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ABSTRACT

In 1984 Congress amended the antidumping (AD) and countervailing duty (CVD) laws, mandating that the International Trade Commission (ITC) "cumulate" imports across countries when determining injury. Since 1984 the cumulation provision has been invoked in over 50 percent of the AD and CVD cases. We estimate that cumulation increases the probability of an affirmative injury determination by 20 to 30 percent and has changed the ITC's decision (from negative to affirmative) for about one-third of cumulated cases. We also show that the protective effect of cumulation increases as the number of countries involved increases, holding import market share constant. That is, cumulated imports have a super-additive effect on ITC decision-making.

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1. INTRODUCTION

In recent decades, the rise in international competition has led many U.S. firms to seek protection from foreign imports. Particularly noteworthy in the 1980s was the increased use of the U.S. "unfair" trade laws. Two popular trade statutes, the antidumping (AD) law and the countervailing duty (CVD) law, allow U.S. firms or industries to seek protection from alleged unfair trade practices, namely dumping and subsidization.

Under these laws, U.S. firms or industries apply simultaneously to the Department of Commerce (DOC) and the U.S. International Trade Commission (ITC); these agencies have the authority granted by Congress to determine, respectively, whether or not an unfair practice has occurred and whether or not the unfair practice has caused injury to the U.S. industry. Affirmative decisions by both of these bodies generally result in the imposition of higher tariffs designed to counter the alleged unfair practice.

Since 1974, the U.S. Congress has made a number of major changes to the AD and CVD laws, largely in response to domestic industry pressures. These amendments were intended to either increase the applicability of the laws or make the unfair practice and injury requirements easier to satisfy. Although several authors have analyzed the decision-making process of the ITC [Hansen, 1990; Moore, 1992; Baldwin and Steagall, 1994], none have incorporated the fact that Congress often amends the rules that define how decisions are to be made. There is no empirical evidence of the impact of the *changes* in the statutes on trade policy. Authors that do discuss the amendments tend to focus on legal issues and only offer conjectures as to the consequences of the revisions [Bello and Holmer, 1985; Lande and VanGrasstek, 1986; Horlick and Oliver, 1989]. Although some observers cite the increased incidence of affirmative AD and CVD decisions as de

facto evidence of the effect of the amendments, this type of casual empiricism should be viewed with skepticism. Many possible explanations for changes in ITC behavior—macroeconomic slowdown, election year political pressures, etc.—have nothing to do with the changes in the statutes. Without careful econometric analysis, attributing observed changes in protection to statutory changes will almost surely misrepresent the true effect of the amendments.

The main purpose of this paper is to provide such an econometric analysis and quantify the protective effect of arguably the most important amendment to the AD and CVD statutes during the 1980s: mandatory cumulation. Enacted in the Trade and Tariff Act of 1984, this provision requires the ITC to cumulate imports when a trade dispute involves imports from multiple sources. Without cumulation, imports are evaluated on a country-by-country basis; when cumulation is applied, the ITC aggregates all "like" imports from all countries under investigation and assesses the combined impact upon the domestic industry. Without cumulation, the volume from any one country is less likely to comprise a significant share of the domestic market and therefore is less likely to cause injury. On the other hand, if the imports from individual foreign competitors are aggregated, the impact of foreign competition will be more significant, making it more likely that the ITC will decide that the domestic industry has suffered material injury by reason of unfairly traded imports.

In order to measure the impact, if any, of the cumulation provision we must control for any other economic and political factors that also explain ITC decision-making. Therefore, in addition to empirically analyzing the impact of cumulation, we offer a broad characterization of the factors that determine AD and CVD outcomes. Thus, our results have general implications for evaluating the efficacy of the ITC's decision-making. For example, our estimates allow us to compare the importance of statutorily

mandated requirements, such as economic measures of injury, with unofficial influences, such as political pressure from members of Congress who have a vested interest in seeing an industry receive a favorable ITC decision.

Our explicit consideration of political pressure is another unique aspect of our research. Previous researchers have focused solely on the impact of statutory requirements on ITC outcomes [Finger et al., 1981; Moore, 1992; Baldwin and Steagall, 1994]. By contrast, our estimates show that political pressure, via both direct representation and PAC contributions, significantly influences decisions made by the ITC, a supposedly apolitical decision-making agency.

However, while our model allows us to address these broader issues, our primary goal is to measure the significance of cumulation on trade policy outcomes. Using industry, import, and political pressure data that is both more detailed (i.e., more disaggregated) and more comprehensive (i.e., covers a larger set of cases) than previous research, we model ITC decision-making, incorporating the impact of cumulation. Using data on AD and CVD cases filed between 1980 and 1988, we find that cumulation has had a dramatic impact on ITC decision-making. Specifically, after controlling for other economic and political factors we find that cumulated cases are 20–40 percent more likely to result in duties than non-cumulated cases. Our results also imply that one-third to one-half of the cumulated cases that resulted in duties would have been denied protection were cumulation not mandated.

Most interestingly, our results imply that cumulated imports have a super-additive effect on ITC decisions. That is, the ITC perceives cumulated imports as more injurious than an equivalent amount of named country imports. In other words, under cumulation the domestic industry has a greater chance of protection by filing against two countries our results have general implications for evaluating the efficacy of trade decision-making. For example, our estimates allow us to compare the importance of statutorily

a 40 percent import market share. Further, the super-additive effect of cumulation becomes more pronounced the larger the number of countries being cumulated. Holding the total import share under investigation constant, the probability of an affirmative decision when imports from five countries are cumulated is greater than the probability when imports from only two countries are cumulated, which in turn is greater than the probability when a single country is being investigated. At least with respect to ITC decision-making, it appears that the sum of the parts is greater than the whole.

The remainder of the paper is organized as follows. In the next section, we examine ITC decision-making and its use of the cumulation provision both before and after the 1984 mandate. In sections III and IV, we econometrically analyze the decision-making behavior of the ITC. In section V we provide a variety of quantitative measures of the impact of mandated cumulation on ITC decision-making. In section VI we conclude with some additional interpretations and extensions of our results.

2. Background

Generally speaking, there are three possible outcomes for an AD or CVD petition. First, a case can be rejected. For instance, if the DOC makes a negative ruling in its final investigation, the case is dismissed; no protection is granted and no final ITC determination is made. A case is also dismissed if either the ITC's preliminary or final investigation is negative. Second, if both bureaucratic agencies' final determinations are affirmative, then a duty (tariff) is levied on the named country's imports; the size of the duty is determined by the DOC in its investigation of the alleged unfair practice. Finally, a case can be withdrawn. As discussed in Prusa [1992] and Murray and Finger [1990], cases are generally withdrawn only after some type of agreement (e.g.,

an orderly marketing arrangement, the foreign firms agree to raise their prices and stop dumping, the foreign government agrees to remove the subsidy, etc.). Note that since the focus of this paper is actual ITC decision-making, we exclude withdrawn cases from our analysis.

If the ITC makes an affirmative decision, duties are only levied against the country named as an unfair trader in the petition. As Hansen and Prusa [1994] document such protection is quite porous; 90 percent of the reduction in trade from the named country is merely diverted to other foreign suppliers. As a result, a domestic industry often files petitions against multiple importing countries. Note, however, that the ITC always makes its decisions on a country-by-country basis, even if imports from a set of countries are cumulated. For example, if seven countries are named in the petition, the ITC makes seven separate injury decisions.

Prior to 1984, it was left to the ITC commissioners' discretion whether or not to cumulate. However, by incorporating the cumulation provision into the Trade and Tariff Act of 1984 (P.L. No. 98-573), Congress required that the ITC cumulate whenever like products from multiple countries were subject to investigation. In particular, the 1984 amendment stipulates that imports from multiple sources must be cumulated when three criteria are satisfied: (1) the imports must compete with one another and the domestic product, (2) the imports must be marketed within a reasonably coincidental period, and (3) the imports must be under investigation. Thus, the 1984 amendment clearly defined when cases should be cumulated, and thereby removed almost all of the ITC's discretion regarding cumulation.

