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# CREATING BARRIERS FOR FOREIGN COMPETITORS: A STUDY OF THE IMPACT OF ANTI-DUMPING ACTIONS ON THE PERFORMANCE OF U.S. FIRMS

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*This study investigates whether anti-dumping statutes are effective at improving the performance of U.S. firms. As international trade grows and competitors increasingly cross national borders to enter new markets, U.S. trade law becomes a potentially important tool for managers as they consider how to create barriers for foreign competitors. The results of this study suggest that the anti-dumping laws significantly increase returns of U.S. firms that pursue anti-dumping protection. The average petitioner between 1980 and 1992 received a $46 million increase in market value as a result of filing an anti-dumping petition. However, no significant change in market value was associated with preliminary or final determinations of the International Trade Commission, except when petitions received a negative determination at the final stage of the process. A negative determination at the final stage of the process resulted in a loss of market value.* © 1998 John Wiley & Sons, Ltd.

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> Nowadays, many businessmen, while proclaiming their belief in free trade as a theoretical ideal, tell you at the same time that, as a matter of practical fact, free trade is a myth. Everybody is cheating.
>
> (*The Economist*, 1990: 6)

Creating barriers to competition plays an important role in strategic thinking and practice (D'Aveni, 1994; Porter, 1985). Much of competitive strategy focuses on how to create and sustain barriers that make it difficult for competitors to succeed. A strategy that promotes the development of proprietary knowledge or brand loyalty, or controls sources of supply, for example, focuses on the market factors that create barriers and the potential to generate economic profits (Boddewyn and Brewer, 1994). Corporate political activity can also create effective barriers for competitors (McEvily, Sutcliffe, and Marcus, 1994; Boddewyn and Brewer, 1994). The pursuit of trade protection represents one type of political activity that firms employ to create barriers for foreign competitors and improve the firm's performance.

Many scholars have noted that as tariffs are reduced through multilateral agreements (such as the General Agreement on Tariffs and Trade (GATT)), other types of trade barriers become the preferred mode of protecting domestic firms from foreign competition (Prusa, 1991; Lipson, 1983). This study investigates whether one type of trade barrier, anti-dumping protection, is effective at improving U.S. firm performance. The empirical evidence in this study suggests that the anti-dumping laws significantly increase the returns to U.S. firms that pursue anti-dumping protection.

The following sections of this paper will provide a review of previous studies of trade protection. A brief background on the anti-dumping statutes and the review process will also be pro-

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vided. Then, an overview of the methodology employed in this study, the results, and a discussion will be presented. A detailed description of the methodology can be found in the Appendix.

## BACKGROUND

### Background literature

Researchers have examined the factors that influence whether firms seek trade protection from foreign competitors and the benefits of pursuing trade protection. Lenway and Rehbein's (1991) study found that organizational slack is a major determinant of involvement in escape clause petitions.[1] Lenway and Schuler's (1991) study of the steel industry tested whether the firm's size, profitability, level of diversification, and competitive strategy affect its investment in trade protection. They found that higher market share helps to explain higher levels of political activity, but they provided only tentative support for the hypothesis that profitable firms are more likely to pursue trade protection. Schuler (1996) also found that high market share firms in the steel industry are more likely to pursue political activity, but he found no relationship between the level of diversification, organizational slack, or the presence of a corporate office in Washington, DC and political activity seeking trade protection. In Salorio's (1991) study, he found that preferences for protection vary based on differences in industry structure, international position, and marketing strategy and channels. These findings are consistent with the view that differences in how firms create value can lead to fundamentally different positions on regulatory issues (Marcus, 1991; Porter, 1985).

The anti-dumping statutes, in particular, have been used extensively by U.S. firms to create barriers for foreign competitors (Boltuck and Litan, 1991). Our understanding of how particular environmental and organizational factors influence the number of anti-dumping petitions is limited, however (Schuler, 1996). Lenway and Schuler's work (1991) suggested that both economic and political factors influence firms' decisions to seek trade protection. Dramatic shifts in the global demand for steel and high levels of import penetration, for example, played a significant role in inducing U.S. steel companies to initiate anti-dumping petitions in early 1982. The outcome of these petitions, however, was affected by political factors that led to negotiated agreements with European Community producers and the withdrawal of the petitions (Lenway and Schuler, 1991). These results conform to Prusa's conclusions that firms may gain protection without pursuing the petition to completion (Prusa, 1991). That is, firms often file anti-dumping petitions and later withdraw them, having achieved either private or government-mediated price and/or quantity agreements with the foreign firms. Thus, strategies to pursue benefits from political activity and competitive strategies may be interdependent (Baron, 1995; Murtha and Lenway, 1994; Ring, Lenway, and Govekar, 1990).

