# RATIONALITY AND INSTITUTIONAL CONTINGENCY: THE VARYING POLITICS OF ECONOMIC REGULATION IN THE FIRE INSURANCE INDUSTRY

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**ABSTRACT:** *Are the politics of economic regulation contingent on institutions? Drawing on arguments about institutional mediation and the institutional bases of rational action, we explore how institutions shape the dynamics invoked in two theories of regulation. We argue that institutional arrangements affect both the clarity and the content of group interests in regulation. Event history analyses of U.S. states' passage of fire insurance regulation from 1906 to 1930 support these arguments in several ways. Market-heterogeneity dynamics specified by cartel-capture theory affected the passage of regulation only under some conditions—namely, relatively depoliticized settings with little overt conflict or uncertainty about policy outcomes. In addition, interest group dynamics were conditioned by the consolidation of interorganizational fields around a particular model of market order, which allowed divergent interest groups to converge in support of regulation. The research suggests ways of thinking about theoretical generality and specificity, regulatory politics, and the relationship between institutional theory and rationality.*

Political interests and conflicts often appear universal and unproblematic: Challenging groups fight for political influence. Firms have interests in stability, autonomy, and profit maximization. While it is clear that interests and conflict structure political outcomes, less clear are the processes that define interests and structure conflicts or complementarities of interest.

An enduring feature of institutional arguments in sociology is that institutional arrangements shape the processes that drive social action and outcomes. Friedland and Alford (1991:245), for instance, argue that "utility maximization, satis-

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ficing, income maximization, profit maximization, risk, power, even interest itself are all institutionally contingent." Similarly, Douglas (1986) argues that institutions shape the terrain of action by classifying, highlighting, and obscuring particular features of a situation. "New institutionalist" research in sociology and political science provides an empirical warrant for thinking of institutions as partially constituting instrumental action (Hall and Taylor 1996; March and Olsen 1989; Powell and DiMaggio 1991). Furthermore, recent neoinstitutional research has begun to move from analyzing the spread of models of order to examining how institutional logics and political regimes *moderate* the dynamics of organizational behavior—showing that causal mechanisms are contingent on institutional conditions (Dobbin and Dowd 2000; Thornton and Ocasio 1999).

Our approach to institutional contingency considers two theories of economic regulation—cartel-capture theory and interest group theory—that provide general accounts of when and why states intervene in industries to control prices, entry, or investment.[1] These theories use rational choice models of action and assume that actors maximize economic interests. We focus on *institutional sources of interests* in regulation and argue that variation in political-institutional conditions may produce variation in the clarity and content of preferences for or against regulation. *Cartel-capture theory* highlights the market conditions that lead firms to use regulation as a tool for creating or maintaining monopoly but typically ignores the way in which policy shapes competitive behavior and the politicization of organizational fields alters interests in "state capture." *Interest group theory* emphasizes the organizing capacities and stakes in regulation of groups both internal and external to an industry but typically pays little attention to institutional shifts over time that may clarify and alter group interests. These two approaches make valuable contributions to understanding economic regulation and the relationship between state policy and private forms of market control. Yet they are more valuable when treated as institutionally contingent.

Empirically, we use event-history analyses to examine U.S. states' passage of rate regulation in the fire insurance industry from 1906 to 1930. This industry provides fertile ground for examining the institutionally mediated relationships among market forces, interest group politics, and state policy. First, the industry was central to the economic infrastructure of the United States; fire insurance was required by creditors, and major urban centers frequently had massive fires (Brearley 1916; Mowbray 1946). Second, the industry was characterized by substantial political and market organization, including cartels, industry associations, and rate-making bureaus. Third, starting in 1909, U.S. states began to pass laws to regulate fire insurance rate making. Typically, these laws allowed state insurance commissioners to order changes in insurance rates or rate-making practices while also authorizing insurers to form rating bureaus or rate-making associations. In effect, these laws eschewed antitrust principles in favor of "regulated cooperation." By 1930 thirty-three states had enacted rate regulation, generating substantial variation in outcomes for the purposes at hand.

The goal here is quite specific—to examine the contingent character of two theories of regulation. In previous work we have assessed competing theories and found direct effects of institutional factors on rate regulation (Schneiberg and

Bartley 2001). Here, however, we examine how institutional conditions shaped the *processes* by which regulation emerged rather than test theories or construct a comprehensive account of the *outcome.* This allows us to identify the specific conditions in which causal mechanisms are most applicable. Methodologically, it implies a focus on interaction effects rather than direct effects of institutional variables.

We begin by considering how institutions mediate political processes and then consider one type of mediation in more detail by focusing on the institutional bases of rationality. Next we outline theories of regulation, discuss ways in which institutional factors may shape the interests specified by these theories, and explain how these apply to the case of fire insurance. After a discussion of methods and measurement, we turn to the results of event-history analyses, which support several ideas about institutional contingency in theories of regulation.

## VARIETIES OF INSTITUTIONAL MEDIATION

As Amenta (1998:19) comments, "Institutional theses typically specify the limits on social policy, but often ignore what drives it. Political theories specify the actors and resources that drive public social provision, but often ignore the systemic limits on political action." Integrating these approaches requires conceiving of institutions as mediating political processes, or conditioning political dynamics. Beyond first-order "institutional effects" on policy, institutions shape the *relationship* between behavioral independent variables and policy outcomes (Amenta, Dunleavy, and Bernstein 1994).

One view of institutional mediation focuses on political opportunities that shape the organizing capacities and successes of challengers. Outsiders' political influence may be limited or amplified by features of the formal political structure and party system, like the basis of party support or presence of "veto points" in the legislative process (Amenta 1998; Immergut 1992). In addition, "policy feedback" arguments suggest that institutionalized policies organize or disorganize constituencies for future political action (Pierson 1994). Further, institutional contexts may change over time and thus modify the effects of other variables (Isaac and Griffin 1989; Sutton and Dobbin 1996; Tolbert and Zucker 1983). These arguments suggest that institutions shape political contests as much as do traits of the contestants themselves. Institutions do so, in part, by defining payoffs, opportunities, and constraints on collective behavior. In this conception, institutions are "rules of the game"—which are themselves variable.

Going further, literature on the "new institutionalism" in sociology and political science suggests that institutions are "constitutive and prescriptive" as well as "constraining and proscriptive" (Clemens and Cook 1999; Hall and Taylor 1996; Schneiberg and Clemens forthcoming; Thelen and Steinmo 1992). Therefore, institutions may mediate the effects of other causal dynamics not only by defining political opportunities but also by shaping the *interests* of political actors and even the actors themselves (Meyer et al. 1997). This line of theory uses a broad definition of institutions as "supraorganizational patterns of human activity by which individuals and organizations produce and reproduce their material subsistence and organize time and space. They are also symbolic systems, ways of

ordering reality, and thereby rendering experience of time and space meaningful" (Friedland and Alford 1991:243). Thus institutions are not simply "rules of the game" that *constrain* action but also systems that help to *constitute* actors and interests. It is this focus on the institutional construction of preferences that motivates our analysis of the politics of regulation.

## INSTITUTIONAL FOUNDATIONS OF RATIONALITY

To specify and delimit the rational choice theories of regulation under consideration, we focus on the social context that underlies rational action. While scholars often leave rationality as a "black box," we join others (from Weber to cultural theorists to rational choice institutionalists) in examining how social conditions shape definitions of interest and create an infrastructure of clarity and calculability that allows rational choices to be made. By unpacking the black box of rationality, we seek to explain *how* the intersection of institutions and interests drives the passage of regulation.

The basic premise of rational choice theory is as follows: "When faced with several courses of action, people usually do what they believe is likely to have the best overall outcome" (Elster 1989:22). This simple statement presumes a number of conditions of choosing. First, if one is to choose from several courses of action, the options must be commensurable—that is, they must be enough alike that one can compare and rank them (Espeland 1998). Second, if choices are made on the basis of expected outcomes, then rationality requires enough evidence or stability in the context of action to calculate an expected outcome (Heimer 1985). For instance, Elster (1989:33) suggests that "beliefs [or preferences] are indeterminate when the evidence is insufficient to justify a judgment about the likelihood of the various outcomes of action." In this situation, uncertainty may override rationality.

Crucially, commensurability, predictability, and the calculation of risk are not merely formal requirements of rational decision making; they are shaped by social context. Rational choice explanations fundamentally rest on institutional conditions for calculation and rationality. Rational choice theorists themselves have recognized cognitive limits on rationality, problems of incomplete information, and the context-bound character of rational choice mechanisms (Bates et al. 1998; Brinton and Nee 1998). In fact, this approach has contributed fundamental insights into how actors craft institutions in response to uncertainty and incomplete information (Akerloff 1970; Alchian and Demsetz 1972; Williamson 1985). Furthermore, work in this tradition has become increasingly self-conscious about explanations that rest on assumptions of full information and theories that are intended to apply only under certain institutional conditions. Yet the institutional conditions for the two rational choice theories of regulation under consideration have gone unspecified, with little consideration of the social contexts that support, inhibit, or define the rational decisions they assume. We seek to contribute to this topic by exploring several ways in which institutions underlie, clarify, and modify interests.

