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Chapter Title: Precedent and Legal Argument in U.S. Trade Policy: Do They Matter to the Political Economy of the Lumber Dispute?

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5 Precedent and Legal Argument in U.S. Trade Policy: Do They Matter to the Political Economy of the Lumber Dispute?

Joseph P. Kalt

5.1 Introduction: Applying Rational Political Economy to the U.S.-Canada Lumber Dispute

Efforts by interested parties to secure trade protection are frequently carried out in the United States through the quasi-judicial regulatory framework of countervailing duty (CVD) law, as administered by the Department of Commerce (DOC). This framework structures at least the form and content of the arguments for and against requested CVD protection. At the same time, however, interested parties have other venues through which to make their case—Congress, the White House, political channels within the DOC, and other potentially involved agencies. Parties who participate in the department's litigation process often confess to perceptions that the process is a charade, that the hearings and filings before the department's International Trade Administration (ITA) and International Trade Commission (ITC) have no influence on the ultimate policy outcomes. Instead, it is averred, the policy outcomes are driven by interest group politics, leaving the litigatory apparatus to serve merely as beside-the-fact "packaging" for decisions made elsewhere and through different, "purely political" processes. If this portrayal is true, the nation pays a high cost for packaging.

This study tries to get at the questions of whether and how the quasi-judicial regulatory process by which CVD law is administered affects the success or

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The author has served as an economic consultant to the governments of Canada and British Columbia in the "Lumber III" trade dispute and has benefited greatly from access to the documentary record in that proceeding. He has also benefited from the helpful comments of the participants in the conference on the political economy of trade protection, especially Frank Wolak and Anne Krueger, and the workshop in law and economics at the University of Chicago. Any errors or omissions are solely the author's, as are the views set forth in this study.

failure of parties petitioning for protection. The research posits two primary, and one subsidiary, theories of the role that institutional structure plays in determining regulatory outcomes. These competing theories are then examined—tested to the extent possible—in the context of a particular set of cases that have been flowing into the DOC in recent years. These cases make up the ongoing disputes over trade in lumber and logs—the "timber trade wars"—that have been raging between the United States and Canada for a decade (see Kalt 1988). As of 1992, the United States had imposed CVDs on Canadian softwood lumber imports on the grounds that the Canadians provide publicly owned trees to loggers at subsidized prices, and that Canadian log export restraints (LERs) subsidize the prices that Canadian sawmills pay for raw logs.

In order to get leverage on the concept of "institutions," this research focuses on the role that a particular legal institution—legal precedent—plays in determining the subgame successes and failures of contending parties as they tussle over such matters as the applicability of CVD law, the definition of the relevant product and geographic markets affected by allegedly countervailable foreign subsidies, the measurement of the magnitude of alleged subsidies, and the attendant size of a CVD. Legal precedent is treated as a costly "entry" barrier that litigants face when trying to exert political influence. Resources are expended by competing parties to defend or break down precedents in a stochastic process of "take your best shot (via legal argument) and hope you hit the bull's-eye." What arguments work and why?

Section 5.2 discusses alternative theories of the political economy of the administrative process of economic policy making, focusing on "capture theory" and "neo-institutionalist" explanations for the role of legal proceedings before the DOC's ITA. Section 5.3 then provides background on the issues and stakes in the U.S.-Canada lumber dispute. Section 5.4 discusses the testing methodology and specific hypotheses regarding the determinants of successful pleadings before the ITA. This section also sets out the specific arguments regarding a set of 14 key issues disputed by the contending parties in their arguments to the ITA. Section 5.5 implements the empirical tests, making use of newly developed methods for determining the informational content of small sample, dichotomous "cases." Section 5.6 summarizes findings and pursues ramifications.

5.2 Competing Theories of the Role of Institutions in Political Economy

5.2.1 Capture Theory and the New Institutionalism

At some risk of caricature, economic theories of rational political economy (or what used to be called the "economic theory of regulation") are currently pulling scholars into two broad camps: Capture Theory (CT) and the New Institutionalism (NI). Under the former, it is argued that political outcomes can

be predicted and explained by a combination of two primary economic factors: (1) the differential stakes that contending parties have in a particular law or regulation, that is, where the rents are, and (2) the differential costs of effective political organization that contending rent-seeking interest groups confront as a result of standard Olsonian forces of free riding.[1] Within this framework, regulatory outcomes and processes are "captured" by successful interest groups who wield the most effective political influence, where "influence" is usually measured by either votes delivered to politicians or votes plus campaign contributions delivered to politicians.

The New Institutionalism does not deny that the two primary factors underlying CT are indeed important (if not strictly "primary") but adds a third fundamental explanatory factor to efforts to understand political outcomes. This factor is the institutional context—laws, procedures, precedents, regulations, voting rules, and so forth—that forms the playing field upon which contending rent seekers meet. NI lays claim to every bit as much economic rationality in the modeling of political actors as does CT but argues that institutional structure constitutes binding constraints, or at least conditioning costs, that limit the range of actors' investments in political outcomes and hence play determinative roles in political outcomes.[2] Thus, to understand why, for example, the United States moved in 1992 to impose tariffs on imports of Canadian lumber, and why the tariff structure and rates are what they are, NI asserts it is necessary to understand the formal institutional setting through which the U.S.-Canada lumber dispute has been mediated.

A fundamental divergence between CT and NI arises over the issue of the endogeneity (and speed of endogeneity) of political institutions. CT tends to view institutions as ephemeral: political actors have the ability to change political institutions, and if a capturing interest group needs an institution changed in order to garner wealth through political influence, support-seeking political actors will change that institution. NI, on the other hand, views political institutions as more exogenous: certainly they can be changed, but in any particular case (say, of regulatory agency behavior), it is costly to change institutions and such costs make institutions "sticky." This stickiness reflects rational commitment on the part of agents (e.g., Congress) to a governmental structure that can substitute for perfect monitoring by principals (i.e., voters and interest groups), but which is therefore imperfect and open to inertia, principal-agent–subagent slack, ideological considerations, and so forth.

In a nutshell, it is CT that argues, for example: "It doesn't matter who is president or if we reform Congress; policies will be driven by the underlying economic interests of effectively organized interest groups." NI responds: "Those interest groups have to work through an institutional context that can-

1. The classic statements here are from the Chicago School: Stigler (1971), Peltzman (1976), and Becker (1983).

2. See, e.g., North (1990), Bates (1988), and the writings of the "rational political economists."

not be changed overnight and will make them more or less powerful in influencing the president or Congress or an administrative agency."

As these theories play out in investigation of a particular class of political actions, such as decisions of the ITA and the ITC regarding trade protection for U.S. lumber interests, they carry testably different implications. According to CT, institutions such as legal proceedings are "Stiglerian theater": the real game is being played out behind the scenes of the hearing rooms by interest groups and support-maximizing politicians. Legal rulings and such matters as precedent may be a language by which the game is explained or justified after the fact to appease the press and the public but is not determinative of outcomes. NI would hold, however, that such institutions as precedent, standards of evidence, and burdens of proof *matter*: agency decision makers and the judges cannot simply ignore precedent, evidence, or procedure, no matter how much political clout the beseeching interest group has. If a group does not have a good argument by which to satisfy or overcome precedent, or meet its evidentiary burden, it runs a substantial risk of losing before the agencies and the courts.

5.2.2 Research Design

These descriptions of CT and NI present them as sharply distinct, alternative hypotheses. As in many contexts where the demands of research are to isolate testable differences in hypotheses, however, the differences here are drawn too starkly. The added ingredient of NI—the determinative role of institutional structure—is not at odds with the rational, choice-theoretic underpinnings of CT, and CT defenders might agree that in any particular instance of economic policy making, institutions can matter. The link is suggested above: the principal-agent problem readily generates institutional structure as a constraint on agents that parties (such as members of the Congress) rationally adopt when they are captured every bit as much as implied by CT, but can only imperfectly monitor how well their agents (such as the regulatory agencies) are doing at the kind of constituent support maximization that underlies CT.[3]

Recognizing these intersections of CT and NI, the tests proposed here must be thought of more modestly than "testing CT versus NI." Rather, the objective of this study is to see whether the added ingredient of NI—the institutional structure of the legal proceedings by which CVD decisions are made in the United States—adds significantly to our understanding of the political economy of the particular case of the U.S.-Canada lumber dispute.

The discussion of sections 5.1 and 5.2.1 suggests the outlines of a research design by which to understand whether and how the quasi-judicial litigatory process of CVD law administration influences the success or failure of requests for protection. Specifically, the research results reported below attempt to sys-

3. The nature of such support maximization is worked out for the case of no principal-agent slack by, e.g., Peltzman (1976) and Becker (1983).

tematically examine a moderate-sized sample of actual legal arguments made before the ITA in the U.S.-Canada lumber dispute in order to test whether success in making an argument can be systematically explained as a function of determinants of the severity of the beseeching party's precedential burden or other contextual aspects of the legal proceedings (per NI theory). Or, alternatively, is success or failure unrelated to apparent precedential burdens and institutional context of the legal proceedings (per CT theory)?