The benefits of pursuing trade protection have been assessed in several studies. In Lenway, Rehbein, and Starks' (1990) study of the steel industry, they found only limited evidence of firm-level wealth effects associated with six trade restrictions on steel import occurring between 1969 and 1982. Lenway and Schuler (1991) found no consistent relationship between the level of involvement in seeking trade protection and its benefits. Lenway, Jacobson, and Goldstein (1990) studied whether firms benefit more from stronger petitions or from lobbying Congress for indirect influence on the International Trade Commission (ITC) decisions; they conclude that corporate resources are better spent improving the strength of the petition rather than lobbying Congress. Thus, while researchers offer theoretical rationale supporting the benefits of seeking trade protection, the evidence quantifying these benefits has been elusive.

This study offers a quantitative evaluation of the effects of pursuing anti-dumping protection. By looking at several stages in the anti-dumping review process, this study attempts to measure the effects of the anti-dumping petition at several stages of the process. By using the firm level of analysis, this study offers an evaluation of impact relevant to managers.

[1] Petitions for trade protection through the escape clause seek temporary protection from foreign imports that have injured or threaten to injure a domestic industry. If the International Trade Commission finds injury, a recommendation for import relief is sent to the president, who decides whether to accept, modify, or reject the recommendation (Lenway and Rehbein, 1991).

### The review process

The U.S. Department of Commerce (DOC) and the U.S. ITC have broad powers to investigate how U.S. foreign trade influences U.S. production, employment, and consumption (U.S. International Trade Commission, 1992); it is in this role that the DOC and the ITC investigate unfair trade practices, such as dumping, or 'sales at less than fair market value', by foreign firms. 'Sales at less than fair market value' are found when prices charged in the United States by a foreign firm are below the foreign market value. The foreign market value is currently defined in several ways, including the price charged in a foreign firm's home market, prices charged on exports to a third country, or as the total average cost of production (Murray, 1991).

The review process of an anti-dumping petition can take as long as 10–14 months to complete and can result in costly legal bills. (See Figure 1 for a flow chart of the process and the time periods associated with each step.) Petitions are filed by a company or group of companies on behalf of the domestic industry. If the DOC finds a credible allegation on the part of the petitioner(s), the ITC performs a preliminary investigation, determining whether there is a 'reasonable indication' of injury to the industry. If the ITC makes an affirmative ruling of injury, an anti-dumping duty is immediately placed on the imported product (based on the DOC's estimated dumping margin), and foreign firms must post bond or make other guarantees that anti-dumping duties will be paid upon assessment. If the DOC finds a 'reasonable likelihood' in its completed investigation that imports are sold at below fair market value, the ITC then performs a final investigation of whether material injury resulted or is threatened by the pricing practices (U.S. International Trade Commission, 1992; Murray, 1991).

If the DOC's final investigation confirms its earlier ruling that imports are being sold in the

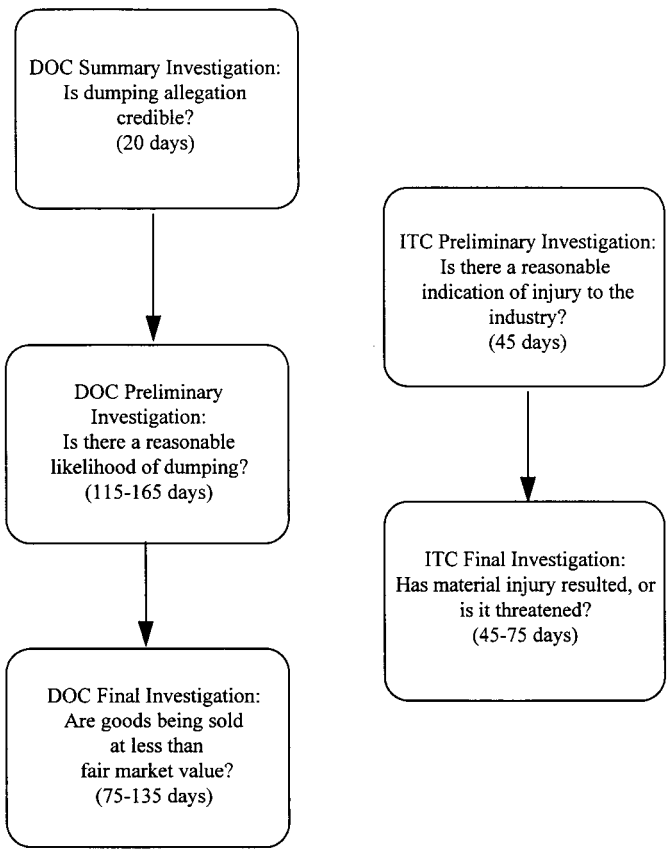


Figure 1. Anti-dumping petition review process

United States at less than fair market value, and the ITC's final evaluation finds threatened or actual material injury, then a long-term anti-dumping duty is placed on the imports based on the DOC's estimated margin of dumping. These duties can be imposed unilaterally and uniformly on all product imports from a particular country, or different duty levels can be imposed on each foreign firm. Administrative reviews to assess whether the dumping has continued can be performed annually for up to 3 years following the findings. Petitioners have the right to appeal the decision to the Court of International Trade, which can overturn the decision or require the ITC commissioners to reconsider the petition. Petitioners are also free to continue filing petitions.

