

## Political-Economic Evaluation of Complex Legislation:

### A Financial Event Study Methodology Applied to Modern Trade Regulation

Modern trade legislation is extremely complex. Prior to the Reciprocal Trade Agreements Act of 1934 (RTAA), trade legislation was relatively simple-- Congress legislated a tariff.<sup>1</sup> The aggregate outcome of the tariff making process was reasonably well measured by changes in the average tariff.<sup>2</sup> With the advent of modern trade policy, ushered in by the RTAA, the simple relationship between protectiveness and the tariff was broken. Major trade legislation is no longer primarily concerned with setting levels of protection directly, but, in addition to providing the legislative authority under which the government engages in GATT negotiation, sets the rules under which such protection is gotten from a wide variety of administrative mechanisms. Since there is no single direct measure of the relative protectiveness of such broad legislation, it is very difficult to evaluate its economic impact. In this paper we develop a new approach to the evaluation of the effect of trade policy legislation based on the event study methodology from financial economics.

Institutional changes of the type embodied in modern trade legislation need to be studied in terms of general equilibrium effects. Unlike tariff changes, which might well be understood to a first approximation in partial equilibrium terms, changes in the rules of the game (even at the margin)

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<sup>1</sup> The "relatively" should be understood with respect to modern trade legislation. In the era of classic tariff politics (from around the end of the Civil War until 1934), the tariff was a major piece of legislation, absorbing a considerable amount of legislative time and effort.

<sup>2</sup> There are numerous problems with the average tariff (tariff revenues/dutiable imports) as a measure of aggregate protection. In fact, there are a variety of theoretically superior measures that are merely impossible to implement given the state of historical data. The point, however, is that the tariff was the major instrument of protection, and overall changes in the protectiveness of the trade regime involved changes in the tariff and very little else.

affect the system as a whole. The research reported here is based on a variant of the specific-factors endogenous trade policy model developed by Hall and Nelson (1989, 1991, 1992). Specific-factor models, under a variety of specifications, yield results of the "friends and enemies" variety. That is, changes in the tariff on some good will raise the return to some factor (the particular good's "friend") and lower the return to some other factor (the particular good's "enemy"). Results of this sort form the economic basis for political competition between sectors over changes in trade policy. In section I we provide a brief discussion of these results and their implications for our empirical work.

If the necessity of a general equilibrium approach is accepted, direct study of the effect of modern trade legislation would appear to be difficult. The data for constructing and estimating a reliable general equilibrium model of the pre- and post-legislation periods, are not generally available.<sup>3</sup> Instead of such an approach, we proceed from the friends and enemies result to study the returns to capital in the affected sectors using an event study approach. While empirically identifying the friends and enemies of a policy change on a *priori* grounds would seem to be difficult, we develop a method which permits firms to identify their preferences via their political behavior. In section 2 we discuss our methodology.

One of the striking results of the research reported here is that, we do not find friends and enemies among the firms actively engaged in the political process. That is, although we are able to identify two distinct groups of firms whose expressed interests with respect to trade legislation are directly opposed, we are not able to find the pattern of returns predicted by the underlying model. These results are presented in section 3. We do not believe that this implies that the model has been falsified. Rather, as we

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<sup>3</sup> Computable general equilibrium techniques are, of course, available, but few would assert that these are "direct" tests of the effect of change in trade law in any meaningful sense.

argue in the discussion of the results that closes the paper, we believe that this implies the ability of firms with strong export interests to form a coalition with firms with strong protectionist interests to support legislation which exploits firms and industries excluded from the political process because their relationship to international competition is less direct. We conclude with some suggestions for future research on the political economy of trade policy.

As Nelson (1989c) argues, a gap has developed between academic research on trade policy and the practice of trade policy. Academic research on trade policy remains wedded to a model of the economy in which the meaning of liberalization and protection are unambiguous. Given this model, it is virtually impossible for coalitions of strong protectionists and strong liberalizers to form. However, in light of the post-Reciprocal Trade Agreements Act structure of trade policy-making, this is no longer the case. The results reported here provide preliminary evidence for the argument that economics needs to adjust its analysis to the new patterns of political and economic practice if it hopes to continue to provide useful intervention in the policy process.

**I. The Political Economy of General Trade Legislation  
in a Specific-Factors Model**

**A. The Differential Effects of Policy Change in General Equilibrium**

Any attempt to characterize a system of economic regulation must pay attention to both the general orientation of the system and the details of its impact on the regulated agents (e.g. firms, sectors, factor-owners, etc.).<sup>4</sup> During the era of the classic tariff system, electoral politics played a fundamental role in setting the overall orientation to protection, while

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<sup>4</sup> See Nelson (1987) and Hall and Nelson (1989) for a discussion of other dimensions of structural and institutional comparison in political-economy.

lobbying determined the details of the dispersion around the average tariff.<sup>5</sup> However, both of these aspects received their final form in a single, relatively simple, piece of legislation. Once the tariff schedule was passed into law, implementation was essentially mechanical. Modern trade regulation is considerably more complex, not only because the legislation setting the terms of trade regulation is more complex than tariff bills, but because trade regulation is implemented by a semi-judicial administrative process with considerable discretion.<sup>6</sup>

While it is not unreasonable, at least as a first approximation, to study the political-economic strategies of individual agents with respect to their own line-item in the tariff-schedule or their own outputs from the administered protection mechanisms in a partial equilibrium framework, this is not true with respect to system-level changes. Whether we are considering a voting calculus with respect to the overall orientation to protection of the Congress that writes the tariff, or a lobbying calculus with respect to the determination of the rules of the administered mechanisms, we must adopt a general equilibrium framework. Systemic changes cannot be understood in partial equilibrium and the political-economy of such changes should not be studied with partial equilibrium tools.

Fortunately, there is now a well-established body of theoretical and empirical research on general equilibrium models of the political economy of trade policy: endogenous tariff theory.<sup>7</sup> Endogenous tariff theory seeks to extend equilibrium models of politics based on rational behavior to political economic analysis by deriving the preferences of agents from an explicitly specified model of the economic relations that underlie the political choices

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<sup>5</sup> This is discussed at some length in Hall, Kao and Nelson (1992).

<sup>6</sup> Details of the administrative process can be found in Finger, Hall and Nelson (1982) and Nelson (1989a).

<sup>7</sup> Surveys of endogenous tariff theory can be found in: Hillman (1989), Magee, Brock and Young (1989), and Nelson (1988).

of those agents. As in general equilibrium theory, the primitive data characterizing the agents are their preferences with respect to final consumption goods and their factor portfolios. Given the other data characterizing the economy in question (i.e. factor endowments, technologies, and market conditions), it is a relatively straightforward exercise to determine the preferences of individuals over economic policy interventions via the impact of those interventions on prices and individual incomes.<sup>8</sup> Policy is then endogenized via some, more or less fully-modelled, political aggregation procedure.<sup>9</sup>

One essential consideration in modelling the economic relations that underlie political calculation in this sort of analysis relates to the time horizon of political calculation. With time horizon measured relative to the mobility of the various factors of production, it is now well-known in trade theory that comparative static results are sensitive to time horizon.<sup>10</sup> Of particular relevance for endogenous policy analysis, results of the Stolper-Samuelson sort are sensitive to time horizon. Under the usual structural,

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<sup>8</sup> It is useful to note that the underlying model is reliable only with regard to incremental changes in trade law. That is, our reading of the econometric and historical literature on trade policy leads us to believe that incremental adjustments in trade law are well accounted for by relatively straightforward pressure group models, but we are not convinced that such models can be reliably used to account for fundamental changes in the structure of the system. Since the Reciprocal Trade Agreements Act of 1934 (RTAA), the legislative environment of trade policy has been reasonably stable. The general terms of the political discourse (i.e. the focus on negotiating authority and administered protection) have become well-established and, certainly since 1962, even the general structure of trade legislation has been stable. Thus, for the period with which we are concerned, it seems reasonable to assume that politics have revolved around incremental change in a stable political space.

<sup>9</sup> Most endogenous policy research simply assumes that the relevant political authorities (e.g. Congress, the Executive, the regulator) are passive registers of effective political demand. This approach has the obvious virtue of simplicity. It should be noted, however, that more sophisticated assumptions have begun to appear.

