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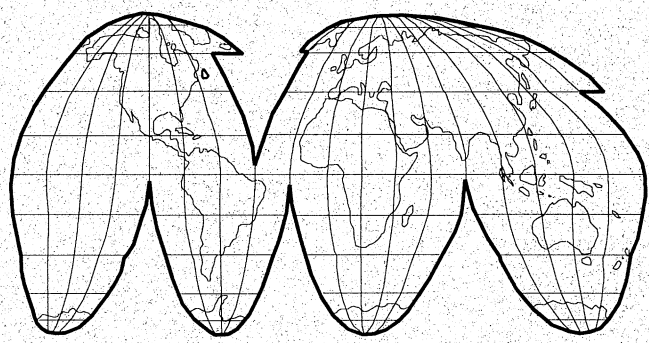

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ITC Injury Determination and the Abuse of Antidumping Law: Evidence from the United States Manufacturing Industries

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The first antidumping legislation adopted in the United States [US], as contained in Sections 800-801 of the Revenue Act of 1916, came largely in response to the alleged dumping threat from the highly cartelized and heavily protected German industries (Viner 1966). This alleged dumping activity took the form of unloading excess industrial capacity from the German cartels on to the noncartelized US market. Inspired by this fear, the original intent of the law was to provide protection for US firms against "unfair competition" resulting from the dumping activity of cartelized firms abroad. Antidumping [AD] law today seems to elicit much broader usage because of explicit changes in US AD law. Under the original US law, predatory intent had to be shown to establish a finding of dumping. However, the Revenue Act of 1921 dropped this intent requirement. As currently administered under US Trade Law, dumping is defined as foreign products exported to the US market at prices below "fair value," that is, either below the prices of comparable products for sale in the domestic market of the exporting country or below costs of production.

Although it is difficult, and most economists would even say impossible, to justify this form of AD on economic theory grounds, the question we would like to address is whether or not the existing law is utilized by domestic firms in the manner in which it was intended.[1] The steadily lower US tariff levels that have been negotiated in the post-WWII period have made AD suit activity an increasingly popular way to obtain temporary protection from foreign competition that is harmful to a domestic industry. Because all foreign competition has the potential to harm the import-competing domestic industry, the use and potential abuse of US AD law is a central concern in both multilateral and bilateral trade negotiations. Consequently, this paper will describe strategies a domestic industry might have for filing an antidumping suit. Because it is difficult, if not impossible, to describe what constitutes abuse of AD law given the definition of dumping cited above, we focus on two general classes of strategies for filing an AD suit. The first strategy is closer in spirit to the original intent of US AD law. The second strategy is closer to what might be called abuse of AD law. The paper will then summarize the empirical evidence as it relates each of these rationales for all 4-digit Standard Industrial Code [SIC] US manufacturing industries facing import competition over the period 1980-1985. Given this evidence, we then discuss the specific aspects of the International Trade Commission [ITC] injury determination process which enable abuses of AD law to occur. We argue that among the two general approaches used by ITC Commissioners to determine injury, the historically most popular approach is particularly

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[1]Equating dumping with international predatory pricing is the only economic rationale for the existence of US antidumping law that has received any support from economists. Unfortunately, this definition of dumping led to very few suits filed immediately following the enactment of the Antidumping Act of 1916 because of the difficulty of establishing predatory intent (Congressional Budget Office 1994, p. 20)

hospitable to a filing strategy that is contrary to the original intent of AD law. The other general approach for determining injury, which until recently has been less popular with ITC Commissioners, makes this filing strategy far more difficult to pursue. We conclude that with only slight modifications to the ITC injury determination process, the potential for abuse of antidumping law of form we describe should be reduced substantially.

A simple view of how AD law restricts trade is that trade flows are affected only when AD duties are imposed. In order to distinguish empirically between filing strategies that are consistent with the intent of AD law and those that are not, we must take a more comprehensive view of the impacts of an AD suit petition. Several researchers have challenged the simple view, arguing that the threat or mere possibility of duties can also restrict trade. In Staiger and Wolak (1994), we studied three possible channels through which indirect effects may arise which when combined with the direct effects of duties, we believe capture most of the trade effects of antidumping law.[2] We refer to the three non-duty effects as the "investigation effect," the "suspension effect," and the "withdrawal effect." Investigation effects occur when an AD investigation takes place; suspension effects occur under so-called "suspension agreements" (where an investigation is suspended in exchange for a promise by foreign firms to stop dumping); and withdrawal effects occur after a petition is simply withdrawn without a final determination.

This focus on the broader trade effects of AD law allows us to distinguish between two general strategies for AD suit activity, the "outcome filing strategy" and "the process filing strategy." Outcome filers are those firms who appear motivated by the expectation that they can secure a finding of dumping. Alternatively, process filers file petitions largely for the trade-restricting effects generated by the investigation process alone. We argue that the outcome filing strategy is consistent with the intent of AD law and therefore does not qualify as abuse. In addition, we argue that it would be difficult to misuse AD law if the petitioner's ultimate goal is to obtain AD duties because of the specific directives given to the ITC on how to arrive at the final injury determination necessary for an affirmative final dumping determination. On the other hand, process filing constitutes abuse of AD law. Firms using this strategy do not file in expectation of obtaining a positive final injury determination but only for the temporary import-restricting and domestic output-enhancing effects of an ongoing AD suit investigation.

US Antidumping Law

Before describing the details of the US dumping investigation procedure, we make several preliminary observations. First, there are two findings necessary for a determination of dumping under US law: i] sales of imports at less than fair value [LTFV]; and ii] material

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[2]There is a growing empirical literature concerned with the determinants and impacts of antidumping petitions. See, for example, Finger; Hernander and Schwartz (1986); Salvatore; Hartigan, Kamma and Perry; Messerlin (1989, 1990); Lichtenberg and Tan; Harrison; and Prusa.

injury to the domestic industry due to these imports. One government agency is assigned to each of these determinations--the ITC determines injury to the domestic industry and the Commerce Department's International Trade Administration [ITA] makes the LTFV determination. Second, for each of these decisions, there is a preliminary and final decision made by each agency. The statutory time allotted for the entire investigation ranges from 10 months to up to 14 months under special circumstances. Figure 1 summarizes the timing of the various stages of the suit resolution process.

