Regulating American Industries: Markets, Politics, and the Institutional Determinants of Fire Insurance Regulation[1]

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This article assesses three approaches to state regulation: capture theory, interest group analyses, and neoinstitutional research. State-level event history analyses of fire insurance rate regulation from 1906 to 1930 are used. Contrary to capture theory, regulation was not driven simply by firms' interests in market control. Instead, consistent with interest group analyses, regulation was more likely when anticompany forces—farmers and small businesses—could challenge big business politically. Further, as neoinstitutional research suggests, regulation was more likely when industry governance evoked legitimacy crises, when courts and professions endorsed regulation and its underlying models, and when states developed system-wide administrative capacities. Institutional conditions also mediated the effects of markets and politics on regulation. Using these findings, we develop a theory of how political and institutional conditions shape industries' governance options.

What drives state regulation of the economy? Since the early 19th century, the American state has repeatedly intervened to control prices, organization, and business practices in particular industries. Unlike "social" regulation (Vogel 1981) or the broad federal interventions regarding civil

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rights and the environment that characterized the 1960s and 1970s, "economic regulation" of U.S. industries began with municipalities and the states, which used charters and commissions to control investment, prices, and entry in key sectors (McCraw 1984; Dobbin 1994; Roy 1997). The growth of the railroads markedly expanded regulation in the latter 19th century. Yet not until the Progressive and New Deal eras did sector regulation became a "vast regime of micro-economic stabilization" that included, at the local, state, or federal level, the gas and electric, meat, radio, airline, telephone, dairy, drug, banking, and insurance industries (Vietor 1994, p. 9; Kolko 1963; Wilson 1980; Heimer 1985). In all of these cases, regulation emerged in the context of economic concentration and new forms of big business in response to firms' efforts to control markets privately, via mergers, associations, or natural monopoly.

A common notion is that the state regulates industries in the public interest in order to safeguard consumers against capitalists' self-interest or the excesses of the market. Despite its analytical shortcomings, this view of the state as a protector of the common citizen remains central to commonsense views of regulation.

A more prominent social science argument sees regulation not as a restraint on capitalism, but as a product of *market forces* and *firms'* interests in controlling competition or centralizing economic power. Here, firms seek regulation and influence the state to intervene on their behalf. Regulation provides key benefits for an industry, including subsidies, price-fixing, and limits on entry. And it emerges as a strategy or tool by which firms forge monopolies and control markets when they cannot do so privately. This view appears in various guises, from revisionist economic histories to instrumentalist neo-Marxist theories of the state, neoclassical models of regulation, and transaction cost accounts of governance (Kolko 1963; Domhoff 1967, 1996; Miliband 1969; Perrow 1998; Stigler 1971; Williamson 1985; McGuire 1989). In all of these cases, a key claim stands out: capitalists and corporations can order economies and respond to market forces more or less as they will—through private organization or the state. What drives regulation? By argument or implication, it is market conditions, capitalists' interests in limiting competition or centralizing power, and their ability to control the state.

In this article, we juxtapose corporate control or capture theories of regulation against two competing views. *Interest group theory* looks beyond market conditions and the regulated industry to focus on a wider array of actors, arguing that the political power of consumers, workers, or farmers is a key determinant of regulation (Peltzman 1976; Noll and Owen 1983; Fishback and Kantor 1996; Sanders 1999). Here, regulation emerges when consumers and other actors are sufficiently powerful to challenge an industry and use the state to check concentrated corporate

power. The *new institutionalism* also looks beyond market forces and the regulated industry but focuses instead on cultural factors, actions by states or professions, and how institutions shape markets or politics (DiMaggio and Powell 1983; Zelizer 1983; Skocpol 1985; Dobbin 1994; Scott 1995; Meyer et al. 1997). In this view, regulation is a vehicle for aligning industry organization with prevailing models of rationality and fairness, emerging when particular institutional conditions obtain.

We address theories of what drives regulation via a state-level event history analysis of rate regulation in American fire insurance from 1906 to 1930. Rate regulation granted insurance commissioners power to alter prices and governance practices in a core infrastructure sector (Riegel 1916; Hobbs 1942; Meier 1988). It thus meant a significant extension of public authority in the U.S. economy. At the same time, rate regulation ratified and enforced a system of *private* associations that insurers had created during the 19th century, making insurance an ideal case for examining theories of regulation and market organization.

In our analyses, we join efforts by sociologists and others to go beyond capture theory or market-driven accounts to show that political contestation and institutional forces centrally shape markets and state policy. Yet, we develop the analysis of politics and institutions in new directions, contributing both to existing work on regulation and neoinstitutionalist research.

First, we are concerned with the relationship between the state and private governance—with regulation as a mechanism for channeling private economic organization and for instituting regulated private governance as a "third way" between markets or statist regimes. In contrast, most recent research on regulation addresses different issues, such as who participates in or wins struggles over regulation, the stringency of public controls, or the level of state expenditures (but see Dobbin 1994; Fishback and Kantor 1996).

Second, rather than simply dismissing capture theory and the role of market forces, we develop a multilevel analysis that acknowledges *intra*industry market dynamics, as well as broader political and institutional struggles over market order. Empirically, we measure both market conditions and political and institutional factors, subjecting competing theories of regulation to more systematic assessment than now exists. Theoretically, we view regulation as an "institutionally embedded" process (Carruthers 1996; Fligstein 1996) in which market forces and organization foster politics and institutional-level dynamics that fundamentally alter firms' private governance options.

Third, we go beyond prior work in modeling regulatory outcomes and institutional factors. Rather than simply modeling rates of adoption, we examine two types of regulation and treat the two outcomes as competing

risks. Moreover, when analyzing the determinants of regulation, we consider how insurers and lawmakers operated within a federated polity by measuring institutional factors at the state and suprastate levels.

WHAT DRIVES REGULATION? THREE VIEWS AND TESTABLE HYPOTHESES

Market Forces and Cartel-Capture Theory

Rejecting claims that regulation is a form of consumer protection that is forced on firms against their will, capture theory argues that regulation is a tool with which the regulated firms limit competition, create monopolies, and benefit themselves at consumers' expense (Kolko 1963; Jordan 1972; Stigler 1971; Noll 1989). Here, market forces and intraindustry dynamics of competition and collective action drive regulation. Firms try to limit rivalry and build monopolies on their own, via merger or private association. But mergers and cartels run afoul of free-riding and other problems of enforcing market control (Olson 1971; Chandler 1977; Lamoreaux 1985). As these problems mount, firms turn from private organization to regulation and create or capture state agencies and use state power to enforce compacts. Regulation occurs when firms cannot control markets privately.

The shift from mergers or cartels to capture hinges on market conditions. In industries that pursue cartels, the critical conditions are market size and heterogeneity (Stigler 1971; Posner 1974; Bowman 1989; Jacquemin and Slade 1989; Schneiberg and Hollingsworth 1990).[2] When firms are few in number, and similar in assets, costs, and strategy, the costs of negotiating, monitoring, and enforcing interfirm agreements are low. Firms share interests, reaching price or output agreements is easy, and defection is consequential and noticeable. Firms thus opt for private cartels. Yet as size and heterogeneity increase, the costs of private compacts multiply. Firms' interests become more diverse, reaching agreement means managing large numbers or divergent interests, and cheating is harder to detect. Firms thus develop interests in state-enforced cooperation, which, unlike private cartels, has a compulsory and universal character. Further, firms' abilities to forge capture coalitions increase. Large numbers raise

[2] Market-based capture theories apply to industries that pursue mergers or cartels, but different market factors drive regulation in each case. In sectors that pursue mergers, regulation rests mainly on the ease of entry. Where barriers to entry are low, corporate consolidations will have trouble controlling markets, as new firms can enter the market whenever corporations raise prices (Kolko 1963; Lamoreaux 1985). We assess "cartel-capture theory" as it is the most developed variant of this approach and bears directly on insurance, where associations prevailed.

firms' political clout. Diversity increases incentives to join the "capture coalition" as one faction might use regulation against a nonparticipating group. Hence:

HYPOTHESIS 1.—*Increasing the number of firms in an industry increases the likelihood of regulation.*

HYPOTHESIS 2.—*Increasing heterogeneity in an industry increases the likelihood of regulation.*[3]

Significantly, cartel-capture theory couples its analysis of market conditions with claims that firms dominate the political process. Possessing extensive resources and expertise, superior organizing capacities, and high stakes in regulation, firms can manipulate public officials and harness the state for rent-seeking purposes via campaign contributions, job offers, withholding information, and bribery. In contrast, firms' chief victims—consumers—possess relatively few resources and small per-capita stakes in any one sector. Consumers also lack the information to keep track of issues, are far more numerous and geographically dispersed, and are thus generally far less capable than firms of organizing effective lobbies (Stigler 1971; Peltzman 1976; Noll and Owen 1983). As a result, firms interests' drive state intervention.

However, market-based capture theories also note that regulation will not occur in every sector that fails to control markets, as intervention entails risks of appropriation (Stigler 1971, p. 7; Bowman 1989, pp. 66–68, 134–42). Consumers will not initiate regulation since they cannot organize on their own. Further, their interests lie in *no* regulation since it *reduces* competition and *raises* prices above market levels. But once in place, regulation can admit outsiders into industry councils, mobilize hostile forces, and expose prices to politics. Lawmakers might use price cuts to play to the electorate or extract resources from firms, especially when anticompany feelings run high or prices are salient issues. Here, firms will eschew capture and veto calls for public price controls.

HYPOTHESIS 3.—*Anticompany politics, public debate, political struggle over industry practices, or increases in the strength of anticompany forces decrease the likelihood of regulation.*

[3] At issue here is the production of two linked collective goods—cartels and regulation—and the claim that size and heterogeneity affect cartels and capture coalitions differently. While other market factors may also affect the costs of cartels and the risk of regulation—geographical dispersion, ease of entry, and the extent of product substitutes (Stigler and Friedland 1962; Posner 1974; Franck and Bunel 1991)—data on these factors are unavailable.