<sup>10</sup> Among others, Mayer (1974), Mussa (1974), Neary (1978), Schweinberger (1980) and Thompson (1990) explicitly consider time horizon in models of the sort used commonly in endogenous policy models. Nelson (1988) and Hall and Nelson (1989) develop the comparison in the context of endogenous policy models.

institutional and technological assumptions of 2-good/2-factor models of small, open economies:

Long-Run: If both factors are fully mobile, an increase in the price of one good relative to the other will cause an increase in the return to the factor used intensively in the production of that good relative to all other prices and a decrease in the return of the other factor relative to all other prices. [Stolper-Samuelson, 1941];

Short-Run: If one factor is sector-specific (i.e. immobile) while the other is fully mobile, an increase in the price of one good relative to the other will cause an increase in the return to its specific factor relative to all other prices and a decrease in the return to the other specific factor relative to all other prices. The effect on the real income of the mobile factor is ambiguous without additional information. [Jones, 1971]<sup>11</sup>

Jones and Scheinkman (1977) derive results of the Stolper-Samuelson sort in higher dimension, suggesting the useful notion of **natural friends and natural enemies**. For example, a good is termed the natural enemy of some factor if an increase in the price of that good lowers the real income of that factor independently of that factor's consumption pattern. Of particular importance for evaluating the empirical research reported here is the result that, quite generally, every good is a natural friend to some factor and a natural enemy to some other factor. Furthermore, Lloyd (1987) has presented a version of this result for an economy with specific-factors and inter-industry flows. Note the nature of these results: a policy that induces a change in the relative price of some good raises the real return to some specific factor and lowers the real return to some other specific factor. Thus, every policy change should have friends and enemies in the Jones-Schienkman sense.

While every policy change should have friends and enemies, these results also imply that the identity of the friends and enemies of any given policy change will vary systematically with the time-horizon of political calculation and this, in turn, implies very different equilibrium policy outcomes. Specifically, if the politically relevant time period is no greater than the

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<sup>11</sup> For an analysis of differential imperfect mobility, see Hill and Mendez (1983).

economic short-run, factor-owners in a given industry have common interests; while if the politically relevant period is at least as long as the economic long-run, industry location is irrelevant and coalitions of individuals with common factor portfolios should be the basic units of coalition formation.

Evidence is accumulating which suggests that, at least with regard to the politics of trade policy, the political calculation of economic agents is quite short-run.<sup>12</sup> Thus, we expect to find the representatives of firms lobbying for firm- and/or industry-specific interests. Given rational expectations on the part of economic agents, this suggests that outcomes should result in the transfer of rents to the politically successful firms.<sup>13</sup> As we will suggest below, if capital markets are efficient, this outcome should be revealed in abnormal returns to the stocks of politically successful firms at the time of proposed changes in the trade laws.

#### **B. Political Preferences and Political Action**

The specific model underlying the analysis reported here is Hall and Nelson's (1991, 1992) extension of Findlay and Wellisz' (1982) endogenous tariff model. Firms apply one specific and one mobile factor to standard neoclassical production functions to produce goods which are traded in perfectly competitive markets. Factors of production are endowed in fixed supply and internationally immobile, one factor is intersectorally mobile

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<sup>12</sup> For the purposes of this paper, the two most useful papers on this question are Magee (1980) and Grossman and Levinsohn (1989). The first is a straightforward demonstration that factor-owners seem to lobby together on trade policy issues, suggesting that factors are sector-specific over the politically relevant period. The second is a capital market study demonstrating that stock market returns of import-competing firms reveal patterns of excess return consistent with the hypothesis that capital is sector specific.

<sup>13</sup> Strictly speaking, rents are transferred to the owners of specific factors invested in a politically successful firm/industry. The losers are, of course, those with specific factors invested in politically unsuccessful firms/industries. The effect of an incremental change on mobile factors cannot be known a priori without additional information on the consumption patterns of mobile factor owners. This last result is known as the "neoclassical ambiguity", see Ruffin and Jones (1977).

while all others are inter-sectorally immobile.<sup>14</sup> Hall and Nelson consider multiple import-competing sectors to examine the effect of changes in trade legislation that (potentially) affect all import-competing firms. The essential result for the research reported here is that, since an increase in the protectionist content of legislation will raise prices in the import-competing sector, specific factors in the import-competing sector are natural friends of the legislation and specific factors in the export sector are natural enemies of the legislation.

Since our goal is to evaluate the economic effect of changes in the trade law, we need some means of identifying (potential) winners and losers from such change. A direct approach to this problem would be to construct samples of winners and losers from incremental changes in the trade law on a priori grounds. This is essentially the approach applied in the partial-equilibrium research on the political-economy of administered protection. Following the Stigler-Peltzman approach to the political-economy of regulation, such research focuses directly on the immediate beneficiaries of administered protection.<sup>15</sup> There is also a significant body of empirical research on the political economy of trade legislation which is also based, more-or-less loosely, on the Stigler-Peltzman framework.<sup>16</sup>

As research on the extension of the Stolper-Samuelson theorem beyond the

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<sup>14</sup> Neither Findlay and Wellisz nor Hall and Nelson consider inter-industry flows explicitly. However, the results of Lloyd (1987) in conjunction with the general framework presented in Hall and Nelson (1991) suggest that the introduction of intermediates does not effect the results relevant to this paper in any essential way.

<sup>15</sup> The basic framework is developed in Stigler (1971), Peltzman (1976), Becker (1983, 1985), and Gardner (1983). For the application to administered protection, see: Baldwin (1981), Finger, Hall and Nelson (1982), and Hansen (1990). Of more direct relevance to the research reported in this paper are the papers that use a financial event study methodology to examine the effects of administered protection on firms: Hartigan, et al. (1986, 1989, 1990), and Lenway, et al. (1990, 1991, 1992). We will discuss these in more detail below.

<sup>16</sup> Of particular note are: Baldwin (1976), Ray (1981); Marvel and Ray (1983); Ray and Marvel (1984); Lavergne (1983); Dougan (1984); Godek (1985); and Clark (1987).

2x2 environment clearly suggests, however, it is extremely unlikely that there is a simple relationship of the sort implied by Chicago regulatory theory when the effects of the policy in question must be seen in a general equilibrium context.<sup>17</sup> An alternative approach proceeds from the assumption that economic agents are economically rational in their pursuit of political goals thus permitting firms to self-identify their economic interests via their political action.<sup>18</sup> It is this indirect approach that we adopt in this paper. Given the standard endogenous tariff model, the public lobbying behavior of firms can be taken as an indicator of their genuine preferences, which are determined by their particular relationship to the economy. Specifically, we assume that the public lobbying behavior of firms identifies the interests of sector-specific capital (with unions representing the interests of sector-specific labor).<sup>19</sup>

One of the benefits of the indirect approach is that it should tend to identify the strongest proponents of liberalization and protection. That is, assuming that political action entails (potentially considerable) costs, we would expect political action only from firms with a strong stake in the outcome of the political process. That is, we should expect to see friends and enemies represented (ie. sectors accomodated by a change in legislation gain and sectors not accomodated lose). This is important for the

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<sup>17</sup> This is precisely the basis of dissatisfaction with the friends and enemies results discussed above. The various theorems state that, given the underlying model, such friend and enemy relations must exist, but they cannot be generally identified without considerable additional information.

<sup>18</sup> The pioneering work applying the indirect approach is reported in Magee (1980).

<sup>19</sup> Two clarifying notes might prove useful here. First, we do not assume that public lobbying is the only aspect of a firm's political strategy, only that the expressed goals of public and private lobbying are the same. Second, we do assume that firm management represents the interests of capital in its lobbying behavior. Even if managers attempted to pursue inconsistent aims in private/secret lobbying the low cost of monitoring public testimony should insure a fairly close relationship between the testimony of managers and the interests of owners.

interpretation of our empirical results. The U.S. economy is large and diversified, so the effect of changes in trade law on a random sample are ambiguous and, probably, small. By focussing on firms with a strong stake in the legislation, however, we should have substantially reduced this problem.