Table I gives an example of how the cumulation provision works in practice. In March 1986, the U.S. brass sheet and strip industry filed an antidumping petition against firms located in seven different countries. West German firms dominated the U.S. import

market, accounting for over 20 percent of all U.S. brass sheet and strip imports and more than half of the allegedly dumped imports. The next largest named country, Brazil, accounted for less than 5 percent of the overall import market. In January 1987 the DOC determined that each of the countries had indeed engaged in "less than fair value" (LTFV) sales, implying that duties would be levied against any country whose imports were deemed by the ITC to have materially injured the U.S. industry. Since the cases were subject to cumulation, the ITC was required to assess the injurious impact of the imports from all named countries. For example, when determining whether dumped imports from France materially injured the U.S. industry, the ITC could not merely evaluate the injurious effects of France's 3.78 percent market share, but was required to factor in the additional 34.57 percent market share from the other named countries. In February 1987, the ITC found that imports from each of the seven countries had injured the U.S. industry.

The central issue in this study is whether or not cumulation alters the outcomes. For example, in the brass sheet and strip cases above, had cumulation not been mandated, would any of the seven injury decisions have been negative? Between 1980 and 1984 51 AD cases were filed where the named country had an import market share less than 5 percent; in only seven of these cases (14 percent) did the ITC find material injury. In contrast, during the same time period approximately 30 percent of cases filed against countries with import market shares greater than 5 percent resulted in duties. This discrepancy suggests that cumulation may have changed the outcome for six of the seven countries in the brass sheet and strip petition. On the other hand, it is also possible that cumulation simply strengthened the U.S. industry's already strong hand. With its large workforce and with production facilities located in a number of trade oversight committee members' districts, the steel industry's political clout is legendary.

Moreover, profits and employment in the industry had fallen during the years preceding the petition, indicating possible injury. Finally, the large LTFV margins also may have contributed to the ITC's determination.[1] Together these factors suggest that injury would have been found even without cumulation.

In Table II we give a breakdown of cases by outcome and whether or not cumulation was used both before and after the 1984 Trade Act. Title VII cases include both AD and CVD petitions ("Title VII" refers to the section of trade law where the statutes appear). In addition, we report the breakdown for AD cases alone, where cumulation seems to have had a disproportionate impact.

A review of the data makes it clear that once Congress mandated cumulation, cases involving cumulation became the norm rather than the exception. Between 1980 and 1984 (i.e., prior to mandated cumulation) only 60 out of 493 Title VII petitions (12 percent) involved cumulation. And, of the 60 cumulated cases, only 15 percent resulted in affirmative ITC decisions. In contrast, of the 433 petitions that were not cumulated, 28 percent received an affirmative ITC decision. Thus, prior to 1984, not only was cumulation rarely used, but when it was used it apparently did not enhance an industry's chance of receiving protection.

Compare the pre-1984 Trade Act numbers with the patterns post-1984. Between 1985 and 1988, 149 of 277 Title VII cases (54 percent) involved cumulation. And, of the 149 cumulated cases, a remarkable 64 percent were granted relief; in contrast, only 32 percent of the non-cumulated cases received favorable ITC decisions. From 1985 onwards, it appears that cumulation was leading the ITC to be more protective.

The patterns in Table II warrant several comments. Most notable is the fact that

[1]Although by law the size of the LTFV margin is not supposed to influence ITC decision-making, there is considerable debate whether in practice Commissioners are more sympathetic to the domestic industry's claims of injury when large margins are involved.

prior to the 1984 Trade Act cumulated cases seem to fare worse than non-cumulated cases. Given the near unilateral support that the cumulation provision received from import-competing industries in congressional hearings and debates leading up to the passage of the 1984 Trade Act, this appears somewhat anomalous. This paradox can be attributed to several factors. First, prior to the 1984 Trade Act the decision of whether or not cumulate was left to the discretion of ITC commissioners. It can be argued that ITC Commissioners prefer not to have their decision overturned by the Court of International Trade [Wilson, 1989, 277-94; Shapiro, 1988]. Given that during the 1980s the Court of International Trade (CIT) reversed nearly 50 percent of AD appeals, and over one-third of all cases appealed [Hansen, Johnson, and Unah, 1995], agency concerns about reversal are well founded. Given the uncertainty surrounding the legal status of cumulating imports, it may be that the ITC commisioners chose to cumulate only when it was clear that doing so would not affect the ultimate outcome, and therefore would not be the basis for a CIT reversal.

A closer examination of the voting and cumulation decisions of the individual commissioners on the cases cumulated prior to 1985 seems to support this conjecture. Among the 60 cases involving cumulation, two cases ended with negative ITA final decisions and 12 cases were withdrawn. These cases are excluded from our analysis since they did not involve ITC decisions. Of the remaining 46 cases, 41 were unanimous decisions (37 negative), and only 5 cases involved split voting behavior. Clearly, the vast majority of cumulated cases prior to the 1984 amendment were unanimous decisions, supporting the hypothesis that cumulation occurred almost always in clear cut cases where the outcome was determined by other factors.

Second, even when the ITC chose to cumulate, individual commissioners often disagreed over whether a set of petitions should be cumulated. Often, several commission-

ers would cumulate while the others would not. Since the ITC makes an affirmative determination if at least half of the commissioners find injury,[2] it may be the case that cumulation did not have any measurable impact on the official outcome in these "split" cases. On the other hand, the fact that only one or two commissioners cumulated imports, does not imply that cumulation did not have an important effect on the outcome. For instance, if the other commissioners were split on injury, the overall ITC decision could change if a single commissioner cumulated, since a single vote can change the majority decision.[3] We believe that the most sensible (and conservative) approach is to classify a case as being cumulated if at least one commissioner cumulated imports. If there is a bias inherent in this classification scheme, it would be that we understate the significance of cumulation (since we may be classifying some non-cumulated cases as cumulated) and this may be what we are seeing in Table II.[4]

Comparing cumulated cases pre- and post-1984 suggests that Congress' mandating of cumulation did indeed change ITC behavior. In particular, only 15 percent of cumulated cases were affirmatively decided when cumulation was discretionary as compared with 64 percent once cumulation was mandated. In addition to the possible explanations discussed above, this result might also simply reflect that ITC commissioners viewed Congress' mandate as a signal to be more protectionist.

The data also indicate that cumulation has been a more important provision for AD cases. Pre-1984, AD cases account for one-half of cumulated Title VII cases, while post-

[2]If the commissioners are evenly divided on a case, the decision of the commission goes to the affirmative.

[3]See Moore [1991] and Baldwin and Steagall [1994] for discussions of individual commissioner voting.

[4]In particular, Mock [1986] states that there were no cumulated CVD cases prior to the 1984 Trade Act. In contrast, our review of ITC proceedings indicates that 30 CVD cases involved at least one commissioner cumulating imports. However, 27 of the 30 pre-1984 CVD cases that we classify as cumulated were rejected by the ITC. While it is not entirely clear from the text, Mock's discussion suggests that he considers a case to be cumulated only if a majority of ITC commissioners cumulated imports.

1984, AD cases account for almost three-quarters of cumulated cases. Note, however, that AD cases account for about half of non-cumulated Title VII cases both pre- and post-1984. It is not clear why cumulation would be more important for AD cases, although part of the explanation lies in the fact that an injury determination is not required for CVD cases filed against countries that have not signed the GATT subsidy code. Since there is no need to prove injury against firms from these countries, there is less of a need to rely on cumulation. Cumulation also seems to have had a more significant effect on AD outcomes. Cumulated AD cases are almost three times as likely to result in duties as non-cumulated cases; in contrast, cumulated and non-cumulated CVD cases were about equally likely to receive protection (especially post-1984).

When Congress was debating whether or not to mandate cumulation, one argument repeatedly made was that the source of the dumped or subsidized imports was irrelevant. What mattered was that the cumulated volume was injurious. This argument in favor of cumulation has been referred to as the "hammering effect" hypothesis, since according to industries and their representatives,

> ...a domestic industry that suffers material injury by reason of 100,000 tons of unfairly traded imports from a single country is injured to the same degree by 20,000 tons of unfairly traded imports from each of five different countries [Suder, 1983].

Whether or not the "hammering effect" theory is valid, one could hypothesize that industries would respond to mandated cumulation by (a) filing more multiple country petitions and (b) filing more cases against countries with smaller import market shares.