Interest Group Theory and the Political Strength of Industry Outsiders

Abandoning one-sided images of capture and a focus on market conditions, interest group theory develops a purely political account of regulation, one that considers a broad array of actors and identifies struggles between interest groups as the driving force behind regulation (McCraw 1975; Wilson 1980; Galambos 1983; Meier 1988; Kanazawa and Noll 1994; Fishback and Kantor 1998). In this view, regulation serves the interests of consumers and other outsiders, at least in part, and represents a victory of anticompany forces. It is a mechanism by which consumers and other groups share in the spoils of the regulated industry or contain concentrated private power, and it emerges when those groups possess sufficient political power to use the state against corporations or cartels.

Theoretically, this research rejects the assumption that consumers and other nonindustry groups are powerless or disorganized. Instead, it focuses on the often significant power of consumers, small firms, farmers, and other groups with stakes in regulation (Peltzman 1976; Noll 1989).[4] Here, political factors drive regulation. Consumers and other groups will be able to counterorganize, contest corporate power, and subject a sector to regulation when they are large in number, posses superior resources or high stakes in regulation, and have similar interests. Homogenous interests aid organization; high stakes mean incentives to organize. Yet numbers and resources are most decisive—and figure most centrally in interest group analysis—as votes, pressure group size, and money are the key political currencies in democratic regimes (Meier 1988; Miller and Canak 1988; Amenta and Zylan 1991; Fishback and Kantor 1996). Hence,

HYPOTHESIS 4.—*Increasing the* number *of consumers, merchants, or farmers relative to the number of businesses in a target industry increases the likelihood of regulation.*

HYPOTHESIS 5.—*Increasing the* resources *or total assets of consumers, merchants, or farmers relative to the resources of a target industry increases the likelihood of regulation.*

Parallel expectations emerge from work that views regulation less as a *defeat* of corporate power than as a *compromise* between an industry and its opponents that institutes public oversight as a condition for private market control. For Sklar (1988) and Sanders (1999), measures like the

[4] Empirically, interest group theory was a response to anomalies faced by Kolko and others in explaining railroad regulation. Some shipper groups benefited from regulation and actively secured key laws over firms' opposition (Peltzman 1989; McCraw 1975; Harbeson 1967). Similar observations were made of other sectors, supporting claims that labor, suppliers, and privileged consumer groups can sometimes organize to contest—or join—regulatory coalitions and secure some of the gains from regulation (Noll 1989; Peltzman 1989; Joskow and Rose 1989).

FTC Act arose from struggles over the corporation and were political settlements in which opponents of big business—small firms, merchants, farmers—accepted corporate consolidation in exchange for public controls on unfair competition or unregulated monopoly. Similarly, Streeck and Schmitter (1985) argue that corporatist bargains in which states endorse and oversee associations are most likely when firms and their trading partners—labor, suppliers, distributors—are sufficiently powerful and organized to subject one another to credible threats of disruption (see also Schmitter 1986; Atkinson and Coleman 1985). Again, regulation occurs when market-based capture theory would not expect, that is, when an industry's adversaries or trading partners can contest corporate dominance.

Interest group analyses also suggest that *small* merchants or manufacturers are especially likely to seek regulation to redress market grievances (Grant 1979; Bowman 1989; Fishback and Kantor 1996). Enjoying less market power, small businesses are less likely than large ones to obtain rebates from corporations or cartels, more likely to confront price discrimination, and more likely to suffer from a corporation's or cartel's market control practices.

HYPOTHESIS 6.—*Increasing the size of the small business sector increases the likelihood of regulation.*

Finally, when anticompany forces threaten to use the state to contest corporate power, firms will resist intervention or try to preempt broad interventions via weaker measures that rely on publicity, limit regulators' power, or serve some corporate interests (Sklar 1988; McGuire 1989). However, these efforts will become increasingly futile as industry opponents grow in political strength. Accordingly,

HYPOTHESIS 7.—*Increasing the strength of political opposition increases the likelihood of strong as opposed to weak forms of regulation.*

Legitimacy, State Structure, and the New Institutionalism

Institutionalists also look beyond market forces but stress normative and cultural factors, actions by states and professions, and the organizational fields in which sectors are embedded (DiMaggio and Powell 1983; Edelman 1990; Fligstein 1990; Dobbin 1994; Scott 1995; Meyer et al. 1997). Three strands of neoinstitutional research bear on regulation—culturally grounded work on organizational fields, polity-centered analyses of state institutions, and claims about institutional mediation. Since these strands have not yet been woven into a single account of regulation, we briefly outline such a view and then derive specific hypotheses from each strand.

In this view, states regulate in response to legitimacy crises evoked by firms' market control activities. Regulation emerges amidst controversy

and debate over market order and is a mechanism for aligning an industry's governance practices with prevailing principles of fairness, progress, and rational order. In fact, regulation may be part of a broader effort by reformers or challengers to exploit legitimacy crises and institute new conceptions of economic development, stabilization, or control within a sector. Further, regulation is more likely when (1) intervention and its underlying models of order are endorsed by professionals, experts, or public authorities like the courts and (2) states develop administrative capacities. Yet, beyond their direct effects, institutional factors can alter the rules of the regulatory game, suppressing or magnifying the effects of market or political forces on regulation

For neoinstitutionalists, legitimacy—the alignment of sectors with prevailing principles of rational or just order and the positive evaluation, credibility, or certification, which stem from that alignment—is what drives the adoption of structures or policies (Meyer and Rowan 1977; Edelman 1990; Strang 1990; Sutton et al. 1994; Suchman 1995; Scott et al. 2000). Further, since states are a force for rationalizing the economy and selecting appropriate organizational forms (Burk 1988; Fligstein 1990; Lindberg and Campbell 1991), legitimacy crises based on perceptions that firms violate principles of order will yield pressures for regulation

The historical record supports this claim. As firms pursue cartels or corporate control, they erect private systems of rule that concentrate power, suspend market forces, and threaten state sovereignty. Private rule raises troubling questions about fair value and appropriate organization. It fuels debates over economic order, as well as protests and public inquires regarding prices, unfair discrimination, and the rationality of combines or trusts (Keller 1981; McCraw 1984; Sklar 1988; Berk 1994). These legitimacy crises may even involve antitrust laws that suppress private rule, statist interventions that displace private rule, or the creation of public corporations as alternatives to for-profit firms (Fligstein 1990; Dobbin 1994). Yet crises need not preclude private order. Instead, controversy and debate can fuel innovation, reform, and new theories of markets that render private rule acceptable to lawmakers and consumers (Schneiberg 1999*a*). In fact, outsiders might authorize private rule as the price of progress if states intervene, not to suppress, but to rationalize market control and align sector governance with prevailing views of just or rational order. Here, intervention creates a possibility for regulated private order as a third way between markets and states.

Research on the rise of organizational fields further reveals how legitimacy crises fuel regulation. For this work, regulation can arise from institutionalization projects—concerted efforts by professionals or reformers to assert jurisdiction and institute models of development, order, or control in an industry (Zelizer 1983; DiMaggio 1991; Fligstein 1996; Clem-

ens 1997; Heimer 1999). Such projects can spark legitimacy crises, as challengers work to create scandal and reframe firms' practices as irrational. But regardless of their source, controversy and crisis alter regulatory environments, creating policy windows and rhetorical resources for challengers to articulate models, organize reform coalitions, and enlist states in their cause (Kingdon 1984; Gormley 1986; Baumgartner and Jones 1991).

At least two kinds of legitimacy crises exist (Stinchcombe 1968; Aldrich and Fiol 1994; Baum and Powell 1995). These are cognitive crises, where market order loses a taken-for-granted character and is subject to controversy or scrutiny, and sociopolitical crises, where public authorities or certification bodies ban certain governance practices as illegal or violating norms of appropriate order. Such crises are most likely to yield regulation when focused in specific sites rather than existing as merely diffuse public sentiment. We thus expect,

HYPOTHESIS 8.—*Subjecting an industry to public investigation, controversy, and debate within legislatures, courts, or the professions increases the likelihood of regulation.*

HYPOTHESIS 9.—*Acts by legislators, courts, or professional bodies to ban specific organizational practices increase the likelihood of regulation.*[5]

Theories of isomorphism also suggest that legislators are more prone to regulate if regulation and its theories of order are adopted by peers or endorsed by experts, professions, or the courts (Derthick and Quirk 1985; Edelman 1990; Baum and Oliver 1992). Endorsement lends weight to a policy and helps consolidate a field around specific principles or reference points. Endorsement can also entail work by states or the professions to create and disseminate model laws, and it promotes theorization, making it easier for actors to communicate or appropriate model laws (Strang and Meyer 1994). Hence,

HYPOTHESIS 10.—*The endorsement of regulation and its theories of order by professional associations, experts, or public authorities increases the likelihood of regulation.*[6]

Ultimately, regulation rests on states' capacities to enforce models of

[5] Curiously, institutional studies of regulation have not pursued this argument. Instead, they stress how regulation expresses taken-for-granted models of order (Dobbin 1994) or rests on administrative capacities (Skorownek 1982; Skocpol and Finegold 1982), locating the impetus to regulation in factors like the rise of the railroads, industrialization, and depression.

[6] Elsewhere, we analyze other forms of isomorphism, notably diffusion among peers and the idea that adoption by peer states increases the chance that states will enact regulation. Institutionalists have addressed this idea by adding number of prior adopters to their models, but heterogeneous diffusion models suggest a different approach is appropriate (Strang and Soule 1998).

order and manage conflict between firms and consumers in an impartial fashion. Structural and cultural bases of state action are important, including whether regulators can develop their own data sources and invoke evaluative standards for "reasonable prices" that are not tied to particular interests (Carruthers 1994). Indeed, building capacities for independent decision making based on objective data and standards is critical for enacting regulation either as a compromise over private rule or as a means for implementing norms of order (Skocpol and Finegold 1982; Skowronek 1982; Orloff and Skocpol 1984; Weir and Skocpol 1985). Consumers and lawmakers are more likely to accept private rule if states can erect credible safeguards, enforce norms, and insulate regulation from capture. Firms might accept public control if administrative capacities and rationalized procedures make regulation predictable and shield prices from politics, reducing risks of expropriation.