## **II. An Event Study Methodology for the Political-Economy of Trade Legislation**

### **A. Introduction**

The preceding discussion suggests that we should be able to evaluate the direction of change of even complex legislation via the effects of that legislation on its friends and enemies. We have argued for a presumption that the lobbying behavior of firms accurately reveals the preference of sector-specific capital (i.e. the friends and enemies of the increased protection). Using this information, we develop an approach to the evaluation of the effect of trade legislation based on a methodology from regulatory event studies.<sup>20</sup> Specifically, since political success implies a transfer from politically unsuccessful (and/or excluded) factor owners to the owners of specific factors in the politically successful firms, and assuming efficient capital markets, we expect the capital market to react to the outcome of the political process. The first point allows us to construct samples of firms favoring liberalization and of firms favoring protection; while the second point allows us evaluate the incremental change in the domestic legal regime regulating international trade via the abnormal security returns to shareholders of pro-liberalization and pro-protection firms. This is the basis of the empirical work reported in this paper.

We apply our methodology to the 1962, 1970, 1974, and 1988 Trade Bills. Our analysis begins by coding the position of firms testifying at House or

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<sup>20</sup> See Schwert (1981) for an excellent introduction to the basic ideas, techniques and results from regulatory event studies.

Senate Hearings on all of the major issues contained in each bill.<sup>21</sup> From the sample of all testifiers we extracted a sub-sample of those testifiers identifying themselves as being employed by a particular firm (generally CEO's or Vice-Presidents). A cluster analysis was then performed on the trade policy preference profiles of these testifiers to generate samples of firms with distinctive preferences. In all four cases the analysis generated two clusters that were easily identifiable as pro-liberalization and pro-protection clusters.<sup>22</sup>

Our primary hypothesis tests are based on these samples of testifying firms. We view these as primary tests since these firms attempted to influence the tone/outcome of a particular bill. The results of these tests are reported in section III/A. In addition, we report the results of several other sets of tests which are based on two alternative methods of sample construction. Under the first, two sub-samples are formed by aggregating into one group firms in major industry associations (e.g., American Iron and Steel Institute) supporting protection and into another those supporting liberalization. Results of these tests are reported in section III/B. Finally, in section III/C, we focus on individual industry associations.<sup>23</sup>

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<sup>21</sup> The major issues were: 1) negotiating authority; 2) anti-dumping rules; 3) countervailing duty rules; 4) escape clause rules; 5) section 301 (unfair trade practices) rules; and 6) adjustment assistance rules. In addition, each bill had special issues (e.g. Most Favored Nation (MFN) treatment for the Soviet Union, or quota treatment for specific products). On each issue, support for the status-quo was coded as 0, support for marginal liberalizing change +1; support for substantial liberalizing change +2; support for marginal protectionist change -1; and support for substantial protectionist change -2.

<sup>22</sup> In all cases, changes in liberalization authority and at least one administered protection mechanism were strong discriminators in the analysis. With the exception of the 1962 bill, adjustment assistance was never a significant discriminator with virtually all testifiers who took a position on the issue favoring some easing of access to the mechanism. This suggests the continuing strength of the 'no serious injury' norm, especially as it relates to labor.

<sup>23</sup> The fundamental difference between the major industry association samples and our testifier samples is that testifiers lobbied on their own behalf while firms in the major industry association samples did not. Since testifiers lobbied on their own behalf one might expect security return effects, if any, to be more

Given that we can distinguish between firms that are expected to benefit from liberalizing changes in the trade regulation regime and those that benefit from changes that are protectionist, the next step is to identify a method for making use of such information to evaluate the economic impact of a piece of trade legislation. Our approach to assessing the economic impact of changes in Trade Law utilizes the well-known capital market event study methodology. If a change in the trade regulation regime has valuation implications, in an efficient capital market security prices will respond to reflect an unbiased estimate of the change's impact on the value of the firm.

In addition to its use in a variety of domestic regulatory studies, the event study methodology has been used effectively to study a number of international trade and trade policy issues. Of particular importance, Grossman and Levinsohn (1989) used event study methods to directly examine the responsiveness of returns to capital to import price shocks. Their results strongly support both the use of a specific-capital framework and an event study methodology. Grossman and Levinsohn are concerned with the general effect of news relating to international prices on domestic firms identified on *a priori* grounds, where we are concerned with the effect of regulatory shocks on firms that have identified themselves, through their lobbying behavior, as interested in those shocks.

Also closely related to our research are the recent series of event studies of the valuation effects of participation in administered protection mechanisms. Hartigan, Perry and Kamma (1986), examined the valuation effects of escape clause (Section 201 of the US trade law) protection on the firms actively involved in that mechanism (i.e. filers). Overall HPK find little evidence of significant effects. The papers by Hartigan, Kamma and Perry

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pronounced on such firms. The rationale for tests on individual industry associations is that since import competition differs across industries so may the effect of the trade bills. Such tests are designed to uncover security return effects that may be masked when the analysis is based on combined samples of industry associations.

(1989, 1990) examine the valuation effects of protection from the anti-dumping mechanism (section 731 of the US trade law). In these latter two papers, HKP find evidence of significant valuation effects. In all three cases, HKP use weekly data and six week event windows (two weeks before and four weeks after critical events) to study the effects of regulation on the cumulative average residual from the estimated normal return for the firms in question. Lenway, Rehbein and Starks (1990) and Lenway and Schuler (1991) focus directly on administered protection to the steel industry. Using daily data and 11 (10 days before, 1 day after) day event windows, Lenway and her colleagues find significant valuation effects of major trade policy actions. Hughes, Lenway and Rayburn (1992) use a similar methodology to study the valuation effects of administered protection on semiconductor manufacturers and users. Here two day event windows were used and significant effects again were found. Unlike HKP and Lenway et al., our research focuses on political outcomes that shift the rules of the game, not outcomes within the rules of the game. Thus, unlike the administered protection cases, the effects are theoretically ambiguous, making evaluation via market response even more valuable.

#### **B. The Basic Event Study Methodology**

Daily security return data for firms listed on the New York and American Stock Exchanges form the basis for our analysis of the economic effect of changes in trade law on shareholder wealth. We assume that each firm's security return generating process conforms to the following extended version of the market model:<sup>24</sup>

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<sup>24</sup> The parameters of (3) are estimated over four different time periods, one for each bill. These time periods are: 1/2/62-12/30/66 for the 1962 bill, 1/2/68-12/29/72 for the 1970 bill, 1/3/72-12/31/76 for the 1974 bill, and 10/3/83-9/30/88 for the 1987 bill. Sample firms were required have daily security returns available on the Center for Research in Security Prices (CRSP) NYSE/AMEX file and when necessary from Standard and Poor's Daily Stock Price Record (the 1962 bill) or from the Dow Jones News Retrieval Service (the 1987 bill). Firms not having security return data available or with more than 30 missing security returns during the model estimation period for a particular bill were dropped from the sample.

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} Trade_{jt}^+ + \gamma_{j2} Trade_{jt}^- + e_{jt}, \quad (1)$$

where  $R_{jt}$  is the observed return on firm  $j$ 's common stock on day  $t$ ;  $R_{mt}$  is the observed return on a proxy for the market portfolio on day  $t$ ;<sup>25</sup>  $Trade_{jt}^+$  is an information variable that takes on a value of one on the day of and day before the release of information indicating an increase in the probability that the 1962, 1970, 1974, or 1987 bill would be passed and a value of zero on all other days (the next section outlines the procedure used to identify event dates).  $Trade_{jt}^-$  is an information variable that takes on a value of one on the day of and day before the release of information indicating a decrease in the probability that the 1970 or 1987 bill would be passed and a value of zero on all other days (this variable is included only under the 1970 and 1987 bills since none of the information events examined under the 1962 and 1974 bills indicated a decrease in the probability of passage);  $\alpha_j$  is an intercept term;  $\beta_j$  is the beta or systematic risk of firm  $j$ ;  $\gamma_{j1}$  is a regulatory event parameter measuring the effect on the shareholder wealth of firm  $j$  of information events deemed to increase the expectation of a particular bill's passage,  $\gamma_{j2}$  is a regulatory event parameter measuring the effect on the shareholder wealth of firm  $j$  of information events deemed to decrease the expectation of a particular bill's passage; and  $e_{jt}$  is a random error term assumed to be serially independent and identically distributed across time for a given firm, but which may be heteroscedastic and contemporaneously correlated across firms.

