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AN ANALYSIS OF FACTORS  
INFLUENCING ITC DECISIONS  
IN ANTIDUMPING, COUNTERVAILING  
DUTY AND SAFEGUARD CASES

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ABSTRACT

This paper attempts to determine the economic factors that best explain the decisions of the International Trade Commission in antidumping, countervailing duty and safeguard cases, utilizing the economic data collected by the Commission for each investigation. We also consider the extent to which these factors measure the injury conditions and causation relationships specified in U.S. trade laws.

Our analyses yield mixed results. For example, while the Commission tends to require declining profits and employment in an industry before recommending import protection in safeguard cases -- as specified in the law, it is not clear that it delineates between serious injury caused by increased imports and serious injury due to other factors. Similarly, in countervailing duty and antidumping cases, economic conditions, such as changes in industry shipments and the degree of capacity utilization, are taken into consideration in material injury decisions, but other factors one would expect to be associated with affirmative decisions, e.g., the ratio of unfair imports to consumption, do not seem to play a significant role. Some variables also enter significantly in the regressions that do not seem to be indicators of material injury.

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## Introduction

This paper investigates the decision-making process of the International Trade Commission (ITC) in administering the injury provisions of U.S. countervailing duty (CVD), antidumping duty (AD), and safeguard laws. Specifically, we attempt to determine the economic factors that best explain ITC decisions under these laws. We also consider the extent to which these factors measure the injury conditions and causation relationships specified in the safeguard and unfair trade laws.

In CVD and AD cases, injury to a domestic industry is caused by unfair increases in imports brought about either by subsidization on the part of foreign governments or dumping by foreign producers. If these unfair imports cause or threaten to cause "material injury" (this being defined as injury "which is not inconsequential, immaterial, or unimportant"<sup>1</sup>), a special duty is levied against the imports equal to the margin of subsidization or dumping. In determining whether a domestic industry is materially injured, the ITC is directed by law to consider (but not limit itself to) a common set of specific economic factors.

In safeguard cases, where injury is not the result of unfair competition, the ITC must find increased imports to be "a substantial cause of serious injury, or threat thereof"<sup>2</sup> to

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<sup>1</sup>Trade Agreements Act of 1979, Public Law 96-39, July 26, 1979, Sec. 771, 93 Stat. 178,

<sup>2</sup>Omnibus Trade and Competitiveness Act of 1988, 100th Congress, 2nd Session, Title I, Subtitle D, Part I, Sec. 1401.

a domestic industry before recommending government assistance aimed at facilitating its positive adjustment to import competition. As in CVD/AD cases, in making its determination on serious injury, the Commission is directed to consider various specific economic factors, but not necessarily to confine itself to these factors. They are meant to reflect the greater degree of harm suffered by an industry when it is "seriously injured" compared to being "materially injured."

Safeguard cases since 1974 are analyzed, since this is the date of the last significant change in the safeguard law. Since substantial changes in the CVD and AD laws were made in the Trade Act of 1979, we focus on post-1979 unfair trade cases but do report on an analysis of antidumping cases in the 1970s. We identify separate ITC "determination functions" for each type of case. These functions are so named because they relate the economic data of the industry under investigation to the ITC determination of whether material or serious injury has occurred.

Several authors have empirically analyzed the decision-making process of the ITC. Takacs (1981) investigates whether macroeconomic variables influence the number safeguards petitions as well as the injury decisions of the ITC over the period 1949-1979. She finds that, while more cases are filed in recession periods of high unemployment and low capacity-utilization rates, the stage of the business cycle does not influence the decisions of the ITC. Baldwin (1985) analyzes

the economic factors influencing ITC safeguard decisions between 1974 and 1983, utilizing the microeconomic data in the Commission's reports on the investigations. He finds short-term changes in industry profits and average percentage changes in employment over the preceding five years to be the most significant factors associated with affirmative findings.

Finger, Hall, and Nelson (1982) investigate the political and economic factors influencing both CVD/AD and safeguard decisions by the ITC over the period 1975-79, using data for the 4-digit SIC industries into which the tariff lines covered by the cases are classified. They consider safeguard cases to be more political than CVD/AD cases, mainly because the president need not accept the decisions of the ITC in safeguard cases whereas the president plays no direct role in CVD/AD determinations. As expected, they find political variables, e.g., industry concentration and employment levels, to be more important in the former type of cases. In contrast, technical economic factors, e.g., capital/labor ratios, average wages, and extent of scale economies are more significant in CVD/AD cases than in safeguard petitions.

Herander and Schwartz (1984) investigate only AD cases between 1976 and 1981, using data from the ITC reports. Their logit regressions indicate that the likelihood of an affirmative ITC decision is positively related to the dumping margin and negatively related to the number of firms in the industry, the change in employment in the industry, the ratio

of profits to sales at the time of the decision, and the skill level of the workers in the industry.

Hansen (1990) combines CVD, AD, and safeguard cases in studying the political and economic factors influencing ITC decisions between 1975 and 1984. The cases are grouped into 4-digit SIC codes and economic characteristics of these industries used as proxies for the particular cases. Using a nested logit model, she finds various political factors reflecting the importance of industries petitioning the ITC in the districts of members of the Ways and Means Committee to be significant determinants of ITC decisions as well as such economic factors as percentage changes in industry employment and market shares and the U.S. trade deficit.

Moore (1989), using the economic data from the ITC reports from 1980-1988, estimates the effects of both political and economic factors influencing the ITC's AD decisions. He too finds that both kinds of variables matter. Moore also conducts panel regressions across individual commissioners and finds that there are significant commissioner-specific effects.

Anderson (1991) also analyzes AD decisions using data from ITC reports as well as from other sources, but his investigation covers the years 1986-1990. Unlike Moore, he does not find that ITC decisions favor the economic interests of members of the Trade Subcommittees of the House or Senate. The only significant economic variables in his regressions are an estimate of the percentage decrease in revenue earned by the

domestic industry as a result of dumping and the level of the industry's income to sales ratio.

Our study focuses on the economic factors influencing ITC decisions in CVD, AD and safeguard cases, although some attention is also given to political influences. The CVD and AD cases cover the period 1980-1990, while the safeguard cases run from 1975 through 1988. (There was only one safeguard case in 1989-1990.) Besides estimating the best regressions for each type of petition separately, we estimate commissioner-specific effects in CVD and AD decisions.

The economic data come from the reports by the Commission on its decisions. These provide data on the specific tariff line items covered by the petitions. The problem with using 4-digit SIC data is that many other items are usually included in a particular 4-digit sector besides the products relevant for the investigations, and, consequently, the economic characteristics of a 4-digit sector may not be the same as those for the relevant products.