HYPOTHESIS 11.—*Regulatory standards and administrative capacities for impartial mediation, independent evaluation, or rational decision making increase the likelihood of regulation.*

Finally, institutional factors like endorsement or administrative capacities may mediate the effects of markets or politics on regulation (Sutton and Dobbin 1996; Dobbin and Dowd 1997; Amenta 1998). Whether these factors magnify or suppress those effects is an open question. To the extent that endorsement and state capacities depoliticize governance, provide actors with templates for managing markets, or support reform projects, they make it easier for firms or states to mobilize regulation as a solution to market or political problems. Here, institutional factors magnify the effects of markets or politics on regulation.[7] Conversely, endorsement and rationalized states can confer a taken-for-granted status on regulation, leading officials to adopt it as the appropriate form of action independently of the market forces and political demands they face. Here, institutional factors decouple regulation from markets or politics, suppressing their effects (Tolbert and Zucker 1983).

HYPOTHESIS 12.—*Endorsement and rationalized state capacities mediate the effects of market forces and political strength on the likelihood of regulation.*

To be clear, in juxtaposing neoinstitutional and interest group analyses with capture-cartel theory, we do not deny that regulation and American economic development were shaped by capitalists' efforts to control mar-

[7] Challengers' abilities to capitalize politically on interest group size may also increase with electoral competitiveness or the extent of voting rights (Amenta, Carruthers, and Zylan 1992; Miller and Canak 1988; Clemens 1997). In a similar vein, Dobbin and Dowd (1997) find that market forces are most prone to spark mergers when firms are subject to institutional regimes of antitrust enforcement.

kets and centralize wealth and power. Rather, the idea is that centralization and market control activate political opposition and institutional dynamics that pave a more contested road to regulation than is often posited by cartel-capture theory.

WHY STUDY FIRE INSURANCE? CASE SUITABILITY AND BACKGROUND

We study the fire insurance industry because of its significance for the economy and its experience with regulation. Fire insurance played a pivotal infrastructure role in promoting credit, economic development, and urbanization during the 19th and 20th centuries. Banks and other lenders universally required fire insurance on collateral for mortgages and credit, making insurance purchases mandatory throughout the United States. In a credit dependent economy, steady supplies of fire insurance were vital for commerce and trade (Brearley 1916; Mowbray 1946). Moreover, American cities frequently burned during the 19th century, making urbanization and citizens' general welfare dependent on functioning insurance markets.

Furthermore, as a regulated industry, fire insurance possessed three features that make it ideally suited for assessing theories of regulation. First, insurance was governed by the states, not the federal government, yielding substantial variation in our dependent variable—the passage of rate regulation laws.[8] These laws typically contained two provisions. They authorized insurers to form rate-making associations, and they subjected rate-making to state oversight, granting insurance commissioners rights to examine associations, require rate filings, and order changes in rates (Rose 1967; Jaskow 1973; Hanson, Dineen, and Johnson 1974).

The adoption of rate regulation varied over time and across states (see fig. 1). From 1909 to 1944, 34 states passed rating laws. Most states that passed laws did so in the 1910s. By 1925, 33 states had adopted regulation, with the last law passed in 1937.[9] Rating laws also varied by type. Of adopters, 16 passed "full rate control" laws, giving commissioners broad

[8] This jurisdictional settlement stems from an 1869 Supreme Court ruling in Paul v. Virginia, which declared that insurance was not interstate commerce and which upheld states' rights to regulate the industry. This settlement exempted insurance from federal antitrust law and ensured that regulatory politics would unfold at the state level (Patterson 1927; Lilly 1976).

[9] Four states that initially passed antidiscrimination measures upgraded their rating laws to full rate control measures during the period under study. Moreover, in 1944, the entire regulatory regime was challenged by the court in U.S. v. Southeastern Underwriters. Yet, the system was saved and universalized by the McCarran-Ferguson Act of 1945 and by the adoption of rating laws in every state from 1946 to 1948. See Meier (1988) for an excellent overview.

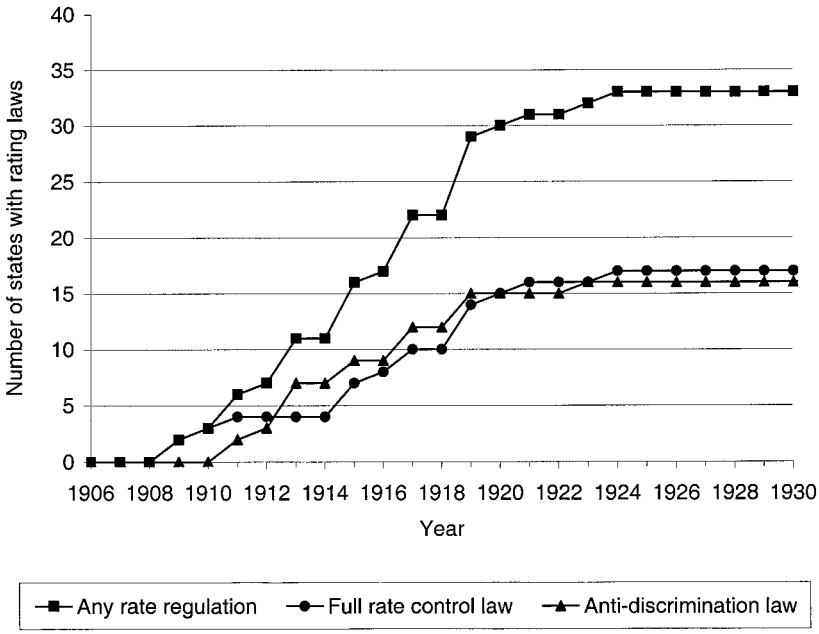

FIG. 1.—Passage of rage regulation, 1906–30

powers, including the power to order changes in general rate levels. The rest passed weaker laws limiting regulators' powers to altering specific rates that unfairly discriminate among risks.

Second, fire insurance was a site of extensive market organization, a critical feature as all three theories being considered are claims about the relations between private order and the state. Fire insurance was exceptionally fertile ground for interfirm association. In response to market conditions, firms organized over 1,000 compacts, rate-making bodies, and data-pooling boards from 1865 to 1920 (Wandel 1935; Parker 1965; Heimer 1985). Insurers depended on collective goods like pooled loss data. Price warfare drove rates below loss costs, and insurers faced huge and unpredictable conflagration losses. Nearly every U.S. city burned from 1820 to 1915, yielding 40 major conflagrations, like the burning of New York in 1835 and the great Chicago fire of 1871. Fantastically destructive, these fires yielded losses that exceeded the industry's resources and could only be absorbed via coordinated nationwide rate advances. Thus, insurers pursued association and private price-fixing with a vengeance.

Third, insurers and their associations experienced forces stressed by all three theories of regulation. Internally, associations routinely ran afoul of free-riding, defection, and problems of enforcement (Wandel 1935; Hanson

et al. 1974). "What we want is good faith in the first place," wrote a member of the National Board of Fire Underwriters of its near collapse. "That is the rock on which we have split. We have solemnly resolved at our meetings, and we have gone out and gave contrary instructions to our agents. . . . That is the cause of so many tariffs and rates being disregarded by agents. *They have received secret instructions from their companies to disregard tariff-rates"* (cited in Brearley 1916, p. 31; emphasis in original). Or as an observer of a Western Union meeting in 1898 commented, "There were so many varied interests represented that the golden mean could not be found. Each one wanted to legislate for himself and no one else. The general good was not taken into consideration" (*Ohio Underwriter,* March 17, 1898, p. 2).

Insurers also faced extraindustry problems of political opposition and legitimacy, as rate advances and price-fixing fueled political mobilization by consumers, controversies over rate discrimination, and protests against the "insurance trust." After a 1900 Indiana board rate hike, "a protest was immediately filed by the agents . . . and there is quite a hostile feeling in Indiana, and the coming legislature will likely take a whirl at the compass. . . . There is little if any justice in a flat advance" (*Western Underwriter,* August 23, 1900, p. 2). Wisconsin property owners had similar reactions to insurers' practices. As one resident put it, "There was no call for raising rates in Beloit . . . as the rates now existing in many cases are higher than like property in neighboring cities. . . . The inspector was very arbitrary in his manner of inspecting" (*Western Underwriter,* June 15, 1905, p. 12). But it was a Kansas City drugstore owner's complaint about the "Fetter Rating Bureau" in 1898 that highlighted consumers' material and moral sentiments most directly. "That bastard Fetter is ruining me! I have to have fire insurance. . . . How can I pay this kind of rate when nobody has money?" (cited in Grant 1979, p. 81).

These external problems went beyond diffuse perceptions that rates violated fairness principles. Association fueled political counterorganization, mass meetings, and the mobilization of groups like the Kansas Farmers Alliance and the Policyholders Union, as well as full-fledged crises of legitimacy. From 1885 to 1910, 24 states passed anticompact laws that made cooperative rate making in insurance illegal, creating a band of anticompact states in the Midwest and South (see fig. 2; Handy 1916; Hobbs 1925). Three states enacted statist rate-making regimes that bypassed private pricing entirely. In addition, nine prominent states held public investigations of insurers' rate practices from 1909 to 1915, subjecting the sector to renewed public scrutiny and criticism. Furthermore, controversy and debate accompanied—and fueled—a project by regulators and reformers to implement a model of insurance as a quasi-public, scientifically administered, and cooperatively organized market (Grant