## RESEARCH HYPOTHESES

All the firms in an industry are potentially affected by the imposition of the anti-dumping duty, but the effects on individual firms may differ due to each firm's strategy, competitive position, or sourcing practices (Porter, 1985; Salorio, 1991). Differences in how goods are produced, how inputs are sourced, and the level of differentiation among the firms' products can create different levels of benefit for each firm in the industry (Salorio, 1991). Although firms may free ride on the political activities of others (Lenway and Rehbein, 1991; Hansen, 1990), one would not expect firms to petition the DOC and incur the costs of the filing unless they anticipated benefits resulting from an affirmative ruling. Therefore, one would expect that the impact of affirmative rulings would be most significant for those firms that file the anti-dumping petitions.

As described in the previous section, there are two different stages in the anti-dumping review process. The ITC's first decision, the preliminary determination, evaluates whether there is a 'reasonable likelihood' of injury to the industry. An affirmative ruling at this stage results in the imposition of an anti-dumping duty commensurate with the amount of dumping. A negative ruling terminates the process. The ITC's second decision, the final determination, results from a more extensive review of the petitioners' evidence of sales at less than fair value. An affirmative ruling at the final stage results in a long-term anti-dumping duty. A negative ruling leads to an elimination of the anti-dumping duty that was imposed after the preliminary ruling, and the process is terminated. Thus, each stage of the ITC review process offers another review of the evidence, additional information about the ITC's evaluation of the evidence, and potentially different levels of anti-dumping protection. Therefore:

> *Hypothesis 1: Affirmative anti-dumping decisions by the ITC at the preliminary and final determinations have positive effects on the performance of the petitioning firms.*

And, conversely:

> *Hypothesis 2: Negative anti-dumping decisions by the ITC at the preliminary and final determinations have negative effects on the performance of the petitioning firms.*

Firms may receive direct and indirect benefits by seeking anti-dumping protection. The most direct benefit of anti-dumping protection is the potential to reduce the threat from foreign competitors by creating barriers to foreign competition through the imposition of an anti-dumping duty. Firms may also benefit indirectly when they file anti-dumping petitions, even if they do not complete the entire review process (Prusa, 1991; Lenway and Schuler, 1991). Simply filing an anti-dumping petition may represent a credible threat to foreign competitors that seek increased market share in the United States. Anti-dumping petitions may serve as a strong signaling device to competitors, domestic and foreign, about price levels. Filing an anti-dumping petition may also induce the foreign firms to negotiate with the petitioning firms directly or with the U.S. government to establish price or quantity agreements (Prusa, 1991). Once an agreement has been reached, the firm can then withdraw the petition from the review process before an anti-dumping duty is actually imposed. In this way, the petitioning firm benefits from the anti-dumping law even though it does not pursue the review process to completion.

Some researchers have suggested that even the existence of the anti-dumping law itself may affect the behavior of U.S. firms and foreign firms (Stern, 1991). Just the *threat* of imposing an anti-dumping duty may reduce price competition by foreign competitors and induce them to

raise prices to customers, making the domestic firms' products more price competitive.

Anti-dumping actions may also be sought to gain competitive advantage over *domestic* competitors. Different industry structures can make cooperative pricing more or less difficult, and technological changes, supply disruptions, and other exogenous factors can affect the relative position of competitors. Significant intraindustry conflict can occur because the potential effects of trade protection may differ for the individual firms in the industry (Salorio, 1991), thereby creating the potential to use trade protection as a means to establish competitive advantage *vis-a-vis* domestic competitors.

Thus, there may be direct and indirect benefits associated with pursuing anti-dumping protection. Firms may receive some of these benefits, such as increased power in private and/or government-led negotiations and signaling of prices to foreign or domestic competitors, even if the petition does not proceed through the entire process successfully. Therefore:

*Hypothesis 3: Filing an anti-dumping petition has a positive effect on the performance of petitioning firms, regardless of the outcome of the petition.*

## METHODOLOGY

Several considerations led to the choice of an event study methodology for this research. First, the public announcements of petition filings and the ITC's decisions offer clear and definitive events to which the market's response can be measured. The preliminary and final determination decisions made by the ITC are publicly announced upon decision. Second, market measures of performance offer a direct measure of shareholder value—one which may more readily represent the value of the firm than traditional accounting measures of performance (Lubatkin and Shrieves, 1986). In this case, accounting returns may not necessarily capture the value associated with using the anti-dumping law as part of a firm's competitive strategy. For example, an anti-dumping action may help sustain price levels at their current level or induce foreign competitors to enter negotations on prices and quantities, thereby creating value for the firm that would otherwise not be created—value that accounting measures would not reliably capture.