If a given bill affects shareholder wealth, and the information events are accurately dated, the return-generating process shifts in mean abnormal

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<sup>25</sup> The S&P 500 index is used for the 1962 and 1987 bills and the CRSP Value-Weighted Market Index for the 1970 and 1974 bills. The S&P 500 index is used for the 1962 bill because the CRSP Value-Weighted Market Index is not available prior to 7/2/62 and for the 1987 bill because the version of the CRSP NYSE/AMEX file available at the time our analysis was conducted ended on 12/31/87.

return, and these shifts should be reflected in the  $\gamma_{jk}$  ( $k=1,2$ ). If the bills examined were on-balance liberalizing one would expect: (1) the values of  $\gamma_{j1}$  to be predominately positive (negative) in samples of firms advocating liberalization (protection) and (2) the values of  $\gamma_{j2}$  to be predominately negative (positive) in samples of firms advocating liberalization (protection).<sup>26</sup> Note again that, given the underlying economic model of the economic process, if there are gainers ("friends") there must be losers ("enemies"), and vice versa.

Following the work of Binder (1985a) and Schipper and Thompson (1983), we estimate the parameters of the firm-specific return-generating equations in an application of Zellner's Seemingly Unrelated Regression (SUR) framework.<sup>27</sup>

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<sup>26</sup> Table 1 reports the number of firms contained in the various samples used in our security return tests. Samples of testifiers (Panel A) advocating protection (liberalization) range from a low of 9 (12) in 1987 (1962) to a high of 32 (19) in 1970 (1970 and 1974). Samples of firms from industry associations (Panel B) advocating protection (liberalization) range from a low of 46 (0) in 1987 (1962) to a high of 127 (64) in 1974 (1974). Finally, the individual industry association sample (Panel C) includes those with as few as (as many as) 6 (59) firms.

<sup>27</sup> See Arnold Zellner, An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias, 57 J. of the Amer. Stat. Assoc. 348 (1962).

More formally,

$$\mathbf{R} = \mathbf{X}\boldsymbol{\Gamma} + \mathbf{E}. \quad (2)$$

In this expression,  $\mathbf{R}$  has dimension  $(T \times J) \times 1$  and is simply a stacked vector of the  $J$  individual firm  $(T \times 1)$  time-series vectors of security returns.  $\mathbf{X}$  is a block diagonal design matrix of dimension  $(J \times T) \times (J \times K)$  where  $K$  is the number of model parameters (i.e., 3 for the 1962 and 1974 bills and 4 for the 1970 and 1987 bills) and each matrix on the diagonal has dimension  $(T \times K)$  and consists of a column of ones, a column of market index returns, and in the case of the 1962 and 1974 bills a column for the information variable  $(\text{Trade}_{jt}^+)$ . In the case of the 1970 and 1987 an additional column is added for the second information variable  $\text{Trade}_{jt}^-$ .  $\mathbf{E}$  has dimension  $(J \times T) \times 1$  and is simply a stacked vector of the  $J$  individual firm  $(T \times 1)$  time-series vector of disturbances. Finally,  $\boldsymbol{\Gamma}$  is a  $(J \times K) \times 1$  vector of coefficients to be estimated. In  $\boldsymbol{\Gamma}$  the individual  $\alpha_j$  and  $\beta_j$  correspond to the intercept and systematic risk of firm  $j$ , while the  $\gamma_{jk}$  are the firm-specific estimates of the particular bill's impact on the wealth of the shareholders of the  $j$ th firm.

Within equations the model assumes that the disturbances are serially independent and normally and identically distributed through time. Across equations this approach allows residual variances to be heteroscedastic, contemporaneous covariances  $(\tilde{\epsilon}_{it}, \tilde{\epsilon}_{jt})$  to be non-zero, assumes that non-contemporaneous covariances  $(\tilde{\epsilon}_{jt}, \tilde{\epsilon}_{jt-1})$  are zero. Our rationale for using the SUR approach is not on efficiency grounds because in our case (i.e., identical

This allows the regulatory event parameters to be firm-specific. The motivation for this approach is from a hypothesis testing perspective since hypothesis tests that explicitly exploit heteroscedasticity and contemporaneous covariance across equations can conveniently be expressed as linear constraints on firm-specific parameter estimates. This appealing aspect of the SUR methodology is not available in traditional event study approaches (e.g., two-stage residual analysis).<sup>28</sup>

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[ Insert Table 1 Here ]

### C. Event Dating and the Interpretation of Event Studies

One of the most difficult and controversial aspects of any event study relates to event dating. Research on the efficient market hypothesis, which underlies the event study methodology used here, provides considerable support for the hypothesis that security prices adjust quickly to fully incorporate all relevant information available to the market. The implication of this, as Brown and Warner (1980, 1985) clearly demonstrate, is that the power of tests

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explanatory variables across equations) there are no efficiency gains from using joint GLS estimation over OLS. With identical explanatory variables the parameter estimates and their standard errors will be identical regardless of whether joint GLS estimation or OLS estimation is used. As noted earlier, our motivation for this approach is the advantages (ease) it offers for hypothesis testing.

<sup>28</sup> For useful general discussions of the SUR approach to financial event studies, see: Binder (1985b) and Thompson (1985). A useful discussion of this methodology applied to general issues in finance is Gibbons (1982).

of the valuation effects of system shocks is dramatically increased by accurate event dating.<sup>29</sup> However, as Binder (1985a, pg. 181) stresses, because major regulatory and political events are likely to be anticipated by the market, "it is extremely difficult to find announcements in the regulatory process that are unanticipated by the market, even when the announcements are carefully studied to eliminate those that do not appear to have a major effect on expectations."

The key, as for the successful regulatory event studies that have focussed on both domestic and international regulatory actions, is to identify events that convey news to the market.<sup>30</sup> Our method of attempting to identify such events is a variant of what Weingast (1988) calls a "gates and signals" approach to event dating.<sup>31</sup> This approach identifies the key "gates" in the Congressional legislative process and argues that passing through such gates conveys information to the market. Similarly for "signals" from key participants in the process.

The analysis of gates is closely linked to the new institutional analysis of Congress (McCubbins and Sullivan, 1987). One fundamental aspect of the new institutionalism is its emphasis on the way the committee system effects legislative outcomes via its control of the flow of legislation. The basic idea is that committee membership, far from being representative of the parent body, is made up of preference outliers.<sup>32</sup> Although the committee must

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<sup>29</sup> Section 5 of Brown and Warner (1980) discusses the issues related to event dating in detail. The simulations reported there make it clear that the larger the event window, the lower the power of the tests.

<sup>30</sup> Once our rules for identifying events were established, we used two sources for identifying the dates at which those event occurred: The Wall Street Journal Index and the Congressional Quarterly Almanac.

<sup>31</sup> See Gilligan and Krebhiel (1988) and Pownall and Pincus (1988) for applications of the gates and signals approach to event dating.

<sup>32</sup> As a general proposition, this is a matter of some dispute. Whatever its merits as a general proposition, it would appear to be an accurate characterization of the key committee on trade policy (the House Committee on Ways and Means). Virtually all accounts of Ways and Means emphasize that a

produce legislation which will command majority support in the parent body, it will have considerable room to realize its particular preferences. This is even more true when the relevant committee has the capacity to enforce its preferences, as the House Committee on Ways and Means certainly does.<sup>33</sup>

--Table ? (Gates and Their Dates) Here--

For trade legislation, the gates are very clear. The first gate is introduction of the legislation by a Member of Congress. Because trade legislation has historically been treated as a revenue measure it begins in the House of Representatives. The next major gate is Committee hearings.<sup>34</sup> Trade legislation has historically been referred to the Committee on Ways and Means. In the announcement of hearings, the committee declares itself ready to begin the actual business of rewriting the rules of trade regulation. This is also the major point of public access to the process for interested parties. Thus, not only is clearing this gate potentially news, but the identity and expressed preferences of the testifiers may well be news. Following hearings, the committee rewrites the legislation on which the hearings were based ("mark-up"). The third gate is the Committee's decision of whether or not to report the legislation to the floor. Since the House cannot act without a bill, a decision not to report legislation is tantamount

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condition of membership on the Committee, at least for Democrats (the majority party over most of the period with which we are concerned in this paper), was support for the Trade Agreements program.

<sup>33</sup> Not only does the Ways and Means Committee deal with key distributive issues, but until the the Democrat party reforms of the early 1970's the Democrat membership of the Committee acted as the Party's Committee on Committees. That is, they determined the committee membership of the members of the majority party. Given the significance of committee membership to constituent service and, thus, to reelection, this gave the Ways and Means Committee considerable power to enforce compliance with its legislative priorities.

