



## Regulation and the Evolution of Corporate Boards: Monitoring, Advising or Window Dressing?

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August 2002

### *Abstract*

It is generally agreed that boards are endogenously determined institutions that serve both an oversight and advisory role in a firm. While oversight role of boards has been extensively studied relatively few studies have examined the advisory role of corporate boards. In this study we examine the participation of “political” directors on the boards of natural gas companies between 1930 and 1998. We focus on the 1938, and 1954 regulation and 1986 partial deregulation of the natural gas industry. Using datasets covering the period from 1930 to 1990 and 1978 to 1998, we test whether regulation and deregulation altered the composition of companies’ boards as the firms’ environment changed. In particular, did regulation cause an increase and deregulation a decrease, in the number of “political” directors on corporate boards? We find evidence that the number of “political” directors increases as firms shift from market to political competition. Specifically the regulation of natural gas is associated with an increase in the number of “political” directors and the deregulation is associated with a decrease in the number of “political” directors on boards.

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## I. Introduction

The basic unit of analysis in corporate governance is the board of directors. Directors monitor, advise, punish and reward. Given these different tasks it is not surprising that the typical corporate board includes members with quite diverse backgrounds.<sup>1</sup> Directors typically come from other industries (such as banking), medicine, the academy, law and politics (Klein (1998)). Neither the advisory role nor the diversity of background which that role would seem to produce has been the focus of studies of corporate governance. Instead, most have focused on the role of outside directors (those not having other business ties to the firm) regardless of their backgrounds, in solving agency problems between the CEO and shareholders (see Hermalin and Weisbach (2001) for a survey). Only recently have some studies begun to examine the advisory role of boards and its impact on the diversity of directors' backgrounds.<sup>2</sup> These studies generally find that the external environment of the firm (or its economic needs to use Klein's terminology) determines the type of outside director chosen by the firm. Most of these studies, however, have been cross-sectional in nature (Klein (1998) and Agrawal and Knoeber (2001)).<sup>3</sup>

Unlike studies such as Kole and Lehn (1999) and Geddes and Vinod (2002) that focus on the general adaptation of board structures to regulation and deregulation, this paper examines the advisory role of political directors on corporate boards by examining the effect on board composition of specific changes in the firms' external environment: specifically, changes in regulation. If political directors' value is primarily related to their knowledge of or connections to the regulatory process, we would expect such directors to be more valuable once comprehensive regulation begins and less valuable post-deregulation.

We use two datasets to evaluate the role of external environment in determining board composition. The first is derived from *Moody's Industrial Manuals* for 1930, 40, 50, 55, 60, 70,

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<sup>1</sup> In Germany, for example, corporations have two boards, one to monitor the management of the firm and the second to assist management in the operation of the firm.

80, and 90. The second uses annual data derived from proxy statements filed with the U.S. Securities and Exchange Commission (SEC) for the period 1978-98. We test whether the imposition of regulation in 1938 and 1954, and subsequent deregulation in 1986, altered composition of the board. In particular, did the regulatory events lead firms to increase the number of “political” directors on their boards in the earlier periods and then reduce the number of “political” directors post-deregulation?

In both datasets we find evidence that some board members serve a political role and that changes in the external environment change the demand for directors. After regulation (either 1938 or 1954 depending on the firms’ lines of business), the data show a marked increase in the number of political directors. Moreover, the 1986 deregulation of natural gas extraction is associated with a decrease in the number of “political” directors on the boards of extraction companies, while the number of political directors on firms in other regulated segments of the industry is not affected by the deregulation of extraction. The results are confirmed using a fixed effects model and a model examining only newly appointed directors. Specifically, we find that “political” regulators are less likely to be added to a board after deregulation.

The paper proceeds in Section 2 with a review of the literature on the determinants of corporate board composition and a brief history of regulation in the natural gas industry. In Section 3 we discuss the data sources and conduct a preliminary analysis of the data. Section 4 presents our predictions and estimation results for both event periods using the *Moody's* data and the proxy statement data. Section 5 offers some concluding remarks.

## II. Deregulation and Board Composition

### *2.1 Board composition and the firm’s external environment*

An operating assumption of much of the corporate governance literature is that boards are endogenously determined institutions (Hermalin and Weisbach (2001), Romano (1996)). The

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<sup>2</sup> See Klein (1998) and Agrawal and Knoeber (2001).

primary focus of this literature has been on the role of the board in mitigating the agency conflicts between CEO and shareholders (Fama and Jensen (1983)). If boards exist to monitor shirking by the CEO and management, then outside directors should be more effective monitors than are employees (see Demsetz and Lehn (1985) Weisbach (1988), Morck, Shleifer and Vishny (1989)). Based on this premise, much of this literature focuses on the proportion of outside directors and the link between performance and corporate governance (Bhagat and Black, 2000).

Exceptions to this focus are Klein (1998) and Agrawal and Knoeber (2001), which focus on the advisory role of the board. Although the monitoring versus advising theories are by no means disparate, the advising literature focuses on the human capital that directors bring to the company. Board members' human capital is important not merely because it allows board members to better detect shirking by the CEO, but also because it gives the CEO independent advice he or she might not get from full time employees (Coase (1937), Williamson (1975) and Demsetz (1991)). In addition, the board may represent part time employment for highly skilled labor. The company may not need the services of an investment banker or lobbyist on a day-to-day basis, but their presence on the board means the company has placed them on a sort of retainer (Mace (1971), Agrawal and Knoeber (2001)). In short the firm's external environment or "economic needs" determine at least in part who is chosen as a director.

One of the most important aspects of a firm's external environment is the presence or absence of regulation. There are a number of reasons why regulation may change the external environment of the firm, but all suggest that regulation shifts the focus of the firm, at least to some degree, from market competition to political competition. At least since Stigler (1971), economists have examined the ways in which regulation can benefit an industry. Peltzman (1976) and Posner (1974) model regulation as a competition for rents. Such competition would imply that "political" directors are added to the board to assist the firm in capturing these regulatory rents. In this context,

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<sup>3</sup> Agrawal and Knoeber (2001) utilize 3 cross sections from 1987, 88 and 1999.

there are many hypotheses for the appointment of political directors to the corporate board. Spiller (1990) posits that post industry employment provides the regulator a reward for favorable regulatory treatment. He finds that regulators who preside over more lenient regulatory periods are more likely to receive post industry employment. “Political” directors also represent a method of lobbying regulatory agencies.

Rent seeking could also be defensive in nature. “Political” directors may be added to the board to protect quasi-rents from regulation (McChesney (1997)). This theory proposes that regulation has the potential to destroy firm specific assets. Lobbying is used not to gain monopoly rents but to protect the firm's assets from expropriation or dissipation.<sup>4</sup> In addition, “political” directors may possess industry specific knowledge or insight into the political process or the threat of future regulation (see Agrawal and Knoeber (2001)). This industry knowledge may make former regulators effective monitors of corporate management. In each case, regulation produces a need for directors who know something about the political landscape and the regulatory horizon to serve on the board in an advisory role.

An alternative to the external environment theory is that a director’s background presence is unrelated to the firms’ external environment. There are several reasons why firms’ external environment might not affect the composition of its board. The first reason is that directors serve only a monitoring function. After all, the board is designed to serve an oversight role and most companies have access to information from salaried employees. The basic prediction of this alternative is that that regulation would not affect the likelihood that political directors are present on a board. For example, if former regulators have special industry knowledge or management expertise, that value would not necessarily increase with regulation nor dissipate with deregulation.

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<sup>4</sup> More recently, economists have considered the possibility that the revolving door might have a beneficial effect, since many regulated industries face a sunk cost problem. Once a firm installs firm-specific capital, the regulator can force the firm to price at marginal cost rather than including the sunk cost of the asset. Post-government employment is a solution to the sunk capital problem as regulators then have a stake in the long-term health of the firms they regulate (see Salant (1995) and Che (1995)).

One other alternative is that many directors are simply window dressing whose sole function is to provide another outside director who will not cause problems for management. This hypothesis is problematic for our examination of regulations impact on board composition. Several studies have suggested that regulated firms may be less actively monitored by shareholders than firms in a competitive market.<sup>5</sup> It is possible that political directors are neither more effective monitors than other types of directors nor involved in rent seeking activities, but are on the boards of regulated industries because there is less market pressure to appoint more effective monitors and greater opportunities for shirking by the CEO's of regulated companies. In effect, regulated firms need or simply have less effective monitoring by their boards than firms that are not regulated. If this is the case, “political” directors are simply window dressing. They are placed on the board for the same reason as relatives of the CEO; they are unlikely to cause trouble for management. For this reason, we also estimate the impact of deregulation on the overall composition of boards and on the proportion of insiders.

## *2.2 From Market to Political Competition: A Primer on Natural Gas Regulation*

The business environment of natural gas companies has changed dramatically over the history of the industry. The natural gas industry does not truly begin until the mid-1920s, although gas was used in a number of cities that happened to be located near a gas field. Moving natural gas over long distances was practically impossible until the mid-1920s when metallurgical advances allowed for the manufacture of pipe that could withstand the pressure that made long distance pipelines feasible. Prior to the mid-1920s natural gas was a byproduct of oil production and, particularly in the southwest, it was often more profitable to burn off the gas than to sell it. By the 1930s a vast network of pipelines had been created. The holding companies that owned the network usually purchased gas from independent producers although a sizable percentage of the gas came from pipeline companies' own properties. As a practical matter most producers had only one

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<sup>5</sup> See Kole and Lehn (1999) and Geddes and Vinod (2002).

pipeline outlet. The Great Depression created further political problems for the gas industry as industry consolidation was perceived as creating monopoly prices and shortages in the northeast while an enormous oversupply in the southwest illuminated the night sky over large natural gas fields.

Federal regulation of the natural gas industry began in 1938 with the Natural Gas Act,<sup>6</sup> which gave the Federal Power Commission (FPC) authority to regulate the prices pipeline companies charged local distribution companies.<sup>7</sup> The Act arose to fill a gap in state regulatory control over local utility rates. Because natural gas pipelines crossed state lines the courts had been reluctant to allow individual states to regulate them. Thus if a local distributor purchased gas from an unaffiliated interstate pipeline, the local regulatory agency could not set the transportation charge. This transportation charge was often substantial and during this period constituted the major determinant of the local customer's bill. Independent producers also argued that the pipeline system forced them to sell their gas at prices below cost (Sanders, 1981, p. 33).

Initial efforts at regulation proved controversial. The Public Utility Holding Act of 1935, which dramatically altered the structure of public utility systems, was a particularly contentious battle (Sanders, 1981).<sup>8</sup> By contrast the Natural Gas Act of 1938 was a model of compromise. The pipeline companies came under federal regulation, but in a last minute concession to the pipelines to assure their political support, the FPC was to require certification of any pipeline construction if an existing pipeline already served the market. The Natural Gas Act of 1938 made the creation of monopoly political payment for price regulation. Sanders (1981) states,

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<sup>6</sup> Natural Gas Act, Pub. L. No. 76-688, 52 Stat. 821 (June 21, 1938)

<sup>7</sup> This section draws heavily on the discussion of the natural gas industry found in Viscusi, Vernon and Harrington (1997), Bradley (1996), Breyer (1982) and Sanders (1981).

<sup>8</sup> As Sanders notes "Between 1935 and 1947, 306 subsidiary utility companies were spun off by the reorganization process. One hundred and thirteen of these were gas companies. Fifteen years after the act, holding company control of interstate pipeline mileage was reduced from 80% to 18%. Interstate pipelines constructed after 1935 often owned substantial gas producing properties, but were seldom integrated with distributing utilities. After the mid-1940s, there was also a sharply declining trend in pipeline ownership of properties. The result of this profound change in the structure of the natural gas industry was that producers, transporters (pipelines) and distributors (local utilities) of gas came to have very different interests in regulation. Both pipelines and

“Like much of the economic regulation initiated during the New Deal, the original Natural Gas Act of 1938 was ambiguously worded, highly discretionary, and quite acceptable to both the regulated industry and the consuming public”

The Act originally covered only the prices of natural gas associated with the transportation and sale for distribution to customers. It did not cover wellhead sales by independent producers.

Although the pipeline industry had by all accounts accepted regulation, the period 1938-1954 was in fact a period of growing contention within the regulatory process. There are several reasons for this growing contention. The first, and most obvious, was that the pipeline industry’s effectiveness in winning entry barriers made lobbying to prevent entry a standard part of the pipeline business. Sanders (1981, p. 49) notes the example of a spokesman for a company planning to build a pipeline from Texas to Wisconsin who testified before the House Commerce Committee that his company was lobbying the FPC for certification in order to block entry by competitors that the state of Wisconsin appeared to favor.<sup>9</sup>

The second major source of political contention in the 1938-54 period was state regulators. A growing conservation movement in the states, where conservation literally meant to restrict supply, had begun to affect producers. The most aggressive efforts to raise price by rationing occurred in Texas, under the Texas Railroad Commission, and Oklahoma, under the Oklahoma Corporate Commission. In 1935 the Interstate Oil Compact was ratified by Texas, Oklahoma, New Mexico, Kansas, Illinois and Colorado to enforce conservation practices. Although the states generally failed in their efforts, largely due to expanded production in non-member states, the FPC regularly denied certification to pipeline companies if the pipeline would harm “conservation” efforts (Sanders, 1981 and Bradley, 1996).

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utilities would prefer a low and stable price level for gas as a commodity—a position diametrically opposed to that of independent producers of gas.” (Sanders, 1981 p38)

<sup>9</sup> Sanders (1981) and Bradley (1996) both note that permits also become necessary to finance new pipelines as the Holding Company Act of 1935 hampered internal financing.



The final source of contention proved the most important. In the period 1938-1954 the gas industry expanded dramatically. The number of households using natural gas increased from 8,348 in 1937 to 21,084 in 1955 (Sanders, 1981). With this rise in consumption came a rise in price so that, where transport cost had made up the majority of a customer's bill in 1938, by the 1950s the fuel cost constituted the majority. By the late 1940s calls were being heard in Congress to extend regulation to producers. Compounding these demands was the regional structure of the natural gas industry that had evolved during the period. As the Appalachian gas fields dried up, production shifted to the southwest, which, due to the 1935 Holding Company Act, pitted the three distinct segments of the industry—production, transport and distribution—against each other in Congress.

At several points during the late 1940s the FPC commissioners tried to expand their regulatory authority to include producer prices. The Natural Gas Act of 1938 is ambiguous in its wording and, in theory at least, could be interpreted to allow the FPC to control wellhead prices. Producer states in the late 1940s grew concerned, and on two occasions tried to enact legislation that would clarify that the FPC did not have the authority to regulate the prices charged by independent producers.<sup>10</sup> In 1949 the Harris-Kerr bill passed the House and Senate only to be vetoed by President Truman. The breakdown of House voting is shown in Figure 1. The bill was favored by producer states (South and West) and opposed by consumer states (North, Midwest and East). Even before it was established that natural gas regulation extended to the producer, it was obvious that regulation would be redistributive.

The FPC's authority was greatly expanded following *Phillips Petroleum Co. v. Wisconsin* (1954), which granted the commission authority to regulate the price at which field producers sold gas to pipelines.<sup>11</sup> The court's ruling overturned an FPC ruling that it could not regulate unaffiliated producers. Nevertheless, the FPC post *Phillips* controlled prices all the way from extraction to the

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<sup>10</sup> The first of these was the Moore-Rizley bill in 1947.

<sup>11</sup> *Phillips Petroleum Co. v. State of Wisconsin*, 347 U.S. 672, 681-684 (1954)

sale of gas to local distribution companies. Prior to *Philips* the FPC had authority over a few hundred pipelines. Post *Philips* it controlled the prices charged by thousands of independent producers. The *Philips* decision was regulatory redistribution via the courts and Congress quickly sought to reverse it. In 1955, William Fulbright and Oren Harris introduced a deregulation bill. The results of the House vote on deregulation are shown in Figure 2. Although the 1955 bill was less far reaching (it allowed some regulatory controls on producer prices), the vote mirrors the 1949 vote. Again the bill was vetoed, this time by President Eisenhower.<sup>12</sup>

Initially the FPC tried to set rates on a case-by-case basis. By the 1960s, however, the FPC was setting prices for whole regions rather than on a firm-by-firm basis. The rates charged in the 1950s seem to have been influenced by the Republican control of Congress (Sanders 1981), with prices favoring producers. By the Kennedy and Johnson administrations, however, the FPC was attempting systematic reductions in prices and the redistribution had begun in force. The rate hearing process involved considerable discretion for regulators and frequently ended in Federal Court. The system began to unravel by the late 1960s when gas shortages began to emerge in the northeast (Sanders (1981) and Breyer, (1982)). During the “oil crisis” of the early 1970s, the shortage problem became particularly acute as the rate setting process failed to keep prices in line with inflation let alone natural gas demand.