According to the efficient markets hypothesis, market prices represent the net present value of all future cash flow and reflect all available information about the value of a security; a semi-strong form of efficiency assumes that new information is quickly assimilated and reflected in the security price (Brealey and Myers, 1991). In this study, like other event studies (e.g., Bettis and Weeks, 1987; Lubatkin, 1987), any change in price that cannot be accounted for in general market moves or firm risk is assumed to reflect a change in anticipated cash flow in the future that is associated with new information presented by a particular event.

This research employed an event study methodology to isolate the unanticipated change or abnormal return associated with anti-dumping petitions. Three different events were tested: the date the petition was initially filed, the date of the preliminary ITC determination, and the date of the final ITC determination. A 3-day event period, extending from 2 days prior to the event until the day of the event, was analyzed. To test the robustness of the 3-day event period results, additional analysis using a 5-day event period, extending from 3 days prior to the event until 1 day following the event, was also performed. Each of these event periods allows for the market response to leakage of information to occur before the event. See the Appendix for a detailed description of the methodology.

### Sample

Between 1980 and 1992, 626 petitions were filed with the Department of Commerce alleging dumping practices by foreign firms. The petitioners during this period consisted of over 336 different organizations, including privately held and publicly traded companies, trade associations, *ad hoc* committees and industry groups, and labor unions.

The sample used in this study was constructed by identifying the petitioners of the 626 filings reported in the *USITC Annual Reports* for fiscal years 1980 through 1992. Fiscal year 1980 represents the first year of implementation of the Trade Agreement Act of 1979 which made significant changes to U.S. anti-dumping law (Prusa, 1991), and 1992 was the most recent data avail-

able at the commencement of this study. The petitioners were identified by cross-referencing the ITC petitions with those recorded by the International Trade Administration of the Department of Commerce. Petitioner names were then retrieved from the Federal Register notices announcing the initiation of the anti-dumping investigation. Data on the trading status of the petitioners, including parent company names, were then collected using *Directory of Corporate Affiliations* and Dun and Bradstreet's *America's Corporate Families*. Dates for the three events tested in this study—the initial filing of the petitions, preliminary determinations, and final determinations—were retrieved from the *U.S. ITC Annual Reports*. Companies that experienced potential confounding events, including surprise earnings announcements and engagement in hostile takeover bids, during the event period were identified using the *Wall Street Journal Index* and eliminated from the sample.

Publicly held companies (or their majority-owned subsidiaries) that trade on the New York, American, or NASDAQ stock exchanges accounted for 147 filing events over the study period. Every publicly held company that petitioned the ITC was included. After eliminating nine filing events for missing financial return data and four filing events for confounding events, 134 filing events by 88 publicly held companies were in the final sample. Because firms file multiple petitions simultaneously, the 134 filing events in the final sample represent 51 percent (316) of the total universe of petitions. Analysis of the preliminary and final determination events included 133 petitions that completed the preliminary determination stage and 72 petitions that reached the final determination stage. Analysis of the petitions based on the ITC decisions (i.e., affirmative decisions or 'winners' and negative decisions or 'losers') was performed for the initial filing, preliminary determination, and final determination events.

Table 1 provides a partial listing of the petitions, products, and petitioners in the sample. The average market capitalization of petitioning firms was \$3.0 billion and ranged from \$5 million to \$33 billion. The median capitalization was \$980 million.

## RESULTS

Table 2 presents the summarized results of the analysis using a 3-day event period. The results show that for the initial filing of an anti-dumping petition, the average abnormal return was 0.01, or 1 percent, which is statistically significant ($p < 0.01$). The results associated with preliminary and final determinations, on the other hand, show small and insignificant impacts on the market price of the security of 0.1 and −0.5 percent, respectively.

Analysis of the change in market valuation was performed for the initial filing event. Using the current shares outstanding, the closing security price on the day prior to the event window, and the change in security price over the event window, the average of the changes in market capitalization was calculated. The analysis suggests that an initial filing event results in an average increase of \$45.9 million in market capitalization for petitioning firms.[2]

Affirmative findings at both preliminary and final determinations show small and insignificant impacts (0.1% and 0.2%) on the market price of the security. These results do not support the first hypothesis that predicted that affirmative decisions by the ITC would have positive effects on the petitioning firms.