Before discussing our analysis in detail and presenting the empirical results, we provide a summary of the investigations initiated under each mechanism over the sample period in section II, including the identification of industries which use the procedures as well as the countries cited in CVD/AD cases. Section III then discusses the ITC's statutory directives, while Section IV describes the data. The model and empirical results are contained in Section V.

Section VI draws some conclusions from the analysis.

## **II. Use of the Fair Trade and Safeguard Laws, 1975-1990**

The number of CVD/AD investigations undertaken by Commerce and the ITC increased dramatically after the 1979 Trade Act. In 1980 alone, U.S. industries filed petitions leading to sixty-eight CVD and 37 AD investigations (see Tables 1 and 2). Between January 1, 1980 and the end of 1990, 306 CVD and 494 AD investigations, representing a wide range of industries and countries had been initiated. Table 1 classifies the 306 CVD investigations initiated between 1980 and 1990 by product under investigation, while Table 2 does the same for AD cases. An average of 28 CVD and 45 AD investigations were initiated annually during this period.

One striking feature of post-1979 CVD and AD investigations is that nearly fifty percent involved iron or steel products, or products made primarily with iron or steel. Thirty-two percent of all CVD and ten percent of all AD investigations over the period were filed by this industry in one year, 1982. During that year alone, 104 CVD investigations were initiated, requiring determinations for eight countries and twenty-three iron or steel and related products. For example, CVD petitions involving cold-rolled carbon steel sheet and strip were filed against multiple countries--Belgium, Brazil, France, Italy, Luxembourg, the Netherlands, the United Kingdom and West Germany.



Two interesting trends emerge concerning the nature of CVD/AD investigations over the 1980-1990 period. First, there has been a significant decline in the use of the CVD statute, while use of the AD statute has remained fairly steady over the period. The number of investigations involving the chemical, food and iron/steel industries, which represent 77% of all CVD cases and 43% of AD cases, have also generally fallen, while other industries have used these statutes more aggressively since 1984.

Tables 3 and 4 break down the 1980-1990 CVD and AD investigations by country of exporter.<sup>3</sup> In the CVD cases, Brazil was cited most often--37 times in 11 years, followed by France (28), Italy (24), Spain (21), Canada (19), the United Kingdom (18) and West Germany (18). The only other developing country besides Brazil against whom a significant number of cases were brought was South Korea with 17 cases. The AD investigations have a different distribution, with Japan by far the leader with 64 allegations of dumping. West Germany (33), Taiwan (31), South Korea (28), Italy (27), Canada (25), and the United Kingdom (22), have also been cited frequently.

Over the entire period, 70% of the CVD cases and 57% of the AD investigations involved developed countries, with 55% of the CVD cases and 31% of the AD case being directed against the

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<sup>3</sup>An investigation typically consists of a single product from a single country. However, investigation TA-701-6 investigated viscose rayon staple fiber from both Austria and Japan. Therefore, there are 307 country-investigations during the period.

European Community. During 1980-1982, when chemical, food and iron/steel industries brought most of the cases, the European Community accounted for nearly seventy percent of all investigations.

As Table 5 shows, the iron and steel industry has also been the most frequent user of the safeguard law. However, a wider variety of industries have used this law compared to the CVD/AD laws. The most important development with regard to safeguards is the significant decline in the number of petitions after 1979. There were no changes in the safeguard law at that time, but the 1979 Trade Act made it considerably easier to gain affirmative decisions in CVD/AD cases by defining material injury in a manner that could be satisfied more easily. The Congress also pressured President Carter into transferring the administration of the CVD/AD laws from the Treasury Department to the Commerce Department, which tends to be more sympathetic than Treasury to the competitive problems of U.S. producers, and members of the Senate Finance Committee informed those nominated to administer these laws that they expected antidumping and countervailing duty protection to be granted more frequently than in the past. As a result of these changes, firms seeking protection utilized the CVD/AD laws to a greater extent rather than petitioning for relief under the safeguard law.

### **III. Injury Determinations: Statutory Criteria for ITC**

### Consideration

As previously noted, the CVD, AD and safeguard laws direct the ITC to take into account a number of specific economic factors in reaching its injury determinations. However, these statutes also state that the Commission need not limit itself just to the factors that are mentioned.

In safeguard cases where the ITC must determine whether an article is being imported in such increased quantities as to be a substantial cause of serious injury for an affirmative finding, the factors specified for ascertaining serious injury are:

- "(i) the significant idling of productive facilities in the domestic industry,
- (ii) the inability of a significant number of firms to carry out domestic production operations at a reasonable level of profits, and
- (iii) significant unemployment or underemployment within the domestic industry."

In judging whether there is a threat of serious injury, the specified factors are:

- "(1) a decline in sales or market share, a high and growing inventory (whether maintained by domestic producers, importers, wholesalers, or retailers), and a downward trend in production, profits, wages, or employment (or increasing

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<sup>4</sup>Omnibus Trade and Competitiveness Act of 1988, 100th Congress, 2nd Session, Title I, Subtitle D, Part I, Sec. 1401.

underemployment) in the domestic industry,

(ii) the extent to which firms in the domestic industry are unable to generate adequate capital to finance the modernization of their plants and equipment, or are unable to maintain existing levels of expenditures for research and development,

(iii) the extent to which the United States market is the focal point for the diversion of exports of the article concerned by reason of restraints on exports of such article to, or on imports of such article into, third country markets."<sup>5</sup>

The term "substantial cause" is defined as a cause which is important and not less than any other cause. Furthermore, in determining whether imports are a substantial cause of serious injury or threat thereof, the ITC is directed to take into consideration whether imports have increased, either absolutely or relative to domestic production, and whether there has been a decline in the proportion of the domestic market supplied by domestic producers.

In AD and CVD cases the ITC is charged with determining whether domestic industries are being materially injured by reason of dumped or subsidized imports. In 1979 a common set of criteria for reaching these decisions was established for CVD and AD cases. Three general factors are mentioned in the statutes as guides in reaching a decision:

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<sup>5</sup> Ibid., Sec. 1401.

"(I) the volume of imports of the merchandise which is the subject of the investigation,

(II) the effect of imports of that merchandise on prices in the United States for like products, and

(III) the impact of imports of such merchandise on domestic producers of like products, but only in the context of production operations within the United States."<sup>6</sup>

In evaluating the volume of unfair imports, the ITC is directed to consider whether the volume of such imports or the increase in the volume, either absolutely or relative to production or consumption, is significant. The price effect of concern to the drafters of the law is whether the unfair imports result in significant price undercutting or prevent price increases that otherwise would have occurred.

In considering the third criterion, the ITC is instructed to evaluate all relevant economic factors, including, but not limited to, actual and potential declines in output, sales, market share, profits, productivity, return on investments, and capacity utilization; factors affecting domestic prices; and actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital and investment.