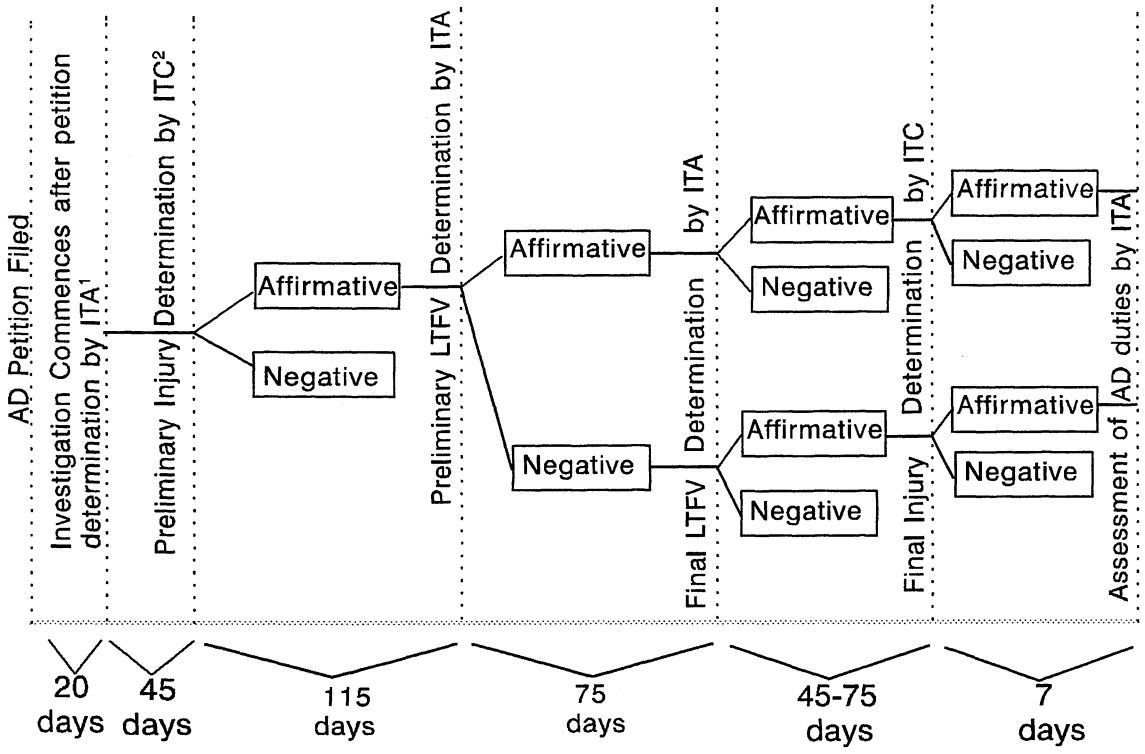

Figure 1. "Typical" course of an antidumping investigation.
[1]International Trade Administration, Commerce Department.
[2]International Trade Commission.

Investigation Procedure

Once an AD petition is filed with the Commerce Department's ITA and with the ITC, the ITA has 20 days to make a "petition determination" as to whether the petition is in order and, if so, to commence an investigation.[3]

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[3]Petitions can be either "self-initiated" by the ITA or initiated by an "interested party" on behalf of the industry. The former is by far the exception, with the most prominent example being the Trigger Price Mechanism.

ITC Preliminary Injury Determination: If the petition determination is affirmative, the ITC then has 45 days to make a preliminary determination of whether the industry under review is "materially injured," or "threatened with material injury," or if the establishment of the industry "is materially retarded" as a result of the imports under investigation. If the ITC's preliminary determination is negative, the investigation is terminated as Figure 1 indicates. If the ITC's preliminary determination is affirmative, as it was for 86 percent of the products investigated between 1980-85, then the investigation will run its course unless the petitioner takes action to terminate or suspend the case.

ITA Preliminary LTFV Determination: Provided the ITC's preliminary determination is affirmative, and within 160 days of the initial filing of the suit (or within 90 days if all interested parties agree to a "waiver of verification"), the ITA must make a preliminary determination of whether there is reasonable evidence that merchandise "is being sold, or is likely to be sold at less than fair value."[4] A negative preliminary determination by the ITA does not terminate the investigation. If the preliminary determination of the ITA is affirmative, then the ITA must provide an estimate of the "dumping margin." ITA is also required to order the "suspension of liquidation" of the affected imported goods and the posting by importers of a cash deposit or bond to cover the estimated dumping duties payable pending the final outcome of the investigation. ITA reached an affirmative determination for 93 percent of the products whose investigations made it past the preliminary injury determination over the period 1980-85.

At any point after the ITA's preliminary determination, the investigation may be terminated or suspended, or it may continue on to the final determination. Termination prior to the final determination occurs if and only if the petition is withdrawn by the petitioner. This action was taken for 42 percent of the products whose investigations made it past the preliminary injury determination during the 1980-85 period, with a large portion taken in the steel industry. Termination usually comes about as a result of price agreements reached by the domestic industry and foreign firms named in the suit.[5]

Suspension occurs if the foreign firms that are the subject of the dumping allegation reach an agreement with the ITA to i] eliminate LTFV sales to the US market, ii] cease exporting to the US market completely, or iii] under "extraordinary circumstances," eliminate the "injurious effect" of their actions, including any margin of "underselling" (i.e., undercutting the price of the domestic product), without necessarily raising price so high as to eliminate the full margin of dumping. Such agreements were negotiated for 2 percent of the products

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[4]In "extraordinarily complicated" cases, the ITA may postpone making its preliminary determination until the 210th day after filing.

[5]Agreements between foreign firms and domestic petitioners are permitted under the Noerr-Pennington doctrine which exempts such parties from prosecution under US antitrust law. However, direct conversations between domestic and foreign firms concerning prices or quantities would not be protected. Consequently, settlements are typically negotiated through the Commerce Department. See Prusa (1992) for a thorough analysis of this exemption and its implications for the effects of antidumping law.

whose investigations made it past the preliminary injury determination during the 1980-85 period. In the case of suspension, any violation of the agreement will result in automatic renewal of the investigation.

ITA Final LTFV Determination: If the case is neither terminated nor suspended, then the ITA must within 75 days of its preliminary determination make a final determination of whether the merchandise under investigation "is being, or is likely to be" sold in the US at less than fair value.[6]

ITC Final Injury Determination: If the ITA's preliminary and final determination are affirmative then, as depicted in Figure 1, the ITC must make its final determination of injury within 45 days of the ITA's final determination (or within 120 days of the ITA's preliminary determination, whichever is later). If the ITA's preliminary determination is negative, and its final determination is affirmative, then the ITC has 75 days from the ITA's affirmative final determination to make its final determination of injury.

Lastly, if the final determinations of both the ITA and ITC are affirmative, the ITA has seven days within which to instruct customs officers to assess the appropriate AD duties. Assessment of dumping duties occurred for 35 percent of the products whose investigations made it past the preliminary injury determination over the period 1980-85. If either the ITC or the ITA final determination is negative, the investigation is terminated, an outcome which occurred for 21 percent of the products whose investigations made it past the preliminary injury determination over the 1980-85 period.

Assessment of AD Duties: Provided that the final determinations of injury and LTFV sales are both affirmative the "definitive" dumping margins for purposes of assessing AD duties must then be calculated. These calculations are made on the basis of the prices of the imports to which they will apply (as opposed to the margins calculated for the LTFV determination, which are based on a sample of imports over an historic period which typically covers the six months preceding the initiation of the petition). The final assessment of AD duties applies retroactively only if the preliminary LTFV determination was affirmative. In this case, antidumping duties would normally be assessed on the relevant imports from the date of the preliminary LTFV determination forward. However, if the industry alleges "critical circumstances" and the ITA and ITC find evidence both that there are "massive" imports of the relevant product over a "relatively short period" which cause material injury, and that there is either a history of dumping in the industry or that importers were or should have been knowledgeable about ongoing dumping, the dumping duties can be applied retroactively 90 days prior to the preliminary LTFV finding.[7]

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[6]The ITA may postpone its final determination until the 135th day after its preliminary determination if requested to do so by either the petitioner or the firms against which the dumping allegations were made.

[7]In practice, however, the conditions for critical circumstances are rarely met.

Thus, there are, in effect, three possible ranges of imports to which antidumping duties may apply once an affirmative final determination is made. If the preliminary LTFV determination was negative, duties equal to the actual dumping margins will be imposed on the relevant imports entering the US on or after the date of final determination. If, alternatively, the preliminary LTFV determination was affirmative, antidumping duties reflecting actual dumping margins will be imposed on imports entering the US either i] on or after the date of the preliminary LTFV determination, or ii] in the case of critical circumstances, 90 days prior to the date of the preliminary LTFV determination.