<sup>34</sup> In many cases, subcommittee hearings play an important role. In the case of trade legislation in the period under consideration in this paper (with the exception of the 1988 bill), Ways and Means operated without a sub-committee structure.

to a veto.<sup>35</sup> If a bill makes it to the floor, the next major gate is the floor vote.

Once a Trade bill has passed the House, it proceeds to the Senate where a similar process occurs. However, the Senate Finance committee (the committee with primary responsibility for trade legislation) lacks both the internal discipline and the capacity to control the floor of the House Ways and Means Committee. This has two implications. First, the major gate in the Senate is the vote on the legislation. Second, Senate trade bills are likely to be more amended than House bills. The result is usually the need for a Conference committee with members of both House and Senate. Passing the conference is the next gate. If a bill passes the Conference, it returns to the floors of the House and Senate. If the bill passes both floors it goes to the President for a signature. If the President signs the legislation, this is the final (tenth) gate. However, if the President vetoes the legislation, it returns to the House and Senate for an override vote. Among the four pieces of trade legislation considered in this paper, two follow this pattern smoothly from announcement to signature (1962, 1974); one fails on the Senate floor (1970); and one is vetoed by the President, the veto is overridden, and the President signed the new bill (1988). The gates and their event dates are reported in table 2.

--Table of Signals Here--

In addition to institutional gates, key participants in the political process may make statements that cause the market to alter its evaluation of the probability of passage. The participants with the most obvious significance are those that exercise exceptional control over gates: the President, Committee Chairs and Subcommittee Chairs with immediate responsibility for trade legislation. We should also include signals by Floor

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<sup>35</sup> There are a variety of ways that the floor can force a piece of legislation to the floor, but they are rarely tried and even more rarely successful (Oleszek, 1984).

leaders of both parties and issue leaders.<sup>36</sup> Given the virtually continuous flow of statements by such figures when legislation is in process it is important to identify only statements which would cause market participants to reevaluate their expectation of the probability of the legislation's passage. This introduces an irreducible element of subjectivity into the analysis. As a result, we consider only a small number of such signals in our analysis: Presidential announcements of the intention to seek negotiating authority; opposition by the chairman of the House Ways and Means Committee (W. Mills) passage of the 1970 trade bill; and key statements by Committee and Floor leaders related to the 1988 legislation.

There are two other types of signal that could have valuation consequences. The first are collective signals by one or both chambers: resolutions expressing the sense of the chamber; and exceptional actions (the attachment of "killer" amendments, the use of unusual parliamentary procedures; adoption of a cloture resolution in the Senate, etc.). For example, during the 1970 legislative process, the Senate Finance Committee attached the trade bill to a social security bill in an attempt to assure passage and reduce the risk of a veto.<sup>37</sup> The other sort of signal is the occurrence of an unexpected event in the political environment that is taken as a signal of a change in the political environment with implications for the legislation in question. For example, during the legislative process that eventually yielded the 1988 trade legislation, Senator Gephardt was an active candidate for the Democratic presidential nomination. A prominent part of his platform was a promise to engage in substantially more aggressive trade

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<sup>36</sup> Considerable research on Congressional voting suggests that Congresspeople make many voting decisions on the basis of cue-taking. That is, since they cannot specialize in all issues, they condition their voting behaviour on the decisions of other members who are taken to be experts in a given area. Thus, informative statements of such experts would be news to the capital market.

<sup>37</sup> In fact, it was this joint Social Security/Trade bill that Wilbur Mills opposed.

policy. The failure of his candidacy caused many commentators to revise downward their evaluation of support in the electorate for aggressive trade legislation. Given that politicians are generally taken to maximize the probability of their reelection, the changed perception of constituent preferences could induce a change in either the probability of passage or the content of the trade legislation.

As we noted at the beginning of this section, effective use of the event study methodology relies on accurate event dating. As a practical matter, the dating problem appears most directly in the choice of the "event window" (i.e. the time period within which the market can be expected to have "gotten the news"). As Brown and Warner (1980, 1985) show, the power of the event study methodology increases with the accuracy of event dating (i.e. the narrowness of the event window). If we knew with certainty when the market received some particular piece of news, we could set the window at the smallest time period for which the data are collected, thus maximizing the power of our test. However, as most regulatory event studies argue, there is good reason to believe that the market receives significant news before it is reported. At a minimum, the market can be taken to know a piece of news at the same time a public source (e.g. a newspaper) knows it. Since there is usually a lag between knowing a piece of news and reporting it, this suggests a two day window (the report date and the day before). We adopt two-day windows for the research reported here.<sup>38</sup>

In addition to the problem of event dating, there are a several issues in the application of the event study methodology to the case of complex legislation that should be mentioned. The most serious relates to the interpretation of the coefficients on the event dummies. To this point, we have treated the gates as signifying something about the final passage of a

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<sup>38</sup> We experimented with longer windows (5 and 10 days) with no improvement in results [Charlie, this is obviously tentative. We need to do this so that we can report a footnote like this]

piece of legislation whose contents remain constant through the legislative process. The case for using the gates and signals method of event dating is clearest in this case. That is, whatever were the priors before a gate, since passage through a gate is virtually a necessary condition for passage of the legislation, there must be some increase in the probability of passage as each gate is passed. If the legislation is fixed in content, then an increase in the probability of passage has clear valuation implications via the impact of the legislation on the returns to specific factors. However, the contents of a bill may be changed at each major gate: the Committee rewrites legislation in markup; the floor of either house can ammend the legislation (this is particularly true of the Senate); and legislation may be substantially rewritten in conference. Thus, there may be two pieces of news at each gate: the increase in the probability of passage as the gate is passed; and the change in the content of the legislation. For our purposes, however, all that need remain constant is the membership of the "friends" and "enemies" of the legislation (in the Jones-Schienkman sense). If the friend-enemy structure remains constant, the underlying model suggests that a revaluation of one group must be accompanied by a revaluation of the other in the opposite direction.<sup>39</sup>

While the multidimensionality of the signal should not affect the basic structure of effects from changes in regulatory structure, it clearly could affect the valuation implication. That is, if the legislation were fixed in content, passing a gate should result in an upward valuation of friends of the legislation and a downward valuation in its enemies. However, since the content of the legislation can change as well, it is entirely possible that this sign pattern can be reversed. To control for this possibility, we check

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<sup>39</sup> The notion that the two effects could offset for one group of firms or the other would seem to be based on a partial equilibrium model of the underlying economy. In general equilibrium, if protectionists and liberalizers are linked through a friend-enemy relationship to the legislation, an increase in the returns to one group must be matched by a fall in real returns to the other.

the signs of each event individually using a methodology developed in Hughes, Magat and Ricks (1986). These results are reported in table ??? .....

\*\*\*\*\*Charlie, we need to do this\*\*\*\*\*

Another important issue in the interpretation of event study results relates to the channel through which firms gain from changes in trade legislation. To this point we have focussed on rent transfers from enemies to friends of the legislation. While this is consistent with the political-economy model that underlies the analysis, it is the case that firms could gain from a reduction in the firm-specific (or industry-specific) risk induced by a change in the regulatory environment. If this latter is the primary channel through which firms gain, not only is the assumption of a constant firm-specific risk (the firm's beta) a misspecification of the model, but we would not necessarily observe any excess returns. To check for this possibility, we test for a change in the betas

\*\*\*\*Charlie, we need to do this\*\*\*\*

The potential significance of the results reported here for both positive and normative work on the political-economy of liberalization and protection requires us to consider potential limitations of our analysis as a result of the apparent weak results for three of the four trade bills. First, these bills may have had an impact on shareholder wealth, but occurred at points in time other than those reflected in our selection of information events (i.e., event dates). Second, it is possible that the valuation effects of changes in content and probability of passage were just off-setting. Third, to the extent that the incremental change embodied in these bills was small, relative to existing law, their provisions may not have been large enough to trigger a change in firm value large enough to be detected by our empirical tests. Finally, it is plausible that the market may not respond to changes in trade law until firms directly benefit from the provisions of the law (e.g., not until grants of administered protection are made or

liberalization successfully negotiated).<sup>40</sup>

### III. Results

#### A. Description of the Hypothesis Tests

If a change in trade legislation implies changed competitive conditions for an industry, either directly via its effect on foreign competitors or indirectly via its factor market effects, the economic model underlying this analysis predicts a change in returns to factors specific to that industry. We have argued, furthermore, that such a change would be revealed by excess returns to specific capital invested in that industry. Thus, our maintained hypothesis is the existence of excess returns induced by rational expectations of change in the structure of law regulating international trade in the United States. We implement our test of this general hypothesis with three specific hypotheses.<sup>41</sup>

Our first test relates to the sum of firm-specific event parameters. Specifically, we test the null hypothesis ( $H_{01}$ ) that this sum is equal to zero. This hypothesis is equivalent to a test on the cross-sectional average regulatory event parameter since the sum is a scalar multiple of the cross-sectional average. Second, we test the null hypothesis ( $H_{02}$ ) that all firms have regulatory event parameters equal to zero. In cases where some firms in the sample are positively effected by the regulatory process, but others negatively, this test is more likely to be rejected since the positive and negative firm-specific regulatory event parameters cannot offset one another like they may in the sums test. Both  $H_{01}$  and  $H_{02}$  are tested by expressing the respective linear constraints in the form  $c - C\hat{\Gamma} = 0$ . Under  $H_{01}$   $c=0$  and  $C$  is a

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<sup>40</sup> As we report above, although we know of no studies of the capital market effects of GATT outcomes, there is now considerable evidence of valuation effects from participation in the administered protection mechanisms.