In determining whether there is a threat of material injury, the law lists ten economic factors for consideration,

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<sup>6</sup>Omnibus Trade and Competitiveness Act of 1988, 100th Congress, 2nd Session, Title I, Part 2, Sec. 1401.

including whether there has been any increase in production capacity in the exporting countries accused of unfair trade practices, any rapid increase in the import penetration ratio, any substantial increase in inventories in the United States, and any negative effects on the domestic industry's efforts to develop improved versions of the product.

#### IV. Data Sources and Variable Construction

In conducting its injury investigations, the ITC obtains industry performance data as well as detailed data regarding the product in question by sending questionnaires to firms, both domestic and foreign, involved in the production of the product. The Commission publishes a report after each investigation in which it explains its injury decision and includes much of the non-confidential economic data collected. To assure that only data considered by the ITC are included in the estimation of its determination functions, all variables entering into the regressions are constructed from these data.<sup>7</sup>

A typical report contains industry performance data for the three years (five years for safeguard cases) immediately preceding the initiation of the investigation and details, among other things, real and nominal values of the U.S. industry's shipments (SHIP), exports, production (PROD),

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<sup>7</sup>We are grateful to Michael Moore for providing the AD data through 1985 and for part of 1986.

employment (EMP), value of net sales, cost of goods sold, and net profits. In some cases, productivity, investment, price and wage data are also available, although the infrequency with which these numbers are reported prevents their inclusion in our formal econometric work. In CVD and AD cases, total imports, imports from the subsidizing or dumping country, and domestic consumption are reported, while in safeguard cases imports and domestic consumption are presented. Since the reports suggest that the ITC prefers real variables over nominal variables, quantity data are used in the regressions.

These variables were entered into the regressions in one or more forms. Some variables appear as levels for the most recent year. However, because the regressions are run across industries, only variables which are independent of units, such as employment (EMP), the import penetration ratio (MC) and the profit/sales ratio (PIS), can be included in level form. For the other variables, percentage changes over some interval are used. The ITC also may consider simply whether a variable increases or decreases over recent periods. To investigate this possibility, dummy variables are created. Dummy variables take a value of unity if the corresponding change variable is negative and zero otherwise.

Since an affirmative ITC injury finding is set equal to unity and a negative finding to zero in the probit regression analysis, percentage changes in such U.S. industry variables as the profits/sales ratio, production, shipments, employment, and

capacity are expected to have negative coefficients, that is, the greater the decrease (increase) in such industry variables the greater the likelihood that the decisions will be affirmative (negative). However, percentage changes in the volume or share of imports (all imports in safeguard cases and "unfair" imports in AD and CVD cases) are expected to be positively related to affirmative decisions. Dummies for the direction of change in these imports should be negative, that is, decreases (increases) in such imports, which are set equal to unity (zero) are likely to be associated with negative (positive) findings, which are set equal to zero (unity).

#### V. An Econometric Model of ITC Behavior

As stated at the outset, the empirical questions being pursued here are: Which economic variables best explain the injury decisions of the ITC and do these variables measure the injury and causation relationships specified in the statutes? To answer these questions we first turn to the empirical identification of the "determination functions," namely, the industry performance data that best explain the serious injury decisions in safeguard cases and the material injury decisions in CVD/AD cases. Separate functions are estimated for safeguard cases and for both CVD and AD cases.

Since the ITC's role is to determine whether a domestic industry has been sufficiently injured to qualify as "serious" injury in safeguards cases or as "material" injury in CVD and



AD cases, the injury determination process may be viewed econometrically as a probit model, where  $y_i=1$  is defined as an affirmative determination in investigation  $i$  (the industry has been sufficiently injured to be eligible for adjustment measures) and  $y_i=0$  as a negative determination (the industry has not been sufficiently injured). Each observation in the regression represents an ITC investigation and determination, for which data are available in the ITC reports.<sup>8</sup>

Variables that significantly increase the likelihood function at the 10% level are kept in the regressions below, while other variables are dropped. Table 6 lists the significant variables in the various regressions together their expected signs.

#### A. Safeguard Cases

The function that best explains serious injury determinations in safeguard cases is shown in Table 7.<sup>9</sup> It is quite similar to that identified in Baldwin (1985, p.108).

(The number of findings of the "threat" of serious injury is insufficient to run separate regressions analyzing the

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<sup>8</sup>For the purposes of this analysis, each determination is defined by a country-product pair for which a separate determination is made by the ITC. Therefore, when the ITC returns separate determinations for similar, yet distinct, products in a single investigation, each is treated as a single observation in the regression. For example, investigation TA-701-167, Certain Carbon Steel Pipe from Italy, provides separate decisions and data for two subcategories--small and large pipes, yielding two regression observations for the single investigation.

<sup>9</sup>The safeguard regressions cover the period 1975-1988 and include 61 cases in which there were 90 separate decisions on different products.

decision-making process for such cases.) DPIS4 is the 4-year percentage change in the industry profit/sales ratio. Its negative sign indicates that an affirmative decision is more likely the greater the decline (or smaller the increase) in an industry's profit/sales ratio. Baldwin (1985) showed a 1-year change in profits/sales ratio to be significant. This variable was also significant in our regressions when it replaced DPIS4, but DPIS4 was kept since it was more highly significant. NTE is a dummy variable which takes a value of 1 if both DPIS4 and the change in industry employment are negative over the 5-year period. Baldwin (1985) found a similar variable to be significant. Both changes in profits and in employment are mentioned in the statute as being relevant in determining the threat of serious injury.

T80\_88 is a dummy variable taking a value of unity for cases initiated during or after 1980, the period during which the 1979 Trade Act was in effect. Its negative coefficient implies that affirmative serious injury decisions have been more difficult to achieve since the 1979 Trade Act. As noted earlier, the safeguard provisions were not modified under the 1979 Act, but changes in the CVD/AD provisions were made that enabled firms to obtain protection on grounds of unfair foreign competition more easily. Perhaps, as protection became easier to obtain in the 1980s under the CVD/AD laws, the ITC raised its threshold level for finding "serious injury" in order to delineate this type of injury more clearly from the "material

injury" criterion under the unfair trade laws.

THIRD, a dummy equal to unity when a particular product is investigated for the third time under the safeguard statute, has a significant positive coefficient, indicating that persistence in petitioning for protection apparently pays off. Time dummies and repeated case dummies were not used in the earlier study.

Finally, a macroeconomic variable, DRGNP, the most recent annual percentage change in real GNP, is significantly negative, that is, the greater the percentage decline in real GNP, the greater the likelihood of an affirmative decision. The Omnibus Trade and Competitiveness Act of 1988 states that the Commission "in making determinations" shall "consider the condition of the domestic industry over the relevant business cycle, but may not aggregate the causes of declining demand associated with a recession or economic downturn in the United States economy into a single cause of serious injury or threat thereof."<sup>10</sup> In other words, the ITC should consider the stage of the business cycle in assessing serious injury but should find in the affirmative if increased imports are a substantial cause of serious injury, even though decreased industry demand due to a general economic downturn is an even more important cause of serious injury.