Congress responded with the Natural Gas Policy Act of 1978, which stipulated the gradual decontrol of prices for new gas wells (those drilled after 1977), let prices grow at the rate of inflation, and moved control of natural gas prices from the FPC to the Federal Energy Regulatory Commission (FERC).<sup>13</sup> Deregulation of extraction companies did not proceed quickly. Prices for new deep wells were deregulated in 1979. Not until 1985 were all new wells deregulated. Finally,

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<sup>12</sup> The reason given for the veto was that South Dakota Senator Francis Chase claimed in a speech that a Washington lawyer in the employ of the oil producers offered him a \$2,500 contribution in exchange for his vote. Eisenhower claimed he could not tolerate the scandal and vetoed the bill.

<sup>13</sup> Natural Gas Policy Act of 1978, Pub. L. No. 95-621, 92 Stat. 3350 (Nov. 9, 1978)

all extraction was deregulated in 1986 by FERC Order 451, which set the regulated price above the market-clearing price.<sup>14</sup> In July 1989, President Bush signed the Natural Gas Wellhead Decontrol Act, which ended rate regulation by the federal government.<sup>15</sup> The distribution of natural gas and its transportation by pipeline remains regulated.

The long history of regulation detailed above suggests one fact quite clearly: beginning in 1938 for pipelines and distribution companies, and in 1954 for producers, the business environment encompassed not just the information about the gas field and customers but also Washington DC. If Klein (1998) and Agrawal and Knoeber (2001) are correct and the composition of boards response to the external needs of the firm, regulatory changes between 1938 and 1986 should alter the composition of boards to include political directors.

For the purposes of our study, it is important to date when deregulation occurred for extraction companies. Clearly, the 1978 act deregulated some portion of production. It appears, however, that most extraction companies held wells that were still regulated. Since we do not know the exact point at which each company's operations were completely deregulated, we treat deregulation as having occurred in 1986. Because this would tend to bias our results toward zero (any company that held no regulated wells may have made its governance changes earlier), we interpret our estimates as lower bounds.

### III Director Classification and Trends

#### *3.1 Moody's and Marquis, 1930-90*

To create our sample of corporate boards we identify all the natural gas companies listed in *Moody's Industrial Manual*. *Moody's* begins near the turn of the century and is one of the most comprehensive industry guides in existence. It provides varying amounts of information on all

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<sup>14</sup> FERC Order No. 451, 51 Fed. Reg. 22168 (June 18, 1986)

<sup>15</sup> Natural Gas Wellhead Decontrol Act of 1989, Pub L. No. 101-60, 103 Stat. 157 (July 26, 1989)

firms listed on the New York Stock Exchange and the American Stock Exchange (the vast majority of publicly traded companies even in the early period of the sample). Periodically, usually every 10 years in the early part of the sample period, *Moody's* lists all the firms in the directory by industry. We include all firms listed by *Moody's* that identify themselves as producing natural gas. We construct the sample of directors at ten-year increments due to the difficulty of identifying the directors' biographies (see below). Although *Moody's* was published prior to 1930, we limit ourselves to 1930-1990 because of data availability (see below). We also include 1955 given the mid-decade expansion of regulation. Thus constructed, our sample consists of eight observation years of data.

The chief advantage of *Moody's* is that it lists the names of the directors and major officers of the corporation. We are able to identify 6,526 directors in the sample period. Table 1 Panel A contains a breakdown of the sample. The major problem is that *Moody's* provides no biographical information for directors and executives prior to the 1980s. To obtain this information for the earlier years, we utilize a second data source, *Marquis Who's Who in Commerce and Industry*, and its continuation *Who's Who in Finance and Industry*. The *Marquis* directory begins in 1938 and is fairly extensive in its coverage. However, it is produced at irregular intervals. As shown in Table 1, between the two sources we are able to construct a sample that includes biographical data on more than 50% of the directors in any given observation year.

Using the biographical information in *Marquis*, we broadly classify directors along two lines. First, we categorize directors by their professional background. Directors are classified as Washington lawyers (those indicating that they practice in Washington, DC, or are members of the Washington bar), non-Washington lawyers, politicians (elected representatives from either state or national government and non-elected officials not associated directly with regulation such as

ambassadors and agency heads), and former regulators (defined as former FERC employees, employees of public service commissions or congressional oversight committees).

We are also interested in whether regulation induces other changes in board composition as such changes also offer evidence on the importance of regulation in determining board composition. For example, finding growing diversity of backgrounds among board members (i.e. more of other non-political director types) caused by regulation might suggest that the demand for regulators is not unique to their regulatory background. For this reason we also classify directors as academics, accountants, bankers (either investment bankers, commercial bankers or private investors), CEOs of independent companies with five or more years of experience in the gas industry, consultants, and engineers (if they have backgrounds in engineering, chemistry or geology). We also indicate that a director has gas industry experience if their primary occupation for at least the previous 5 years was in the natural gas or oil industry. The background classifications are similar to Klein (1998) and Agrawal and Knoeber (2001).

We also indicate the board member's business relation to the firm. The corporate finance literature typically classifies directors as insiders, outsiders, or "grey". Grey directors are not employees of the firm, but have some type of business relation with the firm in addition to their board position (e.g., as an outside legal counsel or investment banker). Unfortunately, such "grey" affiliations are not uniformly indicated in *Marquis* or on the earlier proxy statements (see below). Consequently, we classify directors 1) as inside if they are employees of the firm, 2) as retirees of the firm, and 3) as relatives of the current CEO.

Finally, because different types of "political" directors may well be substitutes for one another (e.g., a Washington lawyer may be as effective as a former regulator) and because "political" backgrounds are not necessarily exclusive (about half the Washington lawyers are also

former regulators), we also include the number of directors falling under several composite “political” categories.

One problem with the Moody's-Marquis data is that we are limited to those directors we can identify in *Marquis*. While there is no obvious reason why the *Marquis* sample should be biased, a non-trivial proportion of the total number of directors must be omitted from any analysis. We would like some method of verifying our results with a more complete sample of biographical data.

### *3.2 The Proxy Statement Sample*

Given the limitations of the Moody's-Marquis data we supplement our analysis with an additional sample that consists of 96 natural gas firms. The breakdown by firm year and total number of directors is given in Panel B of Table 1. The sample was constructed by taking the first 150 firms on a list extracted from COMPUSTAT of all firms in natural gas related SIC codes (between 1978-98). Copies of proxy statements were obtained for each of the firms for all available years of operation between 1978 and 1998. During this period, firms typically provided information on board members' previous employment and relational ties to the firm (i.e. relatives).<sup>16</sup> If all 96 firms had the full twenty years of data we would have a total of 1,920 firm years. We fall short of this total because 1) several firms have missing proxy statements for several years, making it impossible to construct the board, and 2) the majority of firms operated only for a subset of the sample period. In fact we never have more than 45 firms per year in any year between 1978-98 and for 1978 we have only 4 firms.<sup>17</sup>

The proxy dataset has several advantages over the Moody's-Marquis sample and one major disadvantage. The major advantages are that it is easier to collect and hence we are able to utilize annual data, and it contains complete biographical information on all directors as well as their

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<sup>16</sup> Rule 14a-3(8) of the Securities Exchange Act of 1934 requires proxy statements to furnish current information about nominees for directorships (Klein 1998).

tenure of service and their holdings of the firm's stock. The major disadvantage is that the data extend back only to 1977. For this reason we analyze both data sources independently.<sup>18</sup>

### *3.3 Preliminary Data Analysis*

Figure 3 presents the proportion of all directors who are Washington lawyers for all firms, regulated, and unregulated firms by year. Since none of the lines of business in the natural gas industry were regulated in 1930, the unregulated and total columns are identical. Of the 80 directors located in *Marquis* for 1930, we find none fitting our definition of Washington lawyers. The number of Washington lawyers is rising until 1970 and begins to fall thereafter. At its highest in 1970, over 4% of board members fit our definition of Washington lawyers. This rise and fall is consistent with the external environment hypothesis that regulation requires firms to focus attention on the political process. More interesting perhaps is that the proportion of Washington lawyer board members is always higher on regulated firms relative to unregulated firms. The one exception is 1955 when our sample, by coincidence, does not include any unregulated firms.

As shown in Figure 4, the proportion of non-Washington lawyers, defined as all lawyers not meeting the above criteria, rises after 1930 but falls in several decades. Perhaps the best explanation for the rise of lawyers generally is the increasing size of government. Regulation is just one aspect of the interaction between industry and government and a number of reasons for having legal knowledge on corporate boards did not change with deregulation. It is also worth noting that while the federal rate regulation for production ended in 1986, other federal regulations remain and many states retain regulations. We would not expect the 1986 deregulation to end the role of lawyers on corporate boards.

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<sup>17</sup> The number of firms in the sample increases after 1988 when the SEC began to require broader use of electronic filings. Prior to 1988, the number of electronic filings is dramatically lower, and paper copies of filings are not readily available, even from the SEC itself.

<sup>18</sup> Although proxy statements exist prior to 1978 our efforts to obtain them from the SEC met with limited success. We decided to confine the analysis of proxy statements to the post 1978 period after receiving several blank sheets of paper from the SEC with "Best Available Copy" stamped on them.

In the case of politicians the evidence is less clear. We define a politician as any elected official plus other high-ranking heads of agencies not associated with the regulation of natural gas.<sup>19</sup> For example, Figure 5 shows that in 1960 the proportion of politicians on unregulated boards is higher than on regulated boards, but in 1970 and 1980 we find no politicians on the boards of unregulated companies. One possible interpretation of this result is that politicians do not have the expertise that Washington lawyers (or former regulators-see below) have. Another possible explanation is that legislative ethics rules may have precluded elected officials from serving on boards of companies that are subject to direct industry regulation.

In Figure 6 we see former regulators following a trend very similar to Washington lawyers. Former regulators are defined as former employees of either federal or state regulatory agencies charged with regulating the natural gas industry. Again we find no former regulators in 1930. Given the relative lack of regulation such a finding is not surprising. In 1940 and 1950 regulators are more common on unregulated companies. Thereafter, as with Washington lawyers, the number of regulators as a fraction of located directors rises until 1970, then falls. Again, post-1955 regulators are also more common on regulated companies.

The composites measures in Figures 7-10 show similar trends. In particular, Composites 1 and 4, which include board members that are in at least one of the four categories or are Washington lawyers and regulators, respectively, increase as a proportion of board members after regulation and fall after deregulation. In the case of Composite 1, nearly 15% of the identified directors in 1970 could be categorized as some type of political director (the bulk, of course, are non-Washington lawyers). Because Composite 1 includes non-Washington lawyers and politicians, its fall is not as dramatic as for Composite 4. In sum, a trend toward more legal knowledge on the

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<sup>19</sup> For example we count State Department Officials and Ambassadors as politicians but would count the head of the Energy Department as a regulator.



board through time is clearly present, but that trend partially reverses for Washington lawyers and regulators following deregulation.

Figures 11 and 12 present two additional pieces of evidence on corporate boards. Figure 11 presents the percentage of insiders on the board, defined as employees of the firms, and seems to suggest that regulated firms are monitored no less carefully than are unregulated firms (a possibility we explore below). The fraction of insiders has declined for all firms between 1930 and 1990 but the overall decline has been greater among regulated firms. The evidence on board size in Figure 12 suggests a further link between regulation and governance. Although we find no general decline in the size of natural gas companies' boards, unregulated firms consistently have smaller boards. Thus, regulated boards are larger, but include a greater percentage of outsiders. This is consistent with the idea that, in a regulated environment, firms add additional board members with expertise relevant to the firm's environment. We do not include diagrams of our other director types but will discuss them further in the regression results below. Overall, the preliminary evidence in Figures 3-10 suggests that the function of political directors is in part dependent on the regulatory process.

The annual proxy statement data is largely consistent with the *Moody's* data. Figures 13-16 present data on the four measures of political directors and Figures 17-21 reflects the composite measures. In each case, the proportion of political directors is higher on boards of regulated firms relative to non-regulated companies.<sup>20</sup> In the case of Washington lawyers and former regulators, the proportion of these director types on unregulated boards also appears to be a downward trend, although the trend does appear to reverse itself in the late 1990s.

Finally, neither of our other measures of corporate governance, the proportion of insiders or board size, shows a systematic trend (see Figures 22 and 23, respectively). Regulated firms have a slightly lower proportion of insiders post-1986, consistent with the *Moody's* data and contrary to the "regulators as weak monitors" argument. Also, the boards of regulated companies again appear

to be larger than those of unregulated firms. In the next section, we control for factors such as industry by including other variables.

## IV. Estimation and Results

### *4.1 Control Variables for the Moody's Dataset*

*Moody's* provides firm specific data that we use as controls given previous findings in the literature. *Moody's* contains consistent information on the firm's sales, its line(s) of business, and the size of its board. Because sales numbers may not be directly comparable from decade to decade, we construct a dummy variable equal to one if the firm was in the bottom quartile of sales for a given year and a similar variable for firms in the top quartile. Klein (1998) posits that larger firms may have greater information needs suggesting that lawyers, accountants, consultants, academics and even outside CEOs are likely to be more common the boards of larger firms. Further larger firms would also have larger boards. In addition, the benefits of political directors may have the elements of a public good (Olson 1971). Lobbying to prevent lower regulated prices is likely to benefit all firms in the industry. Thus we would predict that smaller firms would be less likely to have political directors because the temptation to free ride is greater given that a larger proportion of the benefits will be received by other firms.

We construct a series of non-exclusive dummy variables equal to one if the firm is a holding company (i.e. owns other companies and hence would be covered by the 1935 act), engages in exploration for natural gas, production of natural gas, operates a natural gas pipeline, and/or engages in the distribution of natural gas to retail or residential customers. We also include a control for firms which hold leases that are produced by other firms. These variables control for

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<sup>20</sup> Again given the limited number of companies (4) in 1978 there are no unregulated firms.

the general economic environment common to all firms in a specific segment of the industry.<sup>21</sup>

Finally, we include the size of the board, as the opportunity cost of a given director type is likely to change as the board size grows. It is not obvious that as the board increases the new additions will be of any particular type however adding a political director (or any type) to a board consisting of 4 members may involve a greater cost than adding such a director to a board of 20.

For the *Moody's* sample, we define a firm as regulated in a given year if 1) it lists one of its lines of business as a holding, pipeline, or distribution company in any year after 1930, and/or 2) it lists production as a line of business in the 1955-1980 period. We construct a categorical variable equal to one if the line of business is regulated in a given sample year and zero otherwise. The regulated variable is coded as one if any of the firm's lines of business is regulated in a given sample year. The summary statistics are given in Panel A of Table 2.

#### *4.2 Control Variables for the Proxy Dataset*

The independent variables for the proxy dataset come from both the firms' proxy statements and COMPUSTAT. We again define a dichotomous categorical regulation variable, coded as a one for production operations in firm years prior to deregulation (pre-1986) and zero afterward. Distribution and pipeline operations are coded one throughout the sample and exploration activities are coded zero. As before, the regulation variable is coded one if any of the firm's lines of business is regulated. Panel B of Table 2 contains summary statistics of the sample.

Although we know of no specific theory suggesting what factors determine what type of director (i.e. banker, lawyer, CEO) will be placed on a board, existing theories do provide some guidance. First, there is an optimal board size determined in part by free riding and information problems (Jensen, 1993; Yermack, 1996). This suggests an opportunity cost associated with adding a board member of any particular type, since arbitrary additions would lead to overly large

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<sup>21</sup> Ideally, we would like to have some performance measures, but *Moody's* data is limited in its stock information for all but the largest companies. We have far better performance measures for our proxy statement sample.

boards. For this reason it is important to control for factors other than regulation in the firm's external environment. For example, a firm with more debt might find greater value in adding a banker to the board rather than a "political" director, despite the presence of regulation.