<sup>41</sup> See Binder (1985a) for a useful discussion of the variety of hypotheses that can be tested in this framework.

contrast (row) vector with J ones in the rows corresponding to the  $\gamma_{jk}$  in  $\Gamma$  and zeroes elsewhere. Under  $H_{02}$   $c$  is a column vector of zeroes of length J and  $C$  is a contrast matrix with J rows where each row contains a single one multiplying an individual  $\gamma_{jk}$  and zeroes multiplying the rest of  $\Gamma$ .

The test statistic we use to test  $H_{01}$  and  $H_{02}$  is the following quadratic form:<sup>42</sup>

$$(c - \hat{c})' [C(X'(\Sigma^{-1} \otimes I)X)^{-1}C'] (c - \hat{c}), \quad (2)$$

where  $\Sigma$  is the covariance matrix of the disturbances,  $I$  is a  $J \times J$  identity matrix, and  $\otimes$  denotes Kronecker product.<sup>43</sup>

Table 3 reports descriptive statistics for the regulatory event parameters and exact F-Statistics for our testifying firm samples.<sup>44</sup>

[ Insert Table 3 Here ]

For  $\gamma_{j1}$  under  $H_{01}$ , rejection is called for in the sample of testifiers advocating liberalization under the 1962 bill and testifiers advocating protection under the 1974 bill. The F-Statistic in the first case is 5.45 (p-value=.02) and suggests that the average  $\gamma_{j1}$  of -.23% (75%<0) is significantly negative. This results suggests that the capital market perceived that

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<sup>42</sup> See Henri Theil, Principles of Econometrics at 314 and 402 (1971) New York: Wiley.

<sup>43</sup> Schipper and Thompson (1985) show that in the case of identical explanatory variables the quadratic form used to test  $H_{01}$  and  $H_{02}$  has an exact finite sample F-distribution. Our tests of  $H_{01}$  and  $H_{02}$  employ these exact F-statistics since they offer the distinct advantage of drawing inference without appealing to asymptotic theory.

<sup>44</sup> F-Statistics are based on the constrained (i.e., diagonal) specification of  $\Sigma$ . Unless otherwise noted none of the inferences in the paper are altered if the unconstrained specification of  $\Sigma$  is used. Descriptive statistics of the systematic risk ( $\beta_j$ ) of various samples across bills are not reported in the paper, but are available upon request.

liberalization-seeking firms would be adversely affected by the passage of the 1962 bill and revalued them accordingly when information was released indicating an increase in the probability of the bill's passage. The F-Statistic of 4.96 (p-value=.03) in the sample of testifiers advocating protection under the 1974 bill suggests that the average  $\gamma_{j1}$  of .24% (62%>0) is significantly positive. This result suggests that these firms were favorably affected by information events deemed to increase the probability that the 1974 bill would be passed.

There are two important things to note about these results. First, they seem to indicate that, in both 1962 and 1974, the market perceived trade legislation as protectionist in content. Since both of these bills were seen as important victories for trade liberalization, this is clearly rather a different picture than one would get from reading historical accounts of this legislation. The second point relates to the asymmetric nature of the result. The results on  $H_{01}$  indicate that the impact of these two bills may have been asymmetric since firms advocating protection (liberalization) in 1962 (1974) were not revalued while the corresponding groups of firms advocating liberalization (protection) were. Stated differently, protectionist firms appeared to have gained under the 1974 bill while liberalization-seeking firms did not lose, and conversely liberalization-seeking firms appeared to have lost under the 1962 bill while protection-seeking firms did not appear to gain. This suggests that a given bill may benefit or harm one sector while not necessarily harming or benefiting the other sector. This result is clearly at variance with the strong separation result derived from the underlying model developed earlier in the paper. We return to this issue in our conclusions.

Turning to  $H_{02}$  and the hypothesis that all firms in a particular testifier sample have regulatory event parameters equal to zero, consistent with the results for  $H_{01}$ ,  $H_{02}$  on  $\gamma_{j1}$  is rejected in the sample of testifiers advocating protection under the 1974 bill. The F-Statistic is 2.39 (p-value<.01).  $H_{02}$  is also rejected on: 1)  $\gamma_{j2}$  for the sample of testifiers

advocating protection under the 1970 bill (F-Statistic=1.73, p-value<.01), 2)  $\gamma_{j1}$  under the 1974 bill for the sample of testifiers advocating liberalization (F-Statistic=2.50, p-value<.01), and 3)  $\gamma_{j1}$  under the 1987 bill in the sample of nine testifiers advocating protection (F-Statistic=2.23, p-value=.06). The latter three results indicate that while the corresponding cross-sectional average regulatory event parameter is insignificantly different from zero (i.e.,  $H_{01}$  cannot be rejected) not all firms in these samples have regulatory event parameters equal to zero. While some impact of the bills would seem to be evident in these samples based on  $H_{02}$ , the impact is not pervasive within any of them since the corresponding test on  $H_{01}$  did not warrant rejection.

In summary, the most consistent results are documented for the 1974 bill where in samples of testifiers advocating protection both  $H_{01}$  and  $H_{02}$  were rejected. Outside of this bill the results provide only modest support for an impact of the bills on samples of testifying firms.

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Table 2: Legislative Gates and their Dates\*

	1962	1970	1974	1988
Introduction	01/25/62	11/18/69	04/11/73	01/06/87
Ways & Means Hearings	03/12/62	05/11/70	05/09/73	02/05/87
Ways & Means Vote	06/04/62	08/21/70	10/10/73	03/25/87
House Floor Vote	06/28/62	11/19/70	12/11/73	04/30/87
Senate Floor Vote	09/19/62	12/29/70	12/13/74	07/21/87
Conference Vote	09/26/62		12/19/74	08/07/87
House Vote	10/04/62		12/20/74	04/21/88 07/13/88
Senate Vote	10/04/62		12/20/74	04/27/88 08/03/88
Presidential Action	10/11/62		01/03/75	05/24/88

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\* With the exception of the removal of trade legislation from the Social Security legislation by the Senate floor (12/29/70) and President Reagan's veto of the Omnibus Trade and Competitiveness Act of 1988, all of these dates imply an increased likelihood of passage and, thus, enter the  $Trade_{jt}^+$  variable. The two exceptions noted here enter the  $Trade_{jt}^-$  variable.