Institutional arrangements that provide well-articulated standards make the world more predictable. Weber argued that rational exchange relied on legal and

financial institutions that made the world calculable by enforcing contracts and standardizing taxation and currencies (Collins 1980). Standardization is also central to commensuration, which is "concerned with measuring different properties normally represented by different units with a single, common standard or unit" (Espeland 1998:24). Likewise, institutions make the world more orderly by maintaining classifications and intensely ordered "administrative grids" (Douglas 1986; Scott 1998). An important effect of institutions, then, is to order an otherwise overwhelmingly chaotic set of objects and to draw attention to some objects over others. This is an approach to rationality in which "the individual is seen as an entity deeply embedded in a world of institutions, composed of symbols, scripts and routines, which provide the filters for interpretation, of both the situation and oneself, out of which a course of action is constructed" (Hall and Taylor 1996:939).

Conversely, situations in which institutions are poorly developed or unsettled can subvert commensurability, predictability, and calculability. As Berk (1994) argues, in periods of "constitutive politics," the economic landscape is itself up for grabs, leaving economic and political interests ambiguous. In periods of "power politics," many of the overarching institutional parameters are relatively fixed, but in constitutive periods, institutional environments may be composed of competing frameworks, conflicting standards, and indeterminacy regarding options, the consequences of choice, or the "rules of the game." Here institutional conditions complicate rather than simplify the task of interpreting reality—producing intractable uncertainties and undermining the conditions for rational choice (Heimer 1985; March and Olsen 1976, 1989).

If the assumption that preferences are clear is in need of further specification, so too are assumptions that conflicts or complementarities of interest are structured by "initial conditions" that are relatively stable over time. Rational choice theorists have begun to address the problem of interests changing over time by exploring how preferences get altered through iterative processes of trial-and-error and learning (Axelrod 1984; Greif 1998). Yet such microlevel "bottom-up" accounts are weaker at explaining higher-level institutions that "structure the exchange and the exchange process, that create identities for the subjects involved in the exchange, and that create a subjectively meaningful social context in which the exchange takes place" (Hamilton and Feenstra 1998:159). Changes in these higher-order structures may alter the costs, benefits, and risk factors involved in individual calculations of interest and therefore create new complementarities and/or conflicts of interest. For instance, the consolidation of an institutional field over time may clarify or constitute otherwise inchoate interests and is itself a critical source of initial conditions.

These ideas about rationality undergird our exploration of the institutional foundations of interests relevant to capture and interest group accounts of regulation. In discussing these theories, we emphasize that industry groups and outsiders are likely to have *clearer* preferences about regulatory policy when institutional conditions and disputes over the rules of the game are settled and when institutional environments provide safeguards for predictability or make governance options more clearly commensurable. In addition, policy regimes that shape market dynamics may affect the *content* of preferences, as could institu-

tional changes that reduce the risks involved in implementing regulation—which may end up aligning the interests of previously antagonistic groups.

## CARTEL-CAPTURE THEORY

In the nineteenth-century U.S. economy, firms commonly sought to organize markets collectively, via interfirm compacts or associations, and to pool information, set standards, fix prices, or develop technical knowledge (Chandler 1977; Fligstein 1990; Schneiberg and Hollingsworth 1990). These historical observations motivate cartel-capture theory's central claim that *economic regulation* can also be an attractive option for firms trying to organize or stabilize markets. The theory rejects the commonsense notion that regulation is constructed in the public interest to restrict monopoly power or solve market failures. Instead it argues that industries use regulation as a tool for suppressing competition, creating monopolies, and extracting rents (Kolko 1963; Posner 1974; Stigler 1971). For instance, firms in competitive industries may be able to better control the market if the state imposes restrictions on entry or allows associations to set minimum prices.

According to the theory, firms seek regulation when market dynamics of competition and collective action make *private* means of organizing an industry untenable. Two of the least costly forms of private organization are cartels and price-fixing associations. Yet these are not always viable market control mechanisms, since the voluntary character of participation opens the door to free-riding, defection from agreements, and other enforcement problems. Regulation may then be an effective alternative if firms can create or capture state agencies that will enforce interfirm agreements and limit competition.

In this view, it is market conditions that prompt the shift from *cartels* to *capture.* Market size and heterogeneity are particularly important (Bowman 1989; Jacquemin and Slade 1989; Posner 1974; Stigler 1971, 1974). When firms are few in number and similar in assets, costs, and strategy, it is relatively easy to form and maintain effective voluntary interfirm agreements. Here firms opt for private cartels. Yet with increased market size and heterogeneity, private organizational strategies become more difficult, because of problems of managing large numbers and divergent interests. Here firms develop interests in state-enforced cooperation while also increasing their ability to forge "capture coalitions." Specifically, large numbers increase firms' political clout, while diversity creates an "asymmetry of interest" in the industry and increases incentives to join the "capture coalition"—to guard against one industry faction using regulation against a nonparticipating group (Stigler 1971). Accordingly, increasing size and heterogeneity prompts a shift from private organization to the state.

However, increasing size and heterogeneity beyond intermediate levels may reverse this process. At some point, greater numbers and diversity may subvert firms' abilities to form effective lobbies (Stigler 1974). Indeed, extremely high levels of heterogeneity may make the faction-against-faction incentive for regulation devolve into infighting that inhibits firms' political influence. Growing market heterogeneity may also increase the chances that a subset or "critical mass" of actors will emerge who are interested and capable of organizing markets pri-

vately *on their own* (Marwell and Oliver 1993).[2] Thus, cartel-capture theory suggests that *market size and heterogeneity have inverse-U-shaped effects on the likelihood of passing regulation.*

### Institutional Mediator: Anticompact Laws

The utility of cartel-capture theory lies in its sophisticated account of how firms' economic strategies shape political outcomes. However, cartel-capture theorists largely ignore the way in which other political conditions shape firms' governance options and strategies. Institutionalists have found that political regimes constitute and alter economic behavior. Research on the development of American capitalism suggests that antitrust laws encouraged the vertical growth of U.S. corporations by constraining their horizontal growth (Hollingsworth 1991). Similarly, Dobbin and Dowd (2000) show that the effects of market dynamics on firm acquisitions are conditional on an antitrust regime that limits cartels and enforces competition.

Drawing on Dobbin and Dowd (2000), one may expect regimes that ban cartels and enforce competition to create precisely the conditions that cause firms to seek regulation. Lacking laws that limit interfirm cooperation, firms will pursue private forms of industry organization. But if this option is blocked by antitrust enforcement, then firms' organizing efforts shift to publicly regulated coordination. Following this logic, *we expect market conditions to be more strongly related to the passage of regulation in states with antitrust laws than in states without antitrust laws.* In fact, in states that lack policy enforcing competitive behavior, the dynamics of competition and collective action specified by cartel-capture theory should be irrelevant to the passage of fire insurance rate regulation.

A second possibility is that hostile political regimes increase uncertainty for firms in calculating the expected costs and benefits of regulation. A potential cost of regulation is that it may end up serving as a channel that admits powerful outsiders into industry councils, mobilizes hostile forces, or exposes prices to politics (Bowman 1989; Stigler 1971). When anticompany forces manage to challenge the power of firms in an industry, it becomes more difficult for firms to calculate this expected cost. Furthermore, when policy undermines predominant firm strategies without providing alternatives, conflict and ambiguity over the creation of new strategies tend to ensue (Dobbin and Dowd 2000). Therefore, politicization of the institutional environment undermines the conditions for the type of rational choice posited by cartel-capture theory. For firms, hostile political regimes increase uncertainty while decreasing predictability and the commensurability of public and private governance options. Following this logic, *we expect industry preferences for capture to be ambiguous under conditions of political hostility and clearer in less politicized environments.*

In the fire insurance case, state "anticompact" laws both enforced competition and politicized institutional environments. Anticompact laws were antitrust laws that banned interfirm price compacts and collaborative rate making in fire insurance. They were a response to extensive systems of interfirm coordination that characterized the nineteenth-century fire insurance industry. Such systems led

farm groups, local boards of trade, and local public officials to stir up a legitimacy crisis for the industry by arguing that cooperation among insurers produced exorbitant rates. Consumer groups also decried arbitrary treatment by company rate-making associations and ultimately turned to anticompact laws for relief. These laws typically prohibited collusive price-fixing outright while targeting specific practices such as associations "advising" companies about rates.