Investigation Effects

Dale (1980, pp. 85-86) discusses two possible reasons for the existence of investigation effects associated with AD petitions. The first focuses on the pricing behavior of exporters. As discussed above, when the final injury and dumping determinations are positive and where the preliminary LTFV determination is also affirmative, duties are typically imposed retroactively on imports that enter the US after the date of the preliminary LTFV finding. The "definitive" margin on which these duties are based is recalculated to reflect the actual dumping margins for imports entering after this date. Thus, an exporter who receives an affirmative preliminary LTFV determination and expects the final determination to be affirmative can nonetheless reduce AD duties, or even avoid them altogether, by raising the price on goods exported after the preliminary LTFV determination date. Under these circumstances, we expect an affirmative preliminary LTFV finding would lead to a sharp drop in the rate of imports and to a rise in prices, with these effects lasting for the remainder of the investigation. Moreover, the rate of imports might be expected to rise somewhat with the filing of a petition in anticipation of its future fall.[8]

A second explanation for investigation effects focuses on the importers of the products under investigation. US law requires that AD duties be imposed on the importer rather than on foreign exporters.[9] As such, an affirmative preliminary LTFV finding places the importer at considerable risk in terms of liability for future duty payments on any imports purchased after that date. Again, this suggests that an affirmative preliminary LTFV finding, coupled with an expectation that the final determination will be affirmative would lead to a sharp drop in the rate of imports and to a rise in prices, with these effects lasting for the remainder of the investigation.[10] Again, the rate of imports might, if anything, rise when a petition is filed in

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[8]As discussed above, a sufficiently large increase in the flow of imports between the date a petition was filed and the date of a preliminary LTFV determination could trigger the "critical circumstances" provisions of US antidumping law which allow duties to be imposed retroactively back to the date of filing.

[9]Exporters are allowed to reimburse importers for duty payments only if the agreement to purchase was made before the preliminary LTFV determination and where the products are exported before the final dumping determination (Dale 1980, p. 105).

[10]Anecdotal support for the trade-restricting effects of preliminary dumping findings is common. For example, in reference to a US antidumping petition brought by the National Knitwear & Sportswear Association against sweater producers in Hong Kong, South Korea,

anticipation of its future fall. For both of these investigation effects to be credible, the foreign competitor must regard the eventual imposition of duties as a significant possibility. Consequently, we expect both of these kinds of investigation effects to be associated with the outcome filing strategy.

A third alternative to the two interpretations of investigation effects put forward by Dale does not require a significant possibility of eventual duties in order to make it credible. For this reason, we associate these investigation effects with the process filing strategy. This strategy supposes that domestic firms use the AD investigation to dampen competition during times when costly price wars might otherwise erupt (see Staiger and Wolak 1991 and 1994).[11] A formal treatment of the anti-competitive effects of AD investigations centers on four features of AD law: i] the preliminary finding of injury, which is both necessary and sufficient to ensure that the investigation will run its year-long course unless the petitioner chooses to stop it, is relatively easy to secure since the ITC typically relies on information provided by the petitioner at this preliminary stage of the investigation; ii] price-cutting during the investigation period by foreign firms named in the petition will raise the likelihood of an affirmative dumping determination, iii] the prospect that foreign firms will face AD duties if they cut prices during the investigation period will reduce their incentive to do so; and iv] the competition-dampening investigation effect noted in iii] is only secured by filing the antidumping petition.

Of these four points, ii] is the least self-evident, and requires some elaboration here. A crucial step in the historically most popular method used by the ITC to determine injury--the trends analysis or bifurcation approach--requires establishing a causal link between dumped imports and injury to the domestic industry. Here, the ITC relies heavily on evidence of "underselling," that is, sales of the imported good in the domestic market at a price below that of the domestically produced "like product," and of a relationship between such underselling and increases in foreign market share. Moreover, in its final determination of injury, the ITC routinely considers data that become available during the period of investigation. Thus, were a foreign firm to cut its price in the domestic market during the period of investigation and gain market share, this would increase the likelihood of an ITC finding of increased foreign

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and Taiwan, *The New York Times* observes:

> The [preliminary dumping] margins were announced as retailers are about to place orders for delivery next fall. Some industry officials said prospects of higher prices, or just the uncertainty over what the new price levels would be, could cause some retailers to switch to domestic suppliers (*The New York Times*, April 24, 1990, p. C1).

[11]It is worth noting that the use of antidumping law as a tool to avoid price wars with foreign rivals has been explicitly documented in at least one instance. In January 1938, the South African Iron and Steel Corporation filed an antidumping petition against steel producers in the US for selling steel in the South African market at prices below those agreed upon by the International Steel Cartel. Dumping duties were levied and the Cartel's pricing arrangements restored (see Hexner 1943). Less direct evidence of firms turning to antidumping law to avert price wars is provided by Messerlin (1990) for the European Community chemical industry.

market share by reason of "underselling," and would consequently raise the likelihood of a final determination of injury and the prospect of AD duties.

Under these four points, we have argued (Staiger and Wolak 1991) that the filing of an AD petition can dampen competition and lead to greater market share for domestic firms during the entire period of investigation. These investigation effects occur because by filing an AD petition, the domestic industry is able to diminish the incentives for foreign firms to aggressively pursue domestic market share while the investigation is proceeding. Hence, with aggressive pricing policies now relatively less attractive for foreign firms, higher domestic prices (and lower imports) can be maintained even as domestic firms increase output.

Suspension and Withdrawal Effects

The imposition of AD duties is not the only way that AD proceedings can have a lasting effect on post-investigation import flows. Suspension agreements, negotiated between the ITA and foreign firms named in the AD petition, are clearly meant to have lasting impacts on import prices and volumes, and are monitored and enforced by the ITA to ensure that they do have such effects. The intent of a suspension agreement is to provide a non-duty alternative by which previous dumping activities can be halted. Therefore, it would be surprising if there were not a "suspension effect" in the data. A prominent example involving such a suspension agreement (though not falling in our sample period) was the 1986 US-Japan Semiconductor Trade Arrangement.

Petitions which are withdrawn by the domestic industry prior to a final determination are simply terminated. It might seem, *a priori*, that a petition withdrawal should allow import flows to continue at (or return to) pre-investigation levels just as in a negative determination. Prusa has provided a bargaining model which overturns this, *a priori*, view. According to Prusa, the AD investigation process provides the domestic firms with both a threat of AD duties against their foreign rivals as well as cover from domestic antitrust laws under the Noerr-Pennington doctrine. This allows domestic firms to coordinate on a more trade-restrictive arrangement with foreign firms which is then implemented upon the withdrawal of the AD petition. Therefore a withdrawn petition could have lasting effects on imports if the investigation process allows foreign and domestic firms to coordinate output or prices in subsequent periods.

The suspension and withdrawal effects do not help to distinguish between the process and outcome filing strategies, because we expect process filers to be primarily interested in the reduction of import flows associated with an ongoing investigation. However, we would not expect the magnitude of either the suspension or withdrawal effect to be particularly large for process filers when compared to the magnitude of these same effects for outcome filers.

Filing Strategies

It is natural to think of filing activity as reflecting the desire to secure a finding of dumping and the explicit remedies under the law that such a finding would bring forth; i.e., AD duties or a suspension agreement in lieu of duties. We call firms that pursue such a filing strategy

"outcome filers." However, the potential for the investigation and withdrawal effects as described above leads to the possibility of another filing strategy where firms file "meritless" AD petitions just to trigger the process. We call firms that pursue this second filing strategy "process filers."

For the process filing strategy to make sense, two logical conditions must hold. First, the AD investigation process itself must be obtainable even when a full investigation would not be warranted on the merits of the case. And second, the significant possibility of a dumping finding can not be a prerequisite for the sought-after investigation and/or withdrawal effects. The first condition is likely to be met given the strict 45-day time limit within which the ITC must make the preliminary injury determination, a time constraint which forces the ITC to rely heavily on information provided by petitioners at this stage of the investigation. Thus, firms that want the AD investigation process should find it relatively easy to obtain, regardless of the merits of their dumping claims.