In order to address the first issue we tallied the number of multiple country petitions and found that 22 percent of pre-1984 petitions and 33 percent of post-1984 petitions involved firms located in more than one country, suggesting that mandated cumulation

has led to a 50 percent increase in multiple petition filings. On the other hand, there is virtually no difference in the average number of countries per filing pre- and post-1984. Of course, the large scale steel industry filings in 1982 and 1984 might explain the similarity. If we exclude the steel industry filings in 1982 and 1984, we find that the average Title VII pre-1984 petition involved 1.3 countries while post-1984 petitions involved an average of 1.8 countries—about a 40 percent increase. Thus, there is some support for the claim that cumulation increases the number of multiple country petitions.

To address the second issue, we calculated the average import market share held by the country named as the unfair trader in the Title VII petition. Overall, we found an average import market share of 11 percent when cumulation was used, as compared with 17 percent when cumulation was not used. This suggests that cases involving cumulation are indeed filed against countries with smaller market shares.

Of course, these cross tabulations alone do not adequately measure the effect of cumulation since they do not control for a wide variety of other economic and political variables that might also be influencing the ITC's decision-making. For instance, if cases with cumulation were also cases where the domestic industry had experienced significant loss in profits, large layoffs, decreased capital utilization, and the like, one should not attribute changing patterns of protection to cumulation alone. In order to more fully address these concerns, we develop a more formal model of bureaucratic decision-making in the next section.

3. Modeling ITC Decision-making

In this section we model the decision-making behavior of the ITC. During the past decade the ITC has been the subject of a growing body of empirical research.

Takacs [1981], Hansen [1990], and Finger, et al. [1982] focussed on determinants of the annual number of petitions filed with the ITC, either in conjunction with or instead of the determinants of ITC decisions, while Baldwin [1985], Moore [1992], and Baldwin and Steagall [1994] more narrowly focus on ITC decision-making. However, none of the previous research has analyzed how a specific amendment affects decision-making nor does any previous research offer as precise measures of political pressure as we do. Moreover, our data set is both more disaggregated and encompasses a larger set of cases than previous research.

We incorporate both economic and political factors that may affect whether or not a Title VII petition receives protection. Clearly, we expect measures of economic injury to be positively related to affirmative ITC decisions, since this is stipulated in the statutes. However, it is widely agreed that political and more general economic pressures also influence ITC decision-making. For instance, the U.S.'s large and growing trade deficit might raise the public's ire over trade-related problems, and thereby create substantial pressure for more affirmative ITC decisions, regardless of whether or not the LTFV imports have statutorily caused injury. Or, a petition filed by an industry with production facilities located in districts of representatives who sit on trade oversight committees might have more success than a petition filed by an industry that does not have a representative who will lobby the commission on its behalf. Below we discuss the variables used to measure these influences. A more detailed description of the variables used in our model is provided in the appendix.

Economic Measures of Injury

By statute, the ITC is directed to take into account the economic situation of an industry in determining injury. Thus evidence of economic hardship or decline should be

important to the decision making behavior of the Commission. In our model, percentage changes in industry capacity utilization and shipments are used to measure recent industry performance.[5] One would expect that the greater the fall in each variable, the greater the likelihood of an affirmative decision.

Even though ITC commissioners are not supposed to consider the LTFV margin when making their injury determination, it would not be surprising to find a relationship between the LTFV margin and the likelihood of injury. Palmeter [1987] offers a different view, arguing that the ITC relies more on the volume of LTFV imports rather than the LTFV margin. We investigate both hypotheses and include both the LTFV margin and the named country's import market share as independent variables.

Cumulation is the economic criterion in which we are most interested. We use two different measures of the cumulation provision. One measure is a dummy variable (= 1 when the case is cumulated). While this is a straightforward measure, it does not capture the fact that cumulation is likely to have a more significant effect on the outcome for named countries with small market shares. For instance, in the brass sheet and strip example discussed above, West German firms had over 20 percent of the import market and it is likely that they would have been found to have caused injury with or without cumulation. On the other hand, Canada and Sweden, with tiny market shares, would more likely have not been found to have caused injury. In other words, one would expect the market share contributed by the *other* named countries to be important in their injury decision. Our second measure, the market share of the other named countries, captures the fact that cumulation is likely to more important for countries with small import market shares.

[5] We could have also included the percentage change in employment, but did not do so because it is highly correlated with the change in shipments.

Title VII protection as compensation for lost protection

It is often argued that administered protection often serves to substitute for the more traditional, but GATT-constrained mode of protection, namely tariffs [Baldwin, 1985; Hoekman and Leidy, 1989; Hansen and Prusa, 1992]. Formally, there is no statutory requirement that there be a connection between increased imports and tariff concessions. However, following Finger, Hall, and Nelson's [1982] argument that administered protection serves as a "poor man's escape clause," we hypothesize that the pleas of industries who have low levels of protection—or have lost protection—will be more successful. In other words, the lower the current tariff, the more likely bureaucrats will use Title VII duties to compensate for lost protection.

Similarly, while Title VII protection is supposed to be granted in response to injury caused by a particular unfair trade action, it may be more appropriately thought of as compensation for overall market share gains by foreign rivals. In other words, Title VII may serve to protect those industries who have experienced the greatest overall import competition. As a measure of general import gains, we construct an industry-level measure of foreign penetration [imports/(output+imports−exports)]. Note that foreign penetration is a far more aggregated index than the measures of import gains reported in the ITC's reports and thus is capturing general industry-wide trends rather than the market share gains by the named importers. If this hypothesis is correct, increased foreign penetration makes it easier for the ITC to make an affirmative injury decision.

Macroeconomic Influences

Trends in the aggregate economy are also likely to influence the ITC. We use the percentage change in the U.S. trade deficit to capture macroeconomic trends in the flow

of imports and exports. We expect a positive relationship between the change in the deficit and ITC decisions.[6]

We also control for additional aggregate trends with dummy variables for each of the years included in our data (with 1980 as the base year of comparison). For instance, changes in the composition of the ITC might lead all cases filed in some years to be more successful.

Political Pressure

Besides the condition of U.S. industries and the overall economy, research has also demonstrated the importance of political factors in explaining ITC decisions. One manifestation of political impact on bureaucratic decision making is the principal-agent relationship between Congress and the ITC [Weingast, 1984]. As discussed in Baldwin [1985] and empirically examined in Hansen [1990], Congressional oversight committees can exert a great deal of pressure on ITC commissioners not only via direct lobbying but also through budgetary control. If this notion is correct, and if congressmembers take actions in order to keep their constituencies happy, then industries located in districts (or states) of oversight committee members would be more likely to receive trade relief than those that do not have such representation.

The House Ways and Means Committee and Senate Finance Committee have jurisdiction over the ITC in their respective houses. In order to measure these committees' potential political influence, we first determined which SIC industries had operations in oversight members' districts. Our first measure is simply the number of oversight committee members' districts wherein the domestic industry operates. Our second measure

[6]We also included the national unemployment rate as a control. Since the regression results are virtually identical with either measure, we only report regressions with the trade deficit.

weights each committee member by the number of employees in the industry in each district. Thus with this second measure, (i) large industries and (ii) industries located in many oversight districts are more influential.

A second manifestation of political impact on ITC decision making is interest group influence. As a measure, we use Political Action Committee (PAC) contributions to Congressional oversight members.[7] The hypothesis is that industries (via their PACs) contribute to the oversight members' campaigns and that more pressure will be exerted on the ITC on behalf of those industries who made larger contributions.

Another measure of interest group influence is an industry's size. For any Title VII case, the larger the petitioning industry is, the greater its electoral impact may be; hence, larger industries can exert greater political pressure either directly on the ITC or indirectly through powerful congressmembers. Employment and output are two alternative measures of industry size. Since the variables are highly correlated and the estimation results are quite similar using either measure, we present the estimates using employment as the measure of industry size.

The ability of an interest group to influence policy may also be affected by its ability to effectively organize. An industry with a large number of small producers may find the benefits of protection too dispersed and the costs of lobbying not worth bearing. We use the 4-firm concentration ratio as a proxy for this notion of an industry's ability to organize and pressure policy-makers.