The testing of NI against CT in the case at hand begins with identification of salient attributes of the CVD legal proceeding before the ITA and then tests whether variation in those attributes across a range of issues argued before the ITA provides explanation for variation in ITA decisions—where "variation in ITA decisions" refers to whether the "winner" in a particular argument is the pro-CVD party (U.S. lumber interests) or the anti-CVD party (the Canadian parties). Under U.S. law (conditioned by various trade acts and U.S. participation in the General Agreement on Tariffs and Trade [GATT]), parties seeking to establish tariff protection for U.S. industries under the rules governing CVDs do so by initiating a legal petition before the ITA. The ITA's core responsibilities in CVD proceedings are to determine whether, in fact, the targeted foreign government is engaging in a countervailable subsidization of its home industry and, if so, by how much (commonly measured as the net reduction in cost realized by the subsidized sector). On a separate legal track, the ITC has the responsibility of determining whether the U.S. industry of interest has been injured as a result of the asserted countervailable subsidy. Should a party prevail at the ITA and the ITC, CVDs are then normally imposed unless blocked by the president under oversight executive powers reserved to the office under U.S. law.

Upon acceptance of a CVD petition for consideration, legal proceedings are launched whereby the ITA first gathers information regarding the nature (e.g., legal origin, method of payment, and level of production) and extent (e.g., magnitude and coverage within and across industries) of any purported subsidy by a foreign government. Interested parties typically include the U.S. industries which compete with the allegedly subsidized foreign industries, the affected foreign industries, and the foreign government.[4] The ITA itself can be a party to the dispute by self-initiating CVD inquiries. Although the particular vehicles of participation can depend on legal criteria of standing, interested parties typically have the ability to participate in the formal ITA proceedings, providing information and legal and substantive argument through the written submissions, provision of data, and oral statements of expert witnesses, industry participants, and legal counsel. Following a round of initial submission and consideration, the ITA issues a preliminary determination to which parties with

4. Interestingly, U.S. consuming interests are typically absent from formal ITA proceedings—in keeping with the predictions of CT that the very wide dispersal of their interests and low per capita stakes leave them unable to overcome Olsonian free-rider problems and become a cohesive interest group.

standing can reply. Following replies and further consideration, the ITA then typically issues a final determination. As a result of the free trade agreement between Canada and the United States, final determinations in CVD proceedings such as the lumber dispute are referred for appeal and review to a five-member binational panel.

I wish to focus here on the final determination phase of CVD proceedings, wherein the ITA of the DOC makes its key rulings and sets forth and imposes specific duties. To this point in CVD proceedings, the ITA is the key adjudicator of parties' disputes, with its procedural, policy, and evidentiary standards codified in law and precedent. In most cases, the key decisions leading to imposition of protective tariffs on behalf of domestic industries are made at this level; a doctrine of "deference to the agency" makes it very difficult for an appealing party to overturn the ITA's findings, particularly on matters of factual evidence.

The doctrine of legal precedent sits at the institutional heart of ITA (and other regulatory agency) legal proceedings. When prior rulings of the agency or appellate bodies overseeing the agency have established particular procedural, policy, or evidentiary standards, such standards play central roles in determining the burdens and natures of proof that a party must satisfy in order to justifiably prevail in an argument. Precedent (and the doctrines of legislative intent and due process on which it is based) thus conditions the ability of a party to win an argument. Where precedent has established a high burden of proof for a party, for example, the likelihood of prevailing declines. Where precedent has created a strong legal principle, securing a ruling contrary to that principle is less likely.

Within the framework of NI, precedent can be represented as exerting two kinds of influences on the outcome of regulatory policy making. First, for a given precedent, a party seeking a ruling contrary to that precedent should require particularly strong arguments. "Strong" here is contextual, and "should" means "if NI is adding to our understanding of the outcome of the policy process." If the precedent, for example, concerns evidentiary thresholds (which can range from a standard of a "more than a mere scintilla" of the evidence to "beyond a reasonable doubt"), the party to whom precedent assigns the burden of proof should require more clear-cut, fewer controvertible facts which fit that theory, and/or clearer exposition, in order to win the argument at issue as the height of the burden increases.

Second, precedents themselves can vary in strength. U.S. administrative law changes over time. Congress modifies underlying legislation; appellate bodies clarify or modify previous rulings; administrative agencies exercise latent discretion; and so on. Experience in the administrative law process, however, indicates inertia and variation in the mutability of various precedents. Within NI, precedents should be "stronger"—that is, harder for an opposing party to overcome or easier for a supporting party to uphold—the longer and more fre-

quently they have withstood previous challenges and been reaffirmed by appropriate authorities, and the more clear is the underlying legislative intent and/or directive.

In short, relative to CT, NI predicts that:

NI-1. For a given precedent, variation in the ability of a party to overcome that precedent or meet the burden of that precedent should be positively related to the strength of that party's arguments.

NI-2. Variation in the ability to overcome precedents or meet the burdens of precedents should be positively related to variation in the strength of relevant precedents.

With the kinds of definitions of "strength" discussed above (and elaborated below), these two hypotheses form the testable difference between CT and NI in the context at hand.

Under strict CT, variation in the success or failure of a party's arguments should not depend on contextual attributes of the institutions of precedent. Rather, variation in the success of arguments ought to be related to the stakes of the contending parties:

CT-1. The decision maker should be more likely to award a victory to an argument, the larger the stakes of the beseeching party, independent of the strength of the party's arguments and the strength of the precedent at issue.[5]

In the proceeding under examination, on any given issue it is the case that the magnitude of one party's gain is (to a first approximation) also the opponent's loss; stakes are generally of equal but opposite sign from the contending parties' perspectives. Across issues, however, stakes differ in their magnitude. An issue such as the very existence of a countervailable subsidy is an all-or-nothing matter, while disputes over measurement of marginal adjustments to a purported subsidy put less at stake for the contending parties. Within the kind of "equalize support at the margin" version of CT developed by Peltzman (1976) and Becker (1983), support-seeking principals (and their agents) faced with support-offering constituents of unequal political clout should secure support from disparate parties by arriving at regulatory decisions that differentially favor the more influential party but do not cut the less influential party completely out.[6] This perspective on argument CT-1 is implemented below.

5. Much of the research that is focused on CT (as well as NI) is directed at variations in the ability of potentially affected interest groups to organize and exert influence. In the present context, the hurdle of organization has already been overcome; the parties are already in the hearing room exerting whatever influence they have.

6. This is the litigation analog to the optimizing equilibrium demonstrated by Peltzman (1976), wherein the support-maximizing decision maker equates the marginal support gained from a decision favorable to group A to the marginal support lost as a result from group B.

These competing hypotheses, NT-1 and NT-2 versus CT-1, about how the ITA legal process works form the core of the analysis undertaken here. An illustration is helpful to explain the framework. The U.S. lumber industry has long argued that the Canadian federal and provincial governments provide the rights to cut trees ("stumpage" rights) at below-market prices to Canadian loggers *and* that this constitutes a countervailable subsidy to lumber production in Canada. Economists testifying on behalf of the Canadians (e.g., William Nordhaus of Yale University) and economists researching the matter independently (e.g., myself)[7] have argued that the evidence *and* the theory indicate that to the extent Canadian stumpage may be below market, the consequence is merely an inframarginal transfer of Ricardian and Hotelling rent to loggers. The supply of logs and hence lumber is left unchanged. U.S. lumber producers, therefore, face no incremental competitive pressure from Canadian lumber producers and are not harmed by Canadian stumpage policy.

This argument has held little or no sway before the ITA or the ITC. It appears to be misunderstood and dismissed as irrelevant theorizing by university economists. Such appearances, however, do not justify any general conclusions as to how the quasi-judicial CVD process operates or as to which arguments take hold and which do not. In order to draw generalizable conclusions in this regard, systematic evidence must be garnered from a framework which isolates alternative determinants of what makes one argument take hold while another falls on deaf ears.

Below I identify a set of central, stakes-bearing issues that have been adjudicated by the ITA in the latest round of the U.S.-Canada trade dispute. These issues can be categorized according to who—the U.S. petitioners or the Canadians—has won each of them as of the ITA's final determination, reached in May 1992. This creates a dichotomous winner-loser variable by which to gauge the outcome of the legal proceedings. For each of the arguments in the data set, I then code the stakes at issue in the argument for their magnitude and code the argument of the winning party for its consistency with precedent, its analytic or theoretical straightforwardness, the strength of the winner's evidence, and the ease of exposition entailed by the winner's argument (these concepts are given more delineation below).