**Table ? : Major Signals and Their Dates**

Trade Expansion Act of 1962:

11/01/61: Secretary of State Ball announces administration intention to pursue new trade legislation. (+)

01/11/62: President Kennedy makes trade a priority in State of the Union Address. (+)

1970 Trade Bill:

07/20/70: President Nixon threatens veto if bill contains quota provisions. (-)

10/13/70: Senate Finance Committee attaches trade bill to Social Security legislation. (+)

11/19/70: House Floor passes Mills quota bill (-)

12/22/70: House Speaker Mills and Ranking Minority Member (Byrnes) oppose legislation. (-)

Trade Reform Act of 1974:

07/16/73: Ways and Means Committee rejects Burke quota ammendment (+)

12/11/73: House accepts Vanik ammendment on MFN for the USSR (-)

Omnibus Trade and Competitiveness Act of 1988:

02/26/86: House Speaker O'Neill convenes meeting of Committee Chairs with trade interests to pursue new trade legislation. (+)

04/29/87: Gephardt Ammendment passes. (-)

11/19/87: Byrd announces conferees cannot finish work before recess. (-)

??/??/88: Gephardt withdraws from race for Democratic nomination. (+)

**Table 1**

**Sample Sizes of Groups Used in Empirical Tests**

<u>Panel A: Testifying Firm Samples</u>				
	<u>Advocate Protection</u>		<u>Advocate Liberalization</u>	
1962 Trade Bill	15		12	
1970 Trade Bill	32		19	
1974 Trade Bill	26		19	
1987 Trade Bill	9		14	
<u>Panel B: Combined Industry Association Samples</u>				
	<u>Advocate Protection</u>		<u>Advocate Liberalization</u>	
1962 Trade Bill	61		-	
1970 Trade Bill	127		64	
1974 Trade Bill	70		18	
1987 Trade Bill	46		37	
<u>Panel C: Individual Industry Associations</u>				
	<u>1962 Trade Bill</u>	<u>1970 Trade Bill</u>	<u>1974 Trade Bill</u>	<u>1987 Trade Bill</u>
Aerospace Industry Assoc.	-	36	-	-
Aluminum Assoc.	-	19	13	-
American Iron and Steel Insitute	8	10	9	6
Anti-Friction Bearing Manuf. Assoc.	7	9	-	-
Business Equipment Manuf. Assoc.	-	29	-	17
Cement Industry Antidumping Comm.	-	14	-	-
Copper and Brass Fabricators Coun.	-	-	9	-
Copper and Brass Research Comm.	11	-	-	-
Cycle Parts and Accessories Assoc.	-	-	7	-
Emergency Lead Zinc Comm.	11	-	-	-
Footwear Retailers Assoc.	-	-	-	7
General Aviation Manuf. Assoc.	-	-	16	-
Independent Refiners Council	-	-	-	6
Synthetic Organic Chemical Manuf. Assoc.	20	30	33	18
Textiles	22	59	-	31

Table 2

Chronology of Major Events  
Underlying the 1962, 1970, 1974, and 1987 Trade Bills

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		Impact on Probability of Passage
<u>Panel A: 1962 Trade Bill</u>		
01/16/62	President Kennedy calls for new trade legislation in State of the Union Address.	+
01/26/62	Trade Bill delivered to the House of Representatives.	+
03/12/62	House Ways & Means Committee Begins Hearings.	+
05/15/62	House Ways & Means Committee Approves Bill.	+
06/05/62	House Ways & Means Committee Reports Bill to House Floor	+
06/29/62	House Passes Bill.	+
07/24/62	Senate Finance Committee Begins Hearings.	+
09/14/62	Senate Finance Committee Reports Bill to Senate Floor	+
09/20/62	Senate Passes Bill.	+
09/27/62	Conferees Approve Bill.	+
10/05/62	Both Houses Pass Conference Bill.	+
 <u>Panel B: 1970 Trade Bill</u>		
08/14/70	House Ways & Means Committee Reports Bill to House Floor	+
09/28/70	Floor Vote Postponed.	-
10/12/70	Senate Finance Committee Attaches Bill to Social Security Act	+
11/20/70	House Approves Bill.	+
12/18/70	Rep. Wilbur Mills Opposes Social Security-Trade Bill.	-
12/29/70	Senate Turns Down Bill.	-
 <u>Panel C: 1974 Trade Bill<sup>1</sup></u>		
04/10/73	President Nixon Sends Trade Bill to Congress.	+
10/03/73	House Ways & Means Committee Reports Bill to House Floor (Vote 20-3 in Favor of the Bill).	+
12/10/73	House Accepts Closed Rule.	+
12/11/73	House Passes Bill.	+
12/13/74	Senate Approves Bill.	+
12/20/74	Conference Report/Final Vote.	+

Panel D: 1987 Trade Bill

04/30/86	House Ways & Means Committee Begins Drafting the Bill	+
03/13/87	House Ways & Means Committee Approves Bill.	+
05/01/87	House Passes the Bill.	+
07/22/87	Senate Approves Bill.	+
04/20/88	Conference Committee Approves Bill.	+
04/22/88	House Approves Bill.	+
05/25/88	President Reagan Vetoes the Bill.	-
06/09/88	Senate Fails to Override Reagan Veto.	-
07/14/88	House Approves New Bill.	+
08/04/88	Senate Approves New Bill.	+
08/24/88	President Reagan Signs the Bill.	+

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1. Since the announcements on 12/10/73 and 12/11/73 are only one day apart we treated them as a single event.

Table 3

Summary Statistics of the Coefficient Estimates and F-Statistics for  $H_{01}$  and  $H_{02}$  for Samples of Testifying Firms<sup>1</sup>

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Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \tilde{\epsilon}_{jt}$  (1962 & 1974 Trade Bills)

Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \gamma_{j2} \text{Trade}_{jt}^- + \tilde{\epsilon}_{jt}$  (1970 & 1987 Trade Bills)

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Panel A: 1962 Bill

<u>Sample</u>	<u>Coeff</u>	<u>N</u>	<u>Mean</u>	<u>Median</u>	<u>%&gt;0</u>	F-Stat. <u>H<sub>01</sub></u>	F-Stat. <u>H<sub>02</sub></u>
Protection	$\gamma_{j1}$	15	-.0012	-.0014	27	1.60	.79
Liberalization	$\gamma_{j1}$	12	-.0023	-.0021	25	5.45 <sup>b</sup>	1.50

Panel B: 1970 Bill

<u>Sample</u>	<u>Coeff</u>	<u>N</u>	<u>Mean</u>	<u>Median</u>	<u>%&gt;0</u>	F-Stat. <u>H<sub>01</sub></u>	F-Stat. <u>H<sub>02</sub></u>
Protection	$\gamma_{j1}$	32	-.0015	-.0003	53	1.09	.86
Protection	$\gamma_{j2}$	32	.0011	-.0007	53	.59	1.73 <sup>a</sup>
Liberalization	$\gamma_{j1}$	19	-.0004	-.0008	47	.05	.86
Liberalization	$\gamma_{j2}$	19	.0003	-.0008	47	.04	1.09

Panel C: 1974 Bill

<u>Sample</u>	<u>Coeff</u>	<u>N</u>	<u>Mean</u>	<u>Median</u>	<u>%&gt;0</u>	F-Stat. <u>H<sub>01</sub></u>	F-Stat. <u>H<sub>02</sub></u>
Protection	$\gamma_{j1}$	26	.0024	.0026	62	4.96 <sup>b</sup>	2.39 <sup>a</sup>
Liberalization	$\gamma_{j1}$	19	-.0012	-.0028	42	.88	2.50 <sup>a</sup>

Panel D: 1987 Bill

<u>Sample</u>	<u>Coeff</u>	<u>N</u>	<u>Mean</u>	<u>Median</u>	<u>%&gt;0</u>	F-Stat. <u>H<sub>01</sub></u>	F-Stat. <u>H<sub>02</sub></u>
Protection	$\gamma_{j1}$	9	-.0027	-.0022	33	2.26	2.23 <sup>b</sup>
Protection	$\gamma_{j2}$	9	-.0054	-.0024	11	1.91	.37
Liberalization	$\gamma_{j1}$	14	.0006	.0006	64	.33	.72
Liberalization	$\gamma_{j2}$	14	-.0000	-.0002	50	.01	.44

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1. F-statistics are based on the constrained (diagonal) variance/covariance matrix of disturbances. Unless noted in the text none of the inferences based

on this Table are altered if the full covariance matrix of disturbances is used. The F-statistics for the  $H_{01}$  ( $H_{02}$ ) have 1 and  $T-(2+k)$  ( $J$  and  $T-(2+k) - J + 1$ ) degrees of freedom where  $T$  is the number of observations in the estimation period  $k$  is the number of regulatory event parameters, and  $J$  is the number of firms.