Most surprising is the absence of some measure of change

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<sup>10</sup>Omnibus Trade and Competitiveness Act of 1988, Title I, Subtitle D, Part I, Section 1401.

in imports or in the import penetration ratio in the determination function, given the statutory language that a product must be "being imported in such increased quantities"<sup>11</sup> to be a substantial cause of serious injury. This absence, together with the significance of short-run changes in national income, suggests that the ITC tends to decide in the affirmative whenever a U.S. industry that faces import competition is being seriously injured, regardless of the source of the injury.

#### B. CVD and AD Cases

The post-1980 CVD and AD determination functions are shown in Table 8.<sup>12</sup> In the samples used for the econometric analysis, 66 percent of antidumping cases resulted in affirmative decisions, that is, findings of material injury, while 65 percent of the countervailing duty were decided in the affirmative. Since the statutory criteria for determining material injury are exactly the same for both forms of unfair import competition, one expects the same variables to be

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<sup>11</sup>Omnibus Trade and Competitiveness Act of 1988, 100th Congress, 2nd Session, Title I, Subtitle D, Part I, Sec. 1401.

<sup>12</sup>The CVD/AD regression cover the period 1980-1990. Not all cases can be included in the regressions, since no report is published for cases withdrawn, suspended or terminated before an ITC determination occurs. Even when reports are published, those cases involving industries with a small number of firms (three or fewer) do not present the data collected in order to protect the firms' private information. Because the data in the reports deal with a very specific product, proxy data are unavailable at a comparable level of disaggregation. Finally, some reports contain information on only a few of the variables used in the regressions.

significant in both sets of cases. It turns out that the four statistically significant variables (at the 10% or less level) for the AD cases are also significant in the CVD cases. However, other variables are significant in the CVD cases in addition to these four.

The four common significant variables in both AD and CVD regressions are: the ratio of total imports in the industry to the consumption of the product (MC), (the higher this ratio, the more likely an affirmative decision); the percentage change in capacity over the most recent year (DCAP), (the greater the decline in capacity, the greater the likelihood of an affirmative decision); the direction of the two-year percentage change in the quantity of dumped or subsidized imports from all sources (LDCUMDUM), (affirmative decisions are more likely if these imports have increased); and whether the product under investigation (from any country) had been subject to a previous investigation of the same type (REPPROD), (repeat products stand a greater chance of receiving an affirmative decision).

In addition, in the CVD cases, affirmative decisions are more likely the greater the percentage decline in shipments over the last year (DSHIP); the higher the level of employment (EMP); if the decision is a final one (FINAL), (the ITC appears to be less stringent in its requirements at the final decision stage than at the preliminary stage); and if the product and country had not been previously investigated (REPCASE) (a case previously decided in the negative decisions is likely be

decided in the negative when resubmitted).<sup>13</sup>

The signs and significant levels of most of these variables are consistent with the so-called "trends" approach, which, as Anderson (1992) points out, seems to be utilized by most commissioners in reaching their decisions in AD and CVD cases. Following the procedure outlined in the safeguard statute (but not explicitly stated in the AD/CVD statutes), commissioners following this approach first determine whether the industry is materially injured and, if it is, then decide if the injury is by reason of the unfair imports. They look at trends in such economic variables as shipments, capacity utilization, and employment in determining material injury and consider such factors as changes in the volume of unfair imports and changes in the ratio of unfair imports to consumption in deciding whether the injury is by reason of the unfair imports (Kaplan, 1991).

Clearly, a decline in capacity utilization is an indication of material injury, as is a decline in shipments. Furthermore, the finding that an affirmative decision is more likely if the direction of percentage change in the volume of unfair imports is positive suggests that the commissioners do consider the causal relationship between unfair imports and material injury. However, one would also expect percentage

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<sup>13</sup>Since the sum of REPROD and REPCASE in CVD cases is only slightly negative, the decrease in the probability of obtaining an affirmative determination on the second filing is, however, small.

increases in the ratio of unfair imports to consumption to be significantly related to affirmative decisions. Once a determination of injury for an industry is made, continuing to find injury for the industry no matter from which country further dumped or subsidized imports come, seems a reasonable position for the commissioners to adopt.

The finding that the ratio of all imports (rather than just unfair imports) to consumption is significantly associated with affirmative decisions does not seem consistent with the logic behind the trends analysis. High levels of unfair imports to consumption together with increases in this ratio suggest a causal relationship between unfair imports and material injury, but there seems to be no good economic reason why the degree of openness in an industry, by itself, should be related to material injury. The association between the level of employment and affirmative decisions in CVD cases also does not seem consistent with the statutes and might indicate that political clout plays a role in CVD decisions. There is no indication from the statutes just what relationship to expect between ITC decisions and the FINAL and REPCASE variables.

We next assume that commissioners focus on the same economic variables in reaching their decisions but differ in their threshold levels for finding material injury. We follow Moore (1989) by creating a panel of data -- votes by commissioner on cases over the sample period -- in order to investigate this phenomenon. In the panel regressions, each

commissioner is allowed to have his/her own intercept term. Lower intercept estimates imply higher material injury thresholds for the commissioner to vote affirmatively.

Table 9 indicates the wide variations in voting behavior among commissioners. At one end of the spectrum are Commissioners Lieberler, Cass, Brunsdale and Alberger who voted affirmatively 50% or less of the time in both AD and CVD cases. In contrast, Haggart, Moore, Bedell and Frank voted affirmatively in 80% or more of the AD and CVD cases in which they participated. Stern, Rohr, Lodwick, Calhoun, Newquist, and Eckes fall within the range of greater than 50% but less than 80%.

Table 10 shows the panel regressions for AD and CVD cases. Interestingly, not only do many commissioners' threshold levels of material injury differ significantly, but some new economic variables enter significantly in the panel models. As expected, Lieberler, Brunsdale, and Cass have the highest injury thresholds (lowest intercepts) in both AD and CVD cases. However, the large negative coefficient for Newquist is surprising. But the fact that Haggart, Moore, Bedell, and Frank (who never cast a negative vote) have the largest positive signs is expected.

The second part of Table 10 shows the economic variables that matter in the panel regressions. In the AD regression the percentage change in shipments (DSHIP) and a dummy variable indicating whether the case is against Japan (JAPDUM) are now



significant. This latter variable and one indicating whether the case involved a less developed country were not significant when included in the non-panel regressions. The other significant variables in this regression are the same as in the non-panel AD regression, namely, the import penetration ratio (MC), the percentage change in capacity over the most recent year (DCAP), the direction of the two-year percentage change in cumulative dumped or subsidized imports (LDCUMDUM), and whether the product has been subject to a previous investigation (REPROD).