Ohio passed the first anticompact law in 1885, and Michigan followed in 1887. During the 1890s and early 1900s, anticompact legislation spread rapidly through the populist regions of the country, leaving a band of anticompact states centered largely in the Midwest and the South (see Figure 1). By 1910 the anticompact movement had run its course.[3]

Anticompact laws constituted the political-institutional context in which rate regulation emerged (Schneiberg 1999; Schneiberg and Bartley 2001). Once states passed rate regulation, they either repealed anticompact laws or allowed them to languish on the books. Nevertheless, the anticompact movement was a defining feature of the setting in which firms considered regulation as a possible solution to market control problems—and thus decisively shaped the context which cartel-capture mechanisms apply.[4] On one hand, anticompact laws enforced market competition, limiting firms' abilities to cooperate openly in making and enforcing rates. At the same time, such regimes represented a configuration of power with industry outsiders able to subject the industry and its markets to disruption and political uncertainty. They represented not only a defeat of industry interests in association but also a legitimacy crisis, in which industry organization was subjected to public scrutiny, controversy, and criticism. In addition, where anticompact laws were in place, they often served as platforms for political attacks against insurers. Indeed, insurance companies fought state antitrust intervention because it subjected the industry and its operations to "politics" and to the strategic behavior of politicians who would "play to the gallery" and attack the "insurance combine" in their search for electoral advantage (Schneiberg 1999). For companies, then, these interventions created uncertainty about the prospects for viable market organization and the meaning and consequences of regulation.

At this point, we consider it an empirical question whether the primary effect of anticompact laws was to (1) enforce competition and thus spur the dynamics specified by cartel-capture theory or (2) politicize industry governance to such an extent as to foster uncertainty in insurers' interests in regulation. We model both of these possibilities and allow the data to lend support to one or the other. Table 1 summarizes the predictions of cartel-capture theory and institutionally contingent versions I and II.

## INTEREST GROUP THEORY

Interest group theory looks beyond the firms and market conditions specified by cartel-capture theory to consumers, suppliers, and subsectors of an industry. In this view, regulation allows consumers and other industry outsiders to share in the spoils of the regulated industry or to contain concentrated private power. Here regulation reflects the relative organizing capacities of producer and con-

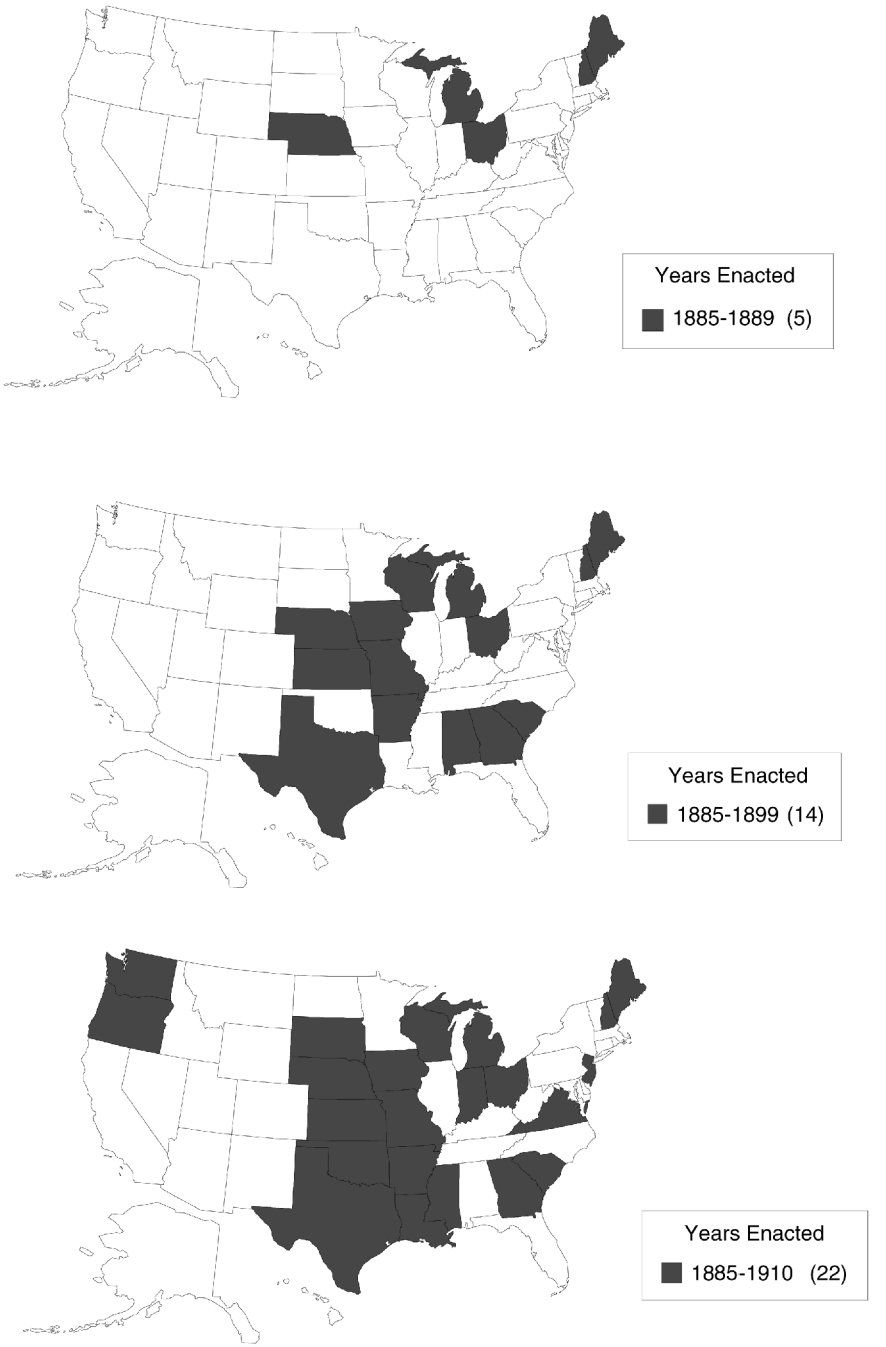


**Figure 1**
Development of Anticompact Measures, 1885–1910

**TABLE 1**
Predicted Effects of Cartel-Capture Variables

| *Theory* | *Core Claim* | *Predicted Effects* |
|---|---|---|
| General: Cartel-capture theory | Market factors drive the passage of regulation. | Market size and heterogeneity have inverted-U-shaped effects on the likelihood of regulation. |
| Institutionally Contingent Version I | Market dynamics are contingent on policy that enforces competition. | Market size and heterogeneity have inverted-U-shaped effects on the likelihood of regulation only in states with anticompact laws. Coefficients are weak or nonsignificant in states without anticompact laws. |
| Institutionally Contingent Version II | Politicization of institutional environments creates uncertainty in industry preferences for regulation. | Market size and heterogeneity have inverted-U-shaped effects on regulation only in states without anticompact laws. Coefficients are weak or nonsignificant in states with anticompact laws. |

sumer groups, and therefore the passage of regulation is at least a partial victory of anti-industry forces such as farmers and major consumers.

The ability of a group to influence and benefit from regulation depends on its capacity to organize (Zeigler 1964), which in turn largely depends on economic stakes in an issue and the number of potential participants (Kanazawa and Noll 1994:23).[5] Interest group theory suggests that group size can have multiple effects, since theorists couple the analysis of free-rider/collective action dynamics with the analysis of political influence. Accordingly, while increased numbers decreases the likelihood of a group becoming organized, it also increases the potential political power of that group. In the main, however, interest group analyses emphasize the latter effect, especially when there is other evidence that a group was organized. Their primary prediction about group size is that the larger an interest bloc, the more likely it is to influence the legislative process (Fishback and Kantor 1996; Kanazawa and Noll 1994; Meier 1988).

Since regulation represents a victory of outsiders, *the larger the population of fire insurers in a state and the greater the stakes associated with fire insurance (the more insurers have to lose) in a state, the less likely that state should be to pass rate regulation.* Standing against the industry were two major consumer groups—farmers and manufacturers. In the early twentieth century, both groups were well organized at the local level. In addition, they were the largest consumers of fire insurance, providing them with high stakes in fire insurance regulation and the potential to use the state to constrain private power. Therefore, *the larger the population of farmers and manufacturers in a state and the greater the stakes each group held in the operation of fire insurance, the more likely that state should be to pass regulation.*

Because they take (potentially hostile) "outsiders" as seriously as producers in

the industry to be regulated, interest group theorists are less prone than cartel-capture theorists to ignoring the larger political environment. Still, interest group theories assume a lot by deriving clear, stable preferences of groups in regulatory outcomes based on a set of initial conditions. Some interest group theorists *do* recognize that goals may change with changes in the environment or the bureaucratization of a movement (Zeigler 1964), and others suggest that uncertainty about the effects of regulation may inhibit interest group support. "If the effects of a regulation, or the precise identity of the beneficiaries and the losers, cannot be predicted beforehand with reasonable accuracy, the incentive to contribute to a lobbying effort is obviously reduced" (Noll and Owen 1983:45). However, interest group analysts have not typically modeled the determinants of certainty or the stability of interests as factors in the passage of regulation.