The objective is to create a data set that can be analyzed under the pseudoregression Boolean techniques pioneered by Ragin (1987). These techniques permit dichotomous data sets representing panels of cases to be reduced to their logical meaning in terms of necessary and sufficient conditions in a manner that continuous variable econometric techniques, familiar to most economists and political scientists, are unable to do. If the cross-case tests for the two central hypotheses, NI-1 and NI-2, listed above are borne out, the results will be consistent with an NI view of the regulatory process. If there is no

7. See Kalt (1988). This research was undertaken and published prior to any engagement with any party to the lumber dispute.

coherent pattern to the explanatory factors except the stakes at issue, the results will be most consistent with CT theory (per CT-1).[8]

5.3 "Lumber III": History and Issues

The United States and Canada have been engaged in a long-running dispute over softwood lumber imports from Canada into the United States. These imports compete directly with lumber supplies produced in the United States, with sawmillers—in the Pacific Northwest region of Washington, Oregon, Idaho, and British Columbia most notably—going head to head for sales in North America and the Far East. In both the United States and Canada, the public sector owns vast forest resources that are provided to private sector loggers at fees known as "stumpage." As noted, certain U.S. milling interests have long complained that they pay market value for stumpage under auction procedures used in U.S. public sector sales while Canadian formula-based stumpage is below market. Moreover, allege the U.S. interests, provincial and federal restraints on log exports restrict the ability of foreign buyers to purchase logs in Canada for export and cause the prices paid for Canadian logs by Canadian sawmillers to be lower than they otherwise would be.[9] Both alleged below-market stumpage and depression of log prices below free trade levels are asserted to constitute countervailable subsidies to Canadian lumber producers.

5.3.1 Lumber I, II, and III

The history of the timber trade wars between the United States and Canada is summarized in table 5.1. The first round of the timber trade war—"Lumber I"—was commenced by a CVD investigation of Canadian stumpage launched by the DOC in 1982. Lumber I ended with a final negative determination by the DOC in 1983, with the DOC finding that stumpage rights were allocated in a way that failed to satisfy the technical legal criterion of "specificity" (which requires that a subsidy be provided to a specific enterprise or industry, or group of enterprises or industries, in order for such a subsidy to be countervailable).

Lumber II arose in 1986 in response to a petition for investigation by the Coalition for Fair Lumber Imports (CFLI), a trade organization and lobbying group representing (predominantly) small and medium-sized U.S. sawmill companies. The CFLI again sought to countervail the Canadian stumpage system. The DOC found on preliminary determination that the Canadian stumpage system was both "specific" (in the sense described above) and "preferential" (i.e., it "distorted" the marketplace for lumber by affecting the supply schedule of Canadian lumber). DOC set the CVD rate for Canadian lumber imports at 14.5 percent ad valorem. The Lumber II CVD was effectively pre-

8. A third theory, contractarianism (per the Buchanan tradition), might predict that the "truth will out" and that the correctness (absence of ambiguity) of an argument would be the only or the dominant explainer.

9. Ironically, the United States has LERs of its own.

Table 5.1 History of CVD Actions in the Timber Trade Wars between the United States and Canada

Case	Allegation	U.S. DOC Decision	CVD on Lumber Imports	Resolution
Lumber I 1982–83	Canada subsidizes mills with below-market stumpage	Stumpage subsidy is not "specific"	Zero	No further action
Lumber II 1986	Canada subsidizes mills with below-market stumpage	Stumpage subsidy is "specific" and distortive	14.50% ad valorem	Canada retaliates; memorandum of understanding replaces U.S. CVD with 15% Canadian export tax
Lumber III 1992–94	Canada subsidizes mills with below-market stumpage and log export controls	Stumpage and export controls are "specific" and distortive	11.54% ad valorem	Binational panel overrules DOC; appeals underway

empted, however, when escalating retaliatory threats by the Canadians compelled the United States and Canada to enter into a memorandum of understanding (MOU). The Lumber II MOU obligated Canada to impose a 15 percent fee on softwood lumber exports to the United States.[10]

In 1991, Canada and a number of its provinces concluded that the MOU had been satisfied by various reforms in Canadian stumpage pricing procedures. Accordingly, they lifted the 15 percent export fee. The DOC's ITA immediately launched Lumber III, an investigation into the possibility that Canadian stumpage continued to constitute a countervailable subsidy. At the invitation of the ITA, the CFLI filed submissions arguing that Canada's LERs also constitute a countervailable subsidy by Canada to its lumber producers. Various Canadian parties, led by the various provinces' forestry ministries, in turn intervened to plead their case as to why neither the stumpage system nor LERs constituted countervailable subsidies. The ITA found on preliminary determination in March 1992 that both Canada's stumpage system and its LERs were countervailable and set a CVD at 14.48 percent for lumber imports into the United States from all of Canada except the (volumetrically insignificant) Atlantic provinces. Following rounds of written and oral submissions by the CFLI and the various Canadian provincial governments, the ITA issued its final determination in May 1992.

On final determination in Lumber III, the ITA found both Canadian stumpage and the LERs to be countervailable and set an ad valorem CVD of 6.51 percent for all Canadian lumber imported into the United States from Alberta, British Columbia, Ontario, and Quebec. This CVD was a mixture of asserted

10. See Kalt (1988) for a discussion and calculation of the international welfare effects of Lumber II.

stumpage and LER countervailable subsidy findings, with all affected provinces found to have stumpage subsidies. Only British Columbia was found to have subsidies emanating from LERs, and reflecting the geography and heterogeneous forest types of British Columbia, the asserted LER subsidy applied only with respect to logs produced along its coastal regions. Following the final determination, Lumber III went before a binational panel (established pursuant to the new free trade agreement between Canada and the United States) for review and remand. The panel remanded the final determination back to the ITA for reconsideration and supplementation on a number of legal and evidentiary issues. The ITA then issued a determination on remand, raising the CVD to 11.54 percent, with the increase coming primarily from the ITA's conclusion that the entire province of British Columbia constituted an integrated relevant log market and was thereby subject to the asserted LER subsidy. In late 1993, the binational panel rejected the ITA's determination on remand (potentially voiding any CVD), basing its rejection of the ITA's findings primarily on the grounds that it had not been shown that stumpage and the LERs were specific in the sense described above. The ITA immediately launched an appeal of this threat to its authority. This "extraordinary challenge" to the binational panel's decisions, however, was rejected in mid-1994. This leaves the Canadian interests the ultimate victors in Lumber III (pending a potential further round of appeals), notwithstanding their notable lack of success before the key administrative agency—the ITA.

5.3.2 The Parties and Their Stakes

The magnitude of the CVDs arrived at by the DOC in Lumber II and III may suggest that the stakes in the lumber dispute are small. However, duties on the order of 5–15 percent translate into hundreds of millions of dollars annually. Lumber II, for example, concerned only stumpage, yet it has been estimated that its CVD would have produced (i.e., but for the MOU) tariff revenues of more than $340 million per year for the United States and net gains for U.S. lumber producers of more than $400 million per year (see Kalt 1988). In the case of Lumber III, the stakes are summarized in table 5.2. The ITA's final determination estimates that the CVD would offset subsidies totaling close to $400 million per year, with that much revenue to be collected by the U.S. government through import duties.

The U.S. interests seeking tariff protection in the lumber disputes were successful in doing so before the ITA in Lumber II and III, but unsuccessful in Lumber I (table 5.1). This pattern of differential success—failure to secure protection in the early 1980s, followed by favorable ITA decisions in the late 1980s and early 1990s—does not appear to be explained by a change in either the organizational capabilities of tariff-seeking interest groups in the United States or the impact of Canadian lumber imports in the U.S. marketplace. The tariff-seeking interests throughout Lumber I, II, and III have consisted of medium-sized and smaller U.S. logging and milling operations organized as

Table 5.2 **ITA Estimates of Countervailable Subsidies: Final Determination (million dollars per year)**

Province	Stumpage	Log Export Restraints	Total
Alberta	5.1	0	5.1
British Columbia	145.7	205.2	350.9
Manitoba	0	0	0
Northwest/Yukon	0	0	0
Ontario	34.3	0	34.3
Quebec	0.1	0	0.1
Saskatchewan	0	0	0
Total	185.2	205.2	390.4

the CFLI, joined with force by at least one of the very large U.S. operators (Georgia Pacific Corporation), and orchestrated by a U.S. law firm renowned for lobbying and legal efforts on behalf of protection-seeking parties. The legal strategies, efforts and expense of these interests do not show perceptible change over Lumber I, II, and III.