The results also show that negative findings by the ITC at the final determination produced significant abnormal returns, supporting the second hypothesis that predicted that negative anti-dumping decisions by the ITC would have negative performance effects on petitioning firms. Table 2 shows that firms with petitions that received negative final determinations ('losers') had a −2.1 percent change in market return ($p < 0.01$). The strength of this finding is enhanced by the relatively low power of the test resulting from the small number of observations (20) in this subsample. However, firms that received a negative preliminary determination had

[2] Note that based on the average abnormal return of 0.01 and the average market capitalization of \$3 billion, the average firm in this sample would anticipate a \$30 million change in market capitalization. The difference between the change in market capitalization for an average firm and the average change in this sample reflects the fact that the product of the means (of the changes in security prices and in market capitalizations) does not equal the mean of the products (of each firm's change in security price and market capitalization).

Table 1. Partial listing of petitions, products, and petitioners

| Petition no. | Product | Petitioner(s)[a] |
|---|---|---|
| 731-TA-31 | Barium carbonate and strontium carbonate | FMC Corp. |
| 731-TA-38 | Truck trailer axle-and-brake assemblies | Rockwell International Corp. |
| 731-TA-53 | Hot-rolled carbon steel plate | Cyclops Corp. |
| 731-TA-87 | Seamless steel pipes and tubes | Babcock & Wilcox Company |
| 731-TA-94 | Bicycle tires and tubes | Carlisle Tire and Rubber Co. |
| 731-TA-107 | Melamine | Melamine Chemicals, Inc.<br>Kaiser Cement Corp. |
| 731-TA-108 | Portland cement | Gifford-Hill Cement Co. |
| 731-TA-119 | Lightweight polyester filament fabric | J. P. Stevens & Co., Inc. |
| 731-TA-165 | Valves, nozzles, and connectors of brass | Badger-Powhatan, Inc. |
| 731-TA-200 | Radial-ply tires for passenger cars | Armstrong Rubber Co. |
| 731-TA-207 | Cellular mobile telephones and subassemblies | Motorola, Inc. |
| 731-TA-238 | 12-volt motorcycle batteries | General Battery Corp. |
| 731-TA-240 | Photo albums and filler pages | Kleer-Vu Plastics Corp.<br>Intel<br>Advanced Micro Devices |
| 731-TA-288 | Erasable programmable read-only memories | National Semiconductor Corp. |
| 731-TA-297 | Porcelain-on-steel cooking ware | General Housewares Corp. |
| 731-TA-341 | Tapered roller bearings, parts, and housings | Timken Co. |
| 731-TA-355 | Silica filament fabric | Ametek, Inc. |
| 731-TA-486 | Coated groundwood paper | Bowater Inc.<br>Ford Motor Co.<br>Chrysler |
| 731-TA-522 | Minivans | General Motors Corp. |
| 731-TA-623 | Hairbrushes, parts, and components | Goody Products, Inc. |

[a]Petitioners may include privately held and publicly traded companies, trade associations, *ad hoc* committees and industry groups, and labor unions. Only publicly traded companies that were petitioners in the sample are shown in the partial listing of petitions listed here.

Table 2. Test results

| Type of event and subsample | Average abnormal return | *Z*-Statistic | Sample size[a] |
|---|---|---|---|
| Initial filing of petition | 0.010 | 2.57** | 134 |
| Eventual winners in preliminary determination | 0.011 | 2.59** | 115 |
| Eventual losers in preliminary determination | 0.002 | 0.20 | 17 |
| Eventual winners in final determination | 0.011 | 1.25 | 48 |
| Eventual losers in final determination | 0.011 | 1.57† | 19 |
| Preliminary determination | 0.001 | 0.17 | 133 |
| Winners | 0.001 | 0.18 | 115 |
| Losers | 0.004 | 0.93 | 18 |
| Final determination | −0.005 | −0.75 | 72 |
| Winners | 0.002 | 0.64 | 52 |
| Losers | −0.021 | −2.45** | 20 |

†$p < 0.10$; **$p < 0.01$

[a]Changes in the size of the samples result from termination of petitions as a result of ITC decisions, withdrawal of petitions by petitioners, and missing financial and ITC data.

a small and insignificant (0.4%) increase in market return—a result that fails to support the second hypothesis.

The support for the third hypothesis is mixed. When a firm files a petition, the average effect is 0.01, or 1 percent, ($p < 0.01$). Positive abnormal returns of 0.01 ($p < 0.01$) were found for those petitions that were eventual winners in the preliminary determination. Even the eventual losers in the final determination stage showed positive and marginally significant abnormal returns of 0.011 ($p < 0.10$). In addition, those firms that received a negative determination at the preliminary stage did not suffer a strong negative effect on performance. Each of these findings supports the hypothesis that firms benefit from filing anti-dumping petitions, regardless of the petition's outcome. On the other hand, those firms that receive a negative final determination suffered a strong negative effect—one which was nearly twice as large as the positive effect of the initial filing. Thus, the net wealth effect is contingent on the eventual petition outcome, but the market does not distinguish eventual winners and losers at the time of initial filing.