More specifically we include three controls for the general characteristics of the board. We include the average age of the board and the average years of service of the board to control for the likelihood of exit from the board. We would expect that boards with higher turnover might be more responsive to changes in the external environment. For example a long serving board might have fewer political directors simply because there have not been any exits to allow a new appointment. For reasons discussed above we also include the firm's board size.

The external monitoring function of the board is proxied by the return on equity, the concentration of ownership among board members, and CEO tenure. Return on equity is included because previous studies have demonstrated that poor performance increases the likelihood that outside directors are placed on the board. Directors of each background type could serve a monitoring function. We posit relatives of the CEO are the least effective monitors. Thus, presuming that each director's professional background provides some expertise for monitoring the CEO, we would expect all director types except relatives of the CEO to increase during periods of poor performance. We would also expect CEO tenure to be inversely related to each outside director type while positively related to the number of insiders and relatives. Also companies that are performing well or have long serving CEOs also have more insiders (Hermalin and Weisbach, 2001). As political directors are usually outsiders, we might expect, for example, that long serving CEOs would have fewer political directors on their boards because the boards are stocked with friendly insiders. Finally, if diversity of occupation types serves to enhance monitoring, we would expect the concentration of ownership among the board to be inversely related with each professional type but positively related to the number of insiders and relatives. This is because as

stock ownership by the board increases (thereby more closely aligning their incentives with those of shareholders) the need for additional outside monitors decreases.

Our primary measure of the firm's external environment is, as with the Moody's data, the firm's line of business and whether the firm is regulated.<sup>22</sup> The dichotomous regulation variable and the debt/asset ratio capture the external environment of the firm. The expectations for political directors with respect to the regulation variable are discussed above. We also expect bankers are more common when firms have larger amounts of debt. Finally, we include the firm's sales as a proxy for firm size.

#### 4.3 Estimation Procedure

Because the dependant variable is a count of the number of directors of each type on the board, ordinary least squares will be bias and inconsistent. Following Hermalin and Weisbach (1988), we estimate a Poisson model. If we define  $\mathbf{I}$  to be  $\log(\mathbf{I}) = \mathbf{X}\mathbf{b}$ , where  $\mathbf{X}$  is the independent variables and  $\mathbf{b}$  are the coefficient estimates, then the probability of  $n$  board members being of director type  $i$  is  $\frac{(\exp(-\mathbf{I}) * \mathbf{I}^n)}{n_i!}$ . Thus the likelihood function is

$$L(\mathbf{b}) = \sum_{j=1}^N \sum_{t=1}^T [C_i - \exp(X_{jt} \mathbf{b}) + n_{ijt} X_{jt} \mathbf{b}],$$

where  $C_i$  is a constant,  $n_{ijt}$  is the number of directors of type  $i$  at firm  $j$  in period  $t$ .  $N$  is the total number of firms and  $T$  is the total number of years.

#### 4.4 Results from the Moody's Data

The cross sectional results for the Moody's-Marquis sample are presented in Table 3 Panel A. We find that regulated firms have on average 1.138 more Washington lawyers on their boards than unregulated firms. Given an average board size of around 9 this represents a sizable increase. We find a similar but smaller effect for non-Washington lawyers, with regulated firms having an

average of .304 more non-Washington lawyers. Former regulators are also more common on the boards of regulated companies. Regulated companies have 1 more regulator than non-regulated firms. Consistent with our preliminary data analysis, only former politicians show no significant difference between regulated and unregulated firms. Not surprisingly the composite measures are generally significant. Composite 1 (all four political director types), Composite 2 (Washington lawyers, politicians and regulators) and Composite 4 (Washington lawyers and regulators) are statistically significant. Only Composite 3 (politicians and regulators) is not significantly different across regulated and unregulated boards.

Consistent with our predictions all types of political directors are less common on the boards of smaller firms and more common on the boards of large firms (defined as the top and bottom quartile of sales for the given year). In general the impact is between .614 and 1.718 political directors smaller for bottom quartile firms and .253 to .907 larger for top quartile firms. This is consistent with our conjecture that smaller firms free ride in the provision of lobbying services to the industry. In addition larger boards consistently have more political directors suggesting that larger boards have a lower opportunity cost of adding political directors. The remainder of the results are more mixed. We find lease holders have more non-Washington lawyers and extraction companies have few politicians while distribution companies have fewer Washington lawyers. However, neither of these results is replicated in the Proxy statement data. As the results from the control variables are similar in the alternative specification we confine our attention to the coefficients on regulation in subsequent discussions of the Moody's political directors results.

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<sup>22</sup> The proxy statements and COMPUSTAT SIC codes do not identify companies which hold leases for other production companies nor holding companies independently from the other categories.

#### 4.4.1 Results Moody's Panel Estimation

Following Hermalin and Weisbach we also estimate the model using fixed effects, because there may be firm-specific characteristics that do not change through time, but are not captured by the dependent variables.<sup>23</sup> With fixed effects the log likelihood becomes

$$L(\mathbf{b}) = C_2 - \sum_{j=1}^N \sum_{t=1}^T n_{ijt} \log\left(\sum_{s=1}^T \exp(-(X_{jt} - X_{js})\mathbf{b})\right),$$

where  $C_2$  is a constant and  $X_{js}$  is the within firm average of the dependent variables.

Panel B of Table 3 presents the fixed effects estimation for the Moody's data. The fixed effects estimation is problematic given the criteria for firm observations: a firm must exist in at least two periods, those periods must cover a regulatory event (i.e. regulation or deregulation), and the firm must have at least one of the director types in question during the sample period. The last criterion is particularly problematic as we know from the preliminary data analysis that a number of unregulated firms simply do not have certain director types on their boards. The reduction in sample size is evident in the number-of-observations and number-of-companies rows. For example, in the case of Washington lawyers only 58 of the 412 firms in the Moody's sample meet the criteria, leaving us with 212 observations. Not surprisingly, only the model estimating the number former regulators is statistically significant, indicating regulation resulted in a given firm adding 1.268 more former regulators to its board. Results for all of the other political directors, though not significant, are positive. The composite measures are more precisely estimated owing to a larger sample size. For Composites 2, 3 and 4 we find statistically significant increases, on the order of 0.827 to 0.999 additional political directors, when a firm is regulated. Thus even when we control for firm specific effects we find evidence that regulation induces a shift toward political directors on the boards of the same firm.

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<sup>23</sup> One might ask why include both cross-sectional and panel results. The simple answer is that the cross-sectional results allow us to explore the possibility that firms entering the market post deregulation may have fewer political directors than incumbent and/or exiting firms.

#### 4.4.2 *Newly Appointed Directors*

The evidence presented above suggests that regulation induces firms to retain “political” directors. Both the fixed effect and cross sectional models suppose that a political director can be removed from the board in any year. There are, of course, reasons why a company might wish to retain political board members even if their political connections are no longer valuable for the firm. Directors with long service might have developed firm specific knowledge over their tenure on the board that warrants their retention. In addition, board members are frequently elected to multiple-year terms and are not likely to be dismissed mid-term. To control for this we re-estimate the above models examining only newly appointed directors. In the Moody’s sample we determine new directors by examining the board in the first year the company appears in the data (say 1960) and we assume that all directors are continuing. We then move to the next period (1970) and code all directors not on the board in the previous period as new. Using this definition, and given the number of firms that appear only once, the number of new directors is relatively small and our sample size is reduced to 411.<sup>24</sup>

The results, presented in Table 3 Panel C, indicate that regulated firms appoint more non-Washington lawyers and former regulators to be new directors. On average, the regulated firms appoint 0.844 more non-Washington lawyers and 1.423 more former regulators to new directorships. Results for Washington lawyers and former politicians are not significant although both are positive. Again, the composite measures are generally significant. Only composite 3 (former regulators and politicians) is not statistically significant.

Panel D presents results of the new director model using firm specific fixed effects. The sample size is too small to permit meaningful analysis for several of the categories. There are too few newly appointed former regulators meeting our fixed effect criteria to estimate the model.

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<sup>24</sup> Note our technique for identifying new directors means that all directors are classified as continuing the first year the firm appears in our data.



Washington lawyers are more common. The model indicates that for a given regulated firm, 2.424 more Washington lawyers are newly appointed. Again, the composite measures are more precisely estimated, with all four being statistically significant and positive. In all other cases, newly appointed political directors are more common on the boards of regulated firms.

#### *4.4.3 Regulation and Other Director Types*

Table 4 presents the results for the other types of directors. We find little or no evidence that regulation affects the selection of other types of directors. The only statistically significant differences are that outside CEOs with experience in the gas industry and consultants are more common on regulated boards. One explanation for the CEO result, which we hope to explore in future research, is the Holding Company Act of 1935, which broke up the industry, possibly encouraging interlocking directorships.<sup>25</sup> In addition to specific director types, the number of insiders and board size do not differ significantly across regulated and unregulated firms.

Firm size is a significant determinant of board size. Firms in the bottom quartile of sales have smaller boards and firms in the top quartile having larger boards. In addition firms in the bottom quartile of sales have few bankers, outside experienced CEOs, engineers and academics. Larger firms also have few outside CEOs but more engineers and academics as well as more insiders generally. The results also indicate that exploration companies have slightly larger boards and fewer insiders while pipeline companies have larger boards. In addition exploration companies have more academics and fewer accounts. In sum we find no general patterns in the backgrounds of non-political directors related to the regulatory environment. Nor do we find evidence that regulated firms are less actively monitored than non-regulated firms.

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<sup>25</sup> Our results from the proxy data regressions indicate that outside CEO's with experience in the gas industry are less likely during regulation. Owing to the different sample periods there are not inconsistent, but caution should be exercised in interpreting the cause of this relationship.

#### 4.5 Proxy Statement Sample

Table 5 presents results of the models using the proxy statement data for the period 1978 to 1998. Panel A contains the cross sectional results. Consistent with the *Moody's* data, we find Washington lawyers are more common on the boards of regulated firms. On average the boards of regulated firms have 1.018 more Washington lawyers than non-regulated firms. Non-Washington lawyers are also more common; with an average 0.657 more on the boards of regulated firms. The coefficient on regulators is positive but not significant. In addition, all of the composite measures except Composite 3 (politicians and regulators) are statistically significant, indicating between 0.491 and 0.888 additional political directors depending on the measure.

The most robust finding in the control variables is consistent with the *Moody's* sample. Larger firms, measured by firm sales, have more political directors on their board. The results also indicate that longer serving boards are more likely to have political directors (except Washington lawyers). One reason is that longer duration boards may be capturing the effect of directors appointed prior to the first efforts at deregulation in 1977. The *Moody's* sample suggests that the decline in the number of political directors actually begins before 1980. Also consistent with the *Moody's* sample we find that larger boards generally have more political directors. Finally Washington lawyers and non-Washington lawyers are less common on firms with higher debt to assets ratios.

As with the *Moody's* data, the fixed effects model (Panel B) requires a greatly reduced sample size (ranging from 221 to 587, depending on political category, versus 685 in the cross-sectional model). Nevertheless, we find that Washington lawyers are more common on boards of regulated companies. We also find Composite 4 (Washington lawyers and regulators) is statistically significant and positive, indicating about 0.477 more directors who are either Washington lawyers and/or former regulators on the boards of regulated firms.

Finally, Panel C presents results for the model examining only newly appointed directors. Here again we find Washington lawyers are more commonly appointed as new directors to the boards of regulated firms. Likewise, Composite 4 shows a similar statistically significant increase in the number of newly appointed Washington lawyers and/or former regulators when the company is regulated.

Table 6 presents results on the determinants for other director types using the proxy statement data. In general, the results indicate little difference between the boards of regulated companies and unregulated companies in the numbers of other director types. We do find that regulation having exactly the opposite effect on the number of outside CEO with experience in the natural gas industry from what we observed for the *Moody's* data. One reason for this maybe the *Moody's* sample's longer time period, however caution is warranted in drawing any conclusions. The results also indicate a small and weakly significant difference in the number of insiders on the board due to regulation. Regulated firm, in contrast to expectations, have fewer insiders.

The results for the control variables suggest that, consistent with our expectations, firms with higher returns on equity have boards with more insiders. Similarly a higher concentration of stock ownership by the board is correlated with more insiders. The former suggests that shareholders do not feel the need to monitor successful firms while the latter suggests that monitoring is less important when the board owns a larger share of the company. Increases in board size result in larger numbers of a variety of director types and increases in firm size result in larger boards generally. There are a number of other findings such as pipeline and distribution companies having large boards and distribution companies having more bankers but as with the *Moody's* data none of the findings in the control variables changes our interpretation of regulations affect on board composition.

#### *4.6 Estimating the Effect of Regulation with No Control Variables*

One recurring problem in studies of corporate boards is endogeneity. Many of the independent variables used as determinates may in fact be determined by the same factors determining the dependent variable. In the context of director types for example board size might determine board composition as it represents the opportunity cost of an additional director. However, other studies have found board size to be determined by regulation. We lack instruments to control for all the potentially endogenous variables in the model. However, we feel confident that the presence or absence of regulation itself is exogenous, regardless of the various ways it may affect the size and composition of the board. Therefore, we re-estimate the models without control variables. The results are presented in Table 7 Panel A-G. They are best interpreted as the total impact of regulation on board composition independent of regulations impact on board composition through board size. In general, the results are similar without the control variables although the significance levels are generally higher suggesting that either there is some multicollinearity between the presence of regulation and the control variables.

## V. Conclusions

In this paper, we examine the role of “political” directors on the boards of regulated companies. There are three possible explanations for the presence of these directors. The first explanation is that these directors play an advising role, providing information, expertise and/or political access to resources relative to the firm’s external environment. The second explanation is that “political” directors serve the same function as other directors, namely to monitor the CEO. They simply have a different background from other directors. Finally, it is possible that “political” directors are on the boards of regulated firms as window dressing—they are poor monitors and unlikely to challenge the CEO. If this is the case, “political” directors are associated with regulation because regulated firms may be subject to less managerial discipline.

We test these hypotheses using data from *Moody's Industrial Manuals* and *Marquis Who's Who in Commerce and Industry* covering the period 1930 to 1990. We examine the regulation of natural gas producers in 1954 and the 1986 deregulation of wellhead natural gas prices. We also estimate the impacts of deregulation using data from proxy statements covering the 1978 to 1998 period. We estimate the effect of regulation on the number of “political” directors using both cross sectional and fixed-effect comparisons of regulated and unregulated firms. We also analyze the number of directors with political backgrounds that are newly appointed to boards of regulated and unregulated firms.

The results presented in this paper are consistent with the hypothesis that “political” directors are added to boards primarily for their regulatory expertise, whether it is used for rent seeking purposes (Stigler, 1971), to protect the firm's quasi-rents from regulation (McChesney, 1997) or simply to advise management as it navigates its regulatory environment. Directors with a political background, such as Washington and non-Washington lawyers, former politicians, and former regulators are all, by various measures, more likely to serve on boards of firms that are subject to regulation and become less likely to serve on boards of firms when regulation is removed. Thus, their value as directors appears tied to the presence of regulation not their general monitoring ability.

We do find evidence of changes in the composition of corporate boards in the 1930-90 sample period. For example the number of inside directors on corporate boards falls during the 1930 to 1990 period. The link between these changes and regulation is tenuous at best. Moreover, our conclusion stands up to the argument that “political” directors are simply management stooges that can be afforded under less-competitive, regulated environments. We examine the possibility that regulated firms are simply less effectively monitored and hence have more directors with a political background simply because they are less effective monitors than other types of directors.

By a variety of traditional corporate finance measures, we find no evidence that regulated companies are less effectively monitored than non-regulated firms.