By the same token, it cannot be argued readily that Lumber I can be distinguished from Lumber II and III on the basis that Canadian lumber imports constituted more of a threat to the U.S. industry after Lumber I in 1982. Although a number of studies have found that the prospects of success in seeking tariff protection in the United States rise when a domestic industry experiences high and rising competition from imports (see, e.g., Baldwin 1984), such trends are not obvious in the case of Canadian or B.C. lumber shipments to the United States (table 5.3). The demand for lumber is driven to a very significant degree by housing starts and other construction needs. As shown in table 5.3, U.S. lumber demand, consumption, and sawmill industry employment were declining in the period leading up to the Lumber I decision (arguably reflecting the economywide recession of 1980–82) but were recovering strongly leading up to the Lumber II decision at the end of 1986. Preceding initiation of Lumber III in 1992, U.S. sawmill employment and consumption were weakening, but the level and share of Canadian and B.C. lumber imports do not appear to make those imports the culprit (table 5.3). Rather, weak macroeconomic conditions and tightening environmental restrictions were impinging on the domestic lumber sector.

In fact, two arguably causal factors stand out as changing between the failure of U.S. interests to secure CVD protection in Lumber I and their successes before the ITA in Lumber II and III. First, between Lumber I and Lumber II, legal precedent regarding the definition of when a foreign nation's asserted subsidies are specific was evolving in unrelated cases toward a lower hurdle for protection-seeking parties. Second, the tightening of environmental restrictions on logging in the United States—particularly in the early 1990s follow-

Table 5.3 **Economic Conditions in North American Wood Fiber Trade**

Year	U.S. Housing Starts (million) (1)	U.S. Softwood Lumber Consumption (billion board feet) (2)	Softwood Lumber Imports from Canada (billion board feet) (3)	Canadian Share of U.S. Consumption (%) (4)	Softwood Lumber Imports from British Columbia (billion board feet) (5)	B.C. Share of U.S. Consumption (%) (6)	U.S. Sawmill Employment (7)	U.S. Sawmill Average Hourly Earnings ($) (8)
1980	1.3	35.4	9.5	27	n.a.	n.a.	175,000	6.36
1981	1.1	33.6	9.1	27	n.a.	n.a.	161,000	6.80
1982	1.1	33	9.1	28	n.a.	n.a.	132,000	7.66
1983	1.7	42	11.9	28	7.2	17.0	143,000	7.86
1984	1.8	44.9	13.2	29	7.6	17.0	143,000	8.08
1985	1.8	45.9	14.5	32	8.3	18.0	136,000	8.22
1986	1.8	47.8	14.1	29	7.8	16.4	145,000	8.57
1987	1.6	50.4	14.6	29	9.2	18.2	148,000	8.45
1988	1.5	48.7	13.7	28	9.2	18.9	152,000	8.75
1989	1.4	47.7	13.5	28	8.9	18.0	144,000	8.94
1990	1.2	45.3	12.4	27	7.4	16.1	139,000	9.23
1991	1.0	42.5	11.7	28	7.1	16.7	130,000	9.33

Sources: Cols. (1)–(5) U.S. Department of Commerce, International Trade Administration, *In the Matter of Certain Softwood Lumber Imports* (Washington, D.C., 1986, 1992), selected filings; cols. (6) and (7) U.S. Department of Commerce, *U.S. Industrial Outlook, Wood Products* (Washington, D.C.: Government Printing Office, 1988, 1994).

ing the listing of the northern spotted owl as an endangered species—placed congressional delegations in logging states in a particular bind. Under pressure from environmental interests to back plans for protecting the northern spotted owl and other environmental amenities, elected officials sought countervailing measures that would allow them to appear supportive of the interests of the logging industry. Attacking Canadian imports provided such a measure. While explaining the success of Lumber II and III relative to Lumber I is outside the purpose of this study, these factors stand out as plausible explanations.

As indicated by table 5.2, there are hundreds of millions of tariff dollars at stake in the timber trade wars, with concomitant stakes in terms of producer rents and consumer surplus (see also Kalt 1988). These stakes clearly stand behind the doggedness of the CFLI over the last decade of legal and political action. Interestingly, as summarized in table 5.4, the coalition has consisted largely of the smaller U.S. sawmills. A number of larger U.S.-based operators, such as Weyerhauser, in fact, have been expanding their investments in Canada. This apparently has tended to cool any enthusiasm for CVD action against Canadian lumber imports. While the direct effect of a CVD action on the profitability of large U.S.-based, but internationalized, producers is still likely to be positive on net, the potential for lingering negative political and regulatory ramifications in Canada seems to induce such producers to lie low in the proceedings before the ITA. The notable support for CVD action by Georgia Pacific Corporation is consistent with this reading, as this corporation is not significantly invested in Canada. Table 5.4 also notes that the U.S. government has been an active supporter of CVD action against Canadian lumber imports. This has been especially evident in Lumber III, where the ITA itself initiated the CVD action and consistently has advocated protection for the U.S. industry.

Lumber consumer interests on both sides of the border have largely been inactive in the lumber dispute. If and to the extent that U.S. tariffs on Canadian lumber shipments to the United States would tend to keep such lumber at home, Canadian consumers could benefit from resulting reductions in domestic Canadian lumber prices. On the other hand, U.S. consumers tend to be harmed by lumber import duties, as the tariffs raise U.S. prices. Notwithstanding these impacts, the basic argument of CT appears to rule: free-rider problems thwart organized political action by large groups with diffuse stakes. When informed, for example, by the organized Canadian milling interests of the potential deleterious effects on U.S. consumers arising under a U.S. CVD action against Canadian lumber, U.S. consumer groups with some organization in place (such as home builders' associations) acknowledge their interest but lend only token opposition to the CVD action. Similarly, U.S. loggers (who stand to benefit from duties on lumber made from Canadian logs) and Canadian loggers (who stand to lose) have generally recognized their interests but have been inactive politically and in the legal arena at the DOC.

The organized and active opposition to CVD action against Canadian lumber consistently has come from Canadian sawmills and the Canadian govern-

Table 5.4 **Economic Stakes and Affected Interests in the Timber Trade Wars between the United States and Canada**

	Supported	Inactive	Opposed
Winners	Georgia Pacific Corp. Small U.S. mills U.S. government (ITA in Lumber III)	Other large U.S. mills U.S. loggers Canadian consumers	
Losers		U.S. consumers Canadian loggers	Canadian mills Canadian government

ment. In particular, participation in the legal proceedings has been led and financed by the provincial forestry ministries and, to a lesser extent, the federal government of Canada. The Canadian mill operators have cooperated for the most part with their governmental agents, providing information and testimony. The direction of the financial stakes of the Canadian mills is straightforward to perceive, and their interests in influencing the role and forcefulness of the various Canadian governmental agents follow. At both the provincial and federal levels, however, these agents see broader support at home for their active opposition to U.S. CVD actions. Specifically, U.S. CVD actions against Canadian stumpage and log export policies are widely interpreted in the Canadian public as assaults on Canada's sovereignty in the area of natural resource policy. This clearly bolsters the governments' active efforts in opposing imposition of U.S. duties, as evidenced by the highly visible and vociferous retaliatory response of the Canadians in Lumber II.

5.4 Framework for Boolean Representation of the Legal Arguments in Lumber III

The legal proceedings engendered by Lumber III have undoubtedly increased the demand for logs in the world—by increasing the demand for paper. Hundreds of thousands of pages of legal briefs, official rulings, expert reports, hearing transcripts, correspondence, and data reporting have been produced and reproduced as the parties have argued their respective positions. In the course of the proceeding, a multitude of arguments has been put forth and debated. These arguments range from the legal and technical to the substantive and factual. Among the many arguments afoot, however, the focus of the proceedings in Lumber III has ended up on a modest number of key matters. I now turn to a discussion of these for purposes of arriving at Boolean codings of their NI-relevant and CT-relevant attributes—precedential status, analytic straightforwardness, evidentiary strength, expositional hurdles, stakes, and so forth. I begin with an introduction to the applicable Boolean pseudoregression techniques.

5.4.1 Boolean Logic and Pseudo-Regression Techniques

Following the framework of section 5.2, we would like to see if and to what extent the success of an argument made in the legal context of the ITA's CVD procedures depends on such variables as the strength of the argument's analytic underpinnings, the strength of the precedent it encounters, the quality of the evidence in its favor, the stakes riding on it, and so forth. Such an analysis encounters significant methodological difficulties. Not the least of these is the creation of a metric by which to measure otherwise vague concepts such as the "strength" of precedent or the "quality" of evidence. For social science researchers accustomed to continuous and naturally metered data (a good thing) and training that emphasizes the ideal of large sample sizes leading to quantitative measures of confidence (a good thing, but only one quadrant of the philosophy of scientific method), measurement in a context of qualitative "cases" is commonly a dead end for production of usable research results. Indeed, in the legal context, questions such as "Why did that party win its case?" are typically relegated to discursive case studies, to be published in law journals.