The steel industry has consistently pursued and received administrative trade protection (Prusa, 1991; Boltuck and Litan, 1991). Because the repeated pursuit of trade protection leads potentially to a better understanding of the review process and its potential consequences for the industry and individual firms by the petitioners and the financial markets, subsample analysis was performed to assure that the steel industry did not dominate the results. Subsample analysis of the petition events reveals that of the 134 events associated with the initial petitions, 52 were for steel products (not shown). For the steel subsample, the average cumulative abnormal return over the event period was 1.1 percent ($p < 0.10$). For the 82 petitions associated with nonsteel products, the average abnormal return was 0.9 percent ($p < 0.05$). Standard *t*-tests show no significant difference between the abnormal returns of the two groups, however.

The analysis using the 5-day period supported the results using the 3-day event period.

## DISCUSSION

This analysis suggests that the market anticipates that anti-dumping petitions will create increased cash flow, and as a result, the market price of the securities increases 1 percent beyond the expected normal market price. The positive effect of anti-dumping actions occurred at the time of the initial filing, before the preliminary and final determinations were made. Even those firms that eventually received a negative determination at the final stage of the process experienced a positive effect when the petition was initially filed. This positive effect is not surprising, given the high proportion of successful petitions. Over the 13-year period, 85 percent of the sample received affirmative findings in the ITC preliminary determination, resulting in the imposition of anti-dumping duties on foreign competitors. The high proportion of successful petitions may account for the lack of consistently significant returns associated with the preliminary and final determinations. In essence, due to the high success rate of anti-dumping petitions, the market responds to the filing, not to the determinations themselves.

On the other hand, no significant increases in security prices resulted from affirmative findings at either the preliminary or final determinations. In addition, no significant change resulted from a negative preliminary determination. However, firms that successfully pursued cases through the final stage, but then received a negative final determination, suffered strong and significant negative effects on the security price. A negative finding produces an average negative effect of 2.1 percent compared to the average 1.1 percent increase that was experienced by these same firms when the petition was filed.

Thus, these results suggest that ITC decisions influence security prices, although the influence of these decisions is not consistent across all stages of the process. Some of the benefits of pursuing trade protection may not depend on ITC decisions. These benefits may be associated with signaling prices or bringing foreign competitors to the negotiating table, for example.

One explanation for the strong negative effect of negative final determinations may result from how firms proceed through the anti-dumping review process. For example, once the initial filing has occurred, some firms will enter negotiations with foreign competitors to resolve the petition without proceeding through the entire review process. If the petition can be resolved, the petitioning firm(s) will then terminate the process (Prusa, 1991; Lenway and Schuler, 1991).

Thus, the cases that proceed onto the final stage of the process represent cases where petitioning and foreign firms could not come to a mediated agreement. This process of 'selecting out' may contribute to the strong negative effect of an unfavorable final determination.

A simplistic interpretation of these results would suggest that companies should 'file early and file often', but such advice would be premature. First, this study's results represent an average effect of all petitions filed over a 13-year period; and, while the length of the study period and wide range of firms in the study increases the generalizability of the *average* results, the application of these results to individual firms may prove unwise. A wide variety of industries, ranging from steel products to hairbrushes, are represented in the sample (see Table 1). While the steel and nonsteel subsamples were analyzed separately, further investigation would be necessary to understand how firm size, industry structure, and other competitive factors may influence the outcome associated with an anti-dumping petition.

Second, the benefits of pursuing trade protection found in this study are based on a sample that includes only the publicly traded firms that initiated petitions on their industry's behalf; those firms that filed petitions as part of an industry group or trade association are not represented. By testing events associated with only those firms that directly petitioned the ITC (and not those who petitioned as members of an industry group or trade association), this test focuses on firms that are likely to enjoy the greatest benefits from a successful petition. Large and high market share firms may receive more benefits from trade protection, because they have more at risk if they fail to deter foreign competition (Lenway and Schuler, 1991; Schuler, 1996); and, therefore, they may be more likely to pursue trade protection individually. Smaller firms may have less to gain from trade protection than larger firms, and they may have lower expectations about their ability to successfully acquire trade protection. In addition, applying the average 1 percent increase in market valuation to a smaller firm (say with a valuation of $50 million) would create a benefit of only $500,000. Discussions with previous participants by this researcher and others (Schuler, 1996) suggest that this smaller benefit may be well below the legal costs associated with pursuing a petition through the administrative process. Smaller firms may try to maximize the net benefits of trade protection by minimizing its costs by petitioning through trade associations or *ad hoc* industry groups. The level of firm-level benefit associated with filing anti-dumping petitions found in this research may not apply to smaller firms.