All the variables significant in the non-panel CVD regression except the change in capacity over the most recent year (DCAP) and whether the decision is a final one (FINAL) are also significant in the panel regression, namely, the import penetration ratio (MC), the direction of the two-year change in cumulative dumped or subsidized imports (LDCUMDUM), the level of employment (EMP), whether the product has been subject to a previous investigation (REPROD), and whether the product and country has been investigated previously (REPCASE).

Four additional variables are significant in the panel CVD cases, namely, the share of subsidized imports to total imports of the product (CTYMM), the two-year percentage change in this ratio (LDCTYMM), the one-year percentage change in subsidized imports (DCUM), and the two-year percentage change in employment (LDEMP). These variables are all strong indicators of injury or of a causal relationship between unfair imports

and injury. Such findings suggest that the commissioners put greater emphasis on economic factors in CVD cases than AD cases. The dummy variables for Japan and less developed countries are not significant for the panel or non-panel CVD regressions.<sup>14</sup>

Some commissioners have explicitly rejected the trends approach. For example, Commissioner Cass, while granting trend analysis makes "a certain rough sense", argues that it "lacks any systematic means either for correlating imports with performance or for determining the probable impact of other variables" (Cass, 1989, pp. 3-4). Cass and Commissioner Brunsdale appear to use the so-called "comparative effects" approach under which the effect of dumping or subsidization on the revenues earned by the domestic import-competing industry is calculated from the dumping or subsidy margins, the share of the market captured by the unfair imports, and estimates of the elasticities of demand for imports and the home product, the elasticity of substitution between the domestically produced good and imports, and the elasticity of supply of the home product (Anderson, 1992). Among the economic factors included in our regressions, one would expect to see the ratio of unfair imports to consumption and the change in unfair imports to be significant variables in the determination functions of commissioners adopting this approach.

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<sup>14</sup>The common set of variables best explaining AD and CVD decisions in the panel and non-panel regressions are DSHIP, MC, LDCUMDUM, and REPPROD.

Other commissioners have followed the so-called "margins" approach. Under this framework, the extent by which the price charged by the exporting country at home is less than the price it charges in the U.S. market (the margin of dumping) is compared to the extent to which the price of the imported product in the United States is less than the price charged by like goods produced in the United States (Cass, 1989; Kaplan, 1991). If the margin of underselling is greater than the margin of dumping, advocates of this approach reason that imports did not cause material injury because the price of imports would have been lower than the U.S. product even if there has been no dumping. In contrast, they find injury when the underselling margin is less than the dumping margin.

Given that commissioners are likely to differ not simply in their threshold levels for finding material injury but in terms of the variables they consider in reaching their decisions, regressions were run on individual commissioners to determine the variables that best explain the AD and CVD decisions of each. The significant variables for individual commissioners in AD and CVD cases are reported in Table 11. The one variable that enters significantly for almost all commissioners in both AD and CVD cases is the ratio of total imports to consumption. While the commissioners differ considerably in terms of other specific variables, most seem to require some indication of material injury, such as a decline in profits, shipments, capacity utilization or employment, for

an affirmative decision in AD and CVD cases. Furthermore, in AD cases, a majority of the commissioners appear to require some indication that unfair imports are increasing before making an affirmative determination, while a high import penetration ratio of unfair imports is significantly related to affirmative decisions for a few members.<sup>15</sup>

An attempt was made to determine if economic factors also played an important role in AD cases prior to 1979 under the 1921 antidumping law.<sup>16</sup> (The results are not shown in table form.) Unfortunately, no economic data were included in ITC reports until 1976 so the sample size is only 41.<sup>17</sup> The only economic factor of significance in the expected manner between 1976 and 1979 is the short-run change in the capacity utilization rate for an industry. This suggests that perhaps economic factors have played a greater role in the decision-making process of commissioners since the revision of the AD law in 1979.

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<sup>15</sup> All of the variables are significant at the 10 percent level, but a few have the wrong sign. In the regression for Lieberler, whose unique interpretation of the statutes did not survive judicial review (Kaplan, 1991), the signs on the change in profits and in capacity utilization are negative rather than positive for her antidumping decisions. In addition, the signs on the direction of change of dumped imports in Lodwick's AD regression and on the change in capacity in Eckes' CVD regressions are unexpected.

<sup>16</sup>A similar effort could not be undertaken for countervailing duty cases, since there was no material injury requirement (and thus a role for the ITC) prior to the 1979 Trade Act.

<sup>17</sup>The ITC took over the responsibility for making injury determinations in AD cases from the Treasury Department in 1954.

## V. Conclusions

We conclude that the evidence is mixed on the extent to which the ITC is guided in its decision-making by economic factors that measure the injury conditions and causation relationships specified in the relevant statutes. The Commission clearly uses economic guidelines set forth in the law in reaching its serious injury determinations in safeguards cases. Specifically, decisions tend to be affirmative if there is a downward trend in industry profits and employment in the sector.

It is less clear, however, whether the ITC delineates between serious injury caused by increased imports and serious injury caused by other factors. The absence of any variable indicating that the Commission considers the extent to which imports have increased in reaching its decisions and yet the significance of short-term changes in real GNP suggests that it does not make this distinction.

The analyses of CVD and AD cases also yields mixed results. That commissioners take into account the trend in the economic variables mentioned in the AD and CVD laws is evident from the finding that affirmative material injury decisions are more likely the greater the percentage decline in an industry's shipments, in its degree of capacity utilization, and, in the case of CVD petitions, in its employment level. Furthermore, the fact that the ITC takes into consideration the percentage

change in dumped or subsidized imports (rather than changes in all imports) in CVD decisions, and the direction of the percentage change in AD cases, indicates a recognition of the causation relationship specified in the unfair trade laws.

However, some variables that one would expect to enter significantly into the various regressions are missing. For example, since most commissioners apparently use the trends approach, one expects increases in the ratio of imports to consumption in safeguard cases and increases in the ratio of unfair imports to consumption in CVD and AD cases to be associated with affirmative decisions. The failure to find percentage declines in profit rates to be related to affirmative decisions in unfair trade cases is also surprising, as is the finding in only one regression of a significant relationship between affirmative decisions and percentage changes in employment.

Furthermore, there are indications that variables unrelated to material injury caused by unfair imports influence ITC decisions. The ratio of total imports (fair or unfair) to consumption and, in the case of CVD petitions, the level of employment are such variables. The significance of the import penetration ratio suggests that Commissioners are more sympathetic to an industry's petition the less competitive the industry is internationally, while the importance of the employment variable in CVD cases suggests that size in itself may be a factor in the determination process. It is also

apparent from the panel regressions that Commissioners differ considerably not only in their threshold level of material injury but in the economic variables they consider most relevant in reaching their decisions.