However, what the process itself is worth when the case against foreign firms is weak is less clear. Dale's interpretations of the outcome filer investigation effects imply that petitions which were known by the industry to have little chance of resulting in a finding of dumping would be unlikely to have strong trade-restricting effects associated with the investigation process. The explanations underlying Dale's interpretations presume a significant probability of a final affirmative dumping determination. In contrast, the significant possibility of a dumping finding is not a prerequisite for the investigation effects under the process filing strategy. This is because the investigation effect under this interpretation comes in the form of a threat to "punish" or "harass" foreign firms with an AD duty if they should "misbehave" and compete too aggressively during the investigation period. Such a threat is made credible by filing the petition; because it is credible, the threatened duties need never be implemented. Thus, domestic firms may value the price-competition-dampening effects of AD investigations for their own sake. Hence, these firms may file such petitions with no expectation that they would actually result in duties or other remedies, but only to ensure that the foreign firms do not engage in aggressive pricing behavior during the investigation phase.

Outcome filers file AD petitions when their chances of securing a dumping determination are sufficiently strong. The investigation effect associated with such filers should correspond to the first two interpretations depicted above: the flow of imports should rise upon filing and fall at the point of an affirmative preliminary LTFV determination, remaining low until the conclusion of the investigation. Process filers file AD petitions without regard to their chances of securing a dumping determination, but rather when the risks of competitive price wars are sufficiently severe. In Staiger and Wolak (1991), we argue that this occurs when capacity utilization falls below a critical level, and thus we will consider the role of capacity utilization as a predictor of the filing activity of process filers. The investigation effects associated with process filers should correspond to the third interpretation depicted above: the flow of imports should fall upon filing and remain low until the conclusion of the investigation.

Summary of Evidence on Process and Outcome Filing Strategies

The empirical work in Staiger and Wolak (1994) focused on 1980 to 1985, because major changes in the structure of US AD law occurred with the passage of The Trade Agreement Act of 1979. Modifications of this act were made by The Trade and Tariff Act of 1984, but none of these are directly relevant to the aspects of the administrative process we consider here.

Data Sources

The source for the industry-level economic magnitudes used for the work reported in Staiger and Wolak (1994) is the National Bureau of Economic Research Trade Data File. It contains domestic shipments, imports and exports, information for 450 US manufacturing industries by 4-digit 1972 SIC from 1958 to 1985. It also contains information on various industry-level economic aggregates such as the level of employment and the size of the capital stock, as well as an industry-level output price deflator. We used this price deflator to convert all nominal dollar magnitudes to 1972 dollars.

The data source for information on the filing date for all antidumping suits and the dates for the subsequent stages of the suit resolution process is the National Technical Information Service's Trade Action Monitoring System [TAMS] Pending Investigation Report. For purposes of the investigation, the ITC links the products under investigation to Tariff Schedules of the United States [TSUS] product codes. Thus, for each petition the TAMS dataset records the TSUS codes for the products which are allegedly being dumped and the petition's disposition in the current month. We also obtained a year-by-year concordance between TSUS product codes and 1972 SICs from the Commerce Department's Foreign Trade Division Imports Extract Master Concordance. This concordance allows us to assign each antidumping suit filed to a 4-digit SIC industry. Staiger and Wolak (1994) discuss further details on the datasets used.

Econometric Modeling Framework

Our econometric model characterizes the joint distribution of three variables--suit filing activity, imports, and domestic output--for each import-competing industry from 1980 to 1985. This distribution is conditional on the unobserved filing strategy pursued by each specific industry. The primary motivation for estimating filing equations jointly with the import and domestic output equations is to examine potential existence, as outlined in the preceding section, of two distinct AD suit filing strategies. Although the specific filing strategy pursued by a firm is unobservable, each filing strategy implies a different set of predictors of future filing activity and different impacts of the various stages of the suit resolution process on domestic output and imports. We use these differences in behavior to infer differences in filing strategies across industries.

For each filing strategy we specify the same joint distribution of filings over our sample period. The only difference between the filing equations estimated for the two filing strategies is what variables enter into the conditional mean of filings for a each year and industry. Let

f_{git} be the number of AD suits filed in industry i for good g in period t, where g=1,...,G_{it}, t=1,...,T and i=1,...,N. Because AD suits are filed at the TSUS code level, for the purposes of this paper a good are defined by TSUS product codes. The vector X_{it} is composed of the observable characteristics of industry i as of the beginning time t which affect the distribution of filings in that industry during that time period. The discrete conditional distribution for f_{git} given X_{it} depends on a different X_{it} for each filing strategy. We aggregate over all G_{it} products in a SIC industry i during time period t to obtain the conditional distribution of f_{it}, the number of filings in industry i during time period t. Using this conditional distribution, we then compute the joint distribution of f_{it} for t=1980 to 1985. Staiger and Wolak (1994) describes this process in detail.

The model of the impact of the AD process on industry-level imports and output first specifies the product class import equations and output prediction equations and then aggregates these to obtain the industry-level equations. Let IMP_{git} denote the level of imports for product class g in industry i in time period t. Let OUT_{git} denote the level of output produced domestically in product class g in industry i in time period t. We treat time period t as the interval of time (t, t + 1).

The goal of the Staiger and Wolak (1994) framework is to measure the within-year effects of the stages of the AD suit resolution process from annual magnitudes. To do this, we first specified models for the rate of imports and domestic output within any given year. The models incorporated how each of the stages of the suit resolution process impacts the rate of change in imports and domestic output. We then aggregated these two within-year flow equations to obtain the annual level of imports and domestic output. Aggregating these TSUS code-level total annual import and competing domestic output equations over all products in each 4-digit SIC yields equations which can be estimated using our industry-level data. This across-product aggregation process clarifies precisely how our industry-level annual indexes of dumping suit activity are constructed from the product-level indexes.

The conditional mean functions for industry-level imports and output, normalized by the number of products in the industry during time period t (IMP_{it}/G_{it} and OUT_{it}/G_{it}, respectively), for our joint outcome and process filing strategies model are:

$$\mu_{it}^{k,j} = \beta^{k,j}\theta_i + \xi_t^m + \beta_1^{k,j} OGP_{it}/G_{it} + \beta_2^{k,j} OGPLFV_{it}/G_{it} + \beta_3^{k,j} OGSUS_{it}/G_{it} + \beta_4^{k,j} OGWD_{it}/G_{it} + \beta_5^{k,j} OGD_{it}/G_{it} \quad (1)$$

where k=m,o (for imports and output) and j=O,P (for outcome and process filers), where

$$OGP_{git} = \int_t^{t+1} I_{git}^{OGP}(s)ds, \quad OGPLFV_{git} = \int_t^{t+1} I_{git}^{OGPLFV}(s)ds, \quad OGSUS_{git} = \int_t^{t+1} I_{git}^{OGSUS}(s)ds,$$

$$OGWD_{git} = \int_{t}^{t+1} I_{git}^{OGWD}(s)ds, \quad and \quad OGD_{git} = \int_{t}^{t+1} I_{git}^{OGD}(s)ds.$$

Each of these five variables is the sum over the associated variable aggregated over the G_{it} TSUS products in industry i for year t. The variables $I_{git}^{k}(s)$, (k=OGP, OGPLFV, OGSUS, OGWD, and OGD) count, respectively, the number of currently ongoing AD petitions (OGP), ongoing affirmative preliminary LTFV determinations (OGPLFV), ongoing suspended suits (OGSUS), ongoing withdrawn suits (OGWD), and ongoing duties (OGD) for all $s \in [t,t+1)$ in product class g in industry i and time period t. The variable $I_{git}^{OGP}(s)$ turns on at the filing date of the suit and remains on until the suit's final disposition date. The variable $I_{git}^{OGPLFV}(s)$ remains on from the date of the affirmative preliminary LTFV decision until the suit's final disposition date. The final disposition of a suit is determined by one of the following four events: 1] a negative final determination, 2] the imposition of duties, 3] the suspension of the investigation, or 4] the withdrawal of the suit by the petitioner. Using this variable we can construct the integrated, industry-aggregate indexes of activity in each of these portions of the suit filing process for year t. The variable $I_{git}^{OGSUS}(s)$ remains on as long as there is an ongoing suspension agreement for product g in industry i during period t. The variable $I_{git}^{OGWD}(s)$ remains on as long as there is an ongoing withdrawal agreement for product g in industry i during period t. The variable $I_{git}^{OGD}(s)$ remains on as long as there is ongoing dumping duties imposed on product g in industry i during period t. The coefficients β_i^{kj}, (i=1,2...5, k=o,m) quantify the impact of a one unit change in these count variables on the annual rate of change in imports and output in industry i during time period t for outcome filers if j=O and for process filers if j=P.