Significance Levels

a =  $p \leq .01$   
b =  $.01 < p \leq .05$   
c =  $.05 < p \leq .10$

Table 4

Summary Statistics of the Coefficient Estimates and F-Statistics  
for  $H_{01}$  and  $H_{02}$  for Combined Industry Association Samples<sup>1</sup>

Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \tilde{\epsilon}_{jt}$  (1962 & 1974 Trade Bills)  
 Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \gamma_{j2} \text{Trade}_{jt}^- + \tilde{\epsilon}_{jt}$  (1970 & 1987 Trade Bills)

Panel A: 1962 Bill

Sample	Coeff	N	Mean	Median	%>0	F-Stat.	F-Stat.
						$H_{01}$	$H_{02}$
Protection	$\gamma_{j1}$	83	.0002	.0000	51	.13	.83
Liberalization	$\gamma_{j1}$	-	-	-	-	-	-

Panel B: 1970 Bill

Sample	Coeff	N	Mean	Median	%>0	F-Stat.	F-Stat.
						$H_{01}$	$H_{02}$
Protection	$\gamma_{j1}$	127	-.0022	-.0029	36	6.12 <sup>b</sup>	.82
Protection	$\gamma_{j2}$	127	.0052	.0032	62	34.15 <sup>a</sup>	1.76 <sup>a</sup>
Liberalization	$\gamma_{j1}$	64	.0012	.0005	52	.87	1.11
Liberalization	$\gamma_{j2}$	64	.0019	.0015	60	2.22	1.05

Panel C: 1974 Bill

Sample	Coeff	N	Mean	Median	%>0	F-Stat.	F-Stat.
						$H_{01}$	$H_{02}$
Protection	$\gamma_{j1}$	70	.0033	.0038	73	16.53 <sup>a</sup>	2.18 <sup>a</sup>
Liberalization	$\gamma_{j1}$	18	.0021	.0001	50	1.34	1.99 <sup>a</sup>

Panel D: 1987 Bill

Sample	Coeff	N	Mean	Median	%>0	F-Stat.	F-Stat.
						$H_{01}$	$H_{02}$
Protection	$\gamma_{j1}$	46	.0005	.0001	50	.26	1.22
Protection	$\gamma_{j2}$	46	-.0006	.0003	52	.07	.98
Liberalization	$\gamma_{j1}$	37	.0005	-.0003	49	.46	1.12
Liberalization	$\gamma_{j2}$	37	.0013	-.0018	38	.61	4.75 <sup>a</sup>

1. F-statistics are based on the constrained (diagonal) variance/covariance matrix of disturbances. Unless noted in the text none of the inferences based

on this Table are altered if the full covariance matrix of disturbances is used. The F-statistics for the  $H_{01}$  ( $H_{02}$ ) have 1 and  $T-(2+k)$  ( $J$  and  $T-(2+k)-J+1$ ) degrees of freedom where  $T$  is the number of observations in the estimation period  $k$  is the number of regulatory event parameters, and  $J$  is the number of firms.

2. In 1962 none of the major industry associations advocated liberalization.

#### Significance Levels

a =  $p \leq .01$

b =  $.01 < p \leq .05$

c =  $.05 < p \leq .10$

Table 5

F-Statistics for  $H_{01}$  and  $H_{02}$  for Samples of Individual Industry Associations<sup>1</sup>

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Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \tilde{\epsilon}_{jt}$  (1962 & 1974 Trade Bills)

Model:  $R_{jt} = \alpha_j + \beta_j R_{mt} + \gamma_{j1} \text{Trade}_{jt}^+ + \gamma_{j2} \text{Trade}_{jt}^- + \tilde{\epsilon}_{jt}$  (1970 & 1987 Trade Bills)

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Panel A: 1962 Bill

<u>Industry Association</u> <sup>2</sup>	<u>N</u> <sup>3</sup>	<u>Y<sub>j1</sub></u>		<u>Y<sub>j2</sub></u>	
		F-Stat.	F-Stat.	F-Stat.	F-Stat.
		<u>H<sub>01</sub></u>	<u>H<sub>02</sub></u>	<u>H<sub>01</sub></u>	<u>H<sub>02</sub></u>
ABMA <sup>P</sup>	7	.14	.32	-	-
AISI <sup>P</sup>	8	.37	.74	-	-
CBRA <sup>P</sup>	11	.22	.83	-	-
ELZC <sup>P</sup>	11	1.55	.85	-	-
SOCMA <sup>P</sup>	20	1.13	1.08	-	-
TEX <sup>P</sup>	22	.40	.62	-	-

Panel B: 1970 Bill

<u>Industry Association</u>	<u>N</u> <sup>3</sup>	<u>Y<sub>j1</sub></u>		<u>Y<sub>j2</sub></u>	
		F-Stat.	F-Stat.	F-Stat.	F-Stat.
		<u>H<sub>01</sub></u>	<u>H<sub>02</sub></u>	<u>H<sub>01</sub></u>	<u>H<sub>02</sub></u>
AA <sup>1</sup>	19	3.58 <sup>b</sup>	.70	.02	.80
ABMA <sup>P</sup>	9	2.79 <sup>c</sup>	1.21	2.44	.68
AIA <sup>1</sup>	36	4.92 <sup>b</sup>	1.26	4.21 <sup>b</sup>	1.15
AISI <sup>P</sup>	10	1.00	.46	2.59	.53
BEMA <sup>P</sup>	29	.21	.88	.38	1.16
CIAC <sup>P</sup>	14	3.05 <sup>c</sup>	.84	.22	.40
SOCMA <sup>P</sup>	30	.15	.87	3.56 <sup>b</sup>	.71
TEX <sup>P</sup>	59	.86	.63	30.61 <sup>a</sup>	2.75 <sup>a</sup>

Panel C: 1974 Bill

<u>Industry Association</u>	N <sup>3</sup>	Y <sub>j1</sub>		Y <sub>j2</sub>	
		F-Stat. H <sub>01</sub>	F-Stat. H <sub>02</sub>	F-Stat. H <sub>01</sub>	F-Stat. H <sub>02</sub>
AA <sup>1</sup>	13	8.75 <sup>a</sup>	2.63 <sup>a</sup>	-	-
AISI <sup>P</sup>	9	5.84 <sup>b</sup>	1.62 <sup>c</sup>	-	-
CBFC <sup>P</sup>	9	.13	2.86 <sup>a</sup>	-	-
CPAA <sup>P</sup>	7	14.21 <sup>a</sup>	4.24 <sup>a</sup>	-	-
GAMA <sup>1</sup>	16	3.84 <sup>b</sup>	2.23 <sup>a</sup>	-	-
SOCMA <sup>P</sup>	33	7.03 <sup>a</sup>	1.56 <sup>b</sup>	-	-

Panel D: 1987 Bill

<u>Industry Association</u>	N <sup>3</sup>	Y <sub>j1</sub>		Y <sub>j2</sub>	
		F-Stat. H <sub>01</sub>	F-Stat. H <sub>02</sub>	F-Stat. H <sub>01</sub>	F-Stat. H <sub>02</sub>
AISI <sup>P</sup>	6	3.60 <sup>b</sup>	1.27	.18	1.55
BEMA <sup>1</sup>	17	2.81 <sup>c</sup>	.96	2.43	.72
FRA <sup>1</sup>	7	2.58	.81	.35	.34
IRC <sup>P</sup>	6	1.42	.61	.76	.29
SOCMA <sup>P</sup>	18	1.13	1.20	7.57 <sup>a</sup>	9.04 <sup>a</sup>
TEX <sup>P</sup>	31	.00	1.22	.02	1.02

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1. F-statistics are based on the constrained (diagonal) variance/covariance matrix of disturbances. Unless noted in the text none of the inferences based on this Table are altered if the full covariance matrix of disturbances is used. The F-statistics for the H<sub>01</sub> (H<sub>02</sub>) have I and T-(2+k) (J and T-(2+k)-J+1) degrees of freedom where T is the number of observations in the estimation period k is the number of regulatory event parameters, and J is the number of firms. A superscript p (1) denotes that the industry association advocates protection (liberalization).

2. Legend: AIA = Aerospace Industry Association, AA = Aluminum Association, AISI = American Iron & Steel Institute, ABMA = Antifriction Bearing Association, BEMA = Business Equipment Manufacturers Association, CIAC = Cement Industry Antidumping Committee, CBFC = Copper and Brass Fabricators Council, CBRA = Copper and Brass Research Committee, ELZC = Emergency Lead-Zinc Committee, FRA = Footwear Retailers Association, GAMA = General

Aviation Manufacturers Association, IRC = Independent Refiners Council, SOCMA  
= Synthetic Organic Chemical Manufacturers Association, and TEX = Textiles.

3. N denotes the number of firms in the association with available data.

Significance Levels

a =  $p \leq .01$

b =  $.01 < p \leq .05$

c =  $.05 < p \leq .10$