### Institutional Mediator: Institutional Consolidation and Administrative Capacities

We argue that the consolidation of interorganizational fields and innovations in suprastate administrative capacities shape the clarity and content of group interests in regulation. First, preferences become more fixed as institutional consolidation makes ends more predictable, reduces uncertainty about outcomes, and articulates stakes. In effect, groups can better calculate the expected cost and benefits of regulation once settlements are reached over the rules of the game, once standard models or cognitive frameworks become the centerpiece in a field, and once administrative capacities for routine decision making and conflict resolution are established (Scott 1994, 1995). Likewise, in "settled" periods, stability in the set of available beliefs and models provides resources for purposive action (Swidler 1986). Therefore, *we expect interest groups to have a clearer influence in the passage of regulation when institutional conditions are settled and decision-making structures and safeguards against uncertainty have been institutionalized.*

Again, there is a second version: The development of stable rules, safeguards, and rationalized procedures for adjudicating rate conflicts may create the conditions for compromise between interest groups, allowing them to converge on a common, mutually acceptable set of organizational solutions (Skowronek 1982; Weir and Skocpol 1985). Both consumer and industry groups are likely to support rate regulation if models of objective rate making and judgment are available and legitimated. Following this logic, *we expect interest group coefficients to become positive with the stabilization of the organizational field and the creation of administrative capacities.*

In the fire insurance case, the years 1914 through 1916 marked a fundamental, systemwide shift in the institutional context of regulation. Three events helped to settle conflicts and consolidate the insurance field around a specific set of theories and governance options: (1) a Supreme Court decision endorsing rate regulation, (2) the National Convention of Insurance Commissioners' development of a model law, and (3) the creation of an actuarial bureau for gathering classified loss data. As a group, these acts instituted "regulated cooperation" and scientific rate

making as the norm for the industry and created the administrative capacity for implementing these models. This shifted insurance from a setting characterized by political conflict and uncertainty about the efficacy of market organization and meaning of regulation into a more stable setting—one where the models of appropriate organization were more clearly defined and the actions of the state were more predictable. Since each of these events of 1914–15 was the culmination of years of debate and struggle, we discuss the historical development of each key event separately.

### *The Supreme Court Decision*

Since the nineteenth century insurers had sought to manage markets through rate-making associations, while consumer groups and lawmakers had rejected the "insurance trust" and its "combines" as nothing more than monopoly predation. In 1909 Kansas passed the first insurance rate regulation law, which granted the state's insurance commissioner the authority to order changes in excessive or unjust rates (Grant 1979; Hobbs 1942:363). Almost immediately afterward, the Kansas Superintendent of Insurance ordered a statewide rate reduction. In response, companies sought to void the law in the courts, taking the issue to the Supreme Court in *German Alliance Ins.* v. *Lewis.*

At this point, the question of which outcomes would obtain—what regulatory or organizing options were possible, what they meant, and whose interests they served—was fraught with uncertainty and conflict. The period was marked by competing models of order and struggles over the balance between public and private control. Insurance companies generally advocated a private cooperative model of insurance markets, whereby companies could associate freely without state interference. However, this model contended directly with antitrust policies, statist policies of public insurance provision, consumer self-insurance through mutual organizations, and "regulated cooperation" that combined private cooperation with state supervision (Schneiberg 1999).

The Supreme Court's 1914 decision in the *German Alliance* case went some way toward establishing options and settling matters of insurance governance. The Court ruled that fire insurance was "affected with a public interest" and that states had the right to regulate insurance rates (Crane 1972:56–57; Grant 1979; Hobbs 1925). In effect, it established regulation as a legitimate option for the states and endorsed "regulated cooperation" as a solution to the problem of monopoly.

### *The NCIC Model Law*

At the end of 1914, the National Convention of Insurance Commissioners (NCIC) followed the Court by endorsing and further articulating the concept of regulated cooperation. The NCIC promulgated a model law that banned discriminatory or unjust rates and empowered state commissioners to order rate changes while also authorizing cooperative rate making (NCIC 1915). This quid pro quo of regulation for authorized association helped to create a basis for convergence in the interests of insurers and their adversaries. The model bills and their explana-

tions endorsed the theories of market failure underlying company efforts to organize insurance markets cooperatively and thus elaborated a rationale for rejecting antitrust. Yet the NCIC bills also articulated the problem of monopoly and theories of regulated cooperation advocated by reformers. By codifying the model of regulated cooperation for the states, the NCIC made this solution to the problems of insurance governance available to legislatures across the country.

### *The NBFU Actuarial Bureau*

While the actions of the Court and the NCIC made regulated cooperation a viable option for the states, they left a critical question unresolved: By what criteria should firms or regulators fix or order changes in rates? As early as 1901 industry reformers had proposed a model of scientific rate making as a solution to the rate problem (Dean 1901; Merritt Committee 1911). The idea was to let companies set rates through industry bodies but to do so through statistical analyses of the loss costs and hazards associated with a risk class. This proposal eventually proved compelling to consumers, legislators, and insurance commissioners. As one former regulator explained to the New York Legislative Investigating Committee in 1910,

> You should have a classification to base your estimate on, and then, if a citizen comes to the authorities and said, "My rate is too high," the judge would have something to base an opinion on. . . . [O]therwise it would be a matter of guess work. (Merritt Committee 1909–10:2421–22)

The committee agreed. "It is perfectly certain," it wrote after grilling industry officials,

> that the public has a right to demand . . . that in return for the right to combine the companies shall furnish equitable rates and not only that but that they shall put themselves in a position to *demonstrate* [through classified loss data] that they are furnishing equitable rates. (Merritt Committee 1911:72)

The companies' failure to produce classified data fueled struggles over rate regulation. Even as the principle of regulated cooperation emerged, its viability hinged on firms' and regulators' ability to set and judge rates according to an objective and generally accepted set of standards. Absent such a system, companies could not justify their rate-making practices, regulators could not evaluate rate conflicts, and consumers lacked the reliable safeguards necessary for them to endorse rate making by company associations (Schneiberg 1999). For insurers, this meant that regulation was to be the price for private association. Driven by this consideration and the potential resurgence of statism and trust busting, the National Board of Fire Underwriters (NBFU) agreed in 1914 to create a uniform classification scheme and an actuarial bureau charged with collecting and distributing premium and loss data to each state for a variety of risks and risk classes (Riegel 1916, 1917).

This accord transformed the terms of conflict at the state level, forging a structural basis for companies and their opponents to agree on a rationalized data-

based regime of rate review. Once the Actuarial Bureau supplied classified data to state insurance departments, regulators could evaluate rate conflicts on a relatively impartial basis (New York State 1922–32). Equally important, the rationalization of rate-making procedures buffered regulation from populist pressures and made regulation predictable, addressing companies' fears that public officials would play politics with prices and the regulatory process. In fact, this development altered firms' calculations regarding regulation. As one company official put it (in an endorsement of regulated cooperation), there is a "middle way" between

> the extremes of State rate making [and] complete company control of rate making without the *steadying influence* . . . of State supervision to hold the rule making body up to a full sense of responsibility for its action to the representatives of the people. [This is] leaving to the companies the selection of the person or persons who shall make rates but giving to the Superintendent of Insurance the power [to] examin[e], compel removal of discrimination [and] hear complaints. (Quoted in Riegel 1916:69; emphasis added)

In sum, these three events created a basis for reconciling conflicting interests and helped to consolidate the fire and property insurance field around the model of a scientifically based system of regulated cooperation.[6] As such, they sorted out conflicts among competing principles of order and established a single well-understood model as the reference point of cognition, calculation, and problem-solving behavior. We consider it an empirical question whether the *primary* effect of these reforms was to (1) clarify preferences relating to regulation or (2) align

**TABLE 2**

Predicted Effects of Interest Group Variables

| *Theory* | *Core Claim* | *Predicted Effects* |
|---|---|---|
| General: Interest group theory | Regulation reflects the relative organizing capacities of producer and consumer groups. | Increasing the size and stakes of insurers decreases the likelihood of regulation. Increasing the size and stakes of consumer groups increases the likelihood of regulation. |
| Institutionally Contingent Version I | The development of fieldwide models and administrative capacities articulates and clarifies group preferences for regulation. | Interest group size and stakes have the expected effects only after 1915. Coefficients are weak or nonsignificant before 1916. |
| Institutionally Contingent Version II | The development of fieldwide models and administrative capacities aligns the interests of insurers and consumers. | Before 1916 insurance industry variables have negative effects and consumer group variables have positive effects on the likelihood of regulation. After 1915, both insurance industry and consumer group variables have positive effects on regulation. |

previously antagonistic interests in support of regulation. Table 2 summarizes the predictions of interest group theory and institutionally contingent versions I and II.

## DATA

### Dependent Variable: Regulation of Fire Insurance Rates

The dependent variable is a binary variable with a value of 1 in the year a state first passed rate regulation and a value of 0 in all previous years. In the framework of event-history analysis, this coding is equivalent to modeling the rate of passage or using the year of passage as the dependent variable (Allison 1995). We model a state's first passage of regulation and therefore exclude a state from the risk set once it passes a rate regulation law, which allows us to understand the dynamics that led a state to pass a law in the first place. Since some legislatures did not meet every year (U.S. Bureau of the Census 1918), we considered states to be at risk of passing regulation only in years with legislative sessions (Allison 1995:227). Figure 2 shows the passage of rate regulation laws from 1906 to 1930.