[7]See Grossman and Helpman [1994] for a model highlighting the importance of political contributions to the policy-making process.

Country/Industry Biases

Evidence suggests that the identity of the named country in a AD or CVD petition influences ITC decisions. We control for country-specific differences by including dummy variables for petitions against each of the following: Japan, Newly Industrialized Countries (NICs), West European countries, and non-market economies. Petitions against Japan might be treated differently in ITC decision-making because of the overwhelming negative attention that Japan received during the 1980s in trade-related matters. Given its situation, one might expect that petitions against Japan would be more likely to receive a positive ITC ruling. Similarly, the rapid export-oriented growth of the NICs might hurt them in ITC hearings. On the other hand, the historically strong relationship and trade ties between Europe and the U.S. may lead to more favorable treatment for their industries. Finally, cases filed against non-market economies may tend to be more successful, both because of cold-war suspicions and also because of the heavy reliance on "constructed value" measures of home market performance when non-market economies are involved (see Tharakan [1991] for a discussion).

Finally, we also control for the fact that steel and steel-related industries were by far the largest users of Title VII laws during the 1980s. The notion here is that petitions filed by steel and steel-related industries are more successful due to this industry's frequency of filing (i.e., learning-by-doing) or the inordinate amount of public attention steel cases tend to receive.

4. Estimating ITC Decision-making

Our data set is comprised of the 770 Title VII cases filed between 1980 and 1988. We drop cases rejected by the Commerce Department (since the ITC never makes a final

decision when no unfair practice is found). We also drop withdrawn cases which receive no official ITC determination. In addition, since most of our measures of economic criteria are unavailable for the agricultural sector, we restrict our sample to manufacturing industries. We also drop CVD cases against industries located in countries that have not signed the GATT subsidy code since an injury decision is not required for these countries. After dropping these cases, we have data for 317 ITC decisions. We estimate the ITC decision function for all Title VII cases, and separately for just AD cases.[8]

Our probit estimates are given in Table III and IV. In Table III we present four specifications of the estimated ITC decision function, allowing for different measures of political pressure and cumulation.[9] In Table IV we test whether discretionary and mandated cumulation had different effects on the ITC.

General Findings

Several general findings emerge from the estimations. First, we find that political pressure has an important influence on ITC decisions. Second, petitions are more likely to result in duties when the case is filed against non-market economies and less likely when filed against European countries. Third, we find that the U.S. steel industry has fared particularly well in ITC decisions. Finally, cumulation crucially influences the ITC. Below we briefly discuss the results. An extended discussion of the importance of the estimated effect of cumulation is contained in section V.

Political Pressure Supporting the findings of Hansen [1990], industries with representatives on the Ways and Means Committee have a greater chance of receiving pro-

[8]We also estimate the ITC decision function for just CVD cases, but to keep the paper a reasonable length, we do not present the results here. These regressions are available upon request from the authors.

[9]Year dummies are included but not reported due to space limitations. They are available upon request.

tection: Senate Finance oversight representation, however, appears to be unrelated to ITC decision-making. It is not surprising that the House oversight influence is more significant because House members have a much more geographically narrow constituency and therefore more narrowly defined interests; a firm filing a trade petition will surely affect a larger fraction of a House member's constituents than a Senator's.

PAC contributions also appear to be positively related to an industry's prospects for protection. In all four specifications and for both the AD-only dataset and the entire Title VII dataset, the impact of PAC contributions is positive, but it is significant only for AD cases.

Economic Criteria The percentage change in capacity utilization and the percentage change in shipments are proxies for changes in the industry's economic health. While both variables have the expected sign (i.e., increases in either capacity utilization or shipments lowers the chance of protection) neither is significant. Although Hansen [1990] and Moore [1991] find some support for economic decline predicting ITC decisions, we feel that the insignificance of the economic criteria reflects the great degree of latitude that the ITC has in making its decisions—statutory guidelines, which define the factors that determine injury and what level of injury constitutes "material" injury are extremely vague. This also explains why well defined political pressure variables play such an important role.

Import market share has a positive and significant effect on ITC decisions. This implies that the larger a country's import market share, the more likely the ITC will find injury. Given domestic industries' testimony preceding the cumulation amendment, this finding was expected.

Country- and Industry-Specific Effects Importantly, we find the existence of country- and industry-specific biases. For instance the European dummy is consistently negative and significant, suggesting that the ITC is reluctant to find injury when imports are from the U.S.'s European allies. In contrast, cases against non-market economies fare particularly well; the coefficient on the non-market dummy is large, positive, and significant. We find that there is no significant country effect for Japan and NICs. We do find, however, that the steel industry, the largest single user of Title VII law, does quite well at the ITC: the steel dummy is consistently positive and significant.

Estimating Pre- and Post-1984 Cumulation Effect

The data presented in Table II suggest that cumulation had a more protective effect once Congress mandated its use. The most straightforward way to test for this is to simply add a regressor that captures the post-1984 cumulation effect. In specification E we estimate

$$\text{Outcome}_i = \alpha + \beta_1 X_i + \gamma_1 C_i + \gamma_2 (D_i C_i) + \phi Y_i,$$

where X_i is a vector of all variables in the model except the cumulation effect, C_i, and year dummies, Y_i; D_i is a post-1984 dummy variable. Thus, γ_1 is the pre-1984 and $\gamma_1 + \gamma_2$ the post-1984 cumulation effect.

Specification E can be applied to any of the four specifications estimated in Table III; the results in Table IV should be compared with Specification A. As in Table III, we omit year dummies from the table. In addition, to conserve space, we do not present t-statistics, but rather only indicate which variables are significant.[10]

The estimates suggest that once cumulation was mandated, it had a greater impact

[10]Complete estimation results are available upon request.

on ITC decision-making. For both the Title VII and AD-only datasets, γ_2 is positive and significant, while γ_1 is insignificant. However, in neither dataset is the estimate of γ_2 statistically different from the cumulation effect estimated in Specification A.

As discussed earlier, the ITC may have interpreted the passage of the Trade and Tariff Act of 1984 as a signal to become more protectionist, and this change in behavior may manifest itself in all of the exogenous variables. If this is indeed the case, we need to estimate a function that allows for more general structural changes in ITC decision-making post-1984. In specification F we estimate

$$\text{Outcome}_i = \alpha + \beta_1 X_i + \gamma_1 C_i + \delta_1 D_i + \beta_2 (D_i X_i) + \gamma_2 (D_i C_i) + \phi Y_i.$$

Once again, we report estimates that should be compared with those in Model A. While a number of the exogenous variables have significant post-1984 effects, the most important finding for our purposes is that cumulation has a statistically greater effect post-1984. However, as was the case for Specification E, the estimated post-1984 effects are not statistically different from those reported in Specification A.

We perform a chi-squared test in order to investigate the overall significance of this more general model (Specification F vs. A). We find that for the AD-only dataset there is no evidence of a general change in ITC behavior (at the 95 percent confidence level). However, for the Title VII dataset, there is evidence that the 1984 trade act may have caused the ITC to become more protectionist.

5. Significance of Cumulation

Most relevant to this work is the fact that cumulation is positive and statistically significant across all specifications for both the Title VII and AD-only datasets. In

Table V we present several measures of the importance of the cumulation provision on ITC decisions. Using the parameter estimates presented in Table III and IV we calculate the change in the probability of protection due to cumulation, evaluated at the mean value of the other independent variables. The estimates imply that not only is cumulation significant, but also it has a substantial effect on outcomes. For instance, for all Title VII cases, cumulation increases the probability of protection by more than 20 percent, while for AD cases, cumulation increases the probability of protection by about 30 percent.

Given this dramatic effect on the probability of protection, it is not surprising that cumulation crucially determines whether or not protection is granted in a large number of cases. For instance, for the data set including all Title VII cases (specification C), 112 of the 313 observations were cumulated. Based on our parameter estimates, of these 112 cumulated cases, 38 (34 percent) would have been negatively decided without cumulation, but were affirmatively decided with cumulation. The percentage of cumulated cases where the outcome changes due to cumulation varies according to the specification (from 18 percent to almost 50 percent for the AD-only dataset), but is always a sizeable number.