The finding that the ITC follows the economic guidelines set forth in the law somewhat more closely in CVD than AD cases may be part of the explanation for the significant decline in the number of CVD cases since the early 1980s. Similarly, the apparent stiffening of the ITC standards in safeguard cases after 1980 may help account for the decline in the number of these cases in the 1980s.

Table 1

U.S. Countervailing Duty Investigations, 1980-1990:  
Initiation of Investigations by Product under Investigation

Year												
Product Category	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	All Years
1. Chemicals	18	11	2	0	1	1	3	0	0	1	1	38
2. Food	31	3	1	0	4	5	0	0	0	1	1	46
3. Iron/Steel	4	3	104	6	17	12	1	0	2	0	2	151
4. Leather	6	0	0	0	0	0	0	0	0	0	0	6
5. Machinery	3	0	1	0	1	0	1	0	0	0	0	6
6. Non-ferrous metals	0	0	0	0	0	2	2	1	0	0	1	6
7. OCTG *	0	0	0	0	3	4	1	0	0	0	0	8
8. Textiles/Apparel	3	0	0	0	0	3	0	0	0	0	0	6
9. Lumber	0	0	3	0	0	0	1	0	0	0	0	4
10. Other Products	3	0	5	2	0	4	11	2	6	2	0	35
All Products	68	17	116	8	26	31	20	3	8	4	5	306

Source: USITC Annual Reports, 1980-1991

\*: OCTG means Oil Country Tubular Goods



Table 2

U.S. Antidumping Duty Investigations, 1980-1990:

Initiation of Investigations by Product Under Investigation

Product Category	Year											All Years
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
1. Chemicals	13	1	1	8	6	3	5	3	5	13	6	64
2. Food	2	0	2	1	6	4	1	0	0	0	1	17
3. Iron/Steel	12	6	49	18	48	30	21	2	14	1	10	211
4. Machinery	2	1	1	0	0	0	0	1	1	2	2	10
5. Non-ferrous me	0	1	0	0	0	3	7	4	1	0	3	19
6. OCTG *	0	0	0	0	5	6	1	0	0	0	0	12
7. Textiles/Apparel	2	0	2	3	1	1	1	0	2	3	0	15
8. Other Products	6	6	10	16	8	16	35	5	19	4	21	146
All Products	37	15	65	46	74	63	71	15	42	23	43	494

Source: USITC Annual Reports, 1980-1991

\*: OCTG refers to Oil Country Tubular Goods

Table 3

U.S. Countervailing Duty Investigations, 1980-1990:  
Initiation of Investigations by Country under Investigation

Country	Year												All Years
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Years	
Canada	2	2	4	0	1	3	2	0	2	3	0	19	
Belgium	5	2	9	0	0	0	1	0	0	0	0	17	
Denmark	6	1	0	0	0	0	0	0	0	0	0	7	
France	6	2	16	0	1	2	1	0	0	0	0	28	
Greece	0	1	0	0	0	0	0	0	0	0	0	1	
Ireland	5	1	0	0	0	0	0	0	0	0	0	6	
Italy	6	1	12	1	1	2	0	1	0	0	0	24	
Luxembourg	5	1	7	0	0	0	0	0	0	0	0	13	
Netherlands	6	1	5	0	0	0	1	0	0	0	0	13	
Portugal	0	0	0	0	0	1	0	0	0	0	0	1	
Spain	0	0	15	1	3	0	1	1	0	0	0	21	
United Kingdom	5	1	12	0	0	0	0	0	0	0	0	18	
West Germany	5	1	11	0	0	1	0	0	0	0	0	18	



Table 3 (Continued)

U.S. Countervailing Duty Investigations, 1980-1990:  
Initiation of Investigations by Country under Investigation

Country	Year													All Years
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1990		
Korea	1	0	6	0	3	4	2	0	1	0	0	0	17	
Singapore	0	0	0	0	0	0	0	0	1	0	0	0	1	
Taiwan	1	0	1	0	0	3	1	0	1	0	0	0	7	
India	1	0	0	0	1	1	0	0	0	0	1	1	4	
Indonesia	0	0	0	0	1	1	0	0	0	0	0	0	1	
Malaysia	0	0	0	0	0	0	0	0	1	0	0	0	1	
Pakistan	2	0	0	1	0	0	0	0	0	0	0	0	3	
Philippines	0	0	0	0	0	1	0	0	0	0	0	0	1	
Brazil	5	1	15	5	4	2	3	0	1	0	1	0	37	
Chile	0	0	0	0	0	0	1	0	0	0	0	0	1	
El Salvador	0	0	0	0	0	0	1	0	0	0	0	0	1	

Table 3 (Continued)

Mexico	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Uruguay	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Venezuela	0	0	0	0	4	4	0	1	0	1	0	1	0	1	0	1	0	10	
Israel	0	0	0	0	0	0	3	0	1	0	1	0	1	0	1	0	1	5	
All Countries	69	17	116	8	26	31	20	3	8	4	5	307							

Source: USITC Annual Reports, 1980-1991

Table 4

U.S. Antidumping Duty Investigations, 1980-1990:  
Initiation of Investigations by Country Under Investigation

Country	Year													All Years
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1990		
Canada	3	1	2	2	3	4	3	2	4	1	0	0	25	
Belgium	1	0	5	2	0	0	2	0	0	0	1	1	11	
France	3	1	9	0	1	3	3	0	1	1	1	1	23	
Greece	0	0	0	0	0	0	1	0	1	0	0	0	2	
Ireland	0	0	0	0	0	0	0	0	1	0	0	0	1	
Italy	6	0	4	4	3	2	3	2	2	0	1	0	27	
Luxembourg	1	0	5	0	0	0	0	0	0	0	0	0	6	
Netherlands	2	0	4	1	0	1	0	1	0	0	1	0	10	
Portugal	0	0	0	0	0	1	1	0	0	1	0	0	3	
Spain	0	0	0	2	9	0	2	1	0	1	0	0	15	
United Kingdom	2	1	8	2	0	1	2	0	2	0	4	4	22	
West Germany	5	2	9	4	0	1	4	0	2	2	4	4	33	
Austria	1	0	0	0	3	1	0	0	0	0	1	0	6	
Finland	0	0	0	0	4	0	0	0	0	0	1	0	5	
Norway	0	0	0	0	1	0	0	0	0	0	1	1	2	
Sweden	0	0	2	0	0	0	2	0	1	1	1	1	7	
Switzerland	2	0	0	2	0	0	0	0	0	0	0	0	4	
Turkey	0	0	0	0	0	1	1	0	0	0	1	3	3	
Australia	0	0	1	0	1	0	0	0	1	0	0	0	3	
New Zealand	0	0	0	0	1	1	0	0	0	0	0	0	2	
South Africa	0	0	0	0	6	1	0	0	0	0	0	0	7	
Japan	7	3	3	7	4	6	9	7	9	3	6	6	64	
Hong Kong	0	0	0	0	0	0	1	0	0	1	1	0	3	
Korea	1	1	2	6	3	5	4	0	2	3	1	0	28	
Singapore	0	0	0	0	0	3	1	0	2	0	1	1	7	
Taiwan	0	0	2	2	3	5	5	1	5	2	3	3	31	