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**Table 1**      **Sample Summary**

This table describes the size of the sample, by year, for each observation year and each dataset. Panel A shows the number of firms listed in the decade volumes of *Moody's Industrial Manual* as being in the petroleum industry with a natural gas line of business and the total number of directors on their boards. The firms listed for 1955 are taken from the 1950 *Moody's* publication, hence the same number of firms in those two years. The Located Directors column refers to those directors listed by *Moody's* for whom we are able to collect biographical data from *Marquis Who's Who in Commerce and Industry* or *Who's Who in Finance and Industry*. Panel B shows the number of firms identified in COMPUSTAT as operating in the natural gas industry for which proxy statements could be obtained with information on board directors, and the number of individual directors.

<b>Panel A: Moody's -Marquis Sample</b>				
<b>Year</b>	<b>Total Directors</b>	<b>Located Directors</b>		<b>Firms</b>
	Number	Number	Percent located	Number
1930	141	80	56.74	15
1940	700	476	68	80
1950	583	451	77.36	61
1955	584	448	76.71	61
1960	1232	840	68.18	127
1970	826	572	69.25	82
1980	1478	934	63.19	162
1990	982	539	54.89	107

<b>Panel B: Proxy Statement Sample</b>		
<b>Year</b>	<b>Number of Firms</b>	<b>Number of Directors</b>
1978	4	26
1979	16	135
1980	17	148
1981	23	197
1982	25	210
1983	29	243
1984	32	268
1985	29	235
1986	27	228
1987	29	232
1988	27	246
1989	45	414
1990	43	421
1991	44	421
1992	45	472
1993	43	435
1994	46	466
1995	43	418
1996	44	412
1997	41	380
1998	33	319

## Table 2 Descriptive statistics

This table reports the mean and standard deviation of the data variables for both samples used in the paper. Panel A reports the numbers for the pooled Moody's-Marquis dataset. This sample includes 4,340 director observations from 615 firm-years over the period 1930-90. Panel B reports the sample means and standard deviations for the Proxy Statement sample, which includes annual data from 1978-98 for 685 firm-years and 6,326 director observations.

<b>Panel A – Moody's-Marquis Sample 1930, 40, 50, 55, 60, 70, 80, 90</b>		
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>
<i>Board Director Characteristics:</i>		
Number of Washington Lawyers (a)	.2565217	.577261
Number of non-Washington Lawyers (b)	.615942	.9356856
Number of former Politicians (c)	.184058	.4783023
Number of former Regulators (d)	.1913043	.5036122
Composite 1 (a, b, c and d)	.8971014	1.186336
Composite 2 (a, c and d)	.4797101	.8348504
Composite 3 (c and d)	.3072464	.6564006
Composite 4 (a and c)	.3782609	.7271172
Number of Bankers	.7173913	1.054324
Number of Outside Experienced CEO	.5318841	.9236441
Number of Engineer or Geologists	.5753623	.8791911
Number of Consultants	.0942029	.3509821
Number of Retirees of the company	.0550725	.2636884
Number of Relatives of the CEO	.0666667	.32086
Number of Accountants	.4072464	.5933396
Number of Academics	.1463768	.4822178
<i>Board Characteristics:</i>		
Number of Insiders	3.604348	2.009768
Number of Board Members	9.3	4.080628
<i>Firm Characteristics:</i>		
Regulated	.7550725	.4295122
Companies in the bottom sales quartile for the current year	.3111882	.4623471
Companies in the top sales quartile for the current year	.1936853	.3950503
Proportion of company years in which the company is a holding company	.0594203	.2365811
Proportion of company years in which the company holds land leases developed by other companies	.4442374	.4967032
Proportion of company years in which the company engages in exploration	.5888889	.4918188
Proportion of company years in which the company engages in extraction	.8869565	.3214233
Proportion of company years in which the company operates a pipeline	.2697723	.4433791
Proportion of company years in which the company engages in distribution	.4132505	.4920675

**Table 2 Descriptive statistics (continued)**

<b>Panel B – Proxy Statement Sample 1978-98</b>		
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>
<i>Board Director Characteristics:</i>		
Number of Washington Lawyers (a)	.4554745	.7233491
Number of non-Washington Lawyers (b)	.870073	1.04114
Number of former Politicians (c)	.5153285	1.145222
Number of former Regulators (d)	.3737226	.8292241
Composite 1 (a, b, c and d)	1.544526	1.774532
Composite 2 (a, c and d)	.8627737	1.308486
Composite 3 (c and d)	.589781	1.182059
Composite 4 (a and c)	.6525547	1.019767
Number of Bankers	1.90073	1.773443
Number of Outside Experienced CEO	.979562	1.153252
Number of Engineer or Geologists	.6394161	1.150855
Number of Consultants	.7927007	1.01492
Number of Retirees of the company	.2277372	.5359489
Number of Relatives of the CEO	.2262774	.5157278
Number of Accountants	.4248175	.7228296
Number of Academics	.4452555	.8387518
<i>Board Characteristics:</i>		
Number of Insiders	2.626277	1.670315
Number of Board Members	9.255474	4.638431
Average years of service of board	9.123122	4.402134
Average age of the board	59.19626	6.530359
% Equity held by Board	9.992701	20.51411
CEO Tenure	11.05715	9.779333
<i>Firm Characteristics:</i>		
Proportion of regulated firm-years	.4686131	.4993785
Proportion of company years in which the company engages in extraction	.7532847	.4314146
Proportion of company years in which the company engages in exploration	.2773723	.4480289
Proportion of company years in which the company operates a pipeline	.2058394	.4046091
Proportion of company years in which the company engages in distribution	.1270073	.3332245
Rate of return on equity	-3.325007	194.1794
Debt/Assets	.297738	.2334445
Sales	895.908	2771.406

**Table 3: The impact of regulation on the number of political board members by type Moody's Marquis Data 1930-90**

This table reports the results of a poisson model estimating the number of board members of each director type. The four composite types are defined as follows: Composite 1 includes all four “political” types; Composite 2, Washington Lawyers, Politicians, and Regulators; Composite 3, Politicians and Regulators; Composite 4, Washington Lawyers and Regulators. Each specification includes controls for line of business (exploration, production, pipeline, distribution and holding company), board size and firm size (bottom quartile of sales for the sample year and top quartile of sales for the sample year).

Panel A: Cross Sectional Estimation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Washington Lawyers	Non-Washington Lawyers	Former Politicians	Former Regulators	Composite 1	Composite 2	Composite 3	Composite 4
Regulated	1.138***	0.304*	0.083	1.000***	0.379**	0.764***	0.446	1.069***
	(0.340)	(0.179)	(0.364)	(0.337)	(0.157)	(0.245)	(0.303)	(0.268)
Board Size	0.077***	0.083***	0.080***	0.088***	0.082***	0.077***	0.083***	0.076***
	(0.020)	(0.014)	(0.019)	(0.019)	(0.010)	(0.012)	(0.015)	(0.016)
Is the Company in the bottom sales quartile for the current year?	-0.765***	-0.614***	-1.718***	-0.788**	-0.733***	-0.933***	-1.094***	-0.776***
	(0.261)	(0.191)	(0.393)	(0.339)	(0.156)	(0.205)	(0.298)	(0.212)
Is the Company in the top sales quartile for the current year?	0.304	-0.018	0.907**	0.527*	0.253*	0.524**	0.722***	0.340
	(0.295)	(0.177)	(0.385)	(0.302)	(0.149)	(0.210)	(0.280)	(0.235)
Is the company a holding company?	-0.082	0.003	-0.370	0.483	0.062	-0.037	0.107	0.108
	(0.264)	(0.280)	(0.372)	(0.310)	(0.210)	(0.197)	(0.272)	(0.228)
Does the company holds land leases developed by other companies?	0.027	0.257**	0.155	0.057	0.136	-0.004	0.035	-0.032
	(0.169)	(0.111)	(0.171)	(0.212)	(0.090)	(0.126)	(0.155)	(0.143)
Does the company engage in exploration?	0.215	-0.106	-0.137	-0.211	-0.026	0.048	-0.097	0.085
	(0.221)	(0.139)	(0.220)	(0.232)	(0.107)	(0.150)	(0.189)	(0.171)
Does the company engage in extraction?	-0.259	-0.116	-0.658**	0.005	-0.102	-0.321**	-0.369	-0.057
	(0.265)	(0.186)	(0.270)	(0.255)	(0.120)	(0.158)	(0.241)	(0.210)
Does the company operate a pipeline?	-0.258	0.114	-0.250	-0.353	0.019	-0.173	-0.225	-0.205
	(0.197)	(0.135)	(0.230)	(0.268)	(0.113)	(0.154)	(0.203)	(0.172)
Does the company engage in distribution?	-0.500**	0.075	-0.340	-0.372	-0.084	-0.350**	-0.287	-0.376**
	(0.206)	(0.125)	(0.304)	(0.227)	(0.101)	(0.144)	(0.206)	(0.156)
Constant	-2.616***	-1.449***	-1.707***	-3.061***	-1.083***	-1.634***	-1.833***	-2.328***
	(0.510)	(0.294)	(0.433)	(0.485)	(0.226)	(0.321)	(0.386)	(0.397)
Observations	672	672	672	672	672	672	672	672
Robust standard errors clustered on firms in parentheses								
* significant at 10%								
** significant at 5%								
*** significant at 1%								

Table 3 Continued

<b>Model:</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>
	<b>Washington Lawyers</b>	<b>Non- Washington Lawyers</b>	<b>Former Politicians</b>	<b>Former Regulators</b>	<b>Composite 1</b>	<b>Composite 2</b>	<b>Composite 3</b>	<b>Composite 4</b>
<b>Panel B: Firm Specific Fixed Effects</b>								
Regulated Firms	0.700 (0.446)	0.179 (0.236)	0.538 (0.487)	1.268** (0.503)	0.301 (0.201)	0.863*** (0.319)	0.999*** (0.386)	0.827** (0.353)
Observations	212	305	155	165	338	269	221	254
Number of companies	58	93	41	47	106	80	64	74
<b>Panel C: Cross Sectional Results for New Directors Only</b>								
Regulated Firms	0.918 (0.573)	0.844** (0.332)	0.226 (0.696)	1.423** (0.564)	0.827** (0.375)	1.007* (0.545)	0.771 (0.623)	1.172** (0.466)
Observations	411	411	411	411	411	411	411	411
<b>Panel D: Firm Specific Fixed Effects New Directors Only</b>								
Regulated Firms	2.424* (1.273)	0.670 (0.706)	-0.224 (0.997)	NA	1.792*** (0.671)	2.467*** (0.934)	2.062* (1.078)	3.184** (1.239)
Observations	119	137	81	NA	153	134	104	127
Robust standard errors in parentheses								
For non-fixed effects estimation standard errors clustered on firm								
* significant at 10%								
** significant at 5%								
*** significant at 1%								

**Table 4: The impact of regulation on the number of other board members by type Moody's Marquis Data 1930-90**

This table reports the results of a poisson model estimating the number of board members of each non-political director type.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Insiders	Board Size	Bankers	Outside CEO with Experience	Engineers	Consultants	Retirees	Relatives	Accountants	Academics
Regulated	-0.011	0.042	0.186	0.486***	-0.172	0.978**	0.796	0.586	-0.072	0.126
	(0.052)	(0.055)	(0.153)	(0.185)	(0.158)	(0.487)	(0.759)	(0.466)	(0.145)	(0.392)
Board Size	0.047***	NA	0.089***	0.082***	0.061***	0.099***	0.083**	0.073**	0.007	0.074***
	(0.004)		(0.012)	(0.016)	(0.016)	(0.037)	(0.034)	(0.037)	(0.021)	(0.021)
Is the Company in the bottom sales quartile for the current year?	-0.055	-0.299***	-0.713***	-0.687***	-0.515**	-0.300	-0.367	-0.394	0.243	-0.995**
	(0.049)	(0.043)	(0.198)	(0.194)	(0.244)	(0.396)	(0.772)	(0.500)	(0.158)	(0.411)
Is the Company in the top sales quartile for the current year?	0.248***	0.294***	-0.220	-0.412**	0.548***	-0.088	0.638	-0.647	0.017	0.768**
	(0.065)	(0.058)	(0.155)	(0.202)	(0.138)	(0.515)	(0.445)	(0.728)	(0.223)	(0.376)
Is the company a holding company?	-0.021	-0.080	0.064	0.265	0.249	-0.220	-0.832	-1.561	0.117	-0.368
	(0.084)	(0.053)	(0.218)	(0.290)	(0.179)	(0.593)	(0.916)	(1.051)	(0.341)	(0.638)
Does the company holds land leases developed by other companies?	0.054	-0.050	0.036	-0.115	0.006	-0.168	-0.125	-0.167	0.068	-0.469
	(0.038)	(0.032)	(0.107)	(0.129)	(0.109)	(0.310)	(0.377)	(0.385)	(0.139)	(0.303)
Does the company engage in exploration?	-0.120**	0.090***	-0.063	-0.167	-0.224*	-0.017	0.385	0.551	-0.362***	0.735***
	(0.048)	(0.032)	(0.115)	(0.129)	(0.115)	(0.319)	(0.351)	(0.433)	(0.127)	(0.284)
Does the company engage in extraction?	0.065	0.021	-0.158	-0.016	-0.129	0.373	-0.277	-0.428	0.066	-0.110
	(0.086)	(0.055)	(0.161)	(0.262)	(0.127)	(0.561)	(0.647)	(0.476)	(0.314)	(0.512)
Does the company operate a pipeline?	0.062	0.082**	0.083	0.244	0.137	-0.094	-0.187	-0.507	0.054	-0.619
	(0.048)	(0.034)	(0.120)	(0.152)	(0.113)	(0.419)	(0.664)	(0.586)	(0.176)	(0.396)
Does the company engage in distribution?	0.067	-0.059	0.246*	0.112	0.435**	0.057	-0.329	-0.407	0.168	0.342
	(0.050)	(0.057)	(0.128)	(0.176)	(0.188)	(0.519)	(0.645)	(0.501)	(0.165)	(0.390)
Constant	0.730***	2.306***	-1.156***	-1.610***	-	-4.374***	-	-	-0.984***	-3.031***
	(0.101)	(0.068)	(0.269)	(0.342)	1.124***	(0.874)	4.117***	3.233***	(0.334)	(0.657)
Observations	672	672	672	672	672	672	672	672	672	672
Robust standard errors clustered on firms in parentheses										
* significant at 10%										
** significant at 5%										
*** significant at 1%										

**Table 5: The impact of regulation on the number of political board members by type Proxy statement data 1978-98**

This table reports the results of a poisson model estimating the number of board members of each type of political director. The four composite types are defined as follows: Composite 1 includes all four “political” types; Composite 2, Washington Lawyers, Politicians, and Regulators; Composite 3, Politicians and Regulators; Composite 4, Washington Lawyers and Regulators.