For each filing strategy, we specified a joint distribution for IMP_{it}/G_{it} and OUT_{it}/G_{it}, which we then used to compute the joint density of these variables for t=1980 to 1985. We then combined this joint density with that for f_{it} for the same filing strategy and time period. We introduce unobserved heterogeneity into the conditional mean functions for these 18 variables (3 variables--filings, imports, and domestic output--for 6 years) to account for both contemporaneous correlation between filings, imports and output within the same industry, and correlation over time between these same variables for the same industry.

We now discuss the variables entering X_{it} for each filing strategy. For the outcome filing strategy, candidate variables for inclusion in X_{it} are those used to determine injury in an antidumping suit proceeding. Since filers are interested in eventually obtaining duties, they will rationally file based on the values of these variables. Although the domestic industry must concern itself with the establishment of injury, a determination of LTFV sales by the foreign firm is also necessary for dumping to be found. Moreover, the margin of final sales in the domestic market relative to LTFV, as found by the Commerce Department, determines the magnitude of the antidumping duties that the petitioning industry can expect.

The Commerce Department's final LTFV margin is extremely unpredictable and there are biases inherent in the process used to determine its level which favor finding a positive margin. This uncertainty is due in part to different methodologies, sometimes for a single suit,

that can be used to determine this margin. Boltuck and Litan contains several papers which discuss the large amount of uncertainty inherent in the dumping margin determination process. The two papers by Francois, Palmeter, and Anspacher and Boltuck, Francois, and Kaplan in the Boltuck and Litan volume are particularly persuasive in concluding that there are strong biases in the process towards finding a positive dumping margin. For all of these reasons, we hypothesize that firms file primarily based on the observable industry characteristics that determine injury. We allow a sufficiently rich stochastic structure in our model to account for unobservable differences in filing behavior across industries. The sample frequencies of the preliminary and final LTFV determinations are consistent with the view that the LTFV standard is not very difficult to meet.

A major indicator of injury to the petitioning firms is the import penetration ratio [$IMPEN_{it} = IMP_{it}/(IMP_{it} + OUT_{it})$]. A large value for IMPEN is indicative of a large foreign presence in the domestic market which may be injurious to the domestic firms. A second variable which is used to assess injury is the domestic firm's capacity utilization rate, which we represent at the industry level by $CAPU_{it} = OUT_{it}/CAP_{it}$ (where OUT_{it} is real shipments and CAP_{it} is real capital stock). We include $IMPEN_{it-1}$ and $CAPU_{it-1}$ in X_{it}, because they are both predetermined as of the beginning of year t. We also include time fixed effects in X_{it} to account for any trends in filing activity not accounted for by changes in observable or unobservable industry characteristics. Finally, we include several additional variables to account for the fact that the magnitude of IMPEN and CAPU necessary to find harmful dumping may vary with the size and the structure of the domestic industry. See Staiger and Wolak (1994) for details.

For the process filing strategy, the theoretical results discussed in "Antidumping Law" guide our selection of variables to include in the filing rate model. These results imply that process filers decide to initiate antidumping suits based purely on the level of capacity utilization in their industry. Consequently, the filing rate function for the joint distribution of filings, imports, and output for the process filing strategy should contain only capacity utilization. The theory gives no guidance concerning the dynamics of the impact of capacity utilization on filing. We included lags of capacity utilization up to the point where the null hypothesis of excluding further lags could not be rejected. This led to the inclusion of $CAPU_{it-1}$ and $CAPU_{it-2}$.

Because the filing strategy used by a firm is unobservable, we needed to allow for this in our econometric model of filings, imports, and output. In Staiger and Wolak (1994) we argued that there are observable variables that should increase the probability a given industry is using the process filing strategy versus the outcome filing strategy. We specified the filing strategy used by an industry for our entire sample time period as a latent indicator (0-1) random variable y_i, where $y_i = 1$ if the industry uses the process filing strategy and $y_i = 0$ if the industry uses the outcome filing strategy. The probability that y_i takes on the value 1 is assumed to depend on observable and unobservable industry characteristics at the beginning of our sample period.

Several of these characteristics are meant to reflect variation in the cost of using AD law across industries. The process filing strategy, whose benefits are relatively short-lived, is less

likely to be chosen by industries with high filing costs. The first characteristic is the beginning of the sample degree of unionization in the industry. All firms in an industry benefit from the protection provided by an AD suit, but only those firms filing the suit bear the costs. We expect more highly unionized industries to have higher probabilities of being process filers. A strong union presence in an industry provides additional organizations to assist in overcoming the coordination and cost-sharing problems associated with filing an AD suit on behalf of the industry. The second factor is the size of industry, which we measure by employment level at the beginning of the sample. There is a substantial fixed cost component to filing an AD suit, which a large industry can share over a greater number of firms and employees to reduce the per firm and per employee suit filing cost. This in turn means that less per firm expected benefits are necessary to trigger an AD suit petition, making process filing more likely. The final variable is the import penetration ratio at the beginning of the sample. We expect larger values of this variable to be associated with higher probabilities of process filing. Unless firms are faced with substantial import competition there is very little reduction in domestic output due to these imports and therefore only a small benefit to reducing the flow of these imports. Consequently, the firms in the industry will have little incentive to concern themselves with pursuing temporary protection through AD law.

The unrestricted form of our two-strategy model allowed for the existence of two separate joint distributions of filings, imports, and domestic output, conditional on the unobservable latent variable y_i. It placed no restrictions on which variables enter the filing rate function for either strategy. It also placed no restrictions on signs and relative magnitudes of the coefficients for the five indicator variables in the mean function for imports and domestic output for either strategy. Finally, our unrestricted model placed no restrictions on how observable characteristics of the industry affect the probability it is using either of the two filing strategies. If certain parameter restrictions consistent with our outcome/process filer dichotomy can be imposed on this unrestricted two-strategy model, then we can conclude that there is evidence for the simultaneous existence of these two kinds of filers.

The coefficient estimates in filing rate model, and the import and output models obtained in Staiger and Wolak (1994) differ across the two filing strategies in the manner predicted by our previous discussion of the outcome and process filing strategies. Evidence consistent with the co-existence of outcome and process filers is that: 1] the restrictions on which variables enter into the process and outcome filing equations are not rejected by the data; and 2] the sign restrictions on the coefficients associated with our five petition-stage variables are not rejected for the import and domestic output equations. Table 1 provides means and standard deviations for the variables used in the Staiger and Wolak (1994) analysis.