Further, note that changing the outcome of cases is only the immediate impact of cumulation; ultimately, the affirmative ITC decision leads to the imposition of a duty and therefore an effect on trade. In the last row of Table V we report the average duty for cases where cumulation changes the predicted outcome. As evidenced, duties are quite large for these cases, averaging about 20 percent per case. Given that the average tariff level is about 4 percent, the additional protection due to cumulation is substantial.

Most interestingly, our results imply that cumulated imports have a super-additive effect on ITC decisions. To illustrate this point, in Figure 1 we plot the estimated

probability of an affirmative AD decision as a function of the total market share of imports under investigation. All other independent variables are valued at the sample mean and the coefficients are from Specification C. We plot three hypothetical scenarios. First, we imagine the petition is filed against a single country. Second, we suppose that the domestic industry files AD petitions against two countries, assuming that each country accounts for half the imports under investigation. Finally, we suppose that the domestic industry files multiple AD petitions against five countries, each accounting for 1/5 of the imports under investigation.

The figure makes the protective effect of cumulation clear. Even though equivalent amounts of imports are under investigation in each of the scenarios, the cases involving cumulation have a greater probability of succeeding. Furthermore, the effect of cumulation becomes more pronounced the greater is the share of imports under investigation accounted for by other named countries. That is, for all levels of market share the probability of an affirmative decision when imports from five countries are cumulated lies above that for two countries, which in turn lies above the probability when only a single country is being investigated.

Consider for instance, the probability of an affirmative decision when 40 percent of imports are under investigation. If the case involves a single country, the probability of an affirmative decision is estimated to be 0.60. If petitions are filed against two countries, each with 20 percent of the import market (yielding a cumulated market share of 40 percent) the estimated probability of an affirmative decision jumps to 0.72. If petitions are filed against five countries, each with 8 percent of the import market the estimated probability of an affirmative decision is 0.78.

This is a startling result. Under the 1984 statute the ITC should treat each of the scenarios identically. Forty percent of the import market is under investigation in each

scenario. If anything, one might expect the ITC to perceive an equivalent amount of cumulated imports as less injurious, since commissioners might not be inclined to punish small countries for the transgressions of others. To the contrary, our estimates imply that the ITC perceives cumulated imports as substantially more injurious.

In order for a case against a single country to be as likely to receive protection as when two countries (each with 20 percent of the import market) are under investigation, that single country would have to account for 62 percent of the import market; for a case against a single country to be as likely to receive protection as when five countries (each with 8 percent of the import market) are under investigation, that single country would have to account for 75 percent of the import market. In other words, cumulated imports have a super-additive effect on ITC decision. This surprising finding leads us to conclude that at least with respect to ITC decision-making, the sum of the parts is greater than the whole.

Table VI presents the effect of cumulation on predicted outcomes for several selected AD cases which had positive ITC decisions. For instance, consider again the "Brass sheet and strip" antidumping petition discussed earlier in Table I. The import market share for these countries ranged from West Germany's 21 percent to Sweden's 1 percent, and the cumulated import market share was 38 percent. With the cumulation provision in effect the ITC found that each of the seven named countries had caused injury to the U.S. industry and thus import duties of 7 percent to 42 percent were levied on brass sheet and strip imports. Without cumulation, however, some of the countries would not have been subject to duties. For instance, under the parameter estimates from specifications A and B, we find that Italian imports would not have been found to have caused injury. Under specifications C and D, where we control for cumulation using the market share of the other named countries and allow for a cross-effect of cumulation

with the steel industry dummy, we find that only Brazil and South Korea would have been subject to duties. In other words, without cumulation the vast majority (31 of 38 percent under investigation) of brass sheet and strip imports would not have been subject to duties.

While similar patterns emerge from the other cases, there are three points worth noting. First, cumulation appears to be less important for cases filed against non-market economies. This is because procedural and political biases against non-market economies are already so substantial that these cases would likely be affirmatively decided with or without cumulation. Second, the steel industry appears to have substantially benefitted from cumulation, as evidenced by the large number of negative decisions predicted without cumulation, especially under specifications C and D. Cumulation appears to further enhance the already favorable treatment the steel industry receives by the ITC. Third, for some petitions (e.g., Telephone Systems and Light-walled Rectangular Pipes and Tubes), our model implies that cumulation was the difference between an affirmative and negative decision for *all* of the named countries.

Finally, we use our estimates to calculate how many pre-1984 cases would have been affirmatively decided had cumulation been mandated during this period. To do this we restrict our data set to those pre-1984 cases that were *not* cumulated. We then consider what would have happened had the imports from all countries named in a multiple petition filing been cumulated by the ITC (i.e., what would have happened if cumulation had been mandated from 1980 onwards). While this procedure is likely to overestimate the number of cumulated cases, since not all countries named in multiple petition filings always have their imports cumulated, it is as sensible as any alternative.

In Table VII we report the results of this pre-1984 scenario. We find that 16 percent to 60 percent of multiple petition cases that were negatively decided without cumula-

tion would have been affirmatively decided with cumulation. While this result may be overestimated, the impact of cumulation on ITC decision-making is clear; more affirmative decisions imposing protective duties on foreign imports would have occurred had mandatory use of cumulation been adopted prior to 1984.

6. Concluding Remarks

As we have shown above, after controlling for other factors, mandated cumulation has dramatically increased the likelihood that the ITC will grant U.S. industries protection. In fact, not only does mandatory cumulation increase the likelihood that the ITC will rule in favor of the domestic industry, but for a given cumulated import market share, it implies that the greater is the number of countries involved, the greater is the probability of receiving protection. This super-additive effect of cumulation may stretch even beyond the intent of Congress in its impact.

There are a number of possible interpretations for our findings. First, as discussed above, the ITC may view Congress's decision to mandate cumulation as a signal to become more protectionist, especially for those petitions involving multiple countries. Second, cumulation may link cases together in a way that biases each country's chances of defending itself. For instance, a delay by any one of the cumulated countries in responding to the ITC's requests for information may hurt each of the country's chances. In fact, it may be in the strategic interest of a country that expects to be subject to duties to increase the likelihood that the other named countries are also sanctioned. In a noncooperative game, each country's profits will be higher if the other named countries are also subject to duties. If each country acts strategically, the final outcome might involve all of the countries being disadvantaged (as compared to when the countries are

not cumulated).

In addition, there are several empirical concerns that should be mentioned. For example, occasionally cases are cumulated with cases that had been previously filed. A U.S. industry might file an AD petition against Taiwan and Brazil, and then several months later file another petition against Korea. In this circumstance, all three cases could be cumulated as long as the three criteria stipulated in the 1984 amendment are satisfied, even though the cases were not filed simultaneously. However, suppose that some information from the Taiwan and Brazil investigations has been revealed (e.g., say, a preliminary affirmative decision), then the likelihood of an affirmative decision against Korea might be affected. In the results presented, we would attribute the "increased probability" entirely to cumulation, when in fact the higher probability may be due in part to the sequential nature of the filings. In fact, even without the cumulation provision the cases might by linked due to the information revealed about ITC's opinion on the health of the domestic industry. To check for this possibility, we drop cumulated cases that were cumulated with previously filed cases and estimate the model. Not surprisingly, since only seven cases were dropped, the parameter estimates are almost identical to those presented in Tables III and IV.

Another issue is the fact that a number of ITC commissioners have used "bifurcated analysis" when making their injury decisions. A commissioner choosing to use a bifurcated approach essentially makes a two-stage injury decision [Kaplan, 1991]. First, the commissioner decides if injury exists. If so, then the commissioner decides whether or not imports are the cause. Under a bifurcated approach, cumulation would only affect the outcome if the test gets to the second stage. Thus, potentially our estimates of the cumulation effect might be biased if the following four criteria are met: (i) the case was cumulated, (ii) ITC commissioners used a bifurcated approach in making their injury

decision, (iii) the injury decision is negative, and (iv) the case was negative at the first stage of the bifurcated analysis.

However, we expect our parameter estimates to be robust whether or not a bifurcated approach was used since our exogenous variables control for both stages of the decision process. Nonetheless, we estimated our model dropping the potentially problematic cases (only 21 cases satisfied the above four criteria). The parameter estimates are essentially unchanged.