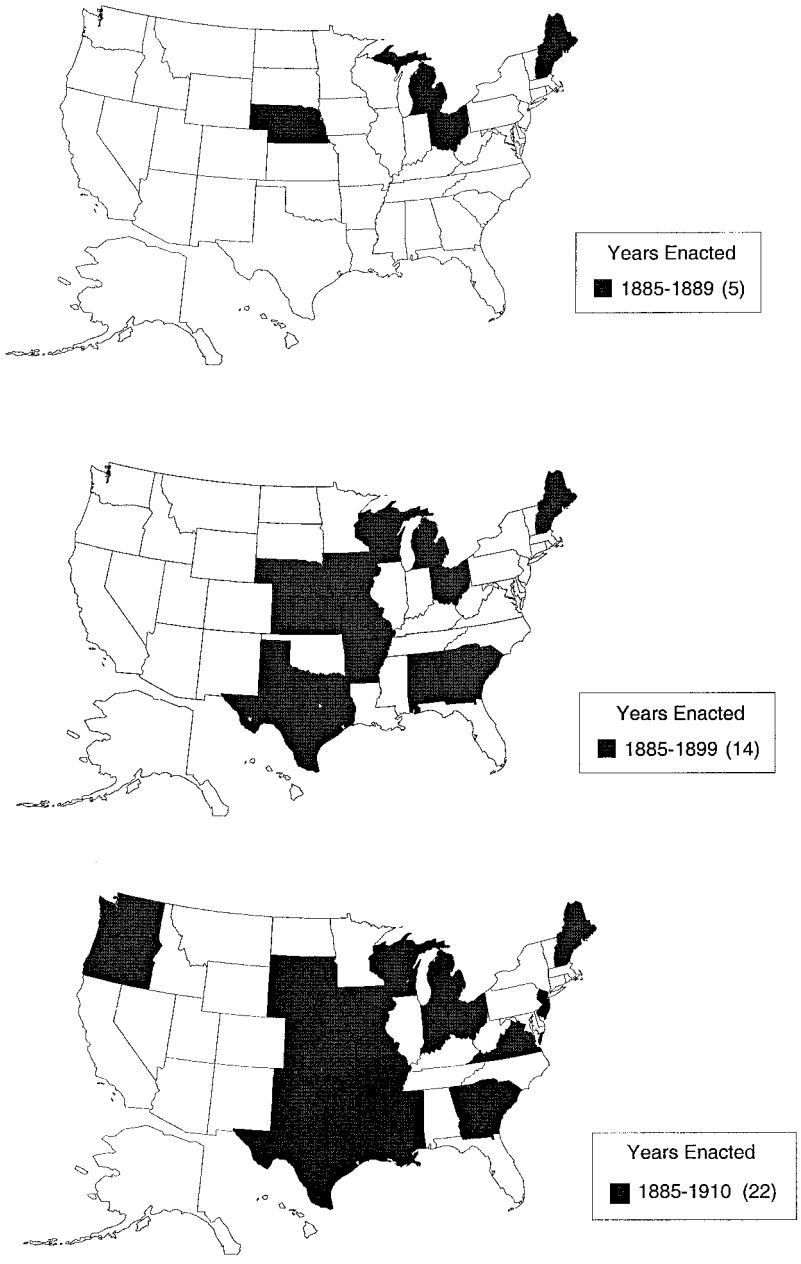

FIG. 2.—Development of anticompact measures, 1885–1910

1979; Schneiberg 1999*a*). In short, the historical evidence suggests that cartel-capture theory, interest group analyses, and the new institutionalism all constitute plausible explanations of rate regulation.

As we turn to methods and measurement, two other features of the case need be kept in mind. First, regulation by states divided the industry into 48 separate insurance markets. Each state had its own rules and required insurers to obtain a license before doing business within the state (Patterson 1927; Lilly 1976). Further, the work of making and enforcing rates fell to state and local boards (Riegel 1916). Thus, following established practice (Harrington 1984; Meier 1988; Pavalko 1989; Amenta, Carruthers, and Zylan 1992), we treat states as independent units of analysis. We measure market, political, and institutional factors at the state level and explore how insurers and their regulation were nested within state-level political and institutional fields.

Yet, states were also embedded within, and potentially affected by, an interstate or national system of institutional forces. Congress and the federal executive were not players in insurance regulation before 1944, but the Supreme Court was the ultimate arbiter of state rights. In addition, policyholders, regulators, and lawmakers in each state closely watched developments in other states. Further, companies and regulators were organized into national associations that sought to oppose, negotiate, or implement regulatory measures. Thus, insurance markets and firms' efforts to organize them were doubly nested, or more precisely, embedded in a federated organizational field that itself contained two levels. Our analysis acknowledges and exploits this complexity by measuring political and institutional factors at both levels.[10]

METHODS

We analyze rate regulation using discrete-time event history models estimated with logistic regression. This approach models the probability that a state will pass a rate regulation law at time t, given that the state has not already done so (Allison 1995; Tuma and Hannan 1984). We employ discrete time methods since 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. The unit of analysis is the state-year.

[10] We distinguish interstate forces—institutional effects derived from the influence of one state and its actions on outcomes in other states—from suprastate forces—institutional effects of national-level events like the creation of an agency or a Supreme Court decision. For analyses of interstate forces and their effects, see Soule and Zylan (1997) and also Strang and Soule (1998).

Event history methods let us include time-varying independent variables and analyze multiple types of events. We first model the passage of any rating law and then model the passage of antidiscrimination and full rate control laws as competing risks. States are excluded from the risk set for the "any rate regulation" models after they adopt a rating law. In competing risks models, states are excluded from the risk set for the passage of one type of law once they adopt the other type of law. Both analyses also exclude states from the risk set in legislative "off years," as states were only at risk when their legislatures were in session (see Allison 1995, p. 227). In all cases, we model the first rating law states passed.

Our analysis is based on models of rate regulation fit for 48 states from 1906 to 1930. This period encompasses virtually the entire wave of rating laws under analysis.[11] We use 1906 as our start date for three reasons. First, serious proposals for regulating rates began circulating around 1900 (Grant 1979, pp. 100–133), making that the earliest time we could consider states first at risk. Second, the first rating laws were not passed until 1909. Third, 1906 was the earliest date for which good data on all variables exist. We used 1930 as our end date because the format of key data sources changed after 1930, depriving us of our best measures on key variables, and because 33 of the 34 states that passed laws had already done so by that time.

Data and Measures

Dependent variables/rate regulation.—States were coded for the year they first passed rate regulation. In competing risks models, states were also coded as having a "full rate control" law if the legislation banned rates that were "excessive" or "exorbitant" as well as "unfairly discriminatory" or if they granted insurance commissioners the authority to order changes in rate levels. States were coded as passing a weaker "antidiscrimination" law if they simply banned rates that unfairly discriminated between risks and limited commissioners' authority over rates to matters of discrimination.

Independent variables/market conditions.—To build state-level measures of market conditions, we used *Insurance Year Book* (Spectator Company 1906–40) annual reports on nearly every fire insurance company firm operating in the United States, including their states of operation. Based on these reports, we assigned companies to states, creating for each state a list of the companies licensed to do business, the assets of each

[11] A second wave occurred from 1946 to 1948, when nearly every state passed full control laws. This wave precludes state-level analysis, as there was virtually no variation by state, type, or time.

company, the geographical scope or number of states in which each company operates, and the company type (mutual, U.S. joint stock, foreign). Multistate firms were coded as present in each of the states in which they were licensed to do business. The *Year Books* also listed the agents operating in each state.

We measured *the number of market actors* using the number of fire insurance agents in each state. We use agents rather than companies, as 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. We log the number of agents since, adding an agent in a state with few agents is far more consequential that adding an agent in a state with many agents.

Measuring *heterogeneity* was complicated by the lack of operational discussions in cartel-capture accounts (but see Stigler 1974, p. 362). Yet insurers operating within a state varied in three ways that produced diverse interests—assets, geographical scope, and firm type.[12] Extending DiMaggio, Evans, and Bryson (1996), we captured these differences and conflicting interests in three ways. We used the *coefficient of variation in firm assets* to tap the overall diversity among firms within a state. Increasing interfirm diversity increases the number of different interests to be organized and the cost of organizing cartels. Based on the standard deviation, the coefficient of variation measures how far on average observations depart from the mean,

$$CV = \frac{S}{\overline{X}}.$$

Dividing by the mean eliminates sensitivity to differences in average firm size and nominal price levels, making this measure appropriate for comparing diversity across states and years.

While measuring overall diversity, the coefficient of variation does not capture the presence of gaps or discrete groups in a distribution. Such

[12] Large or multistate firms were often multiproduct, relatively low cost "general business" insurers. Smaller and more geographically concentrated firms specialized in "preferred risks" like dwellings, paid high commissions to get those lucrative accounts, and were formed as local alternatives to out-of-state firms. As high-cost, single-product firms, "home companies," and preferred risk specialists had different interests from general insurers, vied with them over prices and governance, and sometimes formed their own associations. Relations between stock and mutual firms were far more acrimonious as they reflected greater cost differences and very different modes of operation. Stock insurers excluded mutuals from their associations and tried to legislate mutuals out of existence (Schneiberg 1994, pp. 242–70, 330–64).

gaps mean an absence of brokers for mediating conflicts, increased chances of polarization and factional conflict within a market, and risks that one faction will try to use regulation against another. To tap any hollowing out of the middle in state insurance markets, we calculate the *kurtosis of companies' geographical scope,*

$$k = \{[\Sigma(X - \overline{X})^4 \div N]/s^4\} - 3.$$

Kurtosis takes on positive values for a peaked distribution, decreases as the distribution flattens, and becomes negative as the distribution becomes bimodal. Hence, *decreasing and negative* values signify increasing heterogeneity, that is, the polarization of markets into separate groups of multistate, general insurers and more specialized state and local companies.

Our third heterogeneity measure uses the index of qualitative variation to capture factionalism by examining how firms in a market are divided by type—a key axis of conflict.

$$IQV = \frac{(1 - \sum_{i=1}^{k} p_i^2)}{(k - 1)/k},$$

where p = proportion of firms of a type in a market and k = three types (mutual, stock, foreign). This index varies from 0, when all firms in a state are of one type, to 1, when firms are equally distributed across firm types. Increasing values indicate increasing heterogeneity, with most of the action stemming from increasing proportions of mutuals.[13]

Independent variables/political conditions.—Drawing on analyses of interest group politics (Meier 1988; Miller and Canak 1988; Kanazawa and Noll 1994; Fishback and Kantor 1998), we focused on the political strength of key consumer groups—manufacturers and farmers—relative to insurance interests. We calculated four state ratios: the *relative numbers of farmers* (number of farms/number of insurance agents), *the relative numbers of manufacturing interests* (number of workers in manufacturing/number of agents)*, the relative resources of farmers* (value of farm property/total assets of fire insurance companies in the state), and *the relative resources of manufacturing interests* (value added by manufacturing/total assets of insurers). All things equal, the strength of anticompany forces hinges on the resources of consumers relative to industry interests, that is, their capacity to finance campaigns and lobbies, and on their relative

[13] We also calculated the coefficient of variation in scope, the kurtosis of company assets, and the index of qualitative variation of assets. Asset kurtosis never reached negative values, obviating its usefulness as a measure of bimodality, and the other two measures were highly collinear with other market variables, making them redundant.

numbers, that is, their ability to mobilize votes.[14] Following Fishback and Kantor (1996, 1998), we also measured the strength of big versus small business in a state by calculating the *percentage of manufacturing establishments that employed 20 workers or less* and the *percentage employing 500 workers or more.*

Independent variables/institutional conditions.—Using recent methodological discussions (Schneiberg and Clemens, in press), we craft measures of institutional conditions at the state and suprastate levels that are specific to the insurance case. To measure *legitimacy crises* at the state level, we use (1) a dummy variable for whether a state conducted a public probe into insurance rates during the 1909–15 era of legislative investigations and (2) a dummy variable for whether a state enacted an anticompact law or injunction that targeted fire insurers. In the words of one insurer, investigations stemmed from "an impulse born of unconcealed hostility [in which] committees purposely went gunning," subjected firms to "unremitting attention," and supported "three or four dozen legislative mills" (Brearley 1916, p. 116). Legislative investigations were both a *reflection* of cognitive legitimacy problems that were sufficiently potent to subject fire insurance to controversy and an *institutional forum* for reformers to criticize the industry and advance new conceptions of control. At a minimum, public investigations mark controversy and the problematization of rate-making associations as an organizational form, signifying the antithesis of taken-for-grantedness.