Table 2 presents the coefficient estimates for the Probability of Process Filer equation. Because we assume that $pr(y_i = 1)$ has a probit form, the coefficients associated with the three regressors have the same interpretation as those from a probit model. The estimates imply that the probability an industry is a process filer is increasing in the percentage of all workers in the industry that are unionized in 1979, the level of industry-wide employment in 1979, and

Table 1. Means and standard errors of variables used in the Staiger and Wolak (1994) analysis

2028 Year-Industry Observations (i=1,...,N=338 industries and t=1,...,T=6 years)			
Variable	**Definition**	**Mean**	**Standard Error**
f_{it}	Total Filings	0.928	13.69
Git	Total TSUS Codes	33.63	131.86
IMP_{it}	Real Imports in 10^6 1972 dollars	291.14	1151.19
OUT_{it}	Real Output in 10^6 1972 dollars	2168.61	4161.81
EMP_{it}	Industry Level Employment x 10^3	40.86	62.18
$VADD_{it}/OUT_{it}$	Value-Added per Dollar of Real Output	0.482	0.134
$CAPU_{it}$	Capacity Utilization Rate	2.799	1.899
$IMPEN_{it}$	Import Penetration Ratio	0.119	0.149
OGP_{it}	Ongoing Antidumping Petition	0.547	8.556
$OGPLFV_{it}$	Ongoing Preliminary Less Than Fair Value	0.159	2.711
$OGSUS_{it}$	Ongoing Suspension	0.177	3.418
$OGWD_{it}$	Ongoing Withdrawal	0.558	12.047
OGD_{it}	Ongoing Duties	0.300	3.312
$UNION79_i$	Percent of Industry's Workers Unionized in 1979	32.47	12.43

Table 2. Probability of process filer model results

N = 338 Industries		
Variable	**Coefficient Estimate (Standard Error)**	**Sample Average Probability Elasticity (Standard Error)**
UNION79	0.012 (0.006)	0.85 (0.32)
EMP79	0.004 (0.001)	0.36 (0.05)
IMPEN79	1.297 (0.531)	0.27 (0.08)

the import penetration ratio for this industry in 1979. To provide magnitudes which are more amenable to interpretation, we compute the average over all 338 industries in our sample. These can be interpreted as the percentage increase in the probability that industry i is a process filer brought about by a one percent increase in that variable.

The first and second columns of Table 3 present the filing equation estimates for the outcome and process filing strategies. All of the variables enter in the manner predicted by the outcome filing strategy. The filing equation excludes all variables but two lags of CAPU consistent with the process filing strategy. The addition of the remaining three regressors, IMPEN, EMP, and VADD/OUT, to this equation did not add any statistically significant explanatory power to the model (the likelihood ratio test does not reject the null hypothesis that these three coefficients are jointly zero). This result lends support to the presence of two distinct filing strategies.

Table 4 presents the import and output equations for both filing strategies. The results for the outcome filer model yield investigation effects similar to the effects predicted by the outcome filing strategy outlined previously. The results for the process filer model present a different story of the impacts of AD suits on imports and output. All of the investigation effects beyond simply the filing of an AD suit are considerably smaller in absolute value and quite imprecisely estimated. The only investigation effect which seems present is that predicted by the process filing strategy. Under this strategy, the filing of an AD suit predicts an immediate reduction in the rate of imports and an increase in the rate of domestic output. The remaining stages of the process appear to have little impact on the rate of imports or domestic output. Even the impact of AD duties, although estimated to be trade-restricting, is not very precisely estimated.

Table 3. Filing rate equation estimates from the two filing strategy model

N = 338 Industries for T = 6 Years		
	Coefficient Estimate (Standard Error)	
Variable	**Outcome Filing Strategy**	**Process Filing Strategy**
Constant	3.510 (1.102)	
$IMPEN_{it-1}$	1.700 (0.534)	
$CAPU_{it-1}$	-0.425 (0.139)	-0.250 (0.117)
$CAPU_{it-2}$		-0.140 (0.063)
EMP_{it-1}	0.009 (0.003)	
$VADD_{it-1}$ /OUT_{it-1}	-2.404 (1.723)	
$\sigma \times 10^4$	8.959 (2.045)	
YEAR81	-0.518 (0.221)	
YEAR82	0.041 (0.213)	
YEAR83	0.406 (0.192)	
YEAR84	0.271 (0.093)	
YEAR85	0.805 (0.285)	

Table 4. Import and output equation estimates from the two filing strategy model

N = 338 Industries for T = 6 Years				
	Coefficient Estimate (Standard Error)			
	Outcome Filer Model		**Process Filer Model**	
Variable	**Import Equation**	**Output Equation**	**Import Equation**	**Output Equation**
OGP_{it}/G_{it}	12.58 (6.973)	-3.25 (4.30)	-32.58 (12.39)	16.94 (10.38)
$OGPLFV_{it}/G_{it}$	-48.59 (20.39)	9.74 (4.23)	-3.25 (2.29)	3.69 (6.39)
$OGSUS_{it}/G_{it}$	1.33 (4.03)	21.44 (9.49)	-1.93 (3.09)	3.02 (7.83)
$OGWD_{it}/G_{it}$	-0.04 (2.14)	10.09 (11.44)	-3.22 (2.98)	-4.47 (4.81)
OGD_{it}/G_{it}	-24.69 (11.20)	15.55 (9.49)	-14.94 (9.03)	12.46 (8.32)
YEAR81	0.065 (0.012)	1.27 (2.10)		
YEAR82	0.823 (0.603)	-6.43 (8.20)		
YEAR83	2.483 (0.948)	-8.29 (10.93)		
YEAR84	5.707 (2.394)	7.85 (4.74)		
YEAR85	8.783 (4.203)	8.19 (5.75)		

Figure 2 provides depictions of the import, output, and the sum of imports and output effects of various hypothetical petitions implied by the estimation results for the two filing strategies. The figures, which are meant only to be suggestive of the kind of import and output effects that might accompany an AD investigation, are constructed under the assumption that the preliminary LTFV determination occurs 5 months into the investigation, and final determinations (if they occur at all) occur at the end of the 12th month of the investigation. These timing assumptions approximate the statutory limits imposed on the different phases of the investigation process in the absence of "extraordinary complications." All import and output effects are measured as deviations from zero. Panel a depicts the effect on the levels of imports, output, and the sum of imports and output of a petition that is filed by an outcome filer in month 6, receives an affirmative preliminary LTFV determination in month 11, and a negative final determination in month 18. Panel b depicts the import, output and net import and output effect for the same investigation history when filed by a process filer. As Figure 2 depicts, there appears to be a striking difference in the pattern of import, output and net response to the various phases of the investigation process across the two filing strategies in a way that is consistent with our outcome and process filer interpretations.