We coded states' passage of rate regulation using the Spectator Company's *Fire Insurance: Laws, Taxes, Fees* reports and corroborated the coding with additional historical sources (Hobbs 1925, 1942; Merritt Committee 1911; Reigel 1917, 1927). To qualify as having passed rate regulation, a state must have adopted a law that granted an insurance commissioner (or other official charged with regulating insurance) power to (a) review insurance rates and either (b) order changes in rates or (c) recommend changes in rates.[7] The specific powers of insurance commissioners varied somewhat, with some empowered only to judge unfair discrimination among risks and others able to make more general judgments about excessive rates. In addition to empowering commissioners, the vast majority of

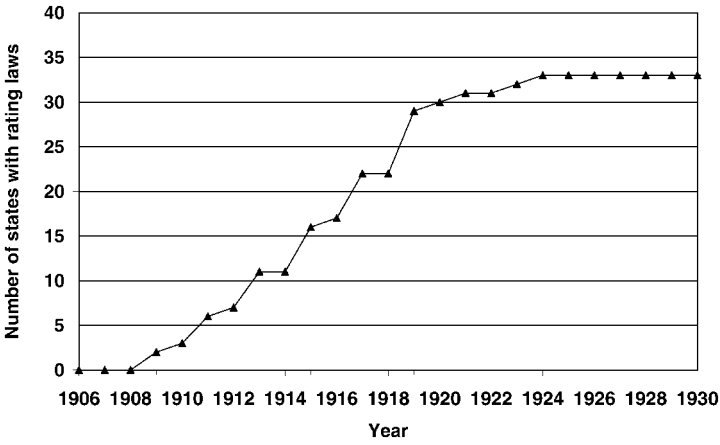


**Figure 2**
Passage of Rate Regulation, 1906–1930

rate regulation states also required insurers to file their rates with the state and authorized insurers to form rating bureaus or rate-making associations.[8]

### Cartel-Capture Variables

To address cartel-capture theory, we constructed state-level measures of market conditions by using data on fire insurance agents, companies, and the states in which they were licensed to do business (Spectator Company 1906–40). This information provided us with a state-level count of agents and allowed us to assign companies to states—creating for each state a list of the companies licensed to do business, the assets of each company, and company type (mutual, U.S. joint stock, foreign). We use the number of fire insurance agents in a state as a measure of the *number of market actors.*[9] Because the logic of cartel-capture theory implies diminishing impacts of increased numbers beyond some point, we also include *the square of the number of market actors.*

We measure market heterogeneity and the prospects for conflicts of interest within a state using two dimensions of interfirm diversity.[10] We use the coefficient of variation in firm assets to tap *asset diversity* of firms in a state. Based on the standard deviation, the coefficient of variation measures the relative amount by which firms depart from the mean level of fire insurance assets in the state. Assets include cash, real estate, mortgage loans, stocks, bonds, collateral loans, and receivables and measure the overall financial strength of insurers. Second, we use the Index of Qualitative Variation to measure *diversity by company type* (mutual, U.S. joint stock, foreign), a potent source of factionalism and conflict among insurers. The measure is based on the percentage of firms of each type, and it varies from 0, when all firms in a state are of one type, to 1, when firms are equally distributed across firm types, so that higher values indicate greater heterogeneity. Since the effects of heterogeneity may be curvilinear, we also include *the square of asset diversity* and *the square of diversity by company type.*[11]

### Interest Group Variables

Our interest group measures include both the numerical size of the group and a proxy for its stakes in insurance regulation.[12] Stakes are based on the economic value in a sector, with dollar amounts adjusted for inflation according to the Consumer Price Index (where 1967 = 100). Size and stakes are both measured per capita to control for the size of the state.

For insurers themselves, stakes are measured as the *total assets in fire insurance per capita* for each state. We measure the numerical strength of fire insurers in a state with the number of *fire insurance agents per capita*, since agents were the industry's political shock troops (Grant 1979). For consumer groups, we operationalize stakes in regulation with measures of the amount of economic value potentially covered by insurance. We measure farmers' stakes with the *total value of farm property per capita* and the size of the agricultural sector with the *total number of farms in a state per capita.* Manufacturers' stakes are represented by *value*

*added by manufacture per capita* and size of the manufacturing sector by the *number of manufacturing establishments per capita.*[13] While conceptually distinct, in our data manufacturers' size and stakes are correlated ($r = .64$). Since the measure of manufacturers' stakes is also highly correlated with number of farms per capita ($r = .81$), we exclude manufacturers' stakes from our analysis to avoid multicollinearity problems. Appendix A shows correlations and univariate statistics for the independent variables.

### Institutional Variables

We measured the existence of an *anticompact law* using the same sources used for rate regulation laws. Anticompact states were considered to be those that at any time during the twentieth century had a law specifically prohibiting cooperative rate making in fire insurance or banning private pricing of fire insurance.[14] The other institutional variation involves the consolidation of the fire insurance field and the creation of suprastate administrative capacities over time. We capture this shift and the institutional regimes it delimits by splitting the analysis into two periods—one period (1906–15) before and another (1916–30) after innovations in administrative capacity and standardization were firmly in place. We identified these periods through extensive study of the history of the industry (Crane 1972; NCIC 1915; New York State 1911–1932, 1922; Reigel 1917). In this article, we approach these two institutional factors as two different, perhaps complementary ways of thinking about the institutional environment—one at the state level (anticompact laws) and the other at the system level (the shift over time).[15]

## METHODS

We perform a series of event-history analyses of the passage of rate regulation in forty-eight states from 1906 to 1930.[16] We use discrete-time models with time-varying independent variables. These models estimate the effects of independent variables on the conditional probability of a state passing regulation at time $t$, given that the state has not previously passed regulation (Allison 1995). The discrete-time specification is appropriate because rating laws were passed only during legislative sessions—that is, at a bounded moment in time—and since we can only measure the time of passage in years. In these models, the "state-year" is the unit of analysis. We use 1906 as the start date of the analysis for three reasons. First, serious proposals for regulating fire insurance rates began circulating in about 1900 (Grant 1979:100–33), making that the earliest time we could consider states at risk. Second, the first rating laws were not passed until 1909. Third, 1906 was the earliest year for which good data on all variables exist. We use 1930 as our end date because the format of key data sources changed at that point and because thirty-three of the thirty-four states that passed laws had already done so by that time. We ran all models using logistic regression procedures in SAS (proc logistic), with maximum likelihood estimation.

For both cartel-capture theory and interest group theory, we first use the variables specified by these theories to predict the passage of rate regulation in the entire set of state-years, disregarding institutional factors ("general" models 1 and 4). These models assume general theoretical causal mechanisms and follow the theories in making no predictions about institutions. We then control for any direct effects of institutional factors ("general plus institutions" models 2 and 5). Our key hypotheses, however, are about how institutions *condition* the effects of other variables. Therefore, we then use conditional models, which identify interaction effects between institutional context and the variables suggested by theories of regulation ("conditional" models 3 and 6). Here the effects of variables are allowed to change across social contexts. For clarity of presentation, we split the set of state-years into institutionally defined segments, following Thornton and Ocasio (1999).[17] This form of presentation is equivalent to using interaction effects with a dichotomous variable and is often used when one expects the effects of independent variables to differ across groups—as is common in stratification research (Bobo and Kluegel 1993; England, Christopher, and Reid 1999; Marini and Fan 1997).

The conditional models allow us to do two things. First, we can test for changes in the effects of *individual independent variables* across institutional conditions by comparing a model in which a coefficient is constrained to be equal across conditions to a model that allows the effect to vary.[18] Second, we can test for the generality of the theories by seeing if the effect of *entire blocks of variables* depend on institutional conditions. Here we compare the fit of the conditional model to that of the general model with only direct effects of institutions. For both of these tasks, we use a one-tailed Chi-squared test to see if the fit of the model improves with the relevant alteration, since the difference in $-2$ Log Likelihood scores has a Chi-squared distribution and since the models for each theory are progressively nested (i.e., model 1 is nested in 2 is nested in 3).