In conclusion, we hope that our research draws increased attention to the protective effects of Congressional amendments to the U.S. trade statutes. Other statutory and procedural amendments have likely also had a significant impact on the overall level of protection in the U.S. For instance, allowing the use of "best information available," making upstream subsidies countervailable, and expanding the definition of "like product" are all examples of revisions that were intended by Congress to make Title VII laws more protective, but whose ultimate impact is unknown.

We also hope that our research draws attention to the apparent movement towards procedural protectionism. While in recent years Congress has largely resisted the rising pressures from U.S. industries to grant them direct protection from foreign imports, it has in fact moved the U.S. towards a policy of greater protectionism. To appease U.S. industries, Congress amended existing U.S. trade laws in order to make them more accessible to industries subject to trade pressures. As the results of this paper indicate, these amendments may have unforeseen impacts on policy outcomes and international patterns of trade.

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Data Appendix

Basic Case Information: Case outcome, date of initiation, subject, and named country, is available in the *Fed-Track Guide to Antidumping and Countervailing Duty Findings and Orders.* Imports subject to investigation are identified in the *Federal Register* by their TSUSA (line-item tariff) code. The LTFV duty is also found in the

Federal Register. The four-digit SIC code corresponding to the TSUSA code can be found in *U.S. Foreign Trade Statistics, Schedule 6.*

Cumulation Data: The public ITC case reports contain information on which countries' imports were cumulated. Not all multiple country filings are cumulated. For example, due to quality differences, some imports in multiple country petitions were determined not to compete with one another, and thus were not cumulated.

Petition filing data in the *Fed-Track* guides helped us construct the hypothetical experiment involving mandatory cumulation for all pre-1984 multiple country petitions.

Capacity Utilization (practical rate) at the four-digit SIC level by year was obtained from the U.S. Bureau of the Census *Current Industrial Reports, Survey of Plant Capacity.*

Shipments and Employment at the four-digit SIC level by year was obtained from the U.S. Bureau of the Census *Census of Manufactures, Subject Series.*

Concentration Ratio at the four-digit SIC level by year was obtained from the U.S. Bureau of the Census *Census of Manufactures, Industry Series.*

Civilian unemployment rate is given in the *Economic Report of the President.* The merchandise trade deficit (millions of dollars) is also given in the *Economic Report of the President.*

Oversight Committee Data was measured by matching four digit SIC industry location with congressional districts. Typically, each product (which is identified by a SIC code) is produced in a number of locations across the country. If a product

is produced in a district whose congressional representative (House or Senate) is a member of the Trade Subcommittee of the House Ways and Means Committee or the International Trade Subcommittee of the Senate Finance Committee, then the industry is believed to have a greater ability to influence ITC policy-making through its political pressure. The *Almanac of American Politics* was used to determine subcommittee membership. Data for industry location (and employment) by district and year at the four digit SIC level were obtained from the *Census of Manufactures. Geographic Area Series.*

PAC Contributions to oversight members were constructed using the Federal Election Commission's publicly available *Campaign Expenditures in the United States Reports on Financial Activity (RFA)* data. The Federal Election Commission reports contributions by each PAC to each representative and each registered candidate. Each PAC is also coded with a (self-reported) "special interest group" classification. The major task is to construct a concordance between PACs and SIC industry definitions without biasing the estimation procedure. The Federal Election Commission's special interest group classification is inadequate offering only a handful of different codes. In order to create a concordance we used the Center for Responsible Politics PAC coding scheme (Makinson, 1989). The CRP assigns each PAC one or more category codes which denote the industry and/or groups the committee represents. The first category is the PAC's primary industry affiliation, the second is the next most important, etc. The CRP categories are relatively detailed, offering almost 400 category codes and greatly help in identifying what industry is represented by which PACs. Unfortunately, the CRP categories were not developed with the aim of mapping into SIC industry codes, and so the classification process is still somewhat arbitrary. Where possible we assigned

the CRP categories a four digit SIC code, but it was often difficult to go beyond two digit SIC codes. The results reported in this paper are based on PAC contribution at the two digit SIC level. PAC data is coded in millions of dollars.

Country and Steel Dummies: **Non-market economies** are defined as East Germany, Czechoslovakia, Hungary, Estonia, Latvia, Lithuania, Poland, USSR, Yugoslavia, Romania, Bulgaria, Vietnam, P.R. of China, and North Korea. **West European economies** are defined as United Kingdom, Ireland, Netherlands, Belgium, Luxemburg, France, West Germany, Austria, Switzerland, Spain, Portugal, and Italy. **NIC economies** are defined as Singapore, South Korea, Hong Kong, and Taiwan (China).

The **Steel industry** was defined to include the following four digit SIC codes: 3312, 3321, 3334, 3339, 3351, 3357, 3432, 3441, 3494, 3496, 3519, 3523, 3557, 3562.

Table I

Example of Cumulation

Brass sheet and strip (Cases #311-317)

Country	Import Market Share	Cumulated Market Share	Market Share of Other Named Countries	LTFV Duty
West Germany	21.27%	38.35%	17.08%	8.87%
Brazil	4.81%	38.35%	33.54%	40.62%
France	3.78%	38.35%	34.57%	42.24%
Italy	3.27%	38.35%	35.08%	12.08%
South Korea	2.20%	38.35%	36.15%	7.17%
Canada	1.83%	38.35%	36.51%	8.10%
Sweden	1.20%	38.35%	37.15%	9.49%

Table II

Title VII Case Summary

Number of Cases filed with and without cumulation,

1980-1988

Title VII Cases

	Pre-1984		Post-1984		All Years	
Outcome	Cum.	No Cum.	Cum.	No Cum.	Cum.	No Cum.
Negative DOC	2	32	8	9	10	41
	(3%)	(8%)	(5%)	(7%)	(5%)	(7%)
Negative ITC	37	126	30	45	67	171
	(62%)	(29%)	(20%)	(35%)	(32%)	(31%)
Affirmative	9	123	95	41	104	164
	(15%)	(28%)	(64%)	(32%)	(50%)	(29%)
Withdrawn	12	152	16	33	28	185
	(20%)	(35%)	(11%)	(26%)	(13%)	(33%)
Total	**60**	**433**	**149**	**128**	**209**	**561**

Antidumping Cases

	Pre-1984		Post-1984		All Years	
Outcome	Cum.	No Cum.	Cum.	No Cum.	Cum.	No Cum.
Negative DOC	2	15	3	4	5	19
	(7%)	(7%)	(3%)	(6%)	(4%)	(7%)
Negative ITC	10	65	21	33	31	98
	(33%)	(32%)	(19%)	(46%)	(22%)	(36%)
Affirmative	9	43	78	18	87	61
	(30%)	(21%)	(71%)	(25%)	(62%)	(22%)
Withdrawn	9	81	8	16	17	97
	(30%)	(40%)	(7%)	(23%)	(12%)	(35%)
Total	**30**	**204**	**110**	**71**	**140**	**275**