This study also does not answer whether or how much the nonparticipating firms benefited from the anti-dumping petitions pursued by other firms in the industry. Some firms may free ride on the political activity of others, and they may benefit nonetheless if trade protection is granted. Other nonparticipating firms may be indifferent to or oppose trade protection, based on expectations about the overall effect of trade protection (Salorio, 1991; Schuler, 1996). Thus, conclusions about the benefits of trade protection for nonparticipants are difficult to make on the basis of this study.

Finally, the loss in market value that occurs when a petition receives a negative ruling at the final stage of the process is large and twice the magnitude of the positive effect of the initial filing. Unless the petition is credible, the firm may suffer considerable loss in market value. These potential costs should not be ignored by managers.

Further investigation of specific industry and firm effects would increase our understanding of the benefits of anti-dumping protection and how they are distributed among firms in an industry. Differences in levels of industry concentration, vertical linkages, product differentiation, and other factors may impact the potential benefits of anti-dumping protection. Differences in these competitive factors can create rivalries in political activities, just as they influence patterns of economic competition (Salorio, 1991).

By investigating how industry and firm-level differences affect the outcomes associated with anti-dumping petitions, we can also gain insight into how these outcomes may compare with the other strategic options that firms pursue to improve their competitive position in the U.S. market. Firms that have high exit costs and/or high downsizing costs, for example, may benefit more from trade protection than other firms, and, therefore, may pursue it more often (Schuler, 1996). For these firms, trade protection may produce a larger net benefit when compared with

other strategies that create barriers for foreign competitors. Firms with lower exit costs and/or lower downsizing costs may pursue options other than trade protection (such as moving production offshore), to improve their competitive position. Firms in industries that are concentrated may also be more likely to pursue trade protection because their smaller numbers make it easier and less costly to organize their efforts toward a common objective (Olson, 1965). In addition, because the petitioner(s) must demonstrate to the ITC material injury to the industry, petitions may be strengthened when a larger proportion of the industry participates in petitions for trade protection. Thus, different industry structures and strategic capabilities may expand or contract the firm's range of potential responses to increased competition by foreign competitors and influence when anti-dumping protection is sought and its ultimate effect.

Future studies should also employ alternative methods to measure firm-level benefits. Although the event study methodology employed in this study is well accepted as a means of valuing changes in future cash flows, the capital asset pricing model on which it is based assumes the market's ability to accurately assess the impact of new information on the firm. In addition, other methodological approaches (using interviews and/or surveys, for example), may also help identify the sources of value that contribute to the increased financial returns found in this study. Firms may benefit from anti-dumping protection due to an increased ability to signal or increase prices, or due to increased market share, or a combination of factors.

In-depth qualitative research may shed light on how experience with the process affects managers' use of U.S. trade law and its effects. For example, there is some evidence that successful petitions may have negative consequences for U.S. firms that are trying to enter or expand in the foreign firm's home market; that is, the imposition of anti-dumping duties may attract the attention of officials in foreign governments and may elicit retaliatory actions that make it more difficult for U.S. firms to succeed in foreign markets (Awanohara, 1993). Political activity may also be perceived negatively in the United States, potentially damaging the reputation of the firm (Schuler, 1996). Other methodological approaches to the topic may improve our understanding of the more indirect consequences of seeking administered trade protection.

This study measures the effects of anti-dumping actions at the firm level. Consequently, conclusions about public policy cannot be made directly. This research, however, does point to several areas worthy of consideration by policy-makers. First, the results suggest that firms benefit significantly from anti-dumping petitions; but, it is unclear whether the overall welfare benefits to firms, their shareholders, their employees, their suppliers, or other stakeholders are justified in terms of the potentially higher costs to U.S. consumers. Second, the size of the change in market capitalization, over $46 million, suggests that significant benefits accrue to shareholders as a result of anti-dumping petitions. These findings suggest that some benefit goes directly to the firms' shareholders in the form of higher stock prices, contradicting scholars who have suggested that the benefits of anti-dumping protection go only to the government in the form of duty collections and that the process yields no benefit for injured firms (Tyson, 1993). Finally, the results of this study raise questions about the anti-dumping review process itself. For instance, firms may use the anti-dumping process to pursue indirect benefits, such as mediated agreements. It is unclear whether using this process to achieve these benefits is the most efficient means of resolving conflicts between domestic and foreign firms.