## RESULTS AND DISCUSSION

Table 3 shows the estimated effects of market size and heterogeneity on the rate at which states passed regulation. In model 1, cartel-capture theory is only weakly supported as a general theory. Only one market variable has the expected effect on the passage of regulation. The positive and significant coefficient for asset diversity and the negative and significant coefficient for the squared term indicate that heterogeneity among fire insurers increases the likelihood of regulation up to a point—after which further interfirm differences begin to decrease the likelihood of regulation. This effect remains when controlling for the existence of anticompact laws in model 2. Here, up to moderate levels (.36 standard deviations above the mean), market heterogeneity promotes regulation, since it undermines cartels and increases firms' incentives for political participation.[19] But in more heterogeneous markets, interfirm differences and infighting appear to impede the success of industry capture-coalitions. Model 2 also shows that states with anticompact laws passed regulation at a rate 2.64 times higher than other states.[20] This effect is consistent with previous findings on the role of anticompany politics and legiti-

**TABLE 3**

Effects of Cartel-Capture Variables on the Passage of Fire Insurance Rate Regulation, 1906–1930[a]

| | *Model 1: General Model All States* | *Model 2: General plus Institutions All States* | *Model 3: Conditional Model*[b] | | |
|---|---|---|---|---|---|
| | | | *Anticompact States* | *Non-anticompact States* | *Diff. across conditions*[c] |
| Intercept | −33.4550* | −35.2841* | −3.9095 | −112.0** | |
| | (15.8223) | (16.3797) | (18.6473) | (44.0329) | |
| Number of agents | .00172 | .000659 | .000898 | .000228 | $\chi^2 = .185$ |
| | (.00105) | (.00115) | (.00229) | (.00155) | (d.f. = 2) |
| (Number of agents)$^2$ | −.000000558 | −.000000147 | −.000000183 | −.0000000145 | |
| | (.000000441) | (.000000465) | (.00000108) | (.000000585) | |
| Asset diversity | .3382* | .3632* | .1309 | .8486* | $\chi^2 = 2.85$ |
| | (.1646) | (.1743) | (.2005) | (.4424) | (d.f. = 2) |
| (Asset diversity)$^2$ | −.00119* | −.00125* | −.00044 | −.00291* | |
| | (.000571) | (.000604) | (.00071) | (.00151) | |
| Diversity by company type | 13.4721 | 11.6335 | −27.6309 | 119.4* | $\chi^2 = 5.36^+$ |
| | (25.8490) | (25.5520) | (30.7304) | (70.0626) | (d.f. = 2) |
| (Diversity by company type)$^2$ | −6.0427 | −4.5733 | 22.0789 | −73.3273* | |
| | (16.7354) | (16.6072) | (20.5239) | (43.5316) | |
| Anticompact law | — | .9720* | — | — | |
| | | (.4450) | | | |
| *N* of state-years | 398 | 398 | 176 | 222 | |
| *N* of events | 33 | 33 | 21 | 12 | |
| −2 Log Likelihood | 207.184 | 202.168 | 194.531 | | |

*Notes:*

[a] Standard errors in parentheses.

[b] Model 3 has time-varying intercepts and time-varying effects of covariates, allowing the effects of covariates to change across institutional conditions. Constraining these effects, as a group, to be equal across conditions does not alter the fit of the model ($\chi^2 = 7.637$, d.f. = 7, $p > .25$).

[c] Significance tests for a difference in coefficients across institutional conditions are computed through a $\chi^2$ test of the fit of the model with the coefficients constrained to be equal compared to a model that allows the coefficients to vary.

Significance tests (one-tailed): $^+p < .10$; $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$.

macy crises in spurring regulation (Schneiberg and Bartley 2001), but it is the conditional model that sheds light on the process by which this institutional factor modifies the effect of market dynamics.

Model 3 shows that several market factors affect regulation but only in states *without* anticompact laws. In anticompact states, none of the market variables have significant effects on the passage of regulation. Yet in the non-anticompact states, market heterogeneity is an important source of pressure for regulation. Diversity by company type has no effect in anticompact states but has the expected curvilinear effect in non-anticompact states. This change across conditions is different from zero at the .10 level of significance (Chi-squared = 5.36, 2 d.f., $p < .10$). Likewise, asset diversity has no effect in anticompact states but has the expected curvilinear effect in non-anticompact states, but this difference in effects is not statistically significant (Chi-squared = 2.85, 2 d.f., $p < .25$).

Overall, only in depoliticized settings (non-anticompact states) do market conditions affect the likelihood of regulation. This supports version II of the institutional mediation hypothesis—the idea that political environments hostile to the industry nullify market dynamics as a source of regulation. In these environments, firms face greater risk and uncertainty about regulation being appropriated by anti-industry forces and therefore will not pursue regulation as a solution to market-control problems. In depoliticized settings, on the other hand, market heterogeneity provides an impetus for regulation. In these settings, the positive coefficient for diversity by company type indicates that—up to a point—increasing the extent to which the insurance market is split between U.S. stock, foreign, and mutual companies increases the likelihood of regulation. As this source of antagonism increases, it becomes more difficult to form private cartels, and firms turn to state regulation. Yet the negative squared term indicates that once the extent of diversity by company type exceeds the mean by .45 standard deviations, increasing heterogeneity decreases the odds of regulation. At fairly high levels, the dynamics of market heterogeneity devolve into infighting and thus impede firms' political action.

Support for *this* version of the anticompact institutional contingency hypothesis (version II) leaves version I without support. In that alternative, anticompact laws would magnify the effects of market conditions on regulation by enforcing the competitive dynamics specified by cartel-capture accounts of regulation. However, no market variables reach significance in anticompact states, where laws enforcing competition existed. Therefore, the importance of anticompact regimes seems to lie not in their effects on competitive behavior but rather in their effect on firms' abilities to clearly calculate the consequences of turning from markets to states.

While one might also expect cartel-capture theory as a whole to perform better when made institutionally contingent, this idea is not supported. Interacting the whole set of cartel-capture variables with anticompact status does not significantly alter the fit of the model (model 3 vs. 2; Chi-squared = 7.637, 7 d.f., $p > .25$).

Table 4 presents models for interest group theory and its institutionally contingent versions. When treated as a general theory, interest group theory makes only a marginal contribution to explaining regulation. The only notable interest group

**TABLE 4**

Effects of Interest Group Variables on the Passage of Fire Insurance Rate Regulation, 1906–1930[a]

| | *Model 4: General Model All Years* | *Model 5: General plus Institutions All Years* | *Model 6: Conditional Model*[b] | | *Diff. across conditions*[c] |
|---|---|---|---|---|---|
| | | | *1906 to 1915* | *1916 to 1930* | |
| Intercept | −3.7114*** | −4.6836*** | 3.2378 | −8.0923*** | |
| | (.9999) | (1.0449) | (2.6887) | (1.8034) | |
| Fire insurance assets per capita | −.00002 | −.00006 | −.00131* | .000095 | $\chi^2 = 14.06$*** |
| | (.000072) | (.000082) | (.000584) | (.000075) | (d.f. = 1) |
| Fire insurance agents per capita | −872.9 | −1032.3 | −3302.3 | 2677.3 | $\chi^2 = 2.56$ |
| | (1588.8) | (1615.7) | (2562.9) | (2781.1) | (d.f. = 1) |
| Farm property value per capita | .1458 | .1650 | .5063* | −.1038 | $\chi^2 = 3.39$* |
| | (.1414) | (.1396) | (.2610) | (.2045) | (d.f. = 1) |
| Farms per capita | 8.3122 | 11.3689 | −29.2822 | 40.0316*** | $\chi^2 = 13.90$*** |
| | (6.9896) | (6.9373) | (15.7160) | (12.3872) | (d.f. = 1) |
| Manufacturing establishments per capita | 327.9+ | 494.6* | −818.0 | 837.3* | $\chi^2 = 6.52$* |
| | (212.3) | (216.4) | (597.4) | (362.7) | (d.f. = 1) |
| Period (1916–30) | — | 1.0467** | — | — | |
| | | (.4047) | | | |
| *N* of state-years | 398 | 398 | 244 | 154 | |
| *N* of events | 33 | 33 | 16 | 17 | |
| −2 Log Likelihood | 221.789 | 215.090 | 187.981 | | |

*Notes:*

[a] Standard errors in parentheses.

[b] Model 6 has time-varying intercepts and time-varying effects of covariates, allowing the effects of covariates to change across institutional conditions. As a group, these effects cannot be constrained to be equal across periods without significantly degrading the fit of the model ($\chi^2 = 27.109$, d.f. = 6, $p < .001$).

[c] Significance tests for a difference in a coefficient across institutional conditions are computed through a $\chi^2$ test of the fit of the model with the coefficient constrained to be equal compared to a model that allows the coefficient to vary.

Significance tests (one-tailed): $^{+}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

influence (in model 4) lies in the positive effect of the number of manufacturing establishments per capita. This effect remains when controlling for the period effect (1916–30) in model 5. So independent of institutional factors, the larger the relative numerical size of the manufacturing sector, the more likely a state is to pass fire insurance rate regulation. The period also has a positive and significant effect, indicating that the underlying rate at which states passed regulation was 2.85 times greater after 1915 than it had been previously. To understand the dynamics behind this historical change, we turn to the conditional model.