Note: Numbers in parentheses denote percent of column total

Table III
Probit Estimation

	Title VII Cases *Specification*				AD Cases *Specification*			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Constant	-0.676	-0.704	-0.669	-1.228	-0.389	-0.290	-0.413	-1.085
	(-0.885)	(-0.922)	(-0.878)	(-1.873)	(-0.414)	(-0.310)	(-0.440)	(-1.333)
# Representatives	0.146	0.114	0.133		0.197	0.149	0.161	
Ways & Means Districts	(2.292)	(1.744)	(1.985)		(2.844)	(2.102)	(2.225)	
# Representatives	-0.056	-0.064	-0.057		-0.052	-0.062	-0.056	
Senate Finance States	(-1.190)	(-1.384)	(-1.245)		(-1.029)	(-1.218)	(-1.106)	
Employment in				-0.280				-0.125
Oversight Districts				(-1.145)				(-0.444)
Employment	-0.945	-0.599	-0.415		-1.419	-0.740	-0.568	
	(-0.789)	(-0.491)	(-0.330)		(-1.064)	(-0.536)	(-0.397)	
PAC	0.745	0.675	0.683	0.915	1.160	1.069	1.040	1.186
Contributions	(1.262)	(1.145)	(1.172)	(1.558)	(1.791)	(1.654)	(1.623)	(1.835)
Concentration	-0.546	-0.759	-0.690	-0.898	-0.047	-0.232	-0.305	-0.702
Ratio	(-0.663)	(-0.926)	(-0.856)	(-1.351)	(-0.052)	(-0.256)	(-0.343)	(-0.944)
Tariff	-2.537	-2.921	-2.373	-2.582	-1.610	-2.474	-1.948	-2.465
	(-0.797)	(-0.924)	(-0.749)	(-0.889)	(-0.451)	(-0.695)	(-0.544)	(-0.743)
Foreign	0.047	-0.056	0.082	-0.079	0.094	-0.024	0.175	0.064
Penetration	(0.065)	(-0.077)	(0.114)	(-0.112)	(0.119)	(-0.030)	(0.222)	(0.083)
%Change	1.997	-0.835	0.805	-3.703	7.656	5.005	5.306	-1.243
Trade Deficit	(0.403)	(-0.173)	(0.163)	(-1.031)	(1.341)	(0.905)	(0.947)	(-0.289)
%Change	-0.554	-0.609	-0.628	-0.891	-0.637	-0.785	-0.735	-0.935
Capacity Utilization	(-0.950)	(-1.023)	(-1.067)	(-1.518)	(-0.961)	(-1.148)	(-1.083)	(-1.387)
%Change	-0.017	-0.106	-0.024	-0.581	0.749	0.658	0.567	-0.107
Shipments	(-0.020)	(-0.126)	(-0.029)	(-0.709)	(0.702)	(0.620)	(0.536)	(-0.104)
Named Country's	1.974	1.943	1.839	1.686	1.591	1.492	1.487	1.365
Market Share	(3.936)	(3.882)	(3.701)	(3.425)	(2.815)	(2.669)	(2.655)	(2.457)
LTFV Duty	0.582	0.612	0.699	0.665	0.604	0.669	0.743	0.728
	(1.754)	(1.802)	(2.030)	(1.978)	(1.721)	(1.854)	(2.025)	(2.040)
Non-Market	0.965	0.939	0.903	0.908	0.993	0.940	0.958	0.974
Dummy	(2.319)	(2.191)	(2.141)	(2.067)	(2.284)	(2.077)	(2.138)	(2.118)
Europe	-0.498	-0.570	-0.473	-0.576	-0.453	-0.616	-0.478	-0.555
Dummy	(-2.245)	(-2.526)	(-2.035)	(-2.485)	(-1.626)	(-2.116)	(-1.592)	(-1.873)
NIC	0.068	0.139	0.123	0.244	0.081	0.151	0.164	0.271
Dummy	(0.233)	(0.486)	(0.426)	(0.854)	(0.253)	(0.473)	(0.509)	(0.854)
Japan	-0.116	-0.092	-0.137	-0.127	-0.051	-0.054	-0.060	-0.068
Dummy	(-0.383)	(-0.303)	(-0.443)	(-0.424)	(-0.158)	(-0.168)	(-0.184)	(-0.216)
Steel Industry	0.811	0.876	0.424	0.754	0.781	0.846	0.417	0.671
Dummy	(3.169)	(3.404)	(1.450)	(2.492)	(2.773)	(2.977)	(1.249)	(1.927)
Cumulation	0.670				0.805			
Dummy	(2.969)				(3.103)			
Other Named Countries'		2.121	1.292	1.945		3.126	2.263	2.807
Cumulated Market Share		(2.834)	(1.608)	(2.767)		(3.280)	(2.256)	(3.166)
Cumulation*Steel			0.994	0.817			0.866	0.731
			(3.132)	(2.617)			(2.399)	(2.055)
Log Likelihood	-159.646	-159.807	-154.738	-156.874	-114.396	-113.032	-110.095	-113.024
Chi-Squared Test	114.232	113.909	124.047	125.553	88.645	91.374	97.247	96.274
# Observations	313	313	313	317	230	230	230	234
# Observations Positive	151	151	151	155	124	124	124	128
% Observations Positive	48.2%	48.2%	48.2%	48.9%	53.9%	53.9%	53.9%	54.7%
% Correctly Predicted	76.0%	74.8%	78.3%	76.7%	75.7%	75.2%	76.5%	75.2%

*t-statistics reported in parentheses

Table IV

Pre- and Post-1984 Effect

	Title VII Cases *Specification*		**AD Cases** *Specification*	
	E	F	E	F
Constant	-0.527	-1.324	-0.541	-1.603
# Representatives Ways & Means Districts	0.122*	0.057	0.164**	0.145
# Representatives Ways & Means Districts x Post 1984 Dummy		0.22		0.12
# Representatives Senate Finance States	-0.027	0.092	-0.019	0.072
# Representatives Senate Finance States x Post 1984 Dummy		-0.271**		-0.223
Employment	-0.92	-1.08	-1.363	-2.597
Employment x Post 1984 Dummy		-0.435		1.667
PAC Contributions	0.842	0.782	1.168*	0.926
PAC Contributions x Post 1984 Dummy		-0.723		-0.972
Concentration Ratio	-0.316	-1.609	-0.001	-1.483
Concentration Ratio x Post 1984 Dummy		4.524**		4.243*
Tariff	-3.288	-0.779	-1.926	2.023
Tariff x Post 1984 Dummy		-5.659		-5.587
Foreign Penetration	0.04	2.054**	0.17	2.056*
Foreign Penetration x Post 1984 Dummy		-4.548**		-3.996**
%Change Trade Deficit	5.218	0.657	8.644	-0.061
%Change Trade Deficit x Post 1984 Dummy		1.095		2.981
%Change Capacity Utilization	-0.561	0.007	-0.618	0.076
%Change Capacity Utilization x Post 1984 Dummy		-1.606		-1.891
%Change Shipments	0.038	-0.828	0.429	-0.194
%Change Shipments x Post 1984 Dummy		1.881		-0.662
Named Country's Market Share	1.931**	1.331*	1.562**	1.350*
Named Country's Market Share x Post 1984 Dummy		1.808		1.238
LTFV Duty	0.632*	0.165	0.635*	0.497
LTFV Duty x Post 1984 Dummy		0.77		0.247
Non-Market Dummy	0.894**	0.696	0.956**	0.701
Non-Market Dummy x Post 1984 Dummy		0.264		0.26
Europe Dummy	-0.560**	-0.373	-0.505*	-0.284
Europe Dummy x Post 1984 Dummy		-0.818		-0.751
NIC Dummy	0.117	-0.227	0.134	0.029
NIC Dummy x Post 1984 Dummy		0.396		0.064
Japan Dummy	-0.126	-0.118	-0.056	0.079
Japan Dummy x Post 1984 Dummy		-0.252		-0.372
Steel Industry Dummy	0.782**	0.045	0.732**	0.312
Steel Industry Dummy x Post 1984 Dummy		1.055*		0.493
Cumulation Dummy	-0.034	0.004	0.232	0.09
Cumulation Dummy x Post 1984 Dummy	1.152**	1.196**	0.949*	1.238*
Post 1984 Dummy		0.212		0.51
Log Likelihood	-156.671	-138.935	-112.975	-100.245
Chi-Squared Test	120.181	155.653	91.488	116.948
# Observations	313	313	230	230
# Observations Positive	151	151	124	124
% Observations Positive	48.2%	48.2%	53.9%	53.9%
% Correctly Predicted	77.0%	77.6%	77.0%	79.6%

Note: * denotes significance at 10% level, ** significance at 5% level

Table V

Effects of Cumulation

	Title VII Cases *Specification*						**AD Cases** *Specification*					
	A	*B*	*C*	*D*	*E*	*F*	*A*	*B*	*C*	*D*	*E*	*F*
Change in probability of positive decision due to cumulation	0.262	0.202	0.201	0.258	0.420	0.437	0.306	0.284	0.294	0.342	0.388	0.450
Number of cases that are predicted affirmative with cumulation but would be predicted negative without cumulation	39	20	38	45	45	23	38	27	45	49	47	26
Number of cases cumulated	112	112	112	116	112	112	98	98	98	102	98	98
Percent of cumulated cases where outcome changed	34.8%	17.9%	33.9%	38.8%	40.2%	20.5%	38.8%	27.6%	45.9%	48.0%	48.0%	26.5%
Average duty for those cases where outcome changed	22.3%	22.2%	16.8%	18.0%	23.3%	23.3%	23.0%	25.9%	20.4%	23.2%	22.9%	24.0%