Similarly, as a clear, official rejection of association, anticompact laws reflect a sociopolitical legitimacy problem for the industry. And once passed, these laws provide institutional support for anti-industry groups. In fact, we can view these two variables as tapping the magnitude of insurers' legitimacy problems. It takes more to pass a law than to hold a hearing. And while investigations could be preemptive in nature, perhaps reflecting company efforts to deflect stronger measures, anticompact laws were a clear rejection of the logic of association.

We used a dummy variable for 1915 to tap the *endorsement* of rate regulation at the suprastate level. At the end of 1914, the National Convention of Insurance Commissioners (NCIC) endorsed regulation by adopting a "Model Rating Law" (NCIC 1915 [December 1914], pp. 17–25;

[14] While strength rests on organization as well as numbers and resources, good state-level data on interest organization for the early 1900s are generally lacking. However, there is evidence that the groups involved here could translate numbers and resources into political strength. The record suggests that merchants, manufacturers, and agrarian interests were already well organized at the local, state, and national levels by the turn of the century, despite limits on participation by certain groups (Sanders 1999; Tontz 1964; Schneiberg 1999*a*). Further, the consumer-challengers to industry dominance in insurance were themselves, by and large, property owners.

1915 [April 1915], p. 22), which immediately followed the Supreme Court decision in *German Alliance Ins. v. Lewis* to ratify the states' right to regulate rates (Crane 1972, pp. 56–57). Both actions specifically endorsed the model of regulated cooperation articulated by reformers in the early 1900s.

We measured *administrative capacities* using (1) a dummy variable for whether a state had a specialized insurance department, (2) a period effect dummy for 1916–21 for the establishment of a national actuarial bureau, and (3) a dummy variable for 1922–30 tapping the articulation of key regulatory standards. Coding for a dedicated regulatory agency (versus regulating insurance via a more general department) is a standard strategy for measuring state-level administrative capacity (e.g., Amenta et al. 1992). Coding for the creation of the Actuarial Bureau in 1916, in contrast, taps a *supra*state institutional development involving a system-wide increase in states' capacities. This bureau compiled and supplied classified data to state insurance departments, enabling regulators to evaluate and mediate rate conflicts on an objective basis (New York State 1922–32). Classified data gave consumers and other outsiders a way to judge and ground claims about rates, increasing their willingness to accept laws that authorized cooperative rate making (Merritt Committee Report 1911; NCIC 1915 [September 1915], app. pp. 148–50). Data-based rate making also buffered regulation from populist pressures, addressing companies' fears that politicians would play politics with rates. Similar effects should result from the 1921 accord between the National Board and the National Convention of Insurance Commissioners, which set five years of classified data and a 5% underwriting profit as the standard for judging rates (NCIC 1922, pp. 19–29). As hypothesized, all three factors should increase the chances of regulation. (Lists of data sources, laws passed by state, and descriptive statistics for all independent variables appear in the appendix.)

ANALYSIS AND FINDINGS

We conducted our analysis in three stages. First, we modeled the passage of *any* rate regulation law as a function of market forces, politics, and institutional conditions. We then modeled the passage of antidiscrimination and full rate control laws as competing hazards, again addressing the effects of markets, politics, and institutions. Finally, we address arguments about institutional mediation by testing whether the effects of markets or politics on regulation themselves rested on institutional conditions.

Any Rate Regulation

Table 1 presents six models of the adoption of any rate regulation law.[15] Model 1 focuses on market conditions—number of actors and three types of heterogeneity—factors that figure centrally in cartel-capture theory. The results provide some support for the theory and hypotheses 1 and 2. Increasing the number of business actors in a market increases the rate at which states pass any rate regulation, as does increasing the diversity of insurers across company type. Heterogeneity in assets and in geographic scope do not reach significance, but the sign of the kurtosis measure is in the expected (negative) direction.

Models 2–4 add to the baseline market conditions model our state-level measures of the political strength of manufacturing and farming interests, two important consumers of insurance. The number and resources of consumer groups and the prospects for effective political challenges to corporate power were important both for capture-cartel theory (hypothesis 3) and interest group theory (hypotheses 4–6), although the two theories make opposite predictions about the effects of politically powerful outsiders.

Model 2 adds to the market variables our two measures of the relative political strength of manufacturing interests. Here, increasing the number of manufacturers relative to insurance interests *decreases* the rate at which states pass rating laws. This result provides some support for cartel-capture claims (hypothesis 3) that the presence of powerful outsiders discourages firms from pursuing regulatory solutions to market problems.

Yet, the picture changes when we consider small versus big manufacturing interests and the power of farm interests. Model 3 adds the percentage of *small* manufacturers in a state. Significantly, increasing the relative weight of *small* manufacturers in a state *increases* the rate that states pass rating laws. In fact, adding small manufacturers suppresses the negative effect of the total number of manufacturers in a state, indicating that the negative effect reflects only the interests of large firms.[16] Model 4 adds the two farm strength measures. Increasing the relative numbers of farmers also increases the likelihood of regulation. Large business interests aside, increasing the political strength of consumers like small businesses and farmers has a *positive* rather than *negative* effect

[15] We estimated all models using maximum-likelihood estimation routines in SAS. We estimated competing risk models simultaneously with multinomial logistic regression.

[16] Substituting the percentage of large manufacturers in a state for the percentage of small manufactures in models 2 and 3 yields significant negative effects. We do not enter the two variables together because they are highly and negatively correlated. One possible reason for this negative effect is that large commercial consumers of insurance could translate their market clout into rebates and thus had little interest in state enforced rates (Grant 1979, pp. 104–30; Bowman 1989).

TABLE 1

EFFECTS OF MARKET CONDITIONS, POLITICAL FACTORS, AND INSTITUTIONAL CONDITIONS ON THE PASSAGE OF *ANY FIRE INSURANCE RATE REGULATION,* 1906–30

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	−7.2109***	−6.6986***	−21.986***	−27.098***	−5.0082*	−23.5204***
	(2.1136)	(2.5077)	(6.9195)	(8.1648)	(2.6587)	(8.7587)
Market conditions:						
ln number of agents	.3879*	.1641	.3691	.6314	−.0263	.3030
	(.2340)	(.2872)	(.3138)	(.4490)	(.2797)	(.5008)
Asset diversity	−.00809	−.00218	.00851	.00787	.00857	.00808
	(.0113)	(.0122)	(.0129)	(.0125)	(.0189)	(.0182)
Kurtosis of geographical scope	−.0797	−.1470	−.0965	−.0953	−.1734	−.1825
	(.1316)	(.1512)	(.1495)	(.1524)	(.2005)	(.2053)
Diversity by company types	4.6631**	5.4210**	6.0259***	7.7662***	.9436	3.4394
	(2.0891)	(2.1670)	(2.2018)	(2.3497)	(2.6738)	(2.9592)
Political factors:						
Relative resources of manufacturing		1.5322	−.2776	.3888		1.6330
		(2.4717)	(2.5022)	(2.6793)		(2.9938)
Relative numbers of manufacturing		−.00350**	.00205	.00204		.00407
		(.00173)	(.00274)	(.00294)		(.00325)
%small manufacturers			.1326**	.1534**		.1636**
			(.0550)	(.0607)		(.0675)
Relative resources of farm interests				−76.9916		−104.8
				(177.0)		(197.5)
Relative numbers of farm interests				.00220***		.00109
				(.000811)		(.000892)

Institutional conditions:						
Legislative investigation					1.5061**	1.2341*
					(.6835)	(.7196)
Anticompact law					1.1600***	1.2515**
					(.4277)	(.5505)
Institutional endorsement (1915)					1.2023^{+}	1.2259
					(.7365)	(.7891)
Specialized insurance department					−.7773	−1.0151*
					(.5222)	(.5736)
Institution of actuarial bureau (1916–21)					1.8255***	1.7805***
					(.6178)	(.6601)
Articulation of rate standards (1922–30)					−.1518	.4326
					(1.2102)	(1.2014)
–2 log likelihood	217.049	212.580	206.723	199.912	189.642	180.622

NOTE.—SEs are given in parentheses. $N = 398$.
$^{+}$ $P = .1026$
* $P < .10$.
** $P < .05$.
*** $P < .01$.

on passing rate regulation. These results contradict claims (hypothesis 3) that the presence of powerful outsiders deters regulation, and support interest group hypotheses (hypotheses 4 and 6) that regulation emerges as politically powerful outsiders seek to use the state to check corporate power.

Model 5 adds to the market conditions model our measures of state- and national-level institutional factors—legitimacy crises, institutional endorsement, and administrative capacities.[17] Both types of legitimacy crises—legislative investigations and anticompact laws—had significant and positive effects on rate regulation. Contrary to hypothesis 3, and consistent with neoinstitutional theory (hypotheses 8 and 9), making an industry a salient political issue, and subjecting its practices to controversy, public scrutiny, and legal prohibitions, increases the likelihood of regulation. This finding is robust and reflects strong effects. In fact, exponentiating the coefficients from model 5 shows that the odds of adopting any rating law are 4.5 times greater in states that have a legislative investigation than in states that do not and 3.18 times greater in states that have an anticompact law than in those that have no such measure in place.

At first, the institutional endorsement variable and hypothesis 10 fare slightly less well. As expected, the coefficient for the endorsement of regulation and its model of economic order by the Supreme Court and the National Convention of Insurance Commissioners has a positive sign, but strictly speaking, the effect here is not statistically significant ($P < .1026$).