There is some evidence that states became more likely to pass regulation after 1915 because the consolidation of the insurance field around a model of regulated cooperation and the development of administrative capacities for implementing that model created a basis for compromise between insurers and consumer groups. Model 6 lends support to this notion in several ways. First, note that in the 1906–30 period, the level of fire insurance assets in a state has a negative and significant effect on the likelihood of regulation, whereas the value of farm property has a positive and significant effect. From an interest group perspective, it is reasonable to interpret these effects as an indicator of divergent interests. Before the development of systemwide models and capacities that stabilized insurance governance, financially strong insurers tended to block the passage of regulation. In contrast, farmers' high stakes in the insurance business made them key supporters of rate regulation. Thus in the 1906–15 period, regulatory politics tended to pit insurers against farmers in a battle between the industry and outsiders.

Second, this antagonism diminished once participants reached a systemwide accord on a model of "regulated cooperation" and put into place the administrative innovations needed to institute this accord in the mid-1910s. The effect of fire insurance assets goes from negative in the first period to nonsignificant in the second period, and this change is statistically significant (Chi-squared = 14.06, $p < .001$). Whereas large insurers had previously opposed regulation, this opposition diminished after 1915. In addition, one of the key consumers of fire insurance—the agricultural sector—supported regulation after 1915, with the number of farms per capita having a positive effect on the likelihood of regulation, a significant change from the previous period (Chi-squared = 13.90, $p < .001$). The effect of the size of the manufacturing sector also significantly changes to a positive effect after 1915 (Chi-squared = 6.52, $p < .05$). These last two positive effects indicate that the size of important consumer groups was particularly significant for the passage of regulation after 1915. Notably, all interest group effects in the 1916–30 period are either positive or not significantly different from zero—suggesting a *lack* of organized opposition to regulation. Put differently, in the second period, there is *no* group for which an increase in size or stakes produces a decrease in the likelihood of regulation.

The other institutionally contingent version (version I) of interest group processes stated that the institutional shift of the mid-1910s around particular models of market order and administrative capacities might serve to *clarify* group interests. If the institutional shift did clarify interests, we should see an increased number of significant coefficients in the second period. Although the effect of farms per capita is highly significant in the 1916–30 period, this is an exception to the

general pattern of nonsignificant or only mildly significant effects in this period. Thus there is little evidence on the whole that interest group preferences became *clearer* with the consolidation of an institutional field.

Still, as a whole, interest group theory explains more about regulation when made institutionally contingent. Adding interactions between interest group variables and institutional factors increases the fit of the model over the general model, even controlling for direct institutional effects (model 6 vs. 5; Chi-squared = 27.109, 6 d.f., $p < .001$).[21]

## CONCLUSION

Are the politics of economic regulation contingent on institutions? There are several ways in which institutional factors mediate processes that generate regulatory intervention. Using the fire insurance case and arguments about the constitutive aspect of institutions, we focused on the social contexts that facilitate, inhibit, or align interests and considered institutional variation occurring across both geopolitical space (U.S. states) and historical time (periods). This allowed us to examine the dynamics of regulation in a historically important economic sector and to identify the conditions under which theories of regulation might apply.

We found evidence of two forms of institutional contingency. First, firms seeking to control markets switched from cartels to regulation as market heterogeneity increased *but only under institutional conditions that limited political risks.* This finding—that the dynamics of competition and cartelization affected regulation only in states *without* anticompact laws—shows that political environments shape how market conditions get translated into political interests. Relatively depoliticized institutional environments facilitate firms' calculations about the expected effects of regulation. More hostile settings inhibit clear calculations and subject capture strategies to high levels of uncertainty, severing connections between markets and state intervention.

Second, interest group dynamics drove the passage of rate regulation *largely because they were conditioned by institutional factors that shaped the content of group interests.* States tended to pass regulation after 1915 because the institutionalization of regulated cooperation provided a basis for the interests of companies and their opponents to converge. Rationalized standards and administrative capacities for making and judging the reasonableness of rates allowed insurers to opt for regulation by diminishing the risk that it would be appropriated by hostile outsiders. They also allowed farmers and manufacturers to support regulation by diminishing the risk that collective rate making would foster an "insurance trust." In effect, standards and rationalized rate administration allowed for compromise among interest groups that were previously at odds.

Laws regulating fire insurance, then, were not simply the result of characteristics of the industry, its consumers, or some other general process. Rather, the economics and politics of regulation rested on specific institutional conditions, defined on the one hand by the state-level political environments and on the other by historical changes in field-level administrative and adjudicative capacities. Given these contexts, regulation emerged at least partly from the dynamics

specified by cartel-capture and interest group theories. Crucially, however, these contexts were neither constant nor unproblematic. The theories at hand contribute more to the understanding of fire insurance regulation when institutional context is not assumed but rather is treated as a variable—one that sometimes modifies the effects of other variables.

This examination of the interplay between institutions and politics contributes to debates about generality and specificity in sociological reasoning, to the analysis of regulation, and to neoinstitutional theory and research. In the big picture, our project speaks to questions about causation in social science. Do theories explain outcomes over a wide range of social contexts, or do their scopes need to be narrowly defined for their explanatory power to shine through? Historical sociologists have recently debated the role of general theories, causal mechanisms, and contingency in historical sociology (Kiser and Hechter 1991, 1998; Somers 1998). To simplify, on one side of this debate are those who argue that explanations should employ causal mechanisms derived from more general theories, like rational choice theory. On the other side are those who emphasize the need for epistemologies and causal narratives specific to a historical time and place. The debate hinges in part on divergent philosophies of science, and thus the competing arguments at times appear incommensurable. Yet this debate should also serve as a call for empirical research into the generality or specificity of causal mechanisms and for inquiry into how these mechanisms vary across different social contexts. As we have demonstrated, sensitivity to institutional contingency does not necessarily mean jettisoning theory. Rather, we have followed Paige (1999) in attempting to develop conditional theory rather than universal theory.

At a more concrete level are implications for research on regulation. In the past few decades, this research has expanded its scope outward, from intraindustry processes centered on firms' behavior to interest group struggles involving a wide range of actors to broader institutional dynamics and structures. Our analysis takes one step further to suggest several possible *institutional scope conditions* for economic and political theories of regulation derived from rational choice theory.[22] An important scope condition for cartel-capture theory may be the *lack* of political hostility surrounding an industry. If political environments are unthreatening to firms, then market conditions are important determinants of regulation. However, where oppositional forces have institutional power, firms are less likely to employ regulation as a market control strategy. Delimited in this way, cartel-capture theory is a powerful way of thinking about how market dynamics shape regulatory outcomes—especially because it calls attention to market factors not often measured by sociologists. For interest group theory, our findings draw attention to institutional conditions that structure *complementarities of interest*—specifically between firms and consumers. Thus our analysis suggests that interest group arguments that focus on pluralistic compromise may be most appropriate in a social context of well-defined models of order and administrative procedures. Compromise between interest groups may not be as likely when informational and administrative standards for judging fairness are themselves at the center of controversy and political struggle.

Yet the most important implications of our results lie at the middle range, with economic sociology, the new institutionalism in organizational analysis, and their relationships with rational choice theories. Organizational forms and strategies that appear "natural" in hindsight are in fact contingent social and historical constructions. Researchers have demonstrated this point in analyses of the modern corporation (Berk 1994; Roy 1997), organizational succession (Thornton and Ocasio 1999), and the dynamics of mergers and acquisitions (Dobbin and Dowd 2000). In doing so, researchers have begun to document how institutions condition, mediate, or moderate other social processes and thereby facilitate the creation of structures and practices that later become taken for granted. We contribute to this project by pointing out the institutionally contingent character of regulation and the processes and choices that underlie it. At a minimum, our findings suggest that two existing rational choice theories of a specific outcome—regulation—are limited in scope. At a maximum, our findings show how economic and political rationality is itself institutionally constituted.

To be clear, our results do not necessarily subvert rational choice as an analytic framework. In fact, rational choice theorists have developed fundamental insights into how uncertainty and incomplete information promote institution building. Nevertheless, our research draws attention to social contexts characterized not merely by incomplete information but also by the absence of basic evaluative criteria. Since it may be the evaluative context of a decision—not just the informational content—that is incomplete, it seems premature to reduce such periods of "constitutive politics" to a state of incomplete information.

A more productive strategy for further inquiry would be to avoid reductionism and to address shifts between (a) the production of specific outcomes within an established institutional regime and (b) the creation, consolidation, or failure to consolidate an institutional regime. The production of outcomes—such as regulation—within a settled system may often be fruitfully understood in terms of the mechanisms specified by existing rational choice theories. But in fields characterized by ambivalence, multiple models, and ill-defined options, actors' capacities to calculate rationally are subverted. Under these conditions, we would expect a shift away from struggles over particular outcomes and problem solving under given constraints to struggles over institutional regimes themselves and efforts to create or restore the bases for calculation and political compromise, whether by building new behavioral controls (Heimer 1985), by defining and delimiting options (Berk 1994; Roy 1997), or by extending processes of commensuration (Espeland 1998). On this point, institutionalists from various camps appear to agree. And on this point rest real possibilities for integration and fruitful cross-fertilization.

