(0.172)	(0.180)	(0.173)	(0.178)	(0.220)
Ln domestic employ_it-1	0.253***	0.270***	0.251***	0.166***	0.265***
	(0.014)	(0.015)	(0.014)	(0.016)	(0.019)
Capacity utiliz_it-1	-0.341***	-0.365***	-0.337***	-0.272***	-0.290***
	(0.034)	(0.038)	(0.034)	(0.032)	(0.039)
Value added/output_it-1	-1.462***	-1.670***	-1.434***	-0.984***	-1.449***
	(0.133)	(0.148)	(0.133)	(0.162)	(0.173)
Macroeconomic control variables					
Growth of US GDP_t-1	1.421	1.410	1.310	1.092	0.526
	(0.892)	(0.917)	(0.893)	(0.986)	(1.072)
Ln (bilateral real exchange rate)_jt-1	0.039	0.038***	0.039***	0.039***	0.049***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)
Constant	-4.558	-4.276	-4.573***	-4.402***	-3.157***
	(0.177)	(0.185)	(0.177)	(0.203)	(0.227)
Number of Observations	256129	248986	253632	77503	60769
Rho	-0.553*	-0.623**	-0.620**	-0.689*	-0.348
	(0.252)	(0.202)	(0.222)	(0.260)	(0.428)

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table G: ML coefficient estimates for table 9: Stage 2

	Add a multi-country case dummy to col. (11)	Add a steel dummy to basic spec. in col. (11)	Add 2 digit industry fixed effects to col. (11)	Add a China dummy to basic spec. in col. (11)	No industry selection into filing
	(16)	(17)	(18)	(19)	(20)
Stage 2: Government's final decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	0.078	0.092	0.186	0.155	-0.008
	(0.321)	(0.318)	(0.352)	(0.356)	(0.339)
Growth of foreign imports_ijt-1					
Growth of foreign output_ijt-1					
Measures of foreign market size					
Ln foreign employ_ijt-1	0.030	0.106*	0.117	-0.149*	0.042
	(0.054)	(0.061)	(0.074)	(0.081)	(0.061)
Ln foreign imports_ijt-1					
Ln foreign output_ijt-1	0.021	0.083	0.032	0.145	0.093
	(0.068)	(0.069)	(0.088)	(0.096)	(0.062)
Fixed effects					
Multi-country case dummy	0.139				
	(0.117)				
Steel dummy		0.581***			
		(0.128)			
China dummy				0.896***	
				(0.321)	
Industry fixed effects (2 digit SIC)					
Industry-level control variables					
Growth of country j's import pen_ijt-1	-0.143	-0.132	-0.165	-0.141*	-0.135
	(0.083)	(0.099)	(0.102)	(0.085)	(0.093)
Country j's import penetration_ijt-1	-1.159	1.333	1.657	-0.596	-0.166
	(1.600)	(1.859)	(2.329)	(1.780)	(1.793)
Growth of domestic employ_it-1	0.262	0.783	0.792	-0.115	0.473
	(0.738)	(0.836)	(0.898)	(0.794)	(0.851)
Ln domestic employ_it-1	-0.088	-0.046	0.015	-0.064	0.040
	(0.080)	(0.152)	(0.141)	(0.092)	(0.058)
Capacity utiliz_it-1	0.214**	-0.046	0.058	0.188*	0.029
	(0.117)	(0.152)	(0.195)	(0.112)	(0.058)
Macroeconomic control variables					
Growth of US GDP_t-1	2.339	1.751	1.797	2.698	3.083
	(2.548)	(2.762)	(2.992)	(2.665)	(2.868)
Ln (bilateral real exchange rate)_jt-1	0.014	0.052**	0.039	0.036	0.038*
	(0.024)	(0.023)	(0.032)	(0.029)	(0.023)
Constant	0.551	-4.219**	-3.005	0.281	-2.439***
	(1.844)	(2.042)	(3.298)	(2.051)	(0.670)
Number of Uncensored Observations	508	508	508	508	508

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

Appendix Table H: ML coefficient estimates for table 9: Stage 1

	Add a multi-country case dummy to col. (1)	Add a steel dummy to basic spec. in col. (1)	Add 2 digit industry fixed effects to col. (1)	Add a China dummy to basic spec. in col. (1)	No industry selection into filing
	(16)	(17)	(18)	(19)	(20)
Stage 1: Industry's filing decision					
Measures of foreign demand					
Growth of foreign employ_ijt-1	-0.157*	-0.157*	-0.157*	-0.157*	
	(0.082)	(0.082)	(0.082)	(0.082)	
Growth of foreign imports_ijt-1					
Growth of foreign output_ijt-1					
Measures of foreign market size					
Ln foreign employ_ijt-1	0.055***	0.055***	0.055***	0.055***	
	(0.017)	(0.017)	(0.017)	(0.017)	
Ln foreign imports_ijt-1					
Ln foreign output_ijt-1	0.095***	0.095***	0.095***	0.095***	
	(0.016)	(0.016)	(0.016)	(0.016)	
Industry-level control variables					
Growth of country j's import pen_ijt-1	0.033***	0.033***	0.033***	0.033***	
	(0.010)	(0.011)	(0.011)	(0.011)	
Country j's import penetration_ijt-1	2.377***	2.377***	2.377***	2.377***	
	(0.142)	(0.158)	(0.158)	(0.158)	
Growth of domestic employ_it-1	0.177	0.179	0.178	0.177	
	(0.171)	(0.172)	(0.172)	(0.172)	
Ln domestic employ_it-1	0.253***	0.253***	0.253***	0.253***	
	(0.014)	(0.014)	(0.014)	(0.014)	
Capacity utiliz_it-1	-0.341***	-0.341***	-0.341***	-0.341***	
	(0.034)	(0.034)	(0.034)	(0.034)	
Value added/output_it-1	-1.462***	-1.461***	-1.460***	-1.461***	
	(0.133)	(0.133)	(0.134)	(0.133)	
Macroeconomic control variables					
Growth of US GDP_t-1	1.420	1.416	1.418	1.420	
	(0.889)	(0.891)	(0.891)	(0.892)	
Ln (bilateral real exchange rate)_jt-1	0.039***	0.039***	0.039***	0.039***	
	(0.006)	(0.006)	(0.006)	(0.006)	
Constant	-4.558***	-4.559***	-4.559***	-4.558***	
	(0.176)	(0.177)	(0.177)	(0.177)	
Number of Observations	256129	256129	256129	256129	--------
Rho	-0.536*	0.354	0.026	-0.443	--------
	(0.258)	(0.432)	(0.594)	(0.316)	

Notes: Robust std errors in parentheses with ***,**, and * indicating statistical significance at the 1%, 5% and 10% levels.

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