As international trade grows, the need to improve our understanding of how firms can compete effectively with foreign competitors also increases. More research is needed to understand what types of activity improve performance and how political activity complements other strategic decisions and actions a firm makes. Previous research has offered theoretical rationale supporting the benefits of seeking trade protection, but the empirical evidence quantifying these benefits has been limited. This study offers empirical evidence that firms can create barriers for foreign competitors and benefit significantly by seeking trade protection.

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## APPENDIX

According to the efficient markets hypothesis, equity market prices represent the net present value of all future cash flows. Any unanticipated change or abnormal return can be isolated using the market model which assumes a linear relationship between the expected return of an individual stock and the expected return of a broadly-based market portfolio or index:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt} \quad (1)$$

where: $R_{jt}$ = rate of return of firm $j$ over period $t$
$\beta_j$ = systematic risk of security $j$ over period $t$
$R_{mt}$ = rate of return of a value-weighted market portfolio over period $t$
$\epsilon_{jt}$ = random error of rate of return on security $j$ over period $t$

Ordinary least squares is used to estimate $\alpha$, $\beta$, and $s_\epsilon$ (standard deviation of the error term) under the assumption that the error terms have an expected value of zero and are not correlated. In theory, the error term, $\epsilon_{jt}$, captures any variance that cannot be explained by the overall market, and therefore, the error represents the change in price associated with the event.

In order to estimate the anticipated, or normal return, for a security, the parameters $\alpha$ and $\beta$ are estimated for a period prior to the event. In this study, the period over which the normal return is estimated is from 250 trading days prior to the event to 50 trading days prior to the event. Estimating the normal return well before the event dates makes it less likely that information about the upcoming event has already been incorporated into the normal return of the security. Estimating the normal return over a period of 200 days or more is consistent with most financial research (e.g., Brown and Warner, 1985), and it provides a meaningful basis for the comparison of abnormal returns associated with a given event.

Given the OLS parameter estimates, $\hat{\alpha}$ and $\hat{\beta}$, the abnormal return for the period $t$ is calculated as:

$$AR_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt}) \quad (2)$$

where $R_{jt}$ is the actual return for a given security and $\alpha + \beta R_{mt}$ is the market-adjusted, or normal, return for a security over the event period. *AR*, or the abnormal return, represents the abnormal change in price that cannot be attributed to the general market or firm risk, and therefore, is attributed to the event that occurred. In most event studies, the event period tightly wraps the event under study. By shortening the length of time prior to the event, the opportunity for nonrelated events to confound the results is minimized. A short event period also increases the power of the test (Brown and Warner, 1985).

Tests of statistical significance of the abnormal return are based on standardized abnormal returns; thus, the standardized abnormal return on a given day is defined as (Mikkelson and Partch, 1986):

$$SAR_{jt} = \frac{AR_{jt}}{S_{jt}} \quad (3)$$

where:

$$S_{jt} = \sqrt{V_j^2 \left[ 1 + \frac{1}{ED} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{i=1}^{ED} (R_{mi} - \bar{R}_m)} \right]} \quad (4)$$

$V_j^2$ is the residual variance of firm $j$'s market model regression, *ED* is the number of days in the period used to estimate the market model, $R_{mt}$ is the market return on day $t$, and $R_m$ is the mean market return in the estimation period. Because the standardized abnormal return is calculated for a given day, a cumulative abnormal return is necessary for an event period that consists of more than 1 day. In addition to the aggregation of the standardized abnormal returns for each firm over the event period, the sample of observations (that consists of multiple firms

with events occurring on multiple dates) is aggregated for all firms in order to determine if the abnormal returns of the sample are statistically different from zero, that is, whether the events created a significant change in security price. Assuming cross-sectional independence, the average standardized cumulative abnormal return (*ASCAR*) for a sample of observations for any time period is (Mikkelson and Partch, 1986):

$$ASCAR_{T_1T_2} = \frac{1/N \sum_{j=1}^{N} \sum_{t=T_1}^{T_{2j}} SAR_{jt}}{\sqrt{T_{2j} - T_{1j} + 1}} \qquad (5)$$

where: $N$ = the number of firms in the sample
$T_1$ = beginning of event period
$T_2$ = end of event period
$j$ = firm index

Assuming that the average standardized cumulative abnormal return has variance equal to $1/N$ and is symptotically normally distributed, the $Z$-statistic can be used to test for significance:

$$Z = \sqrt{N}\,(ASCAR_{T1,T2}) \qquad (6)$$

Finally, the change in the market valuation associated with an event can also be estimated by multiplying the firm's market capitalization on the day preceding the event window by the cumulative standardized abnormal return over the event period.

The source for the security returns was the daily return tape compiled by the Center for Research in Security Prices at the University of Chicago. The market returns were calculated using a value-weighted index of all securities traded on the NYSE, AMEX, and NASDAQ exchanges.