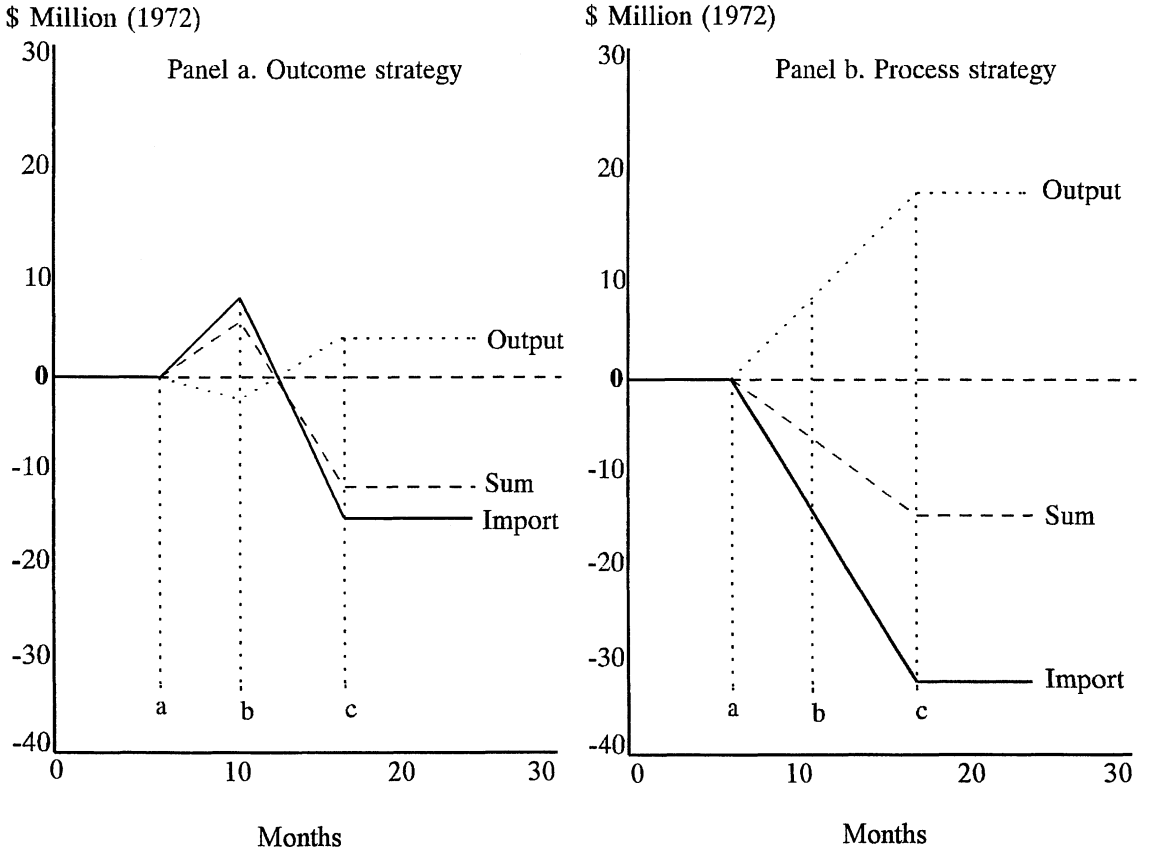

Figure 2. Effects of a hypothetical petition on import and output values and their sum.
a. The petition is filed.
b. An affirmative preliminary LTFV determination is made.
c. A negative final determination is made.

The net effect results for outcome filers indicate significantly negative net import reduction and output enhancement effects from the ongoing preliminary less than fair value and ongoing duty stages of the suit resolution process under the outcome filing strategy, and hence net domestic consumer welfare losses (Table 5). The net effect results for process filers imply that the only nonzero net effect is the large OGP_{it}/G_{it} effect (Table 5). This indicates a substantial net import and output reduction from the filing of a petition under the process filing strategy. Consequently, there are also welfare losses to domestic consumers under the process filing strategy. More importantly these welfare losses result from the filing of an AD petition which is evidently motivated by a desire to secure the trade restricting effects of the investigation alone.

Table 5. Import net effects from the two filing strategy model

	Coefficient Estimate (Standard Error)	
Variable	**Outcome Filer Model**	**Process Filer Model**
OGP_{it}/G_{it}	9.33 (6.14)	-15.63 (6.38)
$OGPLFV_{it}/G_{it}$	-38.85 (15.37)	0.45 (3.29)
$OGSUS_{it}/G_{it}$	22.77 (17.82)	1.09 (3.84)
$OGWD_{it}/G_{it}$	10.05 (12.03)	1.26 (4.32)
OGD_{it}/G_{it}	-9.14 (4.36)	-2.49 (2.13)

Although as emphasized at the beginning of this section, the filing strategy pursued by a given industry is a unobservable, our model does allow the computation of the probability that an industry is a process filer given the estimated parameters of our econometric model and the vector z_i from the equation:

$$pr(y_i = 1 \mid z_i) = \sum_{k=1}^{K} \pi_k \Phi(z_i'\alpha + \theta_k). \qquad (2)$$

The sample average of these probabilities gives an estimate of the proportion of industries pursuing the process filing strategy. For our parameter estimates, the sample average of the probability that an industry is a process filer is 3.5 percent. Assuming the validity of our two strategy model, this implies that approximately 10 industries in our sample are process filers, with the vast majority being outcome filers. This is consistent with our initial view that outcome filing is the major use of AD law.

To further investigate the implications of our two filing strategy model we computed the value of (2) for all observations in our sample and ranked industries by the probability of

being a process filer. The three highest probability process filer industries are: SIC-3312, Blast Furnaces, steel works, and rolling mills; SIC-3714, Motor vehicle parts and accessories; and SIC-3711, Motor vehicles and passenger car bodies. Other notable industries in the top ten highest probability process filer category are: SIC-3721, Aircraft; and SIC-3662, Radio and television transmitting, signaling and detection equipment and apparatus.[12] Once we move outside the ten highest probability process filer industries, the probability that any of the remaining industries is a process filer falls rapidly from less than 10 percent to 0.7 percent. Consequently, all of the remaining industries have a very low estimated probability of following the process filing strategy.

Finally, recall that as we have defined them, outcome filers initiate suits primarily to obtain the protection that comes with a finding of dumping and the explicit remedies that follow (duties or suspension agreements). On the other hand, process filers are primarily interested in the temporary protection afforded by the AD suit resolution process and do not file with the intent of eventually obtaining explicit remedies. Thus, a final implication of the process filing strategy is that the rate of duties per suit filed should be substantially lower for the process filers relative to the outcome filers. To investigate this hypothesis we took the ten highest probability process filer industries and computed the sum of OGD_{it} over these industries for all six years in our sample. We then divided this sum by the sum of f_{it} over these same industries for all six years in our sample. This ratio gives the per-suit level of duty activity for this process filer sample. We repeated this same calculation for the remaining observations in our sample to compute the per-suit level of duty activity for this outcome filer sample. Dividing the process filer ratio by the outcome filer ratio yields 5.5. This indicates that, for our sample, a product level AD suit is 5.5 times more likely to end in duties for an outcome filer than for one of our ten highest probability process filers. This result is consistent with the view that process filers file less for the eventual protection provided by duties than do outcome filers.

ITC Injury Determination Method and the Viability of the Process Filing Strategy

The ITC is an independent quasi-judicial body composed of six commissioners. The positions on the Commission are usually split equally between the two major political parties, although occasionally Commissioners with no political affiliation have served. The Commission's chairmanship also alternates between the two political parties. In making its

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[12]Although we would like to caution that these probabilities are conditional on the validity of both our underlying process filer theory and our econometric model, anecdotal evidence seems to supports the plausibility of these results. For example, concerning the filing behavior of the steel industry (the industry most likely according to our results to be a process filer) *The Economist* writes:

> One lawyer who specializes in international trade says that, for a struggling mill, $400,000 to bring an antidumping suit is money well-spent, even without a final ruling; the process gums up the trade gears sufficiently to steer buyers back to domestic steel.

material injury determination, the ITC is instructed to consider the impact of the dumped imports on factors including output, sales, profits, investment, employment, output growth, and capacity utilization. However, each commissioner has discretion as to how he or she uses this information to determine whether the injury suffered exceeds his or her subjective material injury threshold.

There has been some research assessing the impact of political influence on the ITC decisionmaking process. The evidence to date is most consistent with the view that the economic factors outlined above are the primary predictors of the ITC's decisions. Moore analyzes all individual commissioner's votes for a sample of cases from 1980 to 1986 and finds evidence consistent with the view that commissioners make their injury decisions according to the criteria set forth in the enabling legislation. In particular, he finds that falling production and increased volumes of alleged dumped imports are the primary factors in the commissioner's decisions. He does however, find evidence that political variables, primarily petitions involving the constituencies of the Senate trade subcommittees, can increase the probability of affirmative commissioner votes. Hansen also finds that favorable ITC decisions are more likely if an industry has plants in the districts of key members of Congress. Anderson calls into question these results from the Hansen and Moore studies. His most damaging criticism is that these studies lack the relevant economic variables in the model to predict ITC decisions. Anderson finds, in a model which includes all relevant economic variables used by commissioners to determine injury to the domestic industry from dumping, several of these variables are very important predictors of the ITC decision. He also finds that the addition to the model of political variables similar to those used by Hansen and Moore do not significantly improve the predictive power of his model of ITC decisionmaking. In light of this evidence, it is reasonable to conclude that the ITC injury determination process functions in a manner that is consistent with the directives given in the enabling legislation.