Table 4 (cont.)  
 U.S. Antidumping Duty Investigations, 1980-1990:  
 Initiation of Investigations by Country Under Investigation

Country	Year													All Years
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1990		
China	1	0	3	4	0	6	1	0	1	1	7	7	24	
India	1	0	0	0	0	2	0	0	0	0	1	4	1	
Malaysia	0	0	0	0	0	0	0	0	1	0	0	0	1	
Philippines	0	0	0	0	0	1	0	0	0	0	0	0	1	
Thailand	0	0	0	0	0	1	1	0	1	0	1	4	1	
Argentina	0	0	1	3	1	0	1	0	1	0	2	8	8	
Brazil	0	0	2	3	6	3	7	0	2	1	2	26	26	
Chile	0	0	1	0	0	0	1	0	0	0	1	3	3	
Colombia	0	1	0	1	0	0	2	0	0	0	0	4	4	
Costa Rica	0	0	0	0	0	0	1	0	0	0	0	1	1	
Ecuador	0	0	0	0	0	0	1	0	0	0	0	1	1	
El Salvador	0	0	0	0	0	0	1	0	0	0	0	1	1	
Mexico	0	0	0	1	1	2	2	0	0	2	1	9	9	
Peru	0	0	0	0	0	0	1	0	0	0	0	1	1	
Trinidad/Tobago	0	0	1	0	0	0	0	0	0	0	0	1	1	
Venezuela	0	0	1	0	0	0	0	0	0	0	0	0	1	
Iran	0	0	0	0	5	4	1	1	1	0	1	13	13	
Israel	0	0	0	0	0	1	0	0	0	0	0	1	1	
Kenya	0	0	0	0	1	0	2	0	1	1	1	5	5	
Czechoslovakia	0	0	0	0	0	0	1	0	0	0	0	1	1	
East Germany	0	0	0	0	2	0	0	0	0	0	0	2	2	
Hungary	1	0	0	0	5	0	1	0	0	0	0	7	7	
Poland	0	1	0	0	2	0	1	0	0	0	0	4	4	
Romania	0	0	0	1	3	2	0	0	0	0	0	6	6	
Romania	0	1	1	0	3	1	2	0	1	0	0	9	9	
USSR	0	0	0	0	1	0	1	0	0	0	0	2	2	
Yugoslavia	0	1	0	0	0	2	1	0	0	1	0	5	5	
All Countries	37	15	65	46	74	63	71	15	42	23	43	494	494	

Source: USITC Annual Reports, 1980-1991

Table 5

U.S. Safeguard Investigations, 1975-1990:  
Initiation of Investigations by Product under Investigation

Product Category	1975	1976	1977	1978	1979	1980	1981
1. Chemicals	0	0	0	0	0	0	0
2. Food	2	5	1	0	1	1	0
3. Iron/Steel	3	2	7	2	0	0	0
4. Leather	0	0	0	0	1	1	0
5. Machinery	0	0	0	0	0	0	0
6. Non-ferrous Metals	0	0	1	1	0	0	0
7. Footwear	1	1	0	0	0	0	0
8. Textiles/Apparel	1	0	1	0	0	0	0
9. Lumber	1	0	0	0	0	0	0
Other Products	1	1	3	4	2	0	1
All Products	9	9	13	7	4	2	1

Product Category	1982	1983	1984	1985	1986	1987	1988	1989	1990	All Years
1. Chemicals	0	0	1	0	0	0	0	0	0	1
2. Food	0	0	1	1	0	0	0	0	0	12
3. Iron/Steel	1	1	1	1	1	0	0	0	0	19
4. Leather	0	0	0	0	0	0	0	0	0	2
5. Machinery	1	0	0	0	0	0	0	0	0	1
6. Non-ferrous Metals	0	0	1	0	0	0	0	0	0	3
7. Footwear	0	0	2	0	0	0	0	0	0	4
8. Textiles/Apparel	0	0	0	0	0	0	0	0	0	2
9. Lumber	0	0	0	0	1	0	0	0	0	2
Other Products	1	0	0	1	0	0	1	0	1	16
All Products	3	1	6	3	2	0	1	0	1	62

Source: USITC Annual Reports, 1976-1991



Table 6 Definition of Significant Variables and Their Expected Signs

<u>INDEPENDENT VARIABLES</u>	<u>DEFINITION</u>	<u>EXPECTED SIGN</u>
<u>Percentage Changes</u>		
DPIS	Most recent change in income/sales ratio	-
LDPIS	2-year change in income/sales ratio	-
DPIS4	4-year change in income/sales ratio	-
DSHIP	Most recent change in shipments	-
LDSHIP	2-year change in shipments	-
DPROD	Most recent change in production	-
DCAP	Most recent change in capacity utilization	-
LDCAP	2-year change in capacity utilization	-
DCUM	Most recent change in quantity of "unfair" imports from all countries	+
LDCUM	2-year change in quantity of unfair imports from all countries	+
DEMP	Most recent change in employment	-
LDEMP	2-year change in employment	-
LDCTYMM	2-year change in quantity of unfair imports from country under investigation	+
DRGNP	Most recent change in real GNP	?
<u>Levels</u>		
EMP	Employment	?
MC	Ratio of total imports to consumption	?
CTYMM	Quantity of unfair imports from country under investigation	+

Table 6 - (continued)

<u>INDEPENDENT VARIABLES</u>	<u>DEFINITION</u>	<u>EXPECTED SIGN</u>
<u>Dummy Variables</u>		
T80_88	Safeguard case in 1980 or before (1) or after 1980 (0)	?
THIRD	Product investigated for third time under safeguard statutes (+1); otherwise (0)	+
NTE	Both profit rate and employment decreased over 5-year period (+1); otherwise (0)	+
FINAL	Decision is final (+1); decision is preliminary (0)	?
REPPROD	Product subject to previous investigation (+1); otherwise (0)	+
REPCASE	Product and country subject to previous investigation (+1); otherwise (0)	?
JAPDUM	Case against Japan (+1); otherwise (0)	?
DCUMDUM	Negative percentage change in unfair imports from countries in most recent period (+1); otherwise (0)	-
LDCUMDUM	Negative percentage change in unfair imports from all countries over 2-year period (+1); otherwise (0)	-