Table VI

Predicted Outcomes without Cumulation*

Case	*Country*	*Import Market Share*	*Cumulated Market Share*	*Market Share of Other Named Countries*	*LTFV Duty*	*Specification* A	B	C	D	E	F
Potassium permanganate											
126	Spain	27.83%	49.72%	21.89%	5.49%	N	N	N	N	N	A
125	PR-China	21.89%	49.72%	27.83%	39.63%	A	A	A	A	A	A
Color television receivers											
134	South Korea	31.29%	56.98%	25.70%	13.90%	N	A	A	A	A	A
135	Taiwan	25.70%	56.98%	31.29%	5.46%	N	N	N	A	A	A
Iron construction castings											
264	India	28.73%	68.88%	40.15%	0.90%	A	N	N	N	N	A
263	Canada	19.49%	68.88%	49.39%	10.20%	A	N	N	N	N	A
262	Brazil	12.66%	68.88%	56.22%	26.16%	A	N	N	N	N	A
265	PR-China	8.00%	68.88%	60.88%	11.66%	A	A	A	A	A	A
Brass sheet and strip											
317	West Germany	21.27%	38.35%	17.08%	8.87%	A	A	N	N	N	N
311	Brazil	4.81%	38.35%	33.54%	40.62%	A	A	A	A	A	A
313	France	3.78%	38.35%	34.57%	42.24%	A	A	N	N	N	N
314	Italy	3.27%	38.35%	35.08%	12.08%	N	N	N	N	N	N
315	South Korea	2.20%	38.35%	36.15%	7.17%	A	A	A	A	A	A
312	Canada	1.83%	38.35%	36.51%	8.10%	A	A	N	N	N	A
316	Sweden	1.20%	38.35%	37.15%	9.49%	A	A	N	N	N	A
Granular polytetrafluoroethylene resin											
386	Japan	21.63%	29.97%	8.34%	91.74%	A	A	A	A	A	N
385	Italy	8.34%	29.97%	21.63%	46.46%	N	N	N	N	N	N†
Light-walled Rectangular Pipes & Tubes											
409	Argentina	6.82%	8.41%	1.59%	27.71%	N	N†	N	N	N	N
410	Taiwan	1.59%	8.41%	6.82%	29.15%	N	N	N	N	N	N
Telephone Systems and Subassemblies											
426	Japan	23.72%	38.22%	14.51%	48.07%	A	A	A	N	A	A
428	Taiwan	9.43%	38.22%	28.79%	17.66%	N	N	A	N	N	A
427	South Korea	5.08%	38.22%	33.15%	8.63%	N	N	N	N	N	N

* Based on parameter estimates from AD-only dataset. All cases listed had affirmative ITC decisions.

The predicted outcome (with cumulation) for all cases listed is affirmative, except where noted with a †.

"A" denotes predicted outcome affirmative; "N" denotes predicted outcome negative.

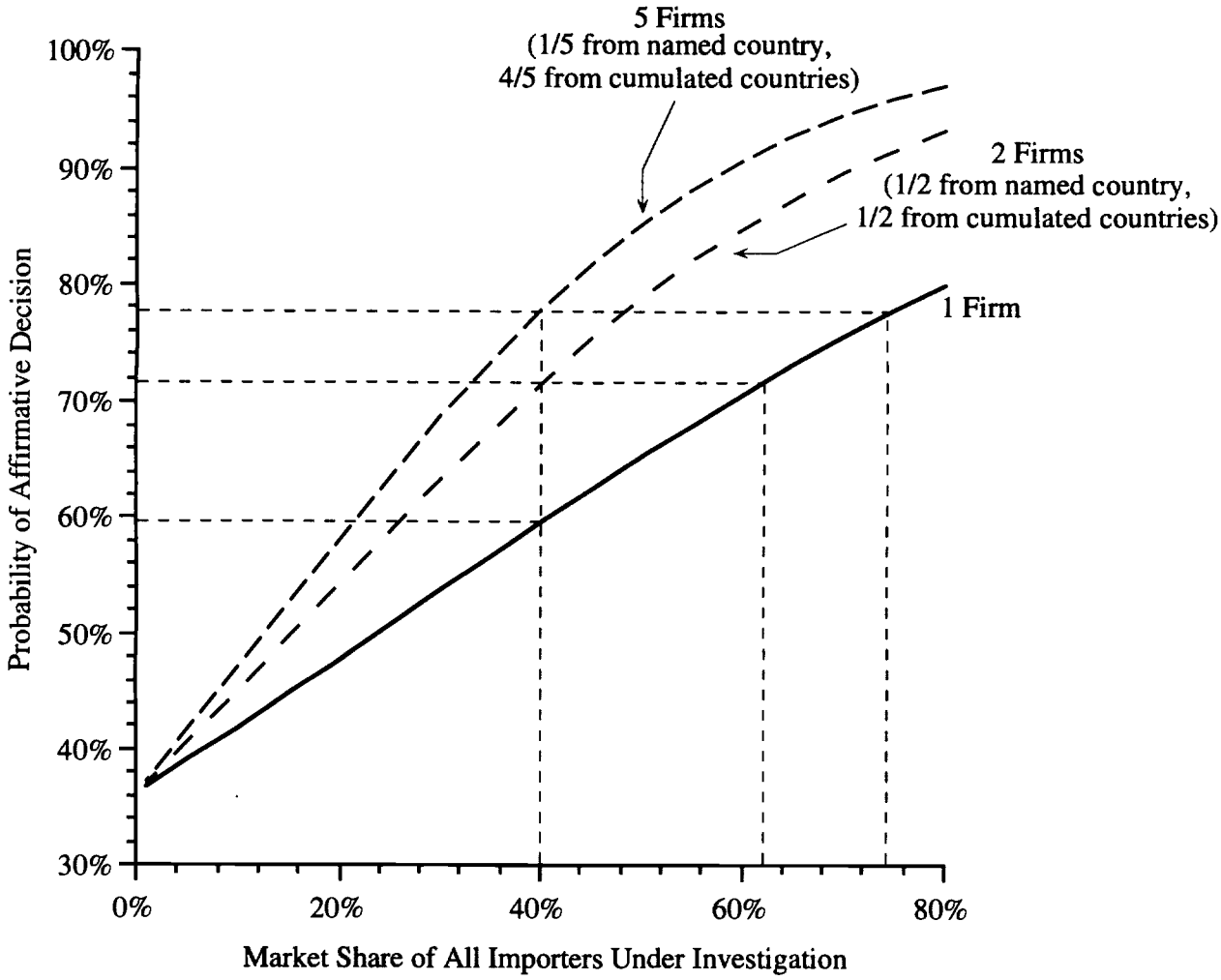
Table VII

Predicted Outcomes if Cumulation

had been mandatory Pre-1984

	Title VII Cases *Specification*						**AD Cases** *Specification*					
	A	*B*	*C*	*D*	*E*	*F*	*A*	*B*	*C*	*D*	*E*	*E*
Number of Cases with Negative ITC decisions (and were not cumulated but were part of multiple petition filing)	93	93	93	93	93	93	49	49	49	49	49	49
Number of Cases Predicted Negative (without cumulation)	83	82	86	84	81	85	41	40	44	43	40	41
Number of Cases Predicted Negative if cumulation had been mandatory	68	64	34	35	28	28	20	28	21	21	16	15
Percentage of Negative Decisions with changed outcomes with cumulation	16.1%	19.4%	55.9%	52.7%	57.0%	61.3%	42.9%	24.5%	46.9%	44.9%	49.0%	53.1%

Figure 1


5 Firms
(1/5 from named country,
4/5 from cumulated countries)
2 Firms
(1/2 from named country,
1/2 from cumulated countries)
1 Firm
100%
90%
80%
70%
60%
50%
40%
30%
0%
20%
40%
60%
80%
Probability of Affirmative Decision
Market Share of All Importers Under Investigation