There are two primary methods, incorporating these economic variables the ITC is directed to look at, used by individual commissioners to make their injury determination. The historically more popular approach is the so-called bifurcation or trends approach. The second approach, which has become more practical with the advent of increases in computing technology, is the unitary (or but for) approach. This approach is also been referred to as the comparative effects or comparative statics approach (Anderson 1992). Boltuck provides a complete discussion of these two approaches.

Bifurcation or Trends Analysis Approach

The bifurcation or trends approach must answer two questions affirmatively in order to obtain a positive injury decision. The first is whether or not the US industry making the like-product is materially injured. In particular, is the industry financially or otherwise unhealthy, or in declining health? Indications of declining health are such things as low profit rates, low rates of capacity utilization or low levels of output. Declining trends in these variables are also important indicators of declining health of the like-product domestic industry. Answering this question is called the "injury test" portion of the overall injury determination.

If the industry is materially injured, or more precisely in poor or declining financial health, the bifurcated or trends approach, then asks whether the alleged dumped imports have made more than a *de minimus* contribution to the industry's condition. Answering this question is called the "causation test." It applies a contributory causation standard, which permits a large fraction of the injury to be caused by factors other than the alleged dumped imports.

Two aspects of the trends analysis or bifurcation approach are that commissioners applying this approach put substantial weight on the US industry's current financial condition and trends in financial performance. A crucial feature of the causation test is the existence of a positive "margin of underselling" which is defined as $(P_D - P_I)/P_I$, were P_D is the price of the domestic like-product and P_I is the price of the imported good sold in the US. As discussed previously, commissioners relying on this approach look for a relationship between a positive or increasing margin of underselling and increases in the market share of the alleged dumped imports in order to affirmatively answer the causation question. This is in keeping with the directives of AD that the material injury must be by reason of the subject imports.

Unitary or "But for" Approach

The unitary approach can be thought of as evolving from a literal interpretation of the directive of the enabling legislation that the injury measured must be directly attributable to the imports under investigation. It is also motivated by developments in the construction and solution of economic simulation models. The unitary approach asks whether the US industry would have been materially better off "but for" the sales of the dumped imports. If so, then the industry is materially injured by reason of imports. Thus, the distinguishing feature of this approach it that it compares the condition of the US industry in the presence of "dumped" imports with an analytic estimate of the condition of the industry were such imports not present. To compute the condition of the market in the absence of these "dumped" imports, the commissioners use an economic simulation model embodying the relevant behavior parameters for that industry.

Most commissioners who have used the unitary approach have interpreted the counterfactual absence of dumped imports to be equivalent to the absence of the underlying unfair trade practice, but not the absence of the allegedly dumped imports. The distinction here is that the elimination of the unfair trading practice would most likely not result in the complete elimination of all of imports. Consequently, removal of all allegedly dumped imports from the US market in a counterfactual experiment would necessarily confer greater benefit to the US industry than simply the elimination of the alleged LTFV price.

Under the unitary approach, these estimates of the impacts of dumping on the US market are obtained through the use of comparative static economic models. The most commonly used model is ITC staff's Comparative Analysis of Domestic Industry Condition (CADIC) model. This model is an Armington-style partial equilibrium model. The Armington assumption is that consumers or industrial end users regard products as differentiated based on the nation of origin. The models rely on market shares of foreign and domestic firms in the US market, behavioral own- and cross-price elasticities for imported and like-domestic products, and the dumping margin. According to Boltuck, submissions by both sides of the

AD investigation have increasingly focused on defining reasonable, empirically-supported ranges for the required parameters.

Viability of the Process Filing Strategy

The unitary and bifurcated approaches favor differing situations. The unitary approach favors an affirmative outcome for US industries in a good or improving financial condition. The bifurcation approach necessarily finds a lack of injury in these instances, but the unitary approach still has a chance to demonstrate that US industry would have been better off but for the dumped imports. The unitary approach also favors those situations when the ITA has reported a large dumping margin, regardless of whether this margin is reflective of actual practices, because this variable is used to determine how much the import price must rise in the counterfactual calculation used to compute the industry equilibrium without the alleged sales at LTFV.

Another important distinction between the unitary and bifurcation approaches is the distinction between bilateral price reductions and unilateral price reductions. In the bifurcation approach it important that unilateral price reductions by imports occur in order for the positive margin of underselling necessary for an affirmative answer to the causation question. If both the import and domestic like-product prices fall by the same amount, a positive margin of underselling will not exist and the an affirmative answer to the causation question will not be possible. However, for the unitary approach the only issue is whether any imports are being sold at less than fair value regardless of level of this import price relative to the domestic like-product price. If the imports that result from this LTFV import price result in material injury to the domestic industry, then the unitary approach would yield a positive injury determination.

Because the bifurcation approach requires either poor or declining financial health for the domestic industry and the existence of a positive margin of underselling by the importing firm for an affirmative injury determination, it is ideally suited to support the process filing strategy. Recall that under the process filing strategy, US firms are attempting maintain prices above those which would exist under the static one-period non-cooperative equilibrium between foreign and domestic firms given the current state of demand in the domestic market. We would expect that maintaining these prices would be particularly difficult in those periods in which domestic demand is particularly low and, correspondingly, when the domestic industry is in poor or declining health. In these circumstances, what the domestic industry would like is a third-party to monitor and punish any price cuts designed to steal market share from the domestic industry. This is precisely what the ITC does under the bifurcation approach.

Because of the requirement of a positive margin of underselling that leads to a surge in imports and hence a fall in the market share of the domestic like-product, the injury determination process using the bifurcation approach serves to monitor precisely the kind of price-cutting behavior that these domestic firms would like insurance against. Consequently, in exchange for the cost of filing of an AD suit petition, process filers get insurance against unilateral price cuts by the importer during the investigation phase that lead to surges in

imports and declines in the domestic market share. If the domestic industry was in poor or declining health (e.g., there was low demand for its product) and the importer engaged in these kinds of unilateral price cuts during the AD investigation process, commissioners using the bifurcation approach would find material injury to domestic like-product and given the very low standard for sales at LTFV and the biases in favor of an affirmative decision, dumping duties would very likely follow.

Because it uses the "but for" criterion to assess injury, the unitary approach to assessing injury is not nearly as conducive to the process filing strategy. As discussed above, the unitary approach does not require a positive margin of underselling. As emphasized by Boltuck, dumping can injure US producers even if imports oversell the US like product. In addition, as discussed above, poor or declining health of the domestic industry is not a necessary condition for an affirmative decision under the unitary approach.

Perhaps the most surprising evidence that the unitary approach is less conducive to the process filing strategy is that the US steel industry (the industry Staiger and Wolak (1994) estimates has the highest probability of being a process filer) has challenged the legality of the unitary approach in the US Court of International Trade [CIT]. According to Boltuck, the steel petitioners charge that the CIT has approved only the contributory causation standard that underlies the bifurcation approach causation test, to the exclusion of the unitary approach. As discussed above, it is precisely the bifurcation approach's causation test that allows the process filing strategy to be viable.

Summary

Staiger and Wolak (1994) found evidence of two kinds of filing strategies: "outcome" filers who file petitions for the possibility of seeing duties imposed, and "process" filers who file for the trade-restrictive effects of the investigation process alone. We also were able compute the probability that each industry in our sample used each of these strategies. Using these probabilities we found that the steel and motor vehicle industries were among the highest probability process filer industries. We also found evidence that this strategy is pursued by a small fraction (less than 4 percent) of industries in our sample.

Given this evidence in favor of the process filing strategy, we then asked the question, what aspects of the ITC injury determination process favor this strategy. We argued that the historically most popular trends or bifurcation approach to injury determination supported the process filing strategy. Given our view that process filing is contrary to the intent of US law, this paper provides further evidence against the use of bifurcation approach. Because the unitary or "but for" approach is not nearly as hospitable to the process filing strategy, this paper also provides evidence for the expanded use of this approach to injury determination.

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