Table 7: Probit Regression Results for Safeguard Investigations<sup>1</sup>

<u>VARIABLES</u>	<u>COEFFICIENT</u>
CONSTANT	-0.063 (-0.288)
NTE	0.937 (2.418)
T80_88	-1.58 (-3.582)
THIRD	2.21 (2.939)
DPIS4	-0.0035 (-2.804)
DRGNP	-5.825 E-5 (-1.816)

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n=	83
-2*loglike.	80.87
X-sq. Stat.	34.18
#/% correct predictions	57/69%

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<sup>1</sup> Numbers in parentheses are t-statistics

Table 8: Probit Regression Results for CVD and AD Investigations<sup>1</sup>

VARIABLES	BEST INDIVIDUAL REGRESSIONS		REGRESSIONS COMBINING ALL VARIABLES FROM INDIVIDUAL REGRESSIONS	
	Post- 1980 AD	Post- 1980 CV	Post- 1980 AD	Post- 1980 CV <sup>2</sup>
CONSTANT	0.057 (0.382)	-0.087 (0.355)	0.033 (0.191)	-0.087 (0.355)
DSHIP	-	-0.026 (4.085)	0.000 (0.151)	-0.026 (4.085)
MC	0.016 (3.840)	0.018 (2.247)	0.017 (3.769)	0.018 (2.247)
LDCUMDUM	-0.406 (2.435)	-0.683 (2.269)	-0.436 (2.370)	-0.683 (2.269)
DCAP	-0.025 (3.737)	-0.040 (2.308)	-0.023 (3.332)	-0.040 (2.308)
EMP	-	1.264 E-5 (1.734)	1.555 E-6 (0.627)	1.264 E-5 (1.734)
FINAL	-	1.015 (2.473)	-0.025 (0.161)	1.015 (2.473)
REPROD	0.446 (2.603)	2.138 (3.434)	0.495 (2.545)	2.138 (3.434)
REPCASE	-	-2.256 (2.644)	-0.227 (0.609)	-2.256 (2.644)
n=	361	172	361	172
#/%correct predictions	260/72%	123/72%	262/73%	123/72%
-2*loglike.	414.048	172.161	413.012	172.161
X-Sq. Stat.	46.433	51.53	47.470	51.53

<sup>1</sup> Numbers in parentheses are t-statistics.

<sup>2</sup> Results for regressions combining all variables from individual regressions for CVD investigations are the same as the best individual regression for CVD investigations.

Table 9: Percentage of Affirmative Votes by Commissioners and Rankings of Commissioner Voting Tendencies for AD and CVD Cases

<u>Commissioner</u>	<u>AD</u>		<u>CV</u>	
	<u>% Affirmative</u>	<u>Rank</u>	<u>% Affirmative</u>	<u>Rank</u>
Lieberler	15	1	49	4
Cass	21	2	38	1
Brunsdale	28	3	48	3
Alberger	50	4	44	2
Stern	58	5	59	6
Rohr	62	6	74	9
Lodwick	64	7	76	10
Calhoun	70	8	57	5
Newquist	74	9	62	7
Eckes	78	10	71	8
Haggart	80	11	89	11
Moore	83	12	na	na
Bedell	83	12	100	12
Frank	100	13	100	12

Table 10: Panel Regression Results for CVD and AD Investigations<sup>1</sup>

<u>VARIABLES</u>	<u>Post- 1980 AD</u>	<u>Post- 1980 CV</u>
Lieberler	-1.709 (-11.21)	-1.565 (-5.853)
Brunsdale	-0.5004 (-4.064)	-0.9898 (-3.444)
Alberger	-0.2220 -1.391)	-1.132 (-5.396)
Stern	-0.2458 (-2.155)	-0.9528 (-5.443)
Rohr	-0.2317 (-2.119)	-0.5082 (-2.122)
Calhoun	0.3135 (1.882)	-0.7503 (-3.829)
Lodwick	-0.1689 (-1.613)	-0.4415 (-1.885)
Eckes	0.3067 (2.840)	-0.4454 (-2.668)
Haggart	0.3559 (1.548)	0.3425 (1.001)
Moore	0.6809 (2.842)	- -
Bedell	0.6966 (2.922)	5.593 (0.0009879)
Cass	-0.6306 (-2.991)	-1.370 (-2.677)
Newquist	-1.457 (-8.166)	-0.5700 (-1.247)
Frank	5.123 (0.09612)	6.237 (0.007189)

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<sup>1</sup> Numbers in parentheses are t-statistics.

Table 10 - (continued)

<u>VARIABLES</u>	<u>Post-1980 AD</u>	<u>Post-1980 CVD</u>
DSHIP	-0.004588 (-3.126)	-0.02137 (-7.188)
MC	0.01568 (7.783)	0.03920 (8.912)
CTYMM	-	4.497E-05 (2.347)
LDCTYMM	-	3.972E-08 (2.444)
DCUM	-	3.418E-06 (1.812)
LDCUMDUM	-0.1808 (-2.124)	-0.5593 (-3.917)
DCAP	.007177 (-2.280)	-
EMP	-	1.462E-05 (4.024)
LDEMP	-	-0.01129 (-4.498)
REPPROD	0.3343 (4.208)	0.6396 (3.284)
REPCASE	-	-1.424 (-4.250)
JAPDUM	0.4288 (3.1999)	-
<hr/>		
n =	1719	841
#1 $\frac{1}{2}$ correct predictions =	123/71 $\frac{1}{2}$	667/79 $\frac{1}{2}$
-2*Log Likelihood =	1908.237	729.057
X-Sq. Stat.	118.267	203.574

Table 11 Individual Commissioner Regressions

<u>COMMISSIONER</u>	<u>AD CASES</u>	<u>CYD CASES</u>
Alberger	MC, CTYMC	DPROD, MC, DPIS
Brunsdale	EMP, DCUM, CTYMC, JAPDUM	-
Calhoun	DPIS, MC, CTYMC	DSHIP, MC, DPIS
Eckes	DSHIP, MC, LDCUMDUM	MC, LDCUM, LDCAP
Lieberler	LDPIS, MC, LDCAP, JAPDUM	MC, DEMP
Lodwick	MC, DCUMDUM, DCAP, REPPROD	MC, FINAL, LDSHIP
Newquist	LDCUMDUM	-
Rohr REPCASE	MC, DCAP, FINAL, REPPROD	LDSHIP, MC, LDCAP,
Stern LDCUMDUM	LDSHIP, MC, LDCUM	MC, DSHIP, DCAP, LDEMP

- indicates insufficient data



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