Pioneering (and prize-winning) methodological developments hold some promise for enabling the scientific researcher to isolate the usable information contained in comparative and qualitative case studies. These methods of "Boolean analysis" have been given modern social science impetus by (especially) Charles C. Ragin and rely on the rules of logic and Boolean mathematics to parse the useful information contained in such contexts (Ragin 1987). Notwithstanding unsettled questions regarding the epistemological relationship of these methods to more familiar methods of classical and Bayesian statistics, these methods do provide rigorous insight into the information content of otherwise qualitative cases.

The Boolean analysis undertaken here relies on the rules of logic to isolate qualitative causes of a dichotomous outcome. At its core, Boolean analysis relies on logic of the following form to reach conclusions regarding the explanatory role of alternative postulated factors: suppose two causes, A and B, are postulated as explanations of an event, Y. A and B occur in various combinations of "presence" and/or "absence," and sometimes Y occurs. In an otherwise well-specified model of causation that identifies A and B as possible causes, if A is always present when Y occurs, but Y occurs with B present and with B absent, B can logically be eliminated as a necessary ingredient in the causation of Y. If the researcher can specify explanatory factors and determine their presence or absence across multiple instances of Y and not-Y, scientific information is gained through Boolean (presence/absence) logic of this form.

Boolean analysis proceeds by coding an outcome of interest for yes/no (0/1) results. In the case at hand, for example, it is possible to examine the various arguments in Lumber III and determine objectively whether the CFLI (or, al-

ternatively, the Canadian parties) won or lost a particular dispute. Possible explanatory factors in determining when an outcome (e.g., Win) occurs are then coded (0/1) for their presence or absence in each observed instance in which an outcome occurs. (This "measurement" of "right-hand side" variables is the more difficult problem and is taken up below.) The resulting coding can be represented by a Boolean summary (or truth) table of the kind in table 5.5.

In this summary, Boolean analysis would code the outcome Y in the first case (row) as Y = aB. The second case would be coded as Y = AB. Multiplication in Boolean analysis is read as "and," while addition is read as "or." Thus, we can say that Y = aB + AB; that is, Y occurs when either a and B are present together or A and B are present together. If this is a well-specified model of the causation of Y, the result that Y = aB + AB can be further reduced by factoring to Y = B(a + A) = B. In other words, B is a necessary and sufficient condition to cause Y, and it does not matter whether A is present or not.

The expression from the illustration to the effect that Y = B is a "prime implicant." Prime implicants indicate necessary and sufficient conditions in the following way:

Y =	B	B is both necessary and sufficient.
Y =	A + B	A and B are each sufficient but not necessary.
Y =	AB	Both A and B are necessary but not sufficient.
Y =	A(B+C)	A is necessary but not sufficient.

Note that Boolean analysis of dichotomous factors is a form of "pseudoregression." This derives from the fact that, when two states, a and A, are both present when Y occurs and other factors are constant across the relevant observations (i.e., B is present along with a and A), there is clearly a collinearity problem—Y occurs with both A and not-A. Just as with standard multiple regression techniques, the Boolean analysis assigns a coefficient of 0 to the A/a factor because no causation can be attributed to it. Similarly, as with standard regression techniques, the validity of results from Boolean analysis depends on the outside-the-data specification that the researcher brings to the evidence. Specification bias can plague Boolean analysis just as it plagues

Table 5.5 **Hypothetical Boolean Summary Table (uppercase = presence; lowercase = absence)**

Outcome	Factor (A or a)	Factor (B or b)
Y	a	B
Y	A	B
y	a	b

more familiar statistical approaches to isolating the effects of individual independent explanatory factors. Such bias could arise in the illustration if, for example, there is an omitted factor, C, such that the accurate prime implicant is Y = aB + AB + AC. In this circumstance, rejection of A as a factor in explaining Y would be erroneous: A plays an explanatory role when it occurs along with C.

For researchers accustomed to large-sample, continuous variable analyses and hypothesis testing, the most obvious disadvantage of Boolean analysis is the absence of quantitative measures of confidence in expressed results. At the same time, however, Boolean analysis utilizes the rules of logical contradiction to arrive at epistemologically valuable conclusions.[11] Indeed, when problems of specification bias are not present, the ability of Boolean analysis to yield statements regarding necessary and sufficient conditions represents an advantage over more familiar quantitative techniques (which focus primarily upon the marginal contributions of multiple variables).

As noted above, the coding of "left-hand side" variables in a case such as ITA's Lumber III final determination is largely objective and straightforward. It entails identifying the "winner" of a particular argument in the proceeding, as this is indicated in the actual ITA decision. Determining the presence or absence of particular possible explanatory factors that might explain an argument's success or failure, on the other hand, requires more judgment, and intensive reading of the appropriate legal records. Such investigation has required me to make certain qualitative assessments regarding, for example, the straightforwardness of the economic theory of natural resource rent, but is bolstered by the fact that the final determinations enunciated by the ITA frequently provide direct discussion of such matters and the direction of influence on its findings. These yield the key right-hand side variables necessary for completion of an actual version of the hypothetical Boolean summary table. The resulting variables and their expected influences (or "signs"), according to the ITA (by both direct assertion and argument passim) and bolstered by the reasoning from the NI interpretation of legal proceedings discussed above, are:

1. *Precedent:* Having precedent on one's side increases the likelihood of winning an argument (see discussion above). In the Boolean analysis which follows, this factor is referred to as P/p.

2. *Straightforward theory:* Having a straightforward theory (e.g., an economic explanation or theory) improves the likelihood of winning an argument. Apparently, having to resort to complicated or exotic theories to make one's case reduces credibility (where "complicated," "exotic," etc., refer, in part, to

11. Not to get too Kantian about the matter, but in so doing it might be argued that Boolean techniques in some circumstances can produce results that are more reliable than familiar quantitative methods *provided the problem of specification bias is not present.* Of course, this qualifier regarding specification bias is equally applicable to the familiar techniques of quantitative analysis. See, e.g., Leamer (1978).

being outside the familiar modes of reasoning of the ITA). Examples discussed below include the concepts of general equilibrium and natural resource rent, which modify familiar supply-demand reasoning. In the Boolean analysis which follows, this factor is referred to as T/t.

3. *Evidence:* All else equal, having the preponderance of evidence on one's side increases the likelihood of winning an argument. In the Boolean analysis which follows, this factor is referred to as E/e.

4. *Ease of exposition:* All else equal, the likelihood of winning an argument increases with the ease with which it can be communicated. This is sometimes related to, but is not the same as, having a straightforward theory. An example from below is the "law of one price," which is relatively easy to express as the intersection of a supply and a demand curve, but which is quite complicated to explain in application to real-world factual contexts (owing to the introduction of considerations of the law's underlying preconditions related to transactions costs, quality differentials, cross-elasticities, and the like). In the Boolean analysis which follows, this factor is referred to as X/x.

In addition to these factors, CT suggests that the stakes riding on an argument can influence the likelihood of winning. In general, the ITA could not be expected to refer to this since the justice it administers is "blind." Nevertheless,

5. *Stakes:* Assuming CT, the likelihood of the winning argument being made by the more influential party increases with the stakes at issue in the argument. In the Boolean analysis which follows, this factor is referred to as S/s.

5.4.2 The Arguments in Lumber III

I now turn to coding the foregoing factors for a set of 14 actual and salient arguments that parties have contended over in Lumber III. The arguments and the results of the coding are set forth in table 5.6. The table also indicates the winning party in each argument as reflected in the ITA's final determination. Recalling that the Lumber III investigation was initiated by the DOC, the proceeding has presented a recurring difficulty in distinguishing between the DOC's role as advocate and its role as adjudicator. Indeed, this has led to formal claims of bias on the part of the Canadian parties.[12] The resulting ambiguity is reflected in the "DOC/CFLI" designation of winner as applicable in table 5.6. For each of the issues that follow, the 0/1 codings shown in table 5.6 are derived from the written record of the Lumber III proceeding. A brief summary of each issue is provided here.

1. *Rent theory:* As discussed above, the economics of natural resource harvesting have played an important role in the Canadian response to allegations that the Canadian stumpage system subsidizes the production of lumber by

12. The primary claim arises as a result of the fact that ITA has employed a former spokesperson for CFLI in the Lumber III investigation.