The results partially support the institutional argument that administrative capacities increase the likelihood of regulation (hypothesis 11). While the presence of a specialized insurance department and the articulation of regulatory standards fail to reach significance, the institution of a national actuarial bureau (*supra*state administrative capacities) has a positive and powerful effect, increasing the odds of any rate regulation by a factor of over six.

Model 6 combines all of our measures into a full model and generally confirms the preliminary conclusion that interest group politics and institutional dynamics, rather than market conditions, drive rate regulation. No market variables reach significance. And net of other measured factors,

[17] We begin by using the market conditions model as the baseline for both political factors and institutional conditions since interest group theorists and many neoinstitutionalists take market-based arguments or capture theory as their foil, arguing for the effects of politics or institutions net of market forces. To the best of our knowledge, no interest group theorists argue for the effects of politics net of institutional factors, and recent institutional arguments about interest group power seem more concerned with mediation rather than the effects of institutions net of politics. However, to cover all bases, we examine these kinds of net effects via a full model (model 6) that includes measures of market forces, political factors, and institutional conditions.

increasing the weight of small manufacturers increases the likelihood of regulation, as do legislative investigations, anticompact regimes, and the rise of national-level administrative capacities. The only surprise here was a significant negative effect of a specialized insurance department, our measure of state-level administrative capacities.

Competing Risks

Table 2 models the passage of antidiscrimination and full rate control laws as competing risks and repeats the logic of the analysis of table 1 in a slightly simplified form. Model 7 analyzes these two forms of regulation as functions of market conditions. Models 8 and 9 add political factors and institutional conditions, respectively, to the baseline market conditions model. Model 10 collects into a single, streamlined model all the market, political, and institutional variables that reached significance at any point in the analysis.[18] These models provide a second view of the relative effects of markets, politics, and institutions and let us assess whether different processes and factors produce different types of regulation.

Two findings emerge. First, different factors drive the passage of antidiscrimination and full rate control laws. This finding is consistent across models, including our full model 10. For *full rate control* laws, political and institutional conditions dominate. Increasing the size of small business and farmer interests increases the likelihood of full rate control laws, as do anticompact regimes, institutional endorsement, and systemwide administrative capacities. No market conditions reach significance in either the baseline market conditions model or the full model. For *antidiscrimination* laws, none of the political factors or *system-level* institutional conditions reach significance. Here, only market conditions (diversity by

[18] Concerns with multicollinearity and diminishing degrees of freedom drove our decision to streamline this model by eliminating four variables that never reached significance. Regarding multicollinearity, both the manufacturing and farmer political resource variables were highly correlated with the number of agents in a state ($r = .63$ and $r = .66$, respectively). Asset diversity was moderately to strongly correlated with a number of variables (variance inflation factor = 5.78). Regarding degrees of freedom, fitting a competing hazards model with every variable included would mean estimating 32 parameters for a total of 33 events. Note that our streamlined model 10 takes a very conservative approach to trimming variables. It includes any variable that reached significance in any of the "any regulation" or competing risk models. It thus contains two variables—relative numbers of manufacturers and the presence of a specialized insurance department—that were only significant in the any regulation models. Dropping those variables does not change our results. We include the variable for rate standards in model 10 to keep the omitted reference period comparable across the any regulation and competing hazards models.

TABLE 2

EFFECTS OF MARKET CONDITIONS, POLITICAL FACTORS AND INSTITUTIONAL CONDITIONS ON THE PASSAGE OF *ANTIDISCRIMINATION VERSUS FULL RATE CONTROL LAWS,* 1906–30

	MODEL 7		MODEL 8		MODEL 9		MODEL 10	
	Anti-discrimination	Full Rate Control	Anti-discrimination	Full Rate Control	Anti-discrimination	Full Rate Control	Anti-discrimination	Full Rate Control
Intercept	−8.4123***	−7.1875***	−18.5362*	−37.858***	−5.0082*	−23.520***	−20.7320**	−29.699***
	(3.0681)	(2.7982)	(10.8582)	(12.6257)	(2.6587)	(8.7587)	(9.3051)	(9.9725)
Market conditions:								
ln number of agents	.3468	.4138	.1865	1.3323*	−.0263	.3030	.3176	.7109
	(.3296)	(.3138)	(.5515)	(.7356)	(.2797)	(.5008)	(.3549)	(.4360)
Asset diversity	−.00741	−.00912	−.00418	.0167	.00857	.00808		
	(.0163)	(.0152)	(.0199)	(.0156)	(.0189)	(.0182)		
Kurtosis of geographical scope	−.2246	−.0242	−.2815	.0169	−.1734	−.1825		
	(.2894)	(.1366)	(.3069)	(.1756)	(.2005)	(.2053)		
Diversity by company types	5.3306*	3.7563	7.5603**	8.2500**	.9436	3.4394	6.7063*	1.8530
	(2.9830)	(2.8020)	(3.2594)	(3.2811)	(2.6738)	(2.9592)	(3.4900)	(4.1777)
Political factors:								
Relative resources of manufacturing			4.9516	−6.5487				
			(3.4875)	(5.3668)				
Relative numbers of manufacturing			−.00031	.00374			.00475	.00629
			(.00391)	(.00467)			(.00371)	(.00434)
%small manufacturers			.1025	.1993**			.1126	.2085**
			(.0832)	(.0914)			(.0806)	(.0842)

Relative resources of farm interests		−170.7	−75.5967				
		(268.6)	(234.4)				
Relative numbers of farm interests		.00136	.00312***			.000256	.00220*
		(.00121)	(.00114)			(.00134)	(.00122)
Institutional conditions:							
Legislative investigation				1.8285**	1.1469	1.6855**	1.1979
				(.8492)	(.9953)	(.8400)	(1.0264)
Anticompact law				.7080	1.7104***	.8990	1.1979*
				(.5798)	(.6144)	(.6939)	(.07428)
Institutional endorsement (1915)				.2648	2.4172**	.1860	2.1477**
				(1.0019)	(1.0919)	(1.0024)	(1.0924)
Specialized insurance department				−1.0147	−.5702	−1.1743	−1.1322
				(.7101)	(.7082)	(.7397)	(.7549)
Institution of Actuarial Bureau (1916–21)				1.1261	2.8380***	1.0754	2.7585***
				(.8074)	(.9658)	(.7289)	(.9325)
Articulation of rate standards (1922–30)				−.4440	.3827	.0670	1.3037
				(1.6849)	(1.7131)	(1.200)	(1.3442)
−2 log likelihood	261.66	236.51		228.41		220.21	

NOTE.—SEs are given in parentheses. $N = 398$.
* $P < .10$.
** $P < .05$.
*** $P < .01$.

company type) and legislative investigation affect the rate of passage. Market forces and the market-driven dynamics of capture may matter, but only for the weaker form of antidiscrimination regulation.

Second, the findings support the interest group argument that increasing the political strength of industry outsiders increases the likelihood of strong as opposed to weak forms of regulation (hypothesis 7). Stronger full rate control laws required politically powerful outsiders, a coalition between small business, farmers, and key institutional actors like the Supreme Court and the National Convention of Insurance Commissioners, as well as an antitrust regime through which actors could attack the insurance trust. In contrast, weaker antidiscrimination laws rested on industry interests stemming from market conditions and on public investigations, rather than the more potent anticompact regime. Indeed, antidiscrimination laws and hearings in states with no anticompact laws may have represented company efforts to preempt more comprehensive measures, or responses by procompany states to the political or institutional threats posed by full rate control efforts in populist states.[19]

Institutional Mediation

To assess whether institutional factors condition the effects of markets and politics on state policy (hypotheses 13), we focus on system-wide factors or the embeddedness of states in a larger institutional environment. We create a dummy variable for the 1915–30 period that taps the endorsement of regulation by the Supreme Court and the National Convention of Insurance Commissioners, and the development of suprastate administrative capacities (the Actuarial Bureau). As seen, 1915 and 1916

[19] The historical record supports this idea. New York, the home of the "insurance combine," was the first state to pass an antidiscrimination law, and passed it after company officials repeatedly warned legislators about the dangers of "politics" and populist full control laws passed in Texas and Kansas (Merritt Committee Hearings 1910–11, pp. 1698–1700, 2413–14, 2757, 2783; Merritt Committee Report 1911, pp. 51, 77). In fact, companies in New York defeated an effort led by Robert Wagner to enact a full rate control measure in 1911. It was not until insurers dropped their opposition in 1921 that New Yorkers were able to pass a full rate control amendment to their original law (New York State 1922). Companies in North Carolina also appeared to have blocked proposals by legislators for a full rate control law based on the Kansas act in favor of a discrimination law (NCIC 1915 [September 1915], app. p. 139), proposing that option as "a middle course between the extremes of State rate making [and] complete company control" (Riegel 1916, p. 69). Similar conflicts emerged within the NCIC. During debates over the model law, regulators from the three leading company states—New York, Connecticut, and Pennsylvania—fought full rate control proposals by commissioners from populist and anticompact-oriented states in the Midwest—Missouri, Ohio, Wisconsin, and Minnesota (NCIC 1915, adjourned meeting, 17–25).

were a watershed in the development of regulation. After that time, regulation was sanctioned by national actors and supported by rationalized suprastate structures. To test the mediation hypothesis, we interacted this shift in institutional conditions with our four market variables and our four political strength variables.

The results provide some support for the mediation hypothesis. As table 3 shows, both the interactions for asset diversity and percentage of small manufacturers are significant (models 12 and 14), indicating that suprastate institutions mediate the effects on regulation of market forces and political factors.[20] Further, in both cases, the main effects failed to reach significance. Asset diversity and small manufacturers only affected regulation *after* the 1915 watershed.[21] This implies that endorsement and rationalized states magnify the effects of market and political factors on regulation, rather than decoupling regulation from markets or politics.[22]

DISCUSSION

In our analysis, rate regulation stems from the political conflicts, controversy, and legitimacy crises firms evoke in the broader institutional environment as they build private systems of market order. Market conditions and firms' interests in controlling competition drove insurers' decisions to form private associations, and market-based dynamics of capture may have fueled weaker forms of regulation. Yet, politics and institutional dynamics were more consistently and centrally related to regulation than market forces or capture processes driven by intrasector competition. Contrary to cartel-capture theory, and consistent with political accounts, regulation was more likely when traditional anticompany forces—farmers and small business—were large enough to challenge big business politically. And as new institutionalists expect, regulation was more likely when industry governance evoked public scrutiny and antitrust laws, when regulators and the courts endorsed regulation and its underlying models of order, and when states developed systemic administrative capacities. In fact, institutional factors sometimes mediated the effects of market and political forces on regulation.