**APPENDIX A**

Correlations and Univariate Statistics for Independent Variables

| *Variable* | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* | *(8)* | *(9)* | *(10)* | *(11)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Number of agents | 1.0 | — | — | — | — | — | — | — | — | — | — |
| (2) Asset diversity [CV] | .42042 | 1.0 | — | — | — | — | — | — | — | — | — |
| (3) Diversity by company type [IQV] | .01926 | .35947 | 1.0 | — | — | — | — | — | — | — | — |
| (4) Anticompact law | .05987 | −.18558 | −.24701 | 1.0 | — | — | — | — | — | — | — |
| (5) Fire insurance agents per capita | .25173 | −.04280 | .18156 | −.07115 | 1.0 | — | — | — | — | — | — |
| (6) Fire insurance assets per capita | −.46596 | −.11412 | .08961 | −.34652 | .17956 | 1.0 | — | — | — | — | — |
| (7) Farm property value per capita | .08703 | −.24608 | −.06034 | .12168 | .57451 | .09789 | 1.0 | — | — | — | — |
| (8) Farms per capita | −.22315 | −.44369 | −.27162 | .49445 | −.18693 | −.21354 | .40674 | 1.0 | — | — | — |
| (9) Manufacturing value added per capita | .26593 | .53510 | .52163 | −.36200 | .14856 | .00471 | −.42810 | −.80627 | 1.0 | — | — |
| (10) Manufacturing establishments per capita | .29459 | .14413 | .36955 | −.29362 | .26522 | −.11157 | −.20155 | −.51430 | .63679 | 1.0 | — |
| (11) Time period [1916–30] | −.09278 | .49498 | .28149 | −.15685 | −.05213 | .21819 | −.09809 | −.14178 | .15358 | −.25564 | 1.0 |
| Mean | 636.9696 | 136.9990 | .7447 | .4422 | .00039 | 2710 | 1.8508 | .0695 | .3145 | .0024 | .3869 |
| Standard deviation | 643.0750 | 22.9932 | .1043 | .4973 | .00018 | 3222 | 1.8547 | .0376 | .2378 | .0011 | .4877 |
| Minimum | 33.1429 | 76.6636 | .5134 | 0 | .00010 | 183.3806 | .0914 | .0048 | .0301 | .0005 | 0 |
| Maximum | 3055 | 209.8392 | .9652 | 1 | .00088 | 24406 | 11.3877 | .1527 | 1.0805 | .0054 | 1 |

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## NOTES

1. Importantly, our focus is on the dynamics of economic regulation, which may be different from those of "social regulation" (e.g., environmental protection, equal opportunity law).
2. For example, in the insurance case, a relatively small group of large, mostly northeastern-based national operating companies themselves carried the costs of privately cartelizing the industry—using their size, common location, and influence to gain control over industry councils and conduct price wars and reinsurance boycotts against defectors.
3. Only one state passed an anticompact law after 1910, Arizona, which added a weak version of a law to its constitution when admitted as a state in 1912.
4. To be clear, we are examining anticompact laws as the *context* in which firms try to solve market problems. Thus our key question is about the interaction between anticompact laws and cartel-capture variables. However, it is also possible that the legitimacy crises that anticompact laws represented may have had direct effects on the passage of regulation—an idea that has found support in previous research (Schneiberg and Bartley 2001). In a few early cases, rate regulation was an extension of anticompact laws, representing a strategy of simply using the state to control rates. But for the most part, regulation was more of a compromise or "middle way" in which states allowed association but subjected it to public supervision. For more on the significance of anticompact laws, see Schneiberg 1999.
5. Interest group theorists also hypothesize that homogeneous populations are more likely than heterogeneous populations to organize into interest groups. These arguments are rarely operationalized. In this case, there is evidence of organization among several distinct producer and consumer groups, so we do not address these arguments, which are largely oriented to explaining why consumer groups are, on the whole, less likely to be organized than producers (Noll and Owen 1983:44).
6. Institutional innovations continued in 1921 with the "5 year, 5%" compromise between the National Board of Underwriters and the National Convention of Insurance Commissioners, which set a specific standard for judging rates, the use of five years of classified data and a 5 percent underwriting profit (NCIC 1922:19–29).
7. All but one of the rate regulation states granted commissioners the power to review rates *and* order changes in rates. The exception was Massachusetts, which only allowed commissioners to recommend rate changes, limiting regulators to an advisory role.
8. A number of states took the additional step of compelling insurers to either form or join associations for the purpose of making and filing rates, and a few statutes actually formed state rate-making associations. In a handful of states, especially early adopters like Kansas, the initial legislation subjected rates to regulation without authorizing associations. However, by the mid-1910s virtually all of these states had either amended their statutes to include such authorization or had recognized associations de facto through administrative rulings.

9. We use agents rather than companies here because agents set prices for policies and are far more numerous than companies; their numbers will be most important for the sector's capacity to monitor and enforce price agreements. Further, agents are business owners and resident-voters in their state, making them the industry's political shock troops (Grant 1979) and key players in any political coalition.
10. Companies with many assets were relatively low-cost "general business" insurers selling a range of insurance products in multiple states. In contrast, smaller firms typically did business in one or a few states, specialized in "preferred risks" such as dwellings, schools, or churches, and paid high commissions to get those accounts. Thus these "home companies" had different interests than general insurers and vied with them over prices and governance policies within industry associations. Regarding company type, stock and mutual companies embodied antithetical operating principles, to such an extent that stock companies excluded mutuals from associations and pushed for legislation against the mutual form (Schneiberg 1994:242–70, 330–64).
11. We recorded all these market conditions every five years starting in 1905, using linear interpolation for intervening years. The Spectator Insurance Year Books listed data as of December 31 of a year, so we lagged all market variables by one year. We assigned multistate firms to each of the states in which they were licensed to do business. We used *Best's Insurance Reports* for the same years to fill in missing data on states of operation and for a few small companies had to infer this information based on evidence from earlier and later years, company size, and county-specific company names. Variables calculated with and without companies for which data was minimal were correlated at .983 or higher.
12. Data on farming and manufacturing sectors comes from various years of the Statistical Abstract and U.S. Census. The Census Bureau collected manufacturing data every five years from 1905 to 1919 and every two years thereafter. It collected agricultural data every ten years from 1900 to 1920 and every five years thereafter. We used linear interpolation to fill in intervening years.
13. We also attempted to capture differences between small and large manufacturers by measuring the percent of manufacturing firms in a state with twenty or fewer employees. But we dropped this variable from the analysis because it had a high variance inflation factor and was correlated with the value of farm property (.72).
14. Three states experimented with "statist" regimes in which the state actually set insurance rates. Two of these also had anticompact laws. For the purpose of the analysis, we treat the context created by a "statist" regime as equivalent to an anticompact regime.
15. Here we treat these factors separately, but the historical relationships between the two are complex. The institutional reforms of 1914–15 represented a systemwide consolidation of rate regulation—a movement that initially arose in 1909 in the context of anticompact regimes in some states. However, once the reforms of 1914–15 were in place, the anticompact movement was well past its apogee and was being superseded by rate regulation in many states.
16. Since fire insurance was regulated at the state level, and following established practice (Amenta, Dunleavy, and Bernstein 1994; Pavalko 1989), we treat states as independent units of analysis. Although a few future states were still territories at the beginning of this period, these territories tend to resemble other states in terms of laws relating to insurance.
17. Thornton and Ocasio (1999) split their data set into two periods and present "piecewise exponential" models. As Allison (1995:105) explains, the idea of a such a model is to "divide the time scale into intervals. Assume that the hazard is constant within each

interval but can vary across intervals. . . . Thus the intercept in the log-hazard equation is allowed to vary in an unrestricted fashion from one interval to another." While we use discrete time rather than continuous time models, our approach to time periods in the analysis of interest group effects is equivalent to the continuous time piecewise model used by Thornton and Ocasio and others (Allison 1995:108).

18. To do this, we ran additional models and compared, for each independent variable, the fit of a model that included its interaction with the institutional variable to the fit of a model that lacked such an interaction term.
19. This and similar findings were derived by integrating the quadratic equation estimated by the model and then transforming the units into standard deviations of the appropriate variable.
20. This odds ratio is derived by exponentiating the anticompact coefficient ($e^b$).
21. We also explored the converse of the arguments above—the possibility that cartel-capture effects are conditioned by the institutional shift over time while interest group effects are conditioned by anticompact status. We ran an additional "full model" (results available on request) in which *both cartel-capture and interest group coefficients* are allowed to vary across each of these institutional conditions. Although we had to delete one variable because of collinearity, the results largely confirm the modeling strategy suggested by our theoretical discussion and used above: Cartel-capture effects were conditioned only by anticompact status. Interest group effects were mainly conditioned by the institutional shift.
22. By "institutional scope conditions," we mean scope conditions that are not necessarily historically specific ("historical scope conditions") but that are also not derived from the general theory itself ("abstract scope conditions"). For a discussion of historical versus abstract scope conditions, see Kiser and Hechter 1998:797.

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