Table 5.6 **Boolean Summary of the Attributes of Observed Winning Arguments in the U.S.-Canada Lumber Dispute (affirmative = 1; otherwise = 0)**

Issue	Winner	Precedent Favors Winner (P = 1; p = 0)	Large Stakes (S = 1; s = 0)	Applicable Theory Straightforward (T = 1; t = 0)	Evidence Favors Winner (E = 1; e = 0)	Winner Ease of Exposition (X = 1; x = 0)
Rent theory	DOC/CFLI	0	1	0	0	1
LER as subsidy	DOC/CFLI	0	1	0	0	0
Market distortion	DOC/CFLI	0	1	1	0	1
LER price change	Canadians	1	0	1	1	1
General equilibrium effects: existence	Canadians	1	0	1	1	1
General equilibrium effects: measurement	DOC/CFLI	0	1	0	0	0
Causation tests	DOC/CFLI	0	1	0	0	0
Other provinces	Canadians	1	0	1	1	1
Law of one price	DOC/CFLI	0	1	0	0	1
Relevant market/1	Canadians	1	1	0	0	0
Relevant market/2	DOC/CFLI	0	1	0	0	1
Export prep. costs	DOC/CFLI	1	0	0	0	1
Transport costs	Canadians	1	0	1	1	1
Company exclusions	Canadians	1	0	1	1	1

Canadian millers. Obviously, the stakes here are very large (see table 5.1); if the Canadians were to prevail in demonstrating that the effects of below-market stumpage were entirely inframarginal, the stumpage CVD would be insupportable. Moreover, the only concerted evidence to test the inframarginality of Canadian stumpage pricing was that developed by Nordhaus on behalf of the Canadian parties. The economic theory of rent, however, is neither straightforward nor easily communicated. There apparently is not strong precedent one way or the other as to the applicability or legitimacy of rent theory in CVD proceedings.

2. *LER as subsidy:* "Border measures" such as LERs have had an unsettled history in the administration of U.S. CVD law. Prior to a single ruling in 1990, border measures had been held to be noncountervailable. This placed the DOC/CFLI at a precedential disadvantage in its arguments for the countervailing of Canada's LERs. In fact, the DOC had to go so far as to argue that "administrative agencies, however, are authorized to depart from a long-standing and consistent practice . . . [and] the Department concludes that the [pre-1990 case] determinations finding border measures in general to be *per se* noncountervailable pursuant to U.S. law were wrongly decided."[13] Clearly, the stakes were all or nothing, and the DOC/CFLI was compelled to labor hard to muster what evidence it could in its favor (eventually appealing to its interpretation of congressional intent). Exposition by the eventual winner, DOC/CFLI, was similarly impeded; and the theory as to why border measures are or ought to be countervailable is not straightforward—at either the ITA or in the broader context of GATT and trade—as they confront difficult issues of national sovereignty and measurement.

3. *Market distortion:* In some prior proceedings, the DOC had indicated that CVDs are justified only when another country's alleged subsidies to domestic processors distort the results of the marketplace in an inefficient direction. In the case at hand, Canadian LERs may, in fact, improve world resource allocation. Evidence is consistent with the conclusion that U.S. LERs and Japanese barriers to trade in lumber (of which Japan is nevertheless a major importer) artificially prop up (especially) Japanese demand for Canadian logs. Canada's LERs counteract this distortive effect.

4. *LER price change:* In the initial stages of the Lumber III proceeding, the CFLI, in particular, maintained that the asserted subsidy realized by B.C. sawmills as a result of LERs should be measured as the difference between a measured foreign price of logs and a measured Canadian domestic price of logs. Precedent, however, seems to support the view that a countervailable sub-

13. Note that I do not intend to be asserting the rightness or wrongness of the positions taken by the parties on this or any other matter listed here. Rather, as this instance indicates, relative to many other issues in the proceeding, the DOC was having to argue very hard in order to make its precedential points; i.e., the precedential burden in practice did not favor its arguments. The quoted passage is from U.S. Department of Commerce, International Trade Administration (1992, 176–77).

sidy must be measured by the difference between the price that Canadian millers would pay for logs absent the LERs and the price they presently pay. Because of general equilibrium effects when a border measure is imposed on an intermediate product (see, e.g., Wiseman and Sedjo 1981) and the large-country position of Canada in wood fiber trade, it would generally be expected that foreign log prices would come down toward Canadian domestic prices in the absence of LERs—making the CFLI measurement contrary to precedent.

5. *General equilibrium effects—their existence:* As noted, economic theory (and evidence in Lumber III) indicates that the context of Canadian LERs makes it highly likely that general equilibrium effects (between log markets and lumber markets) play significant roles in determining log prices. Although the measurement of the quantitative differences between partial and general equilibrium prices for logs absent Canadian LERs is complicated in theory and difficult to demonstrate and explain, the existence of general equilibrium effects is relatively straightforward and easy to communicate (e.g., "The LERs may not affect total log demand in British Columbia; they may only affect where the Japanese have the logs that they buy milled.")

6. *General equilibrium effects—their measurement:* See item 5 above. Both the theory of the proper structure of a model able to capture general equilibrium effects and the implementation of such a model for the purpose of measuring the no-LER price of Canadian logs is complicated and difficult to describe in the context of the ITA's legal proceedings (see, e.g., Wiseman and Sedjo 1981; Moschini and Meilke 1992). Based on what evidence is available, the magnitude of the stakes is likely to be perceived as large by the ITA.

7. *Causation tests:* Because border measures are indirect in their potential effects, the Canadian LERs' effects on Canadian millers' costs are not directly observable (as they would be if, say, subsidies were paid in cash to millers). Nevertheless, the ITA is under a burden to demonstrate a "direct and discernable" impact of the LERs on Canadian sawmillers' costs. In the previous border measure case of 1990 (noted above), the ITA employed regression analyses of the differences between foreign and domestic prices to meet its burden. Notwithstanding the resulting precedential implications and the all-or-nothing stakes, the ITA in Lumber III eschewed its previous approach (and evidence generated therefrom).

8. *Other provinces:* Although other provinces besides British Columbia are subject to LERs, they are relatively minor participants in the marketplace for wood fiber. Moreover, both straightforward theory and accompanying evidence seem to indicate that LERs in the other provinces are not generally economically binding (e.g., some are net importers of logs themselves). The implications are bolstered by the "direct and discernable" standard noted above, and by the ease of exposition.

9. *Law of one price:* In lieu of hypothesis tests and statistical measurement of the magnitude of price effects attendant to LERs, the ITA relies on a partial equilibrium spreadsheet model that utilizes elasticities of supply and demand for an aggregated foreign-log–only sector and a Canadian-log–only sector to

calculate a unique price at which foreign and B.C. log prices would be equated in the absence of Canadian LERs. This approach is justified by what DOC/CFLI refers to as the "universally accepted Law of One Price," and despite considerable evidence that the conditions required for the law to hold in the strong form adopted by the ITA do not apply even within "free trade" regions (such as western Washington). Without the law, however, the DOC/CFLI would run the risk of having no mechanism for identifying and calculating an asserted subsidy. In its favor, the DOC/CFLI have ease of exposition when compared to the Canadians' need to turn to more complicated theories that presumably sound like quibblings about qualifications to the law (see above).

10. *Relevant market/1:* As noted above, the ITA's final determination in Lumber III found that logs in the interior of British Columbia were not in the same relevant market as the rich forestlands of the coastal region (as a result of species heterogeneity, limited cross-elasticities of demand, and high transport costs). The Canadian's case for this conclusion was built up from detailed evidence and extensive discussion of theory and evidence. In their favor, the "direct and discernable" burden faced by the DOC/CFLI created a favorable precedential for the Canadian view: the ITA's spreadsheet model used to identify and measure a subsidy to coastal B.C. log prices was built only for the coastal region. The stakes surrounding the treatment of the interior of the province are large; upon including the interior in its eventual remand determination, ITA raised the calculated value of the countervailable LER subsidy from the figure shown in table 5.1 to more than $450 million per year.

11. *Relevant market/2:* The exclusion of interior logs from the subsidy calculation under the final determination represents the only identifiable case in which the Canadian interests have prevailed before the ITA on an argument with large stakes. While the ITA's eventual reversal in its remand determination is outside of the "final determination" framework on which I am primarily focused, it is included in table 5.6 and discussed below.

12. *Export preparation costs:* In general, precedent recognizes that it is appropriate that any comparison between foreign and domestic log prices for purposes of identifying and measuring an asserted countervailable subsidy be adjusted for intervening costs and quality differences that would sustain cross-border price differences even in the absence of LERs (see the next argument below). Through a complicated and hard (for the Canadians) to explain and measure process of sorting logs for export, certain costs are borne that arguably require accounting for in the ITA's calculation of asserted subsidies. Nevertheless, the incremental stakes in the issue do not appear to be overwhelming, and the ITA can rely on the precedent of "deference to the agency's expertise" in ignoring export preparation costs in its calculations.