[20] We only report models where the interaction terms reached significance.

[21] Curiously, this shift created a negative, rather than positive, effect for asset diversity.

[22] In contrast, the presence of administrative capacities at the state level appears to suppress the effects of markets and politics on regulation, suggesting that state-level institutional conditions decouple regulation from its economic and political determinants. Interacting specialized insurance department with market and political factors sometimes yields significant coefficients for both the main and interaction effects, but with opposite signs. (Results available on request.)

TABLE 3

CONDITIONAL EFFECTS OF MARKET FORCES AND POLITICAL FACTORS ON THE PASSAGE OF *ANY* RATE REGULATION, 1906–30

	Model 11	Model 12	Model 13	Model 14
Intercept	−4.6775*	−8.0479***	−12.4244***	−2.9466
	(2.4164)	(3.2046)	(4.3611)	(5.9236)
Market conditions:				
ln number of agents	.4469*	.3648		
	(.2319)	(.2352)		
Asset diversity	−.0223*	.00851		
	(.0128)	(.0212)		
Kurtosis of geographical scope	−.2596	−.2605		
	(.1927)	(.1840)		
Diversity by company types	2.4638	2.1626		
	(2.3678)	(2.3510)		
Political factors:				
Relative resources of manufacturing			2.1999	1.8755
			(1.9914)	(2.0788)
Relative numbers of manufacturing			.00287	−.00237
			(.00244)	(.00258)
%small manufacturers			.0928*	−.0197
			(.0462)	(.0678)
Relative resources of farm interests			187.8	215.6*
			(119.0)	(123.4)
Relative number of farm interests			.00150***	.00169**
			(.000756)	(.000773)
Institutional shift:				
Shift in suprastate institutional context	1.2626**	6.8320**	1.4068***	−10.4776*
	(.5134)	(3.2186)	(.4311)	(5.3785)
Interaction effects:				
Institutional shift x asset diversity		−.0407*		
		(.0228)		
Institutional shift x %small manufacturers				.1409**
				(.0644)
−2 log likelihood	210.560	207.326	207.928	202.926

NOTE.—SEs are given in parentheses. $N = 398$.

* $P < .10$.

** $P < .05$.

*** $P < .01$.

These findings confirm three revisions of market control or strong forms of corporate dominance arguments made by recent research on state policy. Challengers and interest group politics decisively shape state intervention and market order (Meier 1988; Amenta and Zylan 1991; Clemens 1997; Sanders 1999). State policy and structure define and legitimate forms of public intervention and private organization, sometimes mediating the effects of markets or politics on policy (Skowronek 1982; Fligstein 1990; Schneiberg and Hollingsworth 1990; Campbell and Lindberg 1991). And instituting market control is an irreducibly political-cultural process of struggle and debate over structural change and models of economic order (Derthick and Quirk 1985; Berk 1994; Fligstein 1996; Rao 1998).

Our findings also confirm arguments that regulation is a political and institutional condition for implementing private order as a "third way" between states and markets (Streeck and Schmitter 1985; Atkinson and Coleman 1985; Sanders 1999; Schneiberg 1999*a*). As firms try to control markets through association or merger, they concentrate economic power, creating incentives and opportunities for protests, public criticism, and political organization by a range of potential challengers, including consumers, state actors, or aspiring professionals. Firms' market control efforts can even fuel statist projects or antitrust politics that can preclude private organization. Under these conditions, private rule based on association or consolidation is only possible if supervised and disciplined by the state. By providing outsiders with mechanisms for checking corporate power and aligning sector organization with prevailing models of order, regulation enables industries and their adversaries to converge on regulated private governance as a solution to conflicts over market control.

Further, our findings confirm that there are multiple paths to regulation and variation in the nature of the regulatory compromises that permit private order. In some settings, populists and anticompany forces can take the lead in crafting legislation and can impose measures or demand compromises that tilt toward the interests of outsiders and subject private orders to comprehensive regulation (e.g., Sanders 1999). In others, industry actors may play a role in crafting legislation, or seek to temper or preempt populist measures via weaker public controls that limit regulators' jurisdiction over private regimes (e.g., McGuire 1989). In still other cases, states may play a leading role in fashioning settlements. In all of these cases, regulation emerges as a condition for private order in contexts where outsiders can threaten an industry with antitrust or statist measures that preclude private order. While the mechanisms that produce a middle way can vary, and different compromises are possible between market and state, the general relationship holds.

To be clear, further analysis is needed of the competing theories under consideration since passing regulation does not signal the end of regulatory

politics. We focus on the creation of rate regulation as it is a clear and easily measured outcome that allows us to assess competing accounts of regulation. But capture can occur after creation. Organized challengers can wrest regulation from an industry's hands. Controversy or critique can break an industry's hold over a regulatory domain (Baumgartner and Jones 1991; Derthick and Quirk 1985).

Yet the main challenge at this juncture is less to adjudicate theories further, or to show that politics and institutions rather than markets drive state policy, than it is to combine multiple approaches to analyze more deeply how possibilities for state action or private organization are defined and transformed. Our work suggests three directions for future research of this kind.

First, future research could investigate how political process and institutional forces combine to shape state policy. Amenta and company have shown how institutional *structures* mediate political processes and interest group pressure (e.g., Amenta, Carruthers, and Zylan 1992). However, the question remains if institutional *dynamics* like public scrutiny, declarations of illegality, the endorsement of particular models by expert professionals, or the diffusion of models among states could reduce the costs of political organization or provide certain actors with new political advantages. As Gormley (1986) and Baumgartner and Jones (1991) suggest, increasing public salience and subjecting governance schemes to scrutiny and controversy can undermine entrenched interests and foster a more open political system, thereby empowering challengers. Further analyses of interaction effects would show if these or other institutional dynamics mediate the effects of interest group processes on policy.

Future research could also focus on how politics and institutional dynamics shape state policy in federated, multilevel systems. We find that policy depends on dynamics emerging at both the state and national levels. A natural next step would be to consider diffusion and influence *between* states and to investigate how policy is shaped by organization, bargaining, and discourse at the state, interstate, and suprastate levels. Emulation or mimetic isomorphism is a potentially important institutional effect (Edelman 1992; Haveman 1993; Strang and Meyer 1994), and it plays a role in shaping states' policies (Soule and Zylan 1997). Indeed, recent advances in diffusion models make it possible to document and distinguish the effects of state, interstate, and suprastate forces on market organization or state policy. By pursuing this agenda, future work could yield new insight into the nature of institutional embeddedness and the dynamics of policy making in the federated American polity.

Finally, our results suggest a framework for analyzing how controversy and political struggles in institutional fields transform the organizing options available to firms or regulators. Specifically, which choices sectors

face and which organizational paths they pursue depend on whether or not firms' market control efforts evoke public scrutiny, debate, or anti-company politics. In most cases, firms' organizing activities fly under the radar, evoking little or no controversy or counterorganization. Here, firms will be more or less free to manage markets as they see fit and face three basic governance choices: (1) *no regulation or interfirm organization* (markets), (2) *unregulated private organization* (association or corporate hierarchy), or (3) *capturing the state* to buttress private controls (state-capture).[23] So long as firms' governance efforts attract neither scrutiny nor political counterorganization—so long as markets are insulated from politics and industry outsiders cannot force public debate or challenge firms' efforts—this choice set will prevail (Wilson 1980; Gormley 1986).

Yet, market organization can fuel legitimacy crises and counterorganization in the broader setting, processes that call choice sets into question and transform firms' options. States seeking to foster development might even initiate these processes in response to firms' failures to organize markets. In either case, public scrutiny and organization by outsiders eliminate capture and private order as options, generating three new possibilities: (1) *antitrust policies* that suppress private order, (2) *statist interventions* that displace private rule or establish public corporations, and (3) *regulatory policies* like rate regulation that allow private order but subject it to public control. Whether or not consumers or states can subject industries to public debate, antitrust politics, or statist projects hinges on existing political and institutional conditions.[24] But once they are activated, counterorganization and hostile institutional forces shift the options available to a sector, fostering equilibria that preclude purely private order.

Importantly, states can also intervene to counterbalance, rather than negate, private order, and can institute regulated private rule as third way between states and markets (Hawley 1981; Streeck and Schmitter 1985; Sanders 1999). Market factors like instability or market failures in critical industries can induce consumers and states to accept private market controls (Heimer 1985; Pavalko 1989; Fishback and Kantor 1998). But, market control can also promote monopoly, so compromise is not likely absent credible regulatory safeguards (Schneiberg 1999*a*). States and

[23] Whether firms organize and which option they choose rests partly on market conditions. Market failure or price warfare will increase incentives to organize (Goldberg 1976; Heimer 1985), and enforcement problems may drive firms to state hierarchy.

[24] Challengers' abilities to mobilize the state depend on consumers' collective action capacities (Noll and Owen 1983; Meier 1988; Fishback and Kantor 1996), state structural factors like the openness of the polity to regional interests and the level of electoral competition (Sanders 1999; Miller and Canak 1988; Amenta et al. 1992; Clemens 1997), and institutionalized conceptions of state or market order (Dobbin 1994; Berk 1996).

organized interests are *not* likely to abandon statist or antitrust policies for regulation if they cannot hold industry bodies accountable or reliably counterbalance private power. However, if these conditions emerge—if adversaries are capable of mutual disruption, if states develop administrative capacities to hold firms accountable, if experts and key institutional players endorse private order—then some form of compromise is possible and contestants can converge on the middle path of regulated private order (Atkinson and Coleman 1985; Weir and Skocpol 1985; Schmitter 1986).

Admittedly, these arguments go beyond our specific findings. Nevertheless, existing research and the evidence from fire insurance provide a warrant for presenting these arguments as grounded hypotheses for future research on economic regulation, be it comparative historical or quantitative in nature. Above all, we wish to stress that politics and institutions matter, not because they trump market forces or render intraindustry dynamics irrelevant, but because they shape and shift organizing options and create branching points for the evolution of industrial order. In fact, while our data do not permit it, an ideal next step would involve directly modeling antitrust laws, statist intervention, and regulated private rule as competing risks.