Panel A: Cross Sectional Estimation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Model:	Washington Lawyers	Non-Washington Lawyers	Former Politicians	Former Regulators	Composite 1	Composite 2	Composite 3	Composite 4
Regulated	1.018*** (0.374)	0.657*** (0.232)	-0.123 (0.362)	0.797* (0.436)	0.491*** (0.173)	0.568** (0.276)	0.351 (0.359)	0.888*** (0.339)
Does the firm engage in production?	0.392 (0.405)	-0.365 (0.338)	0.782* (0.466)	0.024 (0.456)	-0.038 (0.198)	0.281 (0.287)	0.379 (0.362)	0.027 (0.381)
Does the firm engage in exploration?	-0.319 (0.422)	-0.303 (0.318)	0.468 (0.466)	-0.527 (0.742)	-0.062 (0.210)	0.087 (0.369)	0.496 (0.460)	-0.505 (0.464)
Does the firm own a pipeline?	0.195 (0.383)	-0.080 (0.332)	1.389*** (0.506)	0.881 (0.600)	0.202 (0.250)	0.445 (0.392)	0.869* (0.478)	0.335 (0.416)
Does the firm engage in Distribution?	0.007 (0.508)	-0.629 (0.517)	-0.109 (0.660)	0.914 (0.713)	-0.303 (0.364)	0.140 (0.473)	0.662 (0.621)	0.178 (0.516)
Average age of service on the board	0.066 (0.042)	0.058* (0.031)	0.079* (0.047)	0.096* (0.057)	0.060** (0.025)	0.070* (0.038)	0.075* (0.045)	0.076* (0.043)
Average age of the board	0.019 (0.031)	-0.045** (0.021)	-0.016 (0.031)	-0.048 (0.043)	-0.025 (0.020)	-0.004 (0.027)	-0.021 (0.032)	-0.010 (0.033)
Rate of return on equity	0.002 (0.003)	0.000 (0.002)	0.001 (0.002)	0.005** (0.003)	0.001 (0.001)	0.001 (0.002)	0.002 (0.002)	0.003 (0.003)
Debt/Assets	-1.534** (0.699)	-0.915** (0.378)	0.274 (0.361)	-1.583 (1.039)	-0.628** (0.311)	-0.501 (0.422)	-0.082 (0.485)	-1.464** (0.718)
Board Size	0.025 (0.022)	0.049*** (0.012)	0.032* (0.018)	0.058*** (0.020)	0.039*** (0.012)	0.029 (0.019)	0.040** (0.018)	0.036* (0.022)
% Equity held by board	-0.002 (0.008)	-0.003 (0.007)	-0.017* (0.009)	-0.018 (0.014)	-0.006 (0.004)	-0.014* (0.008)	-0.022* (0.011)	-0.010 (0.009)
Sales	0.507* (0.259)	0.776*** (0.221)	0.722*** (0.233)	0.844*** (0.284)	0.765*** (0.203)	0.666*** (0.217)	0.816*** (0.238)	0.567** (0.268)
CEO Tenure	-0.008 (0.008)	-0.003 (0.008)	-0.042** (0.019)	-0.027 (0.019)	-0.010 (0.007)	-0.017 (0.012)	-0.032* (0.018)	-0.010 (0.011)
Constant	-3.369** (1.570)	1.838* (1.006)	-1.596 (1.523)	0.051 (2.044)	0.954 (0.954)	-1.235 (1.352)	-1.013 (1.579)	-1.080 (1.583)
Observations	685	685	685	685	685	685	685	685
Robust standard errors clustered on Firms in parentheses								
* significant at 10%								
** significant at 5%								
*** significant at 1%								

Table 5 Continued

<b>Model:</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>
	<b>Washington Lawyers</b>	<b>Non- Washington Lawyers</b>	<b>Former Politicians</b>	<b>Former Regulators</b>	<b>Composite 1</b>	<b>Composite 2</b>	<b>Composite 3</b>	<b>Composite 4</b>
<b>Panel B: Firm Specific Fixed Effects</b>								
Regulated Firms	0.702*** (0.259)	0.160 (0.185)	-0.172 (0.289)	-0.177 (0.459)	0.229 (0.139)	0.291 (0.194)	-0.072 (0.273)	0.477** (0.235)
Observations	298	477	252	221	587	401	297	345
Number of Companies	31	55	26	25	64	43	31	38
<b>Panel C: Cross Sectional Results for New Directors Only</b>								
Regulated Firms	0.801** (0.333)	0.416** (0.174)	-0.273 (0.434)	0.272 (0.479)	0.330 (0.294)	0.330 (0.294)	-0.083 (0.407)	0.647** (0.306)
Observations	685	685	685	685	685	685	685	685
Robust standard errors in parentheses								
For non-fixed effects estimation standard errors clustered on firm								
* significant at 10%								
** significant at 5%								
*** significant at 1%								



**Table 6: The impact of regulation on the number of non-political board members by type Proxy statement data 1978-98**

This table reports the results of a poisson model estimating the number of board members of each type of non-political director

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Insiders	Board Size	Bankers	Experienced CEOs	Engineers	Consultants	Retirees	Relatives	Accountants	Academics
Regulated	-0.192*	-0.144**	-0.391**	-0.747***	0.016	-0.275	-0.208	-0.210	0.323	0.241
	(0.116)	(0.070)	(0.158)	(0.258)	(0.354)	(0.244)	(0.412)	(0.419)	(0.294)	(0.601)
Does the firm engage in production?	-0.163	0.059	0.304	0.039	0.350	0.326	0.000	0.850*	-0.150	-0.015
	(0.119)	(0.071)	(0.254)	(0.328)	(0.516)	(0.359)	(0.703)	(0.488)	(0.502)	(0.426)
Does the firm engage in exploration?	-0.319**	-0.061	0.286	0.100	0.052	-0.126	0.467	1.071*	-1.167*	0.741
	(0.142)	(0.107)	(0.306)	(0.293)	(0.573)	(0.353)	(0.621)	(0.599)	(0.685)	(0.455)
Does the firm own a pipeline?	-0.152	0.198*	0.017	-0.017	0.464	0.844***	0.467	0.005	0.905	1.823***
	(0.133)	(0.115)	(0.296)	(0.377)	(0.375)	(0.307)	(0.510)	(0.524)	(0.568)	(0.566)
Does the firm engage in Distribution?	0.012	0.364***	0.901**	0.132	-1.756***	0.513	-0.700	0.947	0.044	0.764
	(0.160)	(0.129)	(0.357)	(0.571)	(0.673)	(0.393)	(0.698)	(0.670)	(0.623)	(0.679)
Average age of service on the board	0.005	-0.011	-0.023	-0.044	0.007	-0.044	0.005	0.111**	0.056	-0.019
	(0.018)	(0.014)	(0.033)	(0.032)	(0.043)	(0.040)	(0.061)	(0.055)	(0.052)	(0.045)
Average age of the board	-0.023	0.005	-0.002	0.031	-0.009	0.019	0.175***	-0.068*	-0.077**	0.047
	(0.016)	(0.007)	(0.014)	(0.026)	(0.028)	(0.020)	(0.046)	(0.037)	(0.034)	(0.031)
Rate of return on equity	0.001**	-0.001*	0.001	-0.001	-0.001	-0.000	-0.002	0.000	0.004*	0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Debt/Assets	-0.059	0.173	0.245	0.048	0.409	-0.082	1.475***	-1.655*	0.478	-0.334
	(0.156)	(0.115)	(0.254)	(0.334)	(0.380)	(0.396)	(0.341)	(0.885)	(0.395)	(0.712)
Board Size	0.028***		0.043***	0.023	0.009	0.039***	0.029	0.006	0.032	0.031*
	(0.006)		(0.011)	(0.014)	(0.019)	(0.014)	(0.023)	(0.029)	(0.025)	(0.017)
% Equity held by board	0.004*	-0.001	0.003	-0.004	-0.006	-0.004	-0.005	0.013*	-0.020	-0.033**
	(0.002)	(0.002)	(0.003)	(0.005)	(0.012)	(0.005)	(0.011)	(0.007)	(0.015)	(0.016)
Sales	0.679***	0.363***	0.221	0.383	0.033	-1.513**	0.043	-6.498*	-0.802	-0.307
	(0.119)	(0.111)	(0.184)	(0.313)	(0.246)	(0.741)	(0.195)	(3.651)	(0.640)	(0.220)
CEO Tenure	0.004	-0.002	-0.003	0.017*	-0.008	0.008	-0.026	-0.027	0.005	-0.042***
	(0.004)	(0.005)	(0.010)	(0.009)	(0.017)	(0.013)	(0.020)	(0.022)	(0.017)	(0.014)
Constant	2.203***	1.926***	0.247	-1.607	-0.246	-1.576	-13.027***	1.026	2.742*	-4.067***
	(0.781)	(0.336)	(0.623)	(1.255)	(1.623)	(0.998)	(2.646)	(1.846)	(1.665)	(1.578)
Observations	685	685	685	685	685	685	685	685	685	685
Robust standard errors clustered on firms in parentheses										
* significant at 10%										
** significant at 5%										
*** significant at 1%										

Table 7 The impact of regulation on the number of political directors estimated without control variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Washington Lawyers	Non- Washington Lawyers	Former Politicians	Former Regulators	Composite 1	Composite 2	Composite 3	Composite 4
<b>Panel A: Moody's Cross Section</b>								
Regulated Firms	1.159***	0.650***	0.533	1.207***	0.717***	0.997***	0.821***	1.202***
	(0.325)	(0.189)	(0.369)	(0.312)	(0.179)	(0.249)	(0.300)	(0.248)
Observations	672	672	672	672	672	672	672	672
<b>Panel B: Moody's Firm Specific Fixed Effect</b>								
Regulated Firms	0.797*	0.215	-0.120	0.910**	0.280	0.671**	0.520	0.813**
	(0.409)	(0.223)	(0.389)	(0.408)	(0.189)	(0.286)	(0.320)	(0.323)
Observations	212	305	155	165	338	269	221	254
Number of companies	58	93	41	47	106	80	64	74
<b>Panel C: Moody's Cross Sectional Results New Directors Only</b>								
Regulated Firms	1.007*	0.937***	0.401	1.303**	0.955**	1.099**	0.828	1.220***
	(0.544)	(0.334)	(0.667)	(0.515)	(0.383)	(0.543)	(0.613)	(0.447)
Observations	411	411	411	411	411	411	411	411
<b>Panel D: Moody's Firm Specific Effects New Directors Only</b>								
Regulated Firms	1.840*	0.814	-0.014	NA	1.238**	1.684**	1.290*	2.241**
	(1.069)	(0.639)	(0.909)		(0.550)	(0.763)	(0.781)	(1.060)
Observations	119	137	81	NA	153	134	104	127
Number of Companies	23	28	16		33	28	22	26
<b>Panel E: Proxy Statement Cross Sectional Results</b>								
Regulated Firms	1.509***	0.650**	1.117**	1.944***	0.792***	1.174***	1.254***	1.511***
	(0.358)	(0.273)	(0.483)	(0.439)	(0.275)	(0.342)	(0.425)	(0.339)
Observations	685	685	685	685	685	685	685	685
<b>Panel F: Proxy Data Firm Specific Fixed Effects</b>								
Regulated Firms	0.525**	0.101	-0.507*	-0.029	0.048	0.078	-0.250	0.295
	(0.239)	(0.174)	(0.271)	(0.382)	(0.133)	(0.182)	(0.254)	(0.219)
Observations	298	477	252	221	587	401	297	345
Number of Companies	31	55	26	25	64	43	31	38
<b>Panel G: Proxy Data Cross Sectional Results for New Directors Only</b>								
Regulated Firms	1.405***	0.690**	1.109**	1.815***	0.834***	1.179***	1.247***	1.458***
	(0.353)	(0.288)	(0.491)	(0.443)	(0.284)	(0.343)	(0.430)	(0.336)
Observations	685	685	685	685	685	685	685	685

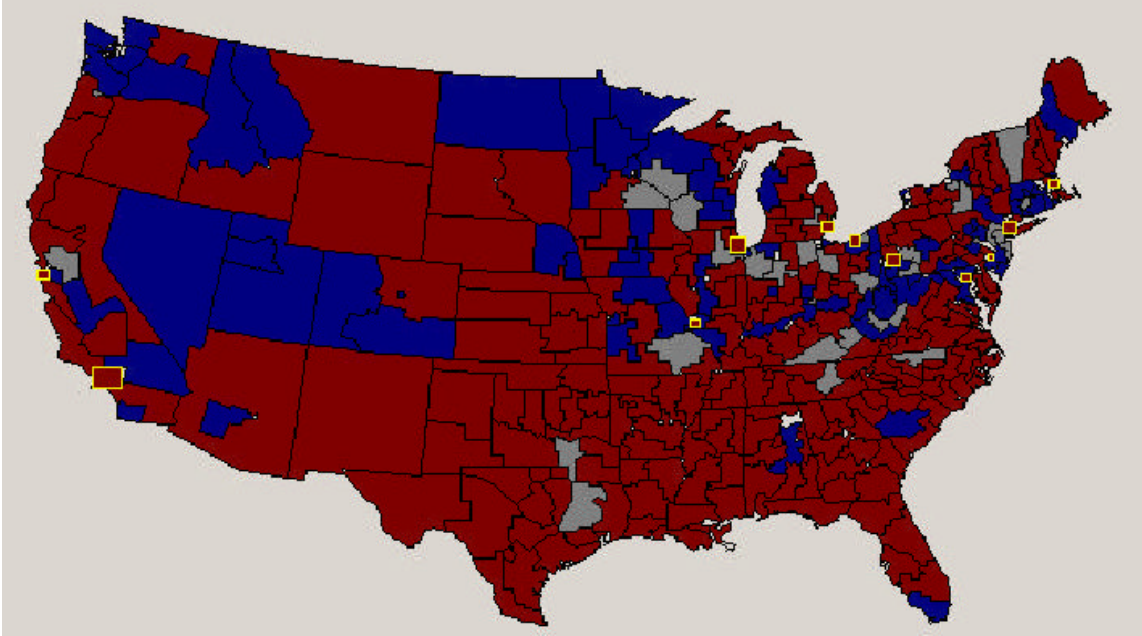


Figure 1: The vote breakdown for the 1949 Harris-Kerr bill (HR 1758), which specified that the Natural Gas Act of 1938 did not allow the Federal Power Commission to regulate producer prices. Districts in red voted for passage. Districts in blue voted against passage. Grey districts abstained.

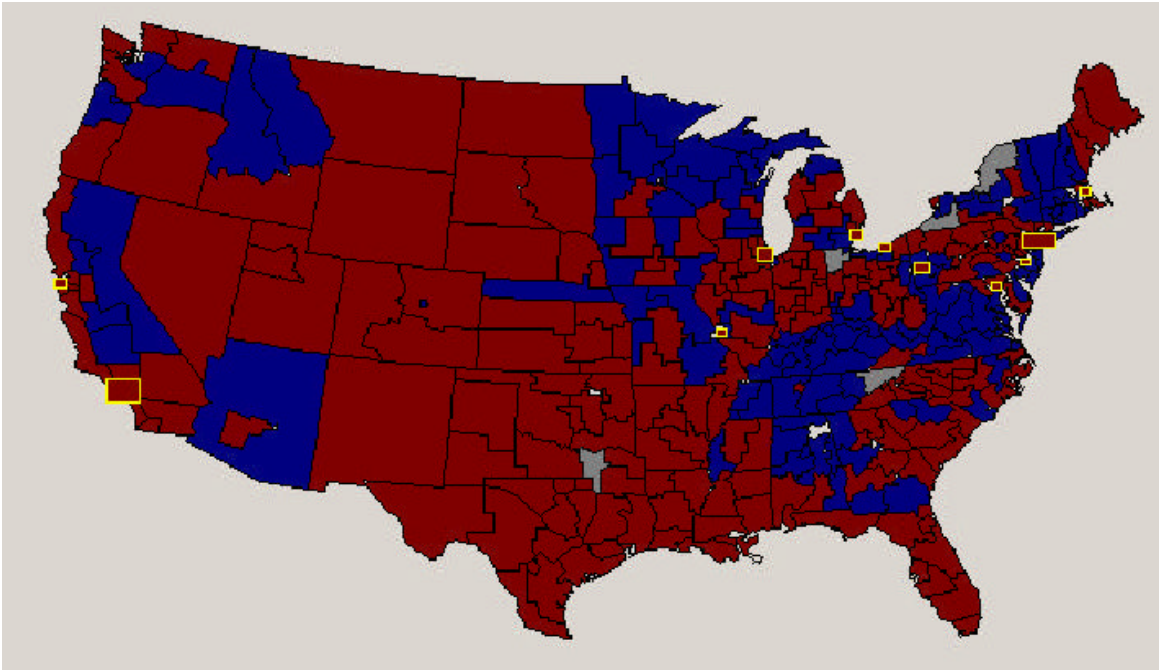


Figure 2: The vote breakdown for the 1955 Harris-Fulbright bill, which deregulated natural gas producers following the Phillips case. Districts in red voted for passage. Districts in blue voted against passage. Grey districts abstained.