13. *Transport costs:* In light of the precedent mentioned above, the Canadian parties have been successful in arguing that transport costs should be deducted from foreign-derived log prices in any attempt under the LER analysis to arrive at log prices netted back to domestic B.C. markets. The resulting adjustments are relatively minor.

14. *Company exclusions:* Under CVD precedent and law, individual companies can be exempted from a CVD if they can be shown to be outside the affected sector or do not use the particular item (B.C. logs, in this case) that is allegedly being subsidized. Such exclusions are not quantitatively important, and the Canadian parties have generally been successful in proving up particular companies for exclusion.

5.5 Results

Having constructed table 5.6 from considerations of the foregoing form, it now provides the basis for a Boolean analysis of the determinants of successful arguments before the ITA. I proceed by converting the indicated 0/1 designations to the uppercase/lowercase notation indicated above and in the table, and then factoring the resulting expressions into prime implicants. Thus, for example, the first case (rent theory) in table 5.6 becomes

$$\text{DOC/CFLI Win} = \text{pSteX},$$

while the second case (LER as subsidy) becomes

$$\text{DOC/CFLI Win} = \text{pStex}.$$

In words, the first case says that the DOC/CFLI won the argument under conditions in which precedent was not particularly in its favor *and* the stakes were large *and* the applicable theory was complicated *and* available evidence did not favor the DOC/CFLI *and* the DOC/CFLI found it relatively easy to exposit its argument against the Canadian position. Phrased this way, it is clear why individual case studies have such a difficult time yielding clear results; with so many "ands," isolating why the DOC/CFLI won the rent theory issue is not possible. But this points to the potential value of the full Boolean analysis.

Upon fully factoring table 5.6, the resulting prime implicant for designation of a winning argument is

$$\text{Win} = \text{pSt} + \text{PsX(tE} + \text{Te}).$$

This is the complete summary of table 5.6, and reflects the process of logical reduction described above.[14] In words, the prime implicant for Win says: A winning argument before the ITA has either precedent running against it (p) and a complicated theory (t) but large stakes (S); or it has precedent in its favor (P), low stakes (s), and easy exposition (X), and either a combination of a complicated theory (t) but strongly supportive evidence (E) or a simple theory (T) albeit weak evidence (e).

At first impression, some of these results may appear contradictory or difficult to interpret. For example, the first term in the prime implicant (pSt) says

14. The case of relevant market/1 is treated as an aberration or outlier for the reasons noted above.

that a winning argument has precedent running against it and weak evidence behind it but large stakes. This result should not be interpreted to mean that this combination makes for a winning argument, or a higher likelihood of a winning argument than, say, a combination of pST (which has a simple theory on its side, when compared to pSt). Rather, the Boolean implicant must be interpreted as merely saying that, when the analysis removes all logical redundancies from table 5.6, it is left with pSt as the logically minimum conditions observed when a win arises despite a lack of supportive precedent. The cases under investigation are insufficiently rich to distinguish further, via Boolean logic alone, between p, S, and t as determinants of Win. In this regard, the power of the Boolean analysis here parallels the common situation found in many multivariate quantitative analyses which lack sufficient data to overcome collinearity among explanatory factors.

Closer inspection of the process of factoring and reduction that produces the prime implicant for Win above reveals that the cases in table 5.6 that produce the first term (pSt) in Win are entirely cases in which DOC/CFLI is the winning party. Similarly, the cases which produce the second term in Win (i.e., PsX-(tE + Te)) are entirely cases in which the Canadians are the winners of the argument. From this observation comes the key findings of this study:

$$\text{DOC/CFLI Wins} = \text{pSt} \quad \text{and} \quad \text{Canadians Win} = \text{PsX(tE + Te)}.$$

Just as in the case of familiar large sample, continuous variable regression methods, the researcher may come to the Boolean analysis of the table 5.6 data with supportable prior beliefs concerning such matters as the permissible signs of the effects of independent variables, the proper structural form of specification, and, of course, the basic specification of explanatory factors to be included in the analysis. In so doing, the collinearity present in the data (i.e., in the logical reduction here to pSt, but no further) may be overcome to some extent, allowing more information to be drawn from the data (Leamer 1978). Thus, consider the above expression for DOC/CFLI Wins. The p in pSt represents the absence of supporting precedent for the position taken by the winning party. It is only reasonably interpreted (through the kinds of prior considerations set forth above) as an impediment to winning an argument. The same interpretation applies to t—the absence of a straightforward theory behind the position taken on the winner's argument.

In short, p and t impede the ability of the DOC/CFLI to win an argument. Yet, when the stakes are large (S), the DOC/CFLI wins anyway. We cannot quite say that no matter which institutional factors (i.e., p, t, x, and/or e) run against the DOC/CFLI, the group wins when the stakes are large; the sample of issues in table 5.6 does not include cases in which DOC/CFLI wins or loses with large S and x and/or e running against it. Nevertheless, it can be said that in the cases available, none occur in which institutional aspects of ITA proceedings block a DOC/CFLI win if the stakes in the matter are large.

This last observation *is* the prediction of CT. It says, contrary to NI, that in

at least the cases represented here, no evidence is found that large stakes will not permit the influential, capturing party from overwhelming institutional blockades such as the absence of supportive precedent or the absence of an uncomplicated theory for one's argument. Having weighed in heavily in prior research against straightforward CT and in favor of NI (e.g., Kalt and Zupan 1984, 1990), I am surprised by these findings. They could not have been deduced by ruminating on the various instances of ITA decision making. The Boolean analysis has permitted the isolation of the informational content—what can and cannot be said—that is contained in the case materials of table 5.6.

NI is not wholly rejected, however. While DOC/CFLI has succeeded in Lumber III in securing the ITA's support for tariff protection against Canadian forest products, the Canadian parties have won some arguments along the way. In so doing, they have tempered the level of protection successfully sought before the ITA by the DOC/CFLI. As noted above, the second term in Win arises from cases in which the Canadian parties prevail in their legal arguments before the ITA, and the Canadian parties win arguments when PsX(tE + Te). Imposing on this expression the priors that neither complicated theories (t) nor weak evidence (e) assist the Canadians in winning an argument, the prime implicant for Canadians Win reduces to[15]

$$\text{Canadians Win} = \text{PsX(tE + Te)} = \text{PsX(E + T)}.$$

This result says that, within the sample of cases encompassed by table 5.6, if the Canadians are to win arguments before the ITA, they require not only issues for which the stakes are small (s), but also institutional help in the form of supportive precedent (P), easy exposition (X), and either strong evidence (E) or a straightforward theory (T). Apparently, the Canadians do not need to have everything in their favor (i.e., PsXET) to win an argument before the ITA. Yet, even when the issue is a matter with small stakes, they need a considerable array of institutional factors on their side in order to win (i.e., P, X, and E or T).

5.6 Summary

For more than a decade, the United States and Canada have been engaged in a rancorous dispute over trade in softwood lumber. Through three successive rounds of administrative litigation before the DOC, the U.S. sawmill industry has sought to have CVDs imposed on Canadian lumber imports. The U.S. interests argue that Canada subsidizes its sawmills by providing timber from

15. This imposition of priors seems to be pushing the Boolean analysis farther than that set forth by Ragin (1987). Doing so here is based on the logical deduction that, given the model specification (in which the explanatory variables are taken to be fully described by S/s, P/p, T/t, E/e, and X/x), the only alternative treatment of the term in parentheses in Canadians Win yields PsXET. That is, the Canadian parties have both E and T going for them. This could only be a stronger position for the Canadians than the observed Canadians Win = PsX(tE + eT). Such strength of argument is not necessary for the Canadians to win.

public forests at below-market prices, and (in Lumber III) by restricting exports of Canadian logs.

The trade war over lumber is waged to a significant extent in the hearing rooms of the DOC. This study has examined whether, and to what extent, the institutional framework—the legal rules, standards, and precedents—of CVD law influences the fate of the contending parties. Two alternative theories of political economy have been tested, capture theory and the new institutionalism. CT deemphasizes the role of institutional settings of the kind at work here: the outcomes of political action are determined by the stakes and organization of rent-seeking parties, and the quasi-judicial regulatory proceedings of the DOC are mere Stiglerian theater. NI, on the other hand, posits that the structure and form of such proceedings are conditioning constraints, with the capacity to significantly influence the outcome of rent-seeking battles. Applying pseudoregression Boolean analysis to the actual legal issues argued before the DOC, I find more support for CT than for NI—at least in so far as particular institutions such as legal precedent and evidentiary burden are concerned. Even when the institutional aspects of ITA proceedings run against its interests, the protection-seeking DOC/CFLI prevails in its arguments when the stakes are large. Even when the stakes in an issue are small, the Canadians are only successful when the array of institutional aspects of ITA proceedings run overwhelmingly in their favor.