CONCLUSION

What drove the industry regulation that reached an apex in the Progressive and New Deal eras? While we do not dismiss intraindustry dynamics or producer interests in market control, our analysis of insurance shows that broader political and institutional dynamics fueled sector regulation. Regulation emerged from the legitimacy problems, counterorganizational dynamics, and political struggles firms evoked in the broader surround as they tried to govern markets privately.

Our analyses contribute to existing work on regulation and economic organization and address recent calls for extending neoinstitutional analysis in new directions. For research on regulation, our work confirms and extends revisions of capture theory that emphasize state structure, regulatory environments, and industry outsiders. We develop new measures of market conditions and include them with political-institutional factors in our models of regulation. We take the federated nature of the American regulatory environment into account, and we model different types of regulation as competing hazards. Taken together, these extensions let us assess the effects of market and institutional factors, and to determine whether different institutional mechanisms or features of the regulatory environment fueled different forms of regulation.

For research on governance and American economic development, our findings provide further evidence for the political and institutional contingency of economic organization. Rate regulation endorsed a system of cooperative market order at the heart of a quintessentially liberal system. Moreover, regulation and the private orders it consolidated emerged not just from the organizing and centralizing tendencies of companies and their managers, but also from political and institutional struggles against unbridled centralization. Associations may have been efficient solutions to insurance market failures (Schneiberg 1999*b*), but their emergence was not uniquely determined by economic conditions. On the contrary, the endorsement of private orders rested on specific political and institutional conditions, including a balance of power between the industry and outsiders and the development of state capacities to deflect corporate interests from purely sectarian pursuits (Streeck and Schmitter 1985; Atkinson and Coleman 1985; Schneiberg 1999*a*). We thus join recent work that avoids reducing the evolution of economic order in the United States to a single organizational principle, dynamic of efficiency, or logic of political control (Sabel and Zeitlin 1985; Campbell, Hollingsworth, and Lindberg 1991; Berk 1994; Dobbin 1994; Roy 1997).

For the new institutionalism in sociology, our analysis contains three points of interest. First, our research confirms a key tenet of this approach: social units—firms, industries, states, and nation-states—are embedded in higher-order systems of evaluation and control, systems which constrain, channel, and enable problem-solving efforts within those "lower-order" social units (DiMaggio and Powell 1991; Meyer et. al 1997).

Second, we developed some new empirical strategies for analyzing institutional effects (Baum and Powell 1995; Schneiberg and Clemens, in press). Using law and public investigations, we created some new measures of institutional processes of controversy, attention, and legitimacy. Moreover, by distinguishing state, interstate, and suprastate factors, we have begun to tackle the problem of analyzing institutional effects that emerge at different levels within federated or multitiered systems.

Finally, our research develops a more dynamic, contested, and political analysis of how higher-order institutional dynamics shape action and organization than is currently common. Neoinstitutionalism in sociology has taken a decidedly cognitive or cultural turn, analyzing state policies and organizational forms as expressions of taken-for-granted models of order (Dobbin 1994; Meyer et al. 1997; Haveman and Rao 1997) or as the results of diffusion processes based on mimicry or mimesis (Strang and Meyer 1994; Strang and Soule 1998). This emphasis has prompted efforts to introduce politics more directly into the analysis (Fligstein 1996) and calls for more attention to the coercive and normative dimensions of institutional effects (Mizruchi and Fein 1999). Consistent with these calls, we

analyze state policy and economic order as a result of multilevel political organization, and the activation of controversy, legitimacy crises, and anticompany forces within institutional fields—rather than as an expression or reflection of taken-for-granted understandings. Such an approach supports a more political and contested view of institutional factors, highlighting how political and institutional processes fundamentally define and transform the choice sets available for private and public problem-solving behavior.

APPENDIX

Data Sources

Rate regulation.—Data on the date and type of rate regulation laws passed come from Spectator Company's, *Fire Insurance: Laws, Taxes and Fees* for 1900–50—an annual report summarizing insurance laws by state. We corroborated our coding using surveys of insurance rate legislation conducted by industry analysts and investigating committees in 1911, 1916, 1925, and 1942 (Merritt Committee Report 1911; Riegel 1917, 1927; Hobbs 1925, 1942). We considered states at risk of passing regulation according to the schedule of years of legislative sessions (U.S. Bureau of the Census 1918).

Market conditions.—All of the market conditions measures are based on Spectator Company's *Insurance Year Book*, *Fire and Marine* from 1906, 1910, then every five years until 1930, using linear interpolation for intervening years. Data on the number of insurance agents in a state were only listed through 1930. The *Year Books* listed data as of December 31 of a year, so we lagged all the market variables by one year. We used Best's annual *Insurance Reports* for the same years (1906–40) to fill in missing data on states of operation. When data was missing from both sources, we used evidence from earlier and later years, information on company size, and county-specific company names to infer its state(s) of operation. Such inferences were primarily needed for some small mutual companies, which we could generally code as operating only in their home states. Variables calculated with and then without companies for which data was minimal were correlated at 0.983 or higher.

Political factors.—The measures of the relative political strength of outsiders are ratios of manufacturing and farming interests to fire insurance interests. We constructed these ratios by combining several data sources. The U.S. Census Bureau collected data on manufacturing every five years from 1905 to 1919 and every two years thereafter. The bureau collected agricultural data every 10 years from 1900 to 1920 and every five years thereafter. We used information in the *Insurance Year Books*

(Spectator Company 1906–40) on fire insurance agents and company assets. In every case, we used linear interpolation to fill in data for missing years. Our measures of relative numerical strength are based on the number of workers in manufacturing (U.S. Bureau of the Census 1922, p. 249; 1930, pp. 821–25; 1939, p. 777), the number of farms (U.S. Bureau of the Census 1922, p. 141; 1930, p. 627; 1939, p. 584), and the number of insurance agents (Spectator Company 1906–40). Our measures of relative resource strength are based on the value added by manufacture (U.S. Bureau of the Census 1922, p. 249; 1930, pp. 821–25; 1939, p. 777), the value of farm property (U.S. Bureau of the Census 1922, pp. 147–50; 1930, p. 626; 1939, p. 583), and the total assets of fire insurance companies (Spectator Company 1906–40). We also measured the percentage of manufacturing firms with 20 or less and 500 or more employees (U.S. Bureau of the Census 1902, vol. 7, pp. 582–83; 1913, vol. 8, pp. 234–35; 1923, vol. 8, p. 90; 1933, vol. 1, pp. 72–73; 1943, vol. 1, pp. 169–73).

Institutional conditions.—Data on whether or not states conducted a legislative investigation came from historical materials provided by Brearley (1916, pp. 115–32) and information contained in the *Proceedings of the National Convention of Insurance Commissioners* (NCIC 1915, app. pp. 119–44). Data on anticompact laws used the sources and methods described for rate regulation. Data on whether or not a state had a stand-alone insurance department came from tables in Spectator *Insurance Year Books* listing state officials with authority in insurance matters. We coded the state as having a stand-alone insurance department if a position specific to insurance (not concerned with other state functions) was listed. Information on the period effect dummy variables for the institution of the Actuarial Bureau, the articulation of the five year/5% rate regulatory standards, and the NCIC endorsement came respectively, from Riegel (1917) and New York State's Insurance Reports (1918–32), from the NCIC *Proceedings* (1922, pp. 19–29) and New York State's Lockwood Report (1922, p. 211), and from the NCIC *Proceedings* (1915 [December 1914], pp. 17–25; 1915 [April 1915], p. 22), and Crane (1962, pp. 56–57).

TABLE A1
SUMMARY OF RATE REGULATION LAWS

State	Year Enacted	Type
Kansas	1909	Full
Texas	1909	Full
Louisiana	1910	Full
Missouri	1911	Full
New York	1911	Antidiscrimination
Washington	1911	Antidiscrimination
Massachusetts	1912	Antidiscrimination
Arkansas	1913	Antidiscrimination
New Jersey	1913	Antidiscrimination
North Carolina	1913	Antidiscrimination
West Virginia	1913	Antidiscrimination
Iowa	1915	Antidiscrimination
Michigan	1915	Full
Minnesota	1915	Full
Oklahoma	1915	Full
Pennsylvania	1915	Antidiscrimination
Kentucky	1916	Full
New Hampshire	1917	Antidiscrimination
Ohio	1917	Antidiscrimination
Oregon	1917	Antidiscrimination
South Carolina	1917	Full
Wisconsin	1917	Full
Colorado	1919	Full
Indiana	1919	Full
Nevada	1919	Antidiscrimination
North Dakota	1919	Antidiscrimination
South Dakota	1919	Full
Tennessee	1919	Antidiscrimination
Vermont	1919	Full
Virginia	1920	Full
Wyoming	1921	Full
Idaho	1923	Antidiscrimination
Mississippi	1924	Full
Illinois	1937	Antidiscrimination

TABLE A2
DESCRIPTIVE STATISTICS OF INDEPENDENT VARIABLES

Variable	Mean	SD	Min	Max
ln number of agents	5.99139	.98789	3.50083	8.02453
Asset diversity (CV of assets)	136.999	22.99323	76.66363	209.8392
Diversity in geographical scope (kurtosis)	.24939	2.80163	−1.47155	19.88119
Diversity by company type (IQV)	.74475	.10428	.51343	.96525
Relative resources of manufacturers	.05836	.10676	.00044	.57169
Relative numbers of manufacturers	203.2401	151.7161	8.0691	577.4743
%large manufacturing firms	.80371	.65966	0	3.28084
%small manufacturing firms	83.04014	7.47442	60.55262	97.63483
Relative resources of farmers	.0015	.00174	.0000167	.01025
Relative numbers of farmers	246.717	238.6492	14.57018	1,322.168
Legislative investigation	.06281	.24293	0	1
Anticompact law	.36181	.48113	0	1
Specialized insurance department	.75879	.42835	0	1
Institution of national actuarial bureau (1916–21)	.20603	.40496	0	1
Articulation of rate standards (1922–30)	.1809	.38542	0	1
Institutional endorsement (1915)	.08291	.2761	0	1

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