Figure 3

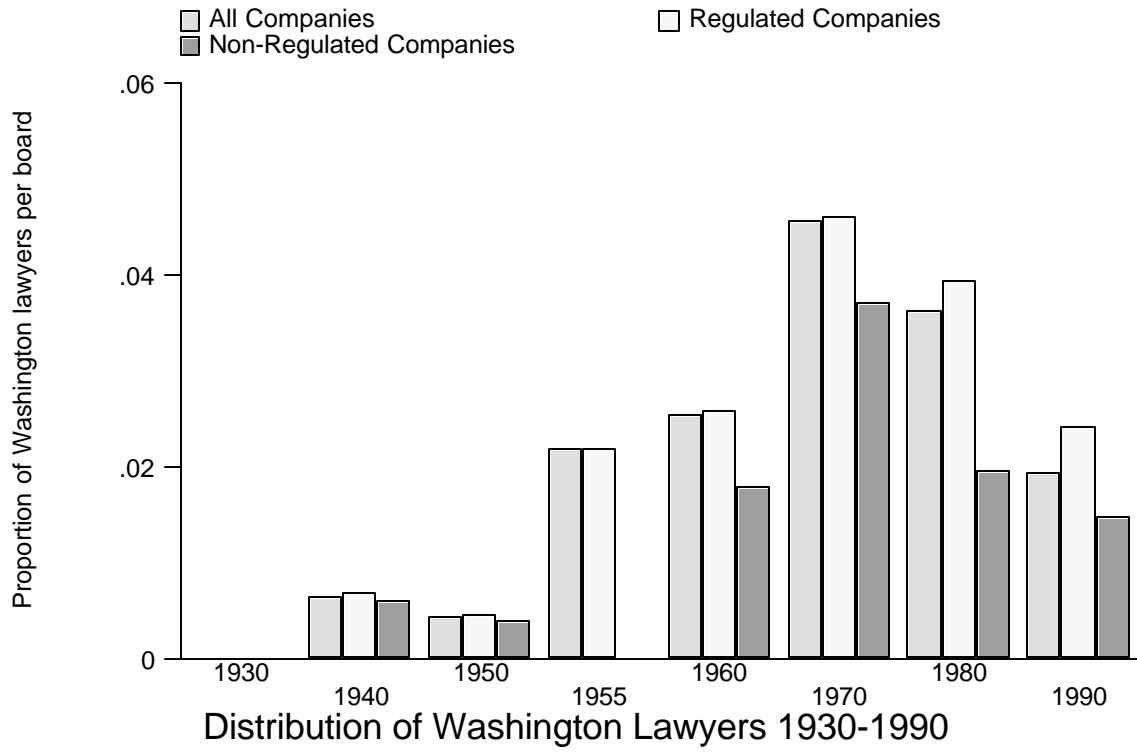


Figure 4

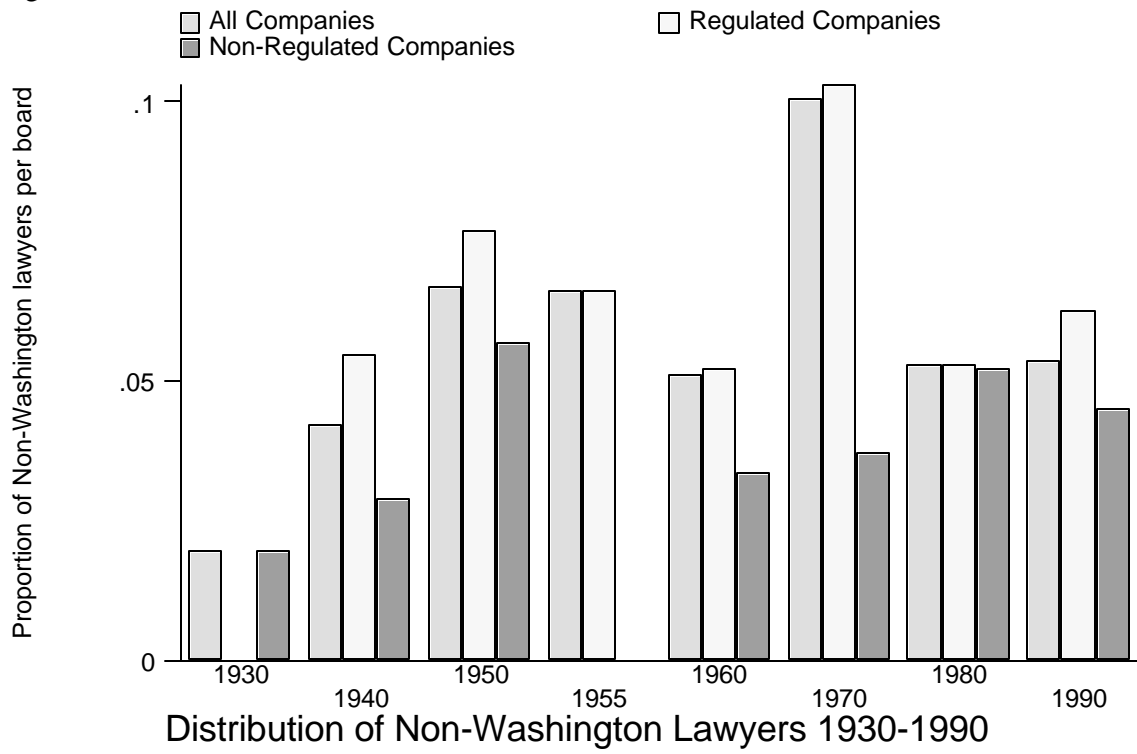


Figure 5

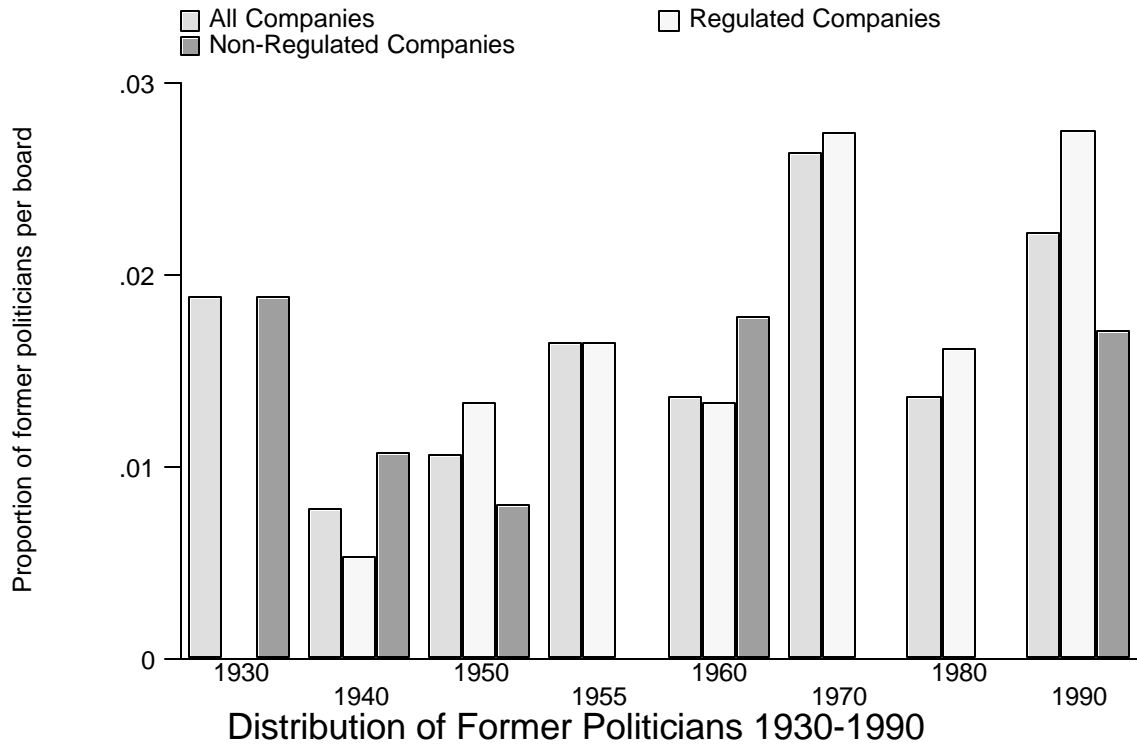


Figure 6

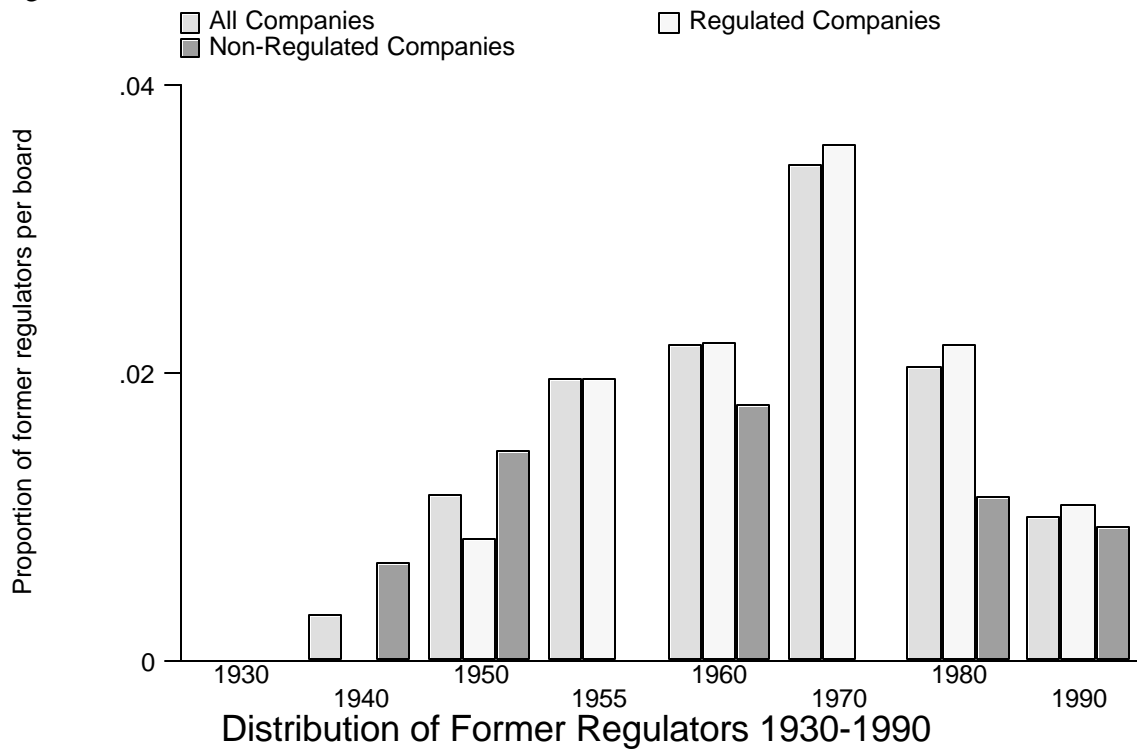


Figure 7

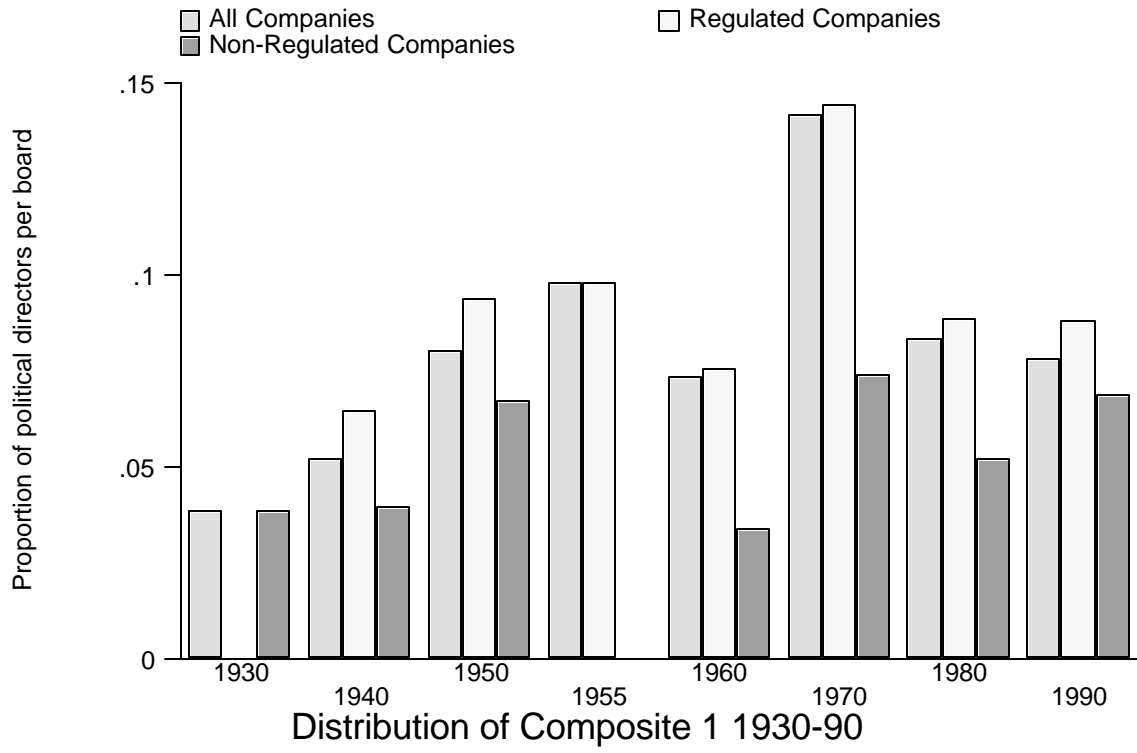


Figure 8

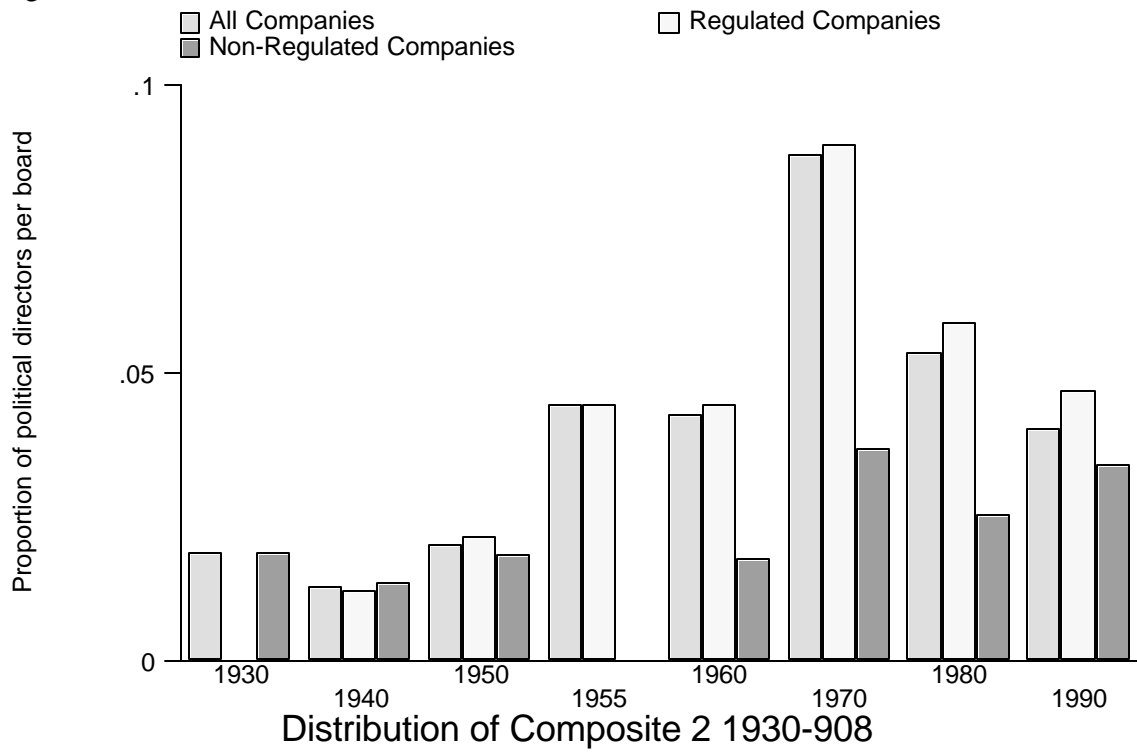


Figure 9

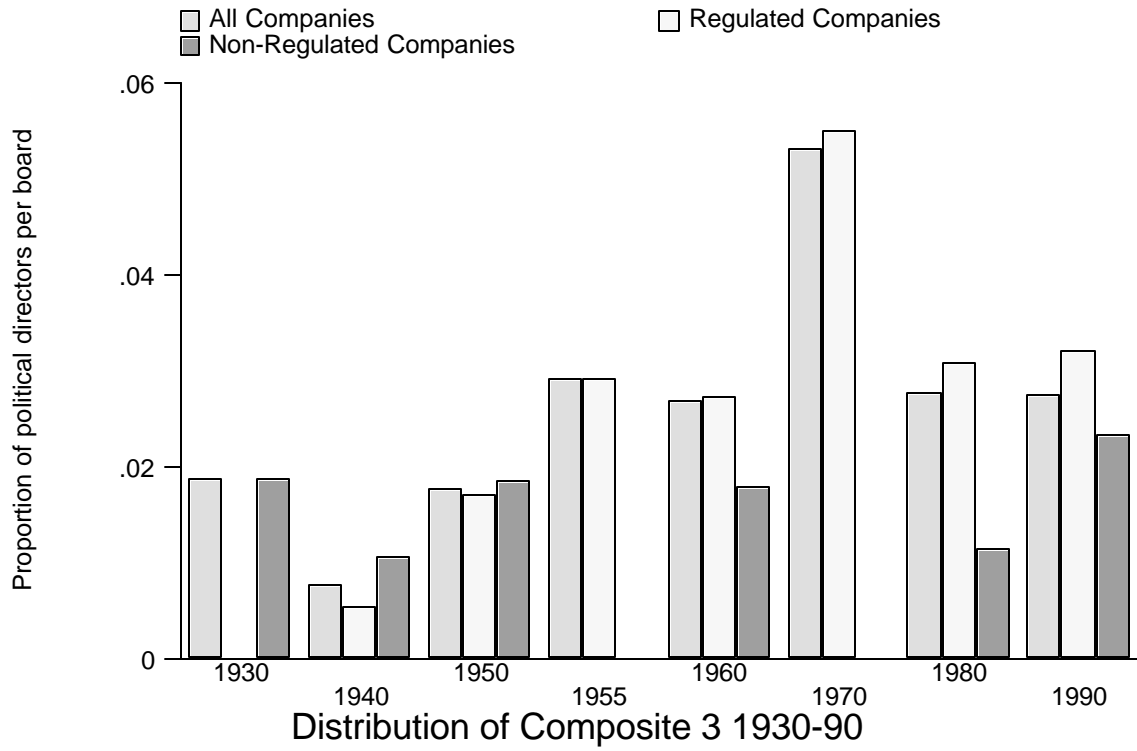


Figure 10

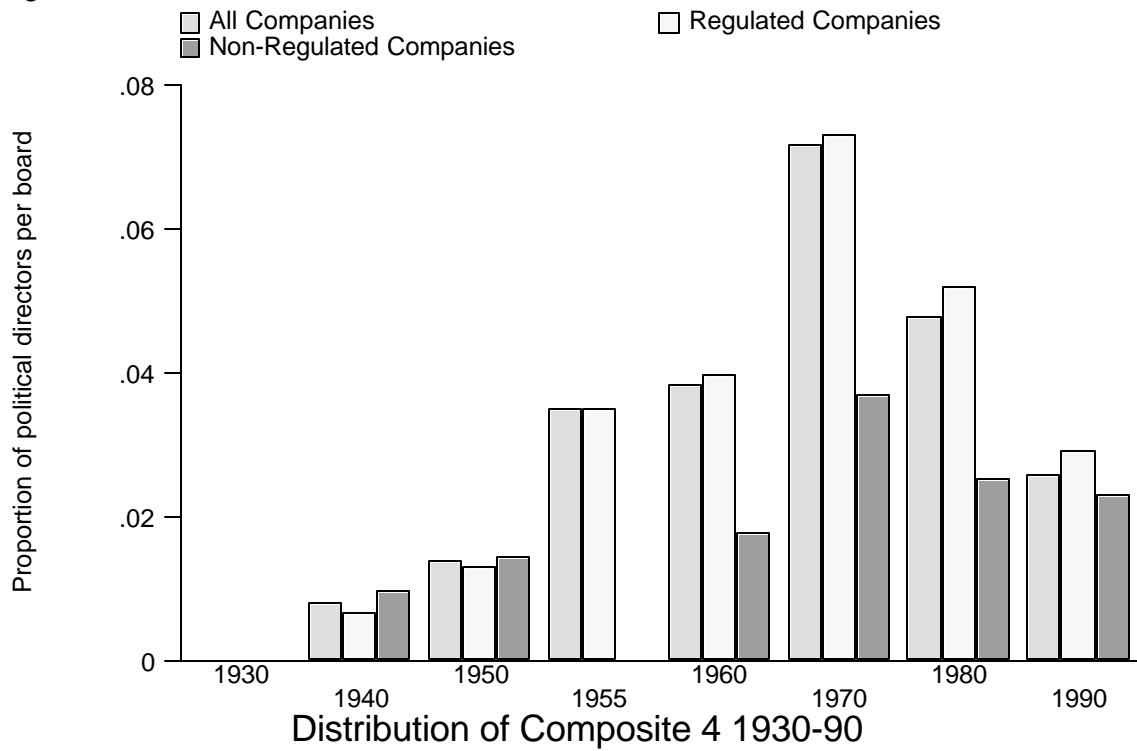


Figure 11

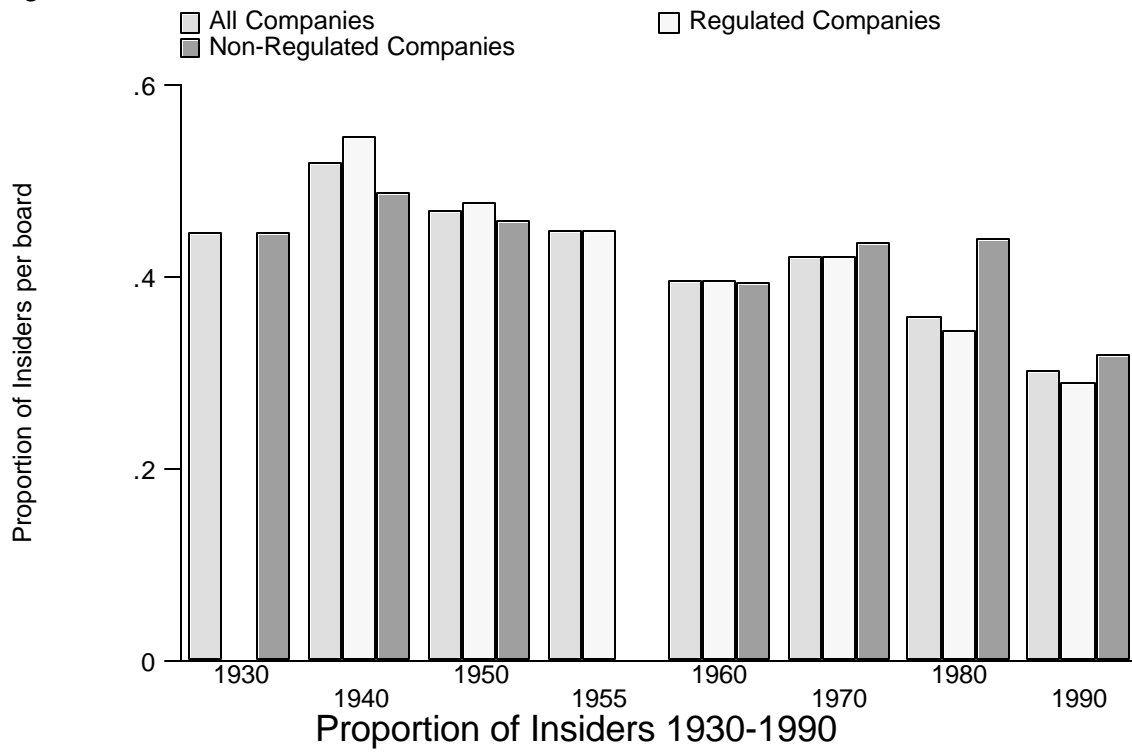


Figure 12

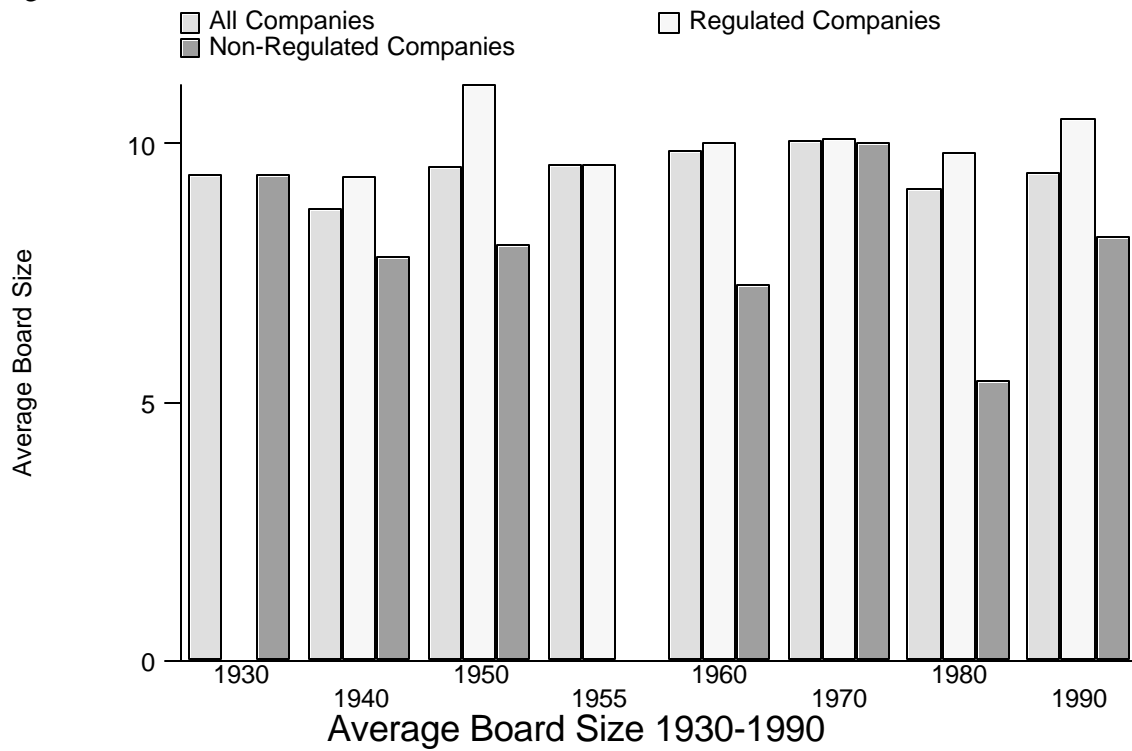




Figure 13

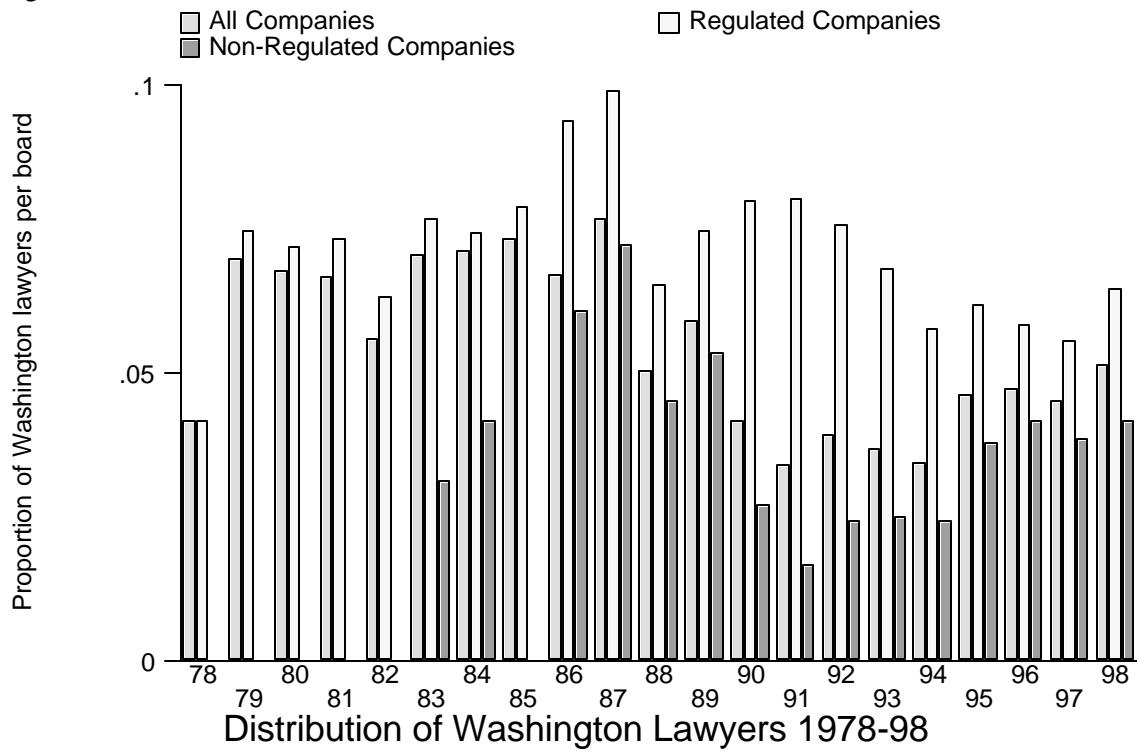


Figure 14

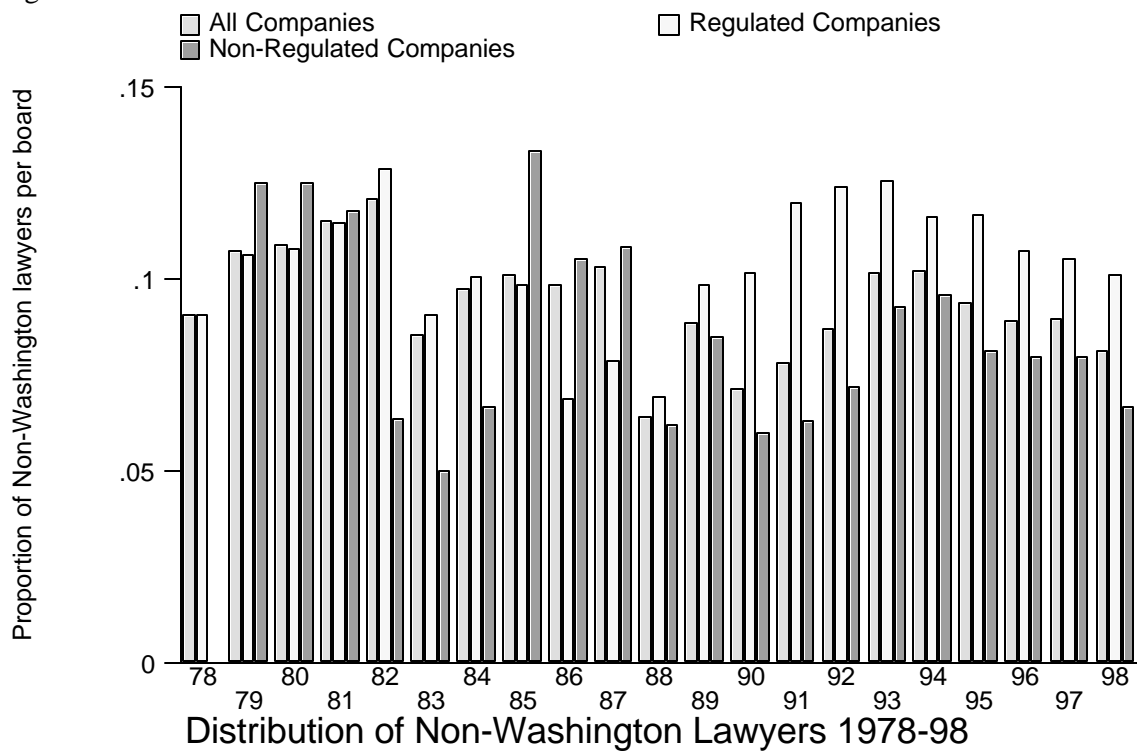


Figure 15

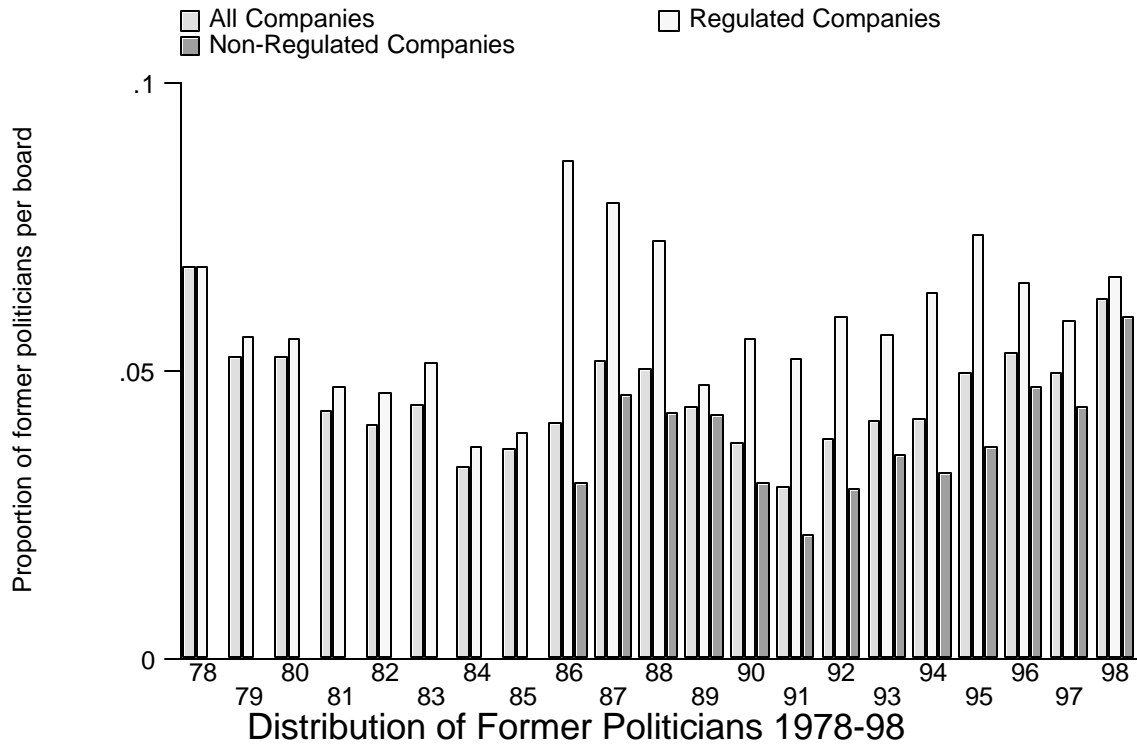


Figure 16

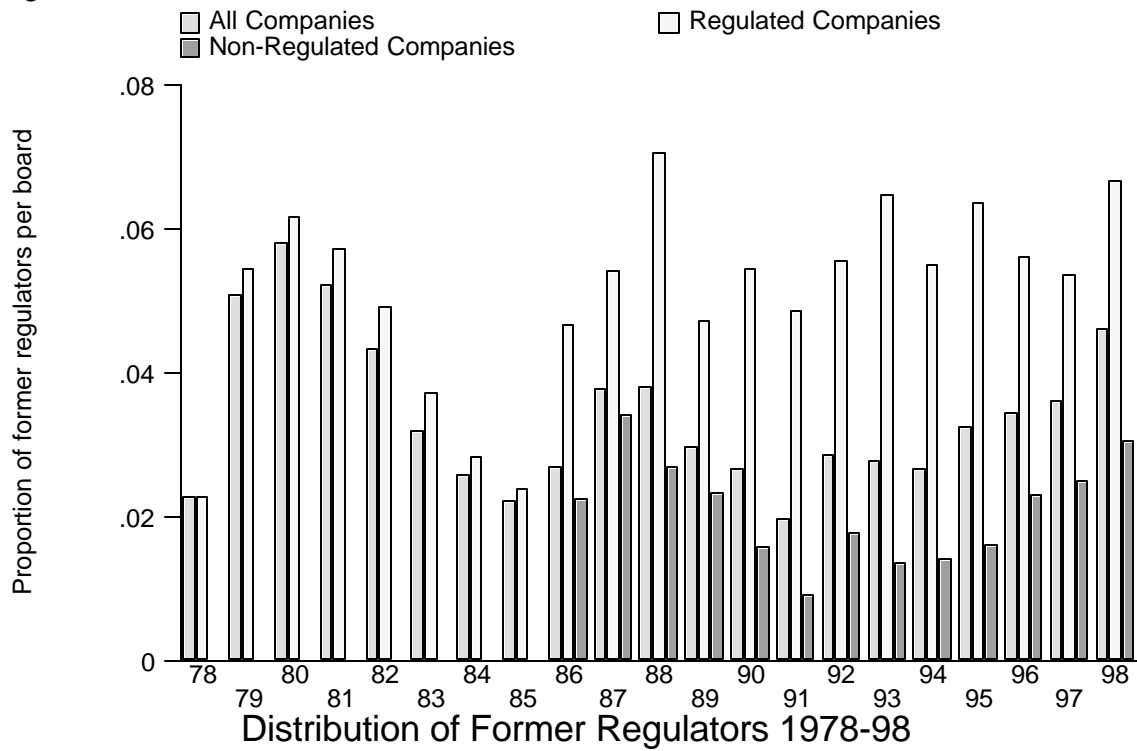


Figure 17

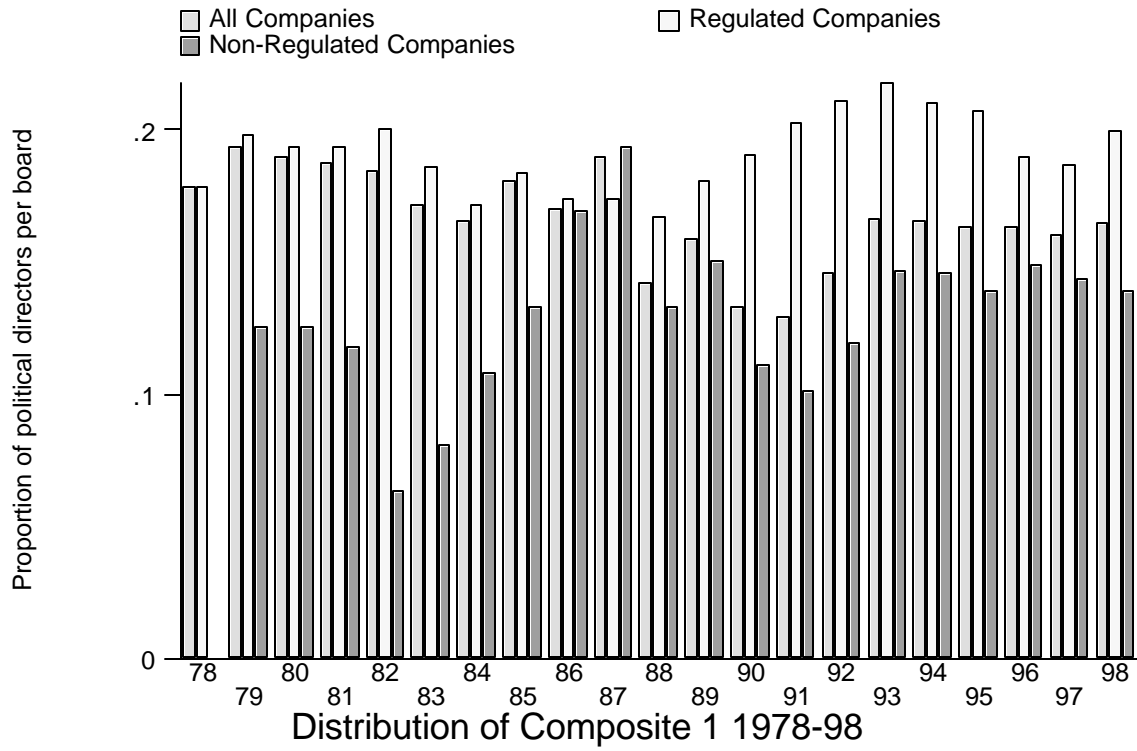


Figure 19

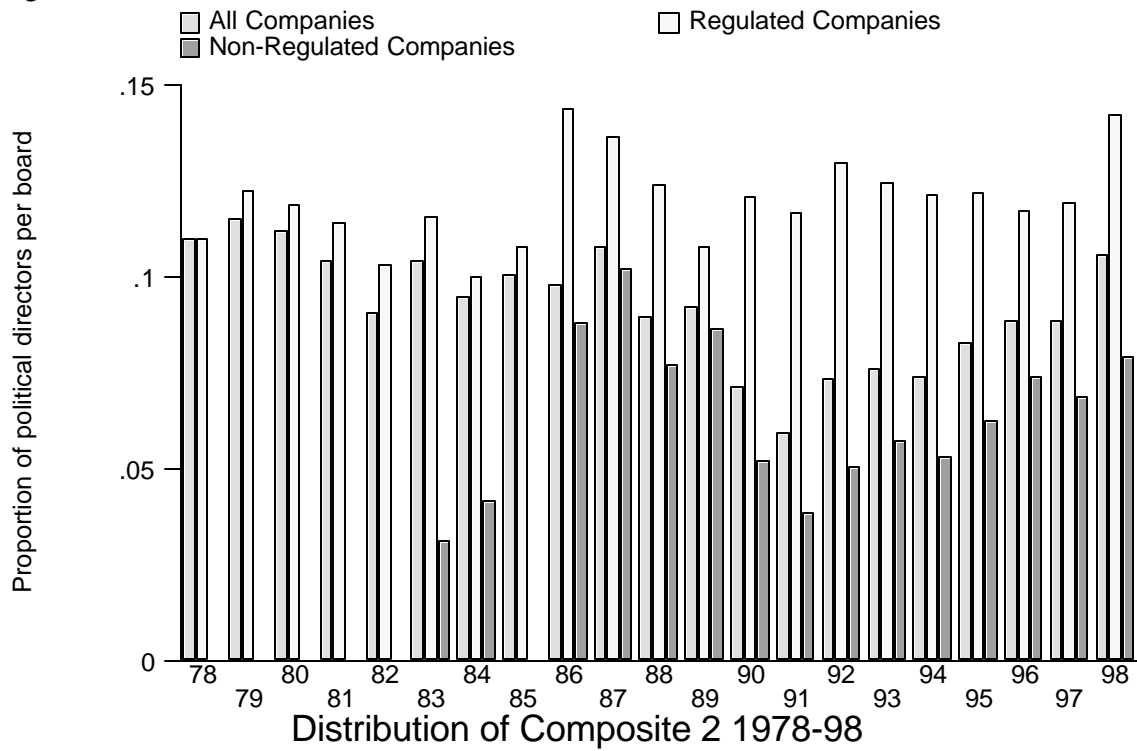


Figure 20

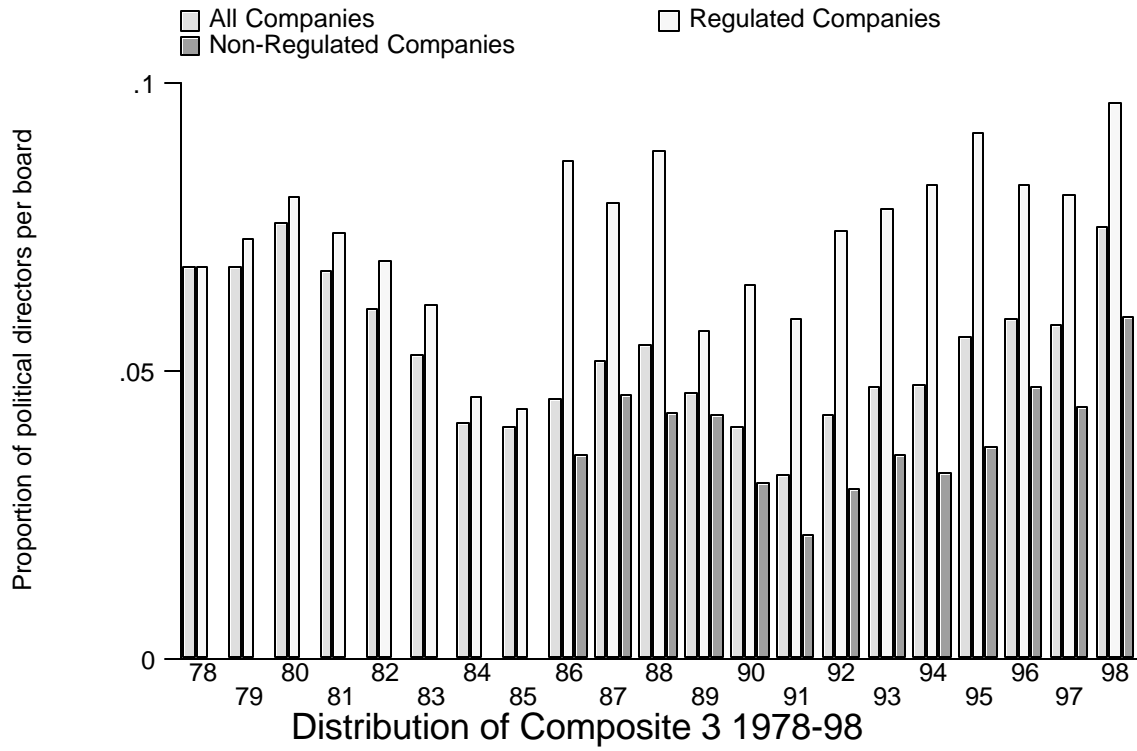


Figure 21

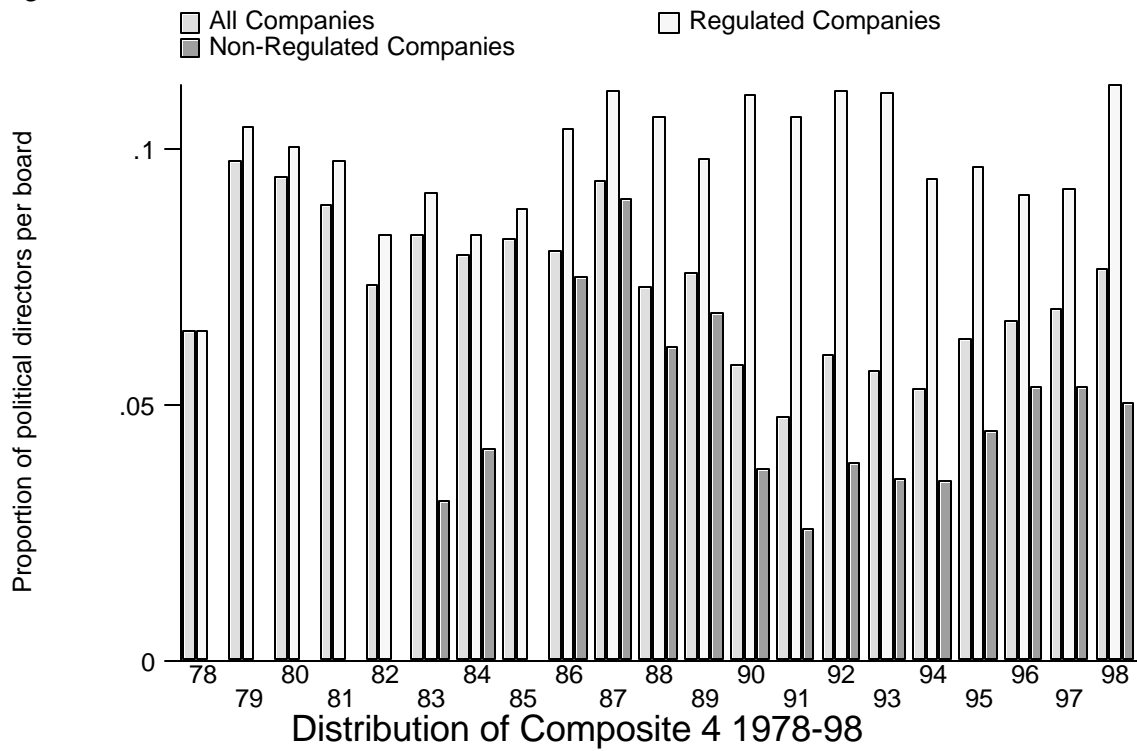


Figure 22