It should be stressed that the results regarding the role of institutions in conditioning policy outcomes only applies to the quasi-judicial setting of the ITA. The case can be made that, viewed in the large, the relevant U.S. institutions do matter in the NI sense to the making of trade policy, even as applied to the case of lumber. The ITA is only one step in a gauntlet of institutions that a protection-seeking party must traverse in order to succeed. Indeed, in Lumber III, the layers of post-ITA appeal have thus far produced wins for the Canadians. Perhaps this is what should be expected in a political system of checks and balances. CT may have won a battle at the ITA, but NI may yet win the war.

References

Baldwin, R. E. 1984. Trade policies in developed countries. In *Handbook of international economics*, vol. 1, ed. R. W. Jones and P. B. Kenen, chap. 12. New York: North-Holland.

Bates, R. 1988. Contra-contractarianism: Some thoughts on the new institutionalism. *Politics and Society* 16 (June/Summer): 387–401.

Becker, G. 1983. A theory of competition among pressure groups for political influence. *Quarterly Journal of Economics* 98 (August): 371–400.

Kalt, J. P. 1988. The political economy of protectionism: Tariffs and retaliation in the timber industry. In *Trade policy issues and empirical analysis*, ed. R. Baldwin. Chicago: University of Chicago Press.

Kalt, J. P., and M. A. Zupan. 1984. Capture and ideology in the economic theory of politics. *American Economic Review* 74 (June): 279–300.

———. 1990. The ideological behavior of legislators: Rational on-the-job consumption or just a residual? *Journal of Law and Economics* 33, no. 1 (August): 103–31.

Leamer, E. E. 1978. *Specification searches: Ad hoc inference with non-experimental data.* New York: Wiley.

Moschini, G., and K. D. Meilke. 1992. Production subsidy and countervailing duties in vertically related markets: The hog-pork case between Canada and the U.S. *American Journal of Agricultural Economics* 74, no. 4 (November): 951–61.

North, D. 1990. *Institutions, institutional change, and economic performance.* Cambridge: Cambridge University Press.

Peltzman, S. 1976. Toward a more general theory of regulation. *Journal of Law and Economics* 19, no. 2 (August): 211–40.

Ragin, Charles C. 1987. *The comparative method.* Berkeley and Los Angeles: University of California Press.

Stigler, G. 1971. The economic theory of regulation. *Bell Journal of Economics* 2 (Spring): 3–21.

U.S. Department of Commerce. International Trade Administration. 1992. *Final countervailing duty determination: Certain softwood lumber products from Canada.* Washington, D.C.: U.S. Department of Commerce, May 15.

Wiseman, C. A., and R. Sedjo. 1981. Effects of an export embargo on related goods: Logs and lumber. *American Journal of Agricultural Economics* 63, no. 3 (August): 423–29.

Comment

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Do trade institutions matter in the outcome of trade policy?[1] Not much, according to the evidence presented in several of the papers in this volume. Several of the U.S. industries studied here have shown great creativity in finding new ways to protect their markets from imports. The auto industry, or at least one of its firms, obtained loan guarantees from the federal government and then secured "voluntary" export restraints from the Japanese even though normal trade institutions turned down their request for protection under section 201 of the trade law. The semiconductor industry received U.S. and Japanese government assurances that its market share in Japan would be 20 percent, a remedy completely outside normal trade rules. The textile and apparel industries have received special treatment under the Multi-Fiber Arrangement for years. Agriculture negotiated a new program of export subsidies during the 1980s. And the lumber industry persuaded existing trade institutions to change their view of Canadian stumpage procedures, and therefore to grant U.S. producers protection from Canadian imports in 1986 and 1991 but not in 1982.

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1. The information in this comment comes from participants on both sides of this trade dispute, all of whom wish to remain anonymous.

All this evidence strongly suggests that trade institutions are malleable and relatively sensitive to changes in political pressures.

The economic conditions of the U.S. lumber industry do not seem to explain why it failed to receive protection in 1982 but did gain the help of the Commerce Department and the International Trade Commission in 1986 and again in 1992. As figure 5C.1 indicates, employment in logging camps and sawmills was unusually low in 1982 but not in 1986 or 1992. Lumber production in 1986 and 1992 also did not dip dramatically. Residential housing accounts for about 70 percent of U.S. lumber consumption (nonresidential construction takes 15 percent, and other uses such as shipping pallets account for the remaining 15 percent). Yet housing starts were strong in 1986 but weak in 1982 and 1991. The import protection which the lumber industry obtained in 1986 clearly was not the result of depressed conditions.

In no year did lumber users strongly oppose the protection from imports which the lumber industry sought. The residential construction industry is well represented by the National Association of Home Builders (NAHB), whose members are construction contractors. The NAHB estimated that the Canadian

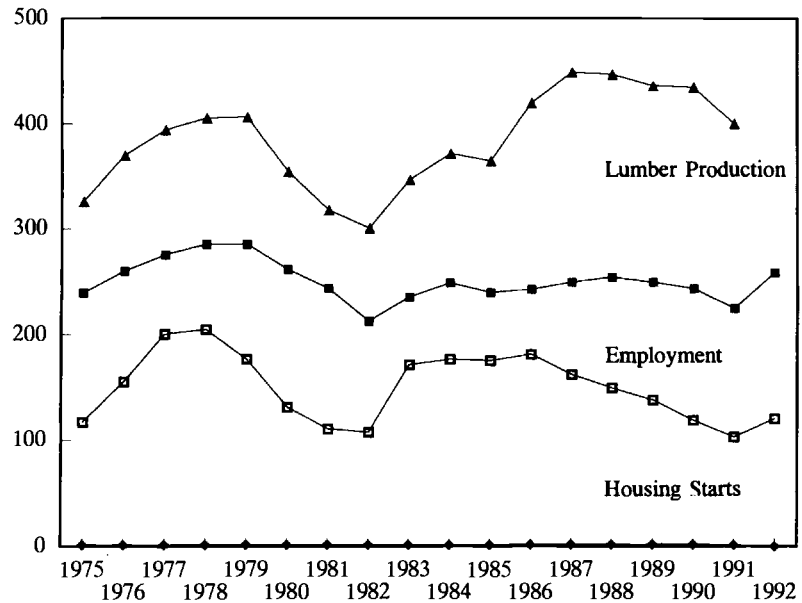

Fig. 5C.1 Lumber industry conditions

Source: Housing starts (tens of thousands of starts)—*Economic Report of the President* (Washington, D.C.: Government Printing Office, 1994), 330; employment in SIC industries 241 and 242 (thousand production workers) and lumber production (hundred thousand board feet)—U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States* (Washington, D.C.: Government Printing Office, various years).

export tax imposed in 1986 would increase the price of lumber by only 2 percent, or a few hundred dollars per house. Since NAHB members do not have to worry about competition from imported housing, they could afford to ignore a small increase in lumber prices, unlike downstream users in industries which export their products or which compete with imports.

Moreover, the NAHB needed to concentrate its political efforts in 1986 on fighting to save the deductibility of mortgage interest. If the Tax Reform Act of 1986 had eliminated this provision, construction contractors would have suffered far more serious declines in demand than if Canada imposed an export tax on lumber. Therefore, although the NAHB did offer mild opposition to the lumber industry's petition, it saved its serious fire for the tax bill.

As Kalt's econometric evidence suggests, the story of the U.S.-Canada lumber dispute is consistent with capture theory. In 1981 the U.S. lumber industry had not captured U.S. trade institutions and therefore lost its case for protection. By 1986, with help from Congress, and again in 1991, it had solidified its friendship with the relevant agencies and had their full support in obtaining protection from Canadian imports. By 1991 this friendship was so strong that the Commerce Department took the unusual step of initiating a section 301 petition. This creative step by Commerce suggests how responsive institutions can be under political pressure.

But now there is a new institution which may prove more resistant to U.S. political pressure. The U.S.-Canada Free Trade Agreement created bilateral panels of experts to review all trade disputes. These experts are chosen by both sides and are supposed to be familiar with trade law and conditions in the industry requesting protection. Domestic U.S. institutions which are subject to capture by U.S. interests no longer have the final say.

As this is being written (March 1994), one of these panels is considering whether Canada's unilateral lifting of the export tax should be allowed.[2] It will be interesting to see whether this new institution does in fact insulate international trade from political pressures. It will also be interesting to see in a few years whether domestic U.S. industries learn how to exert pressure on these new institutions, the way they learned during the 1980s to exercise their political power on domestic U.S. trade institutions.

2. See table 5.1 of Kalt's paper for the history of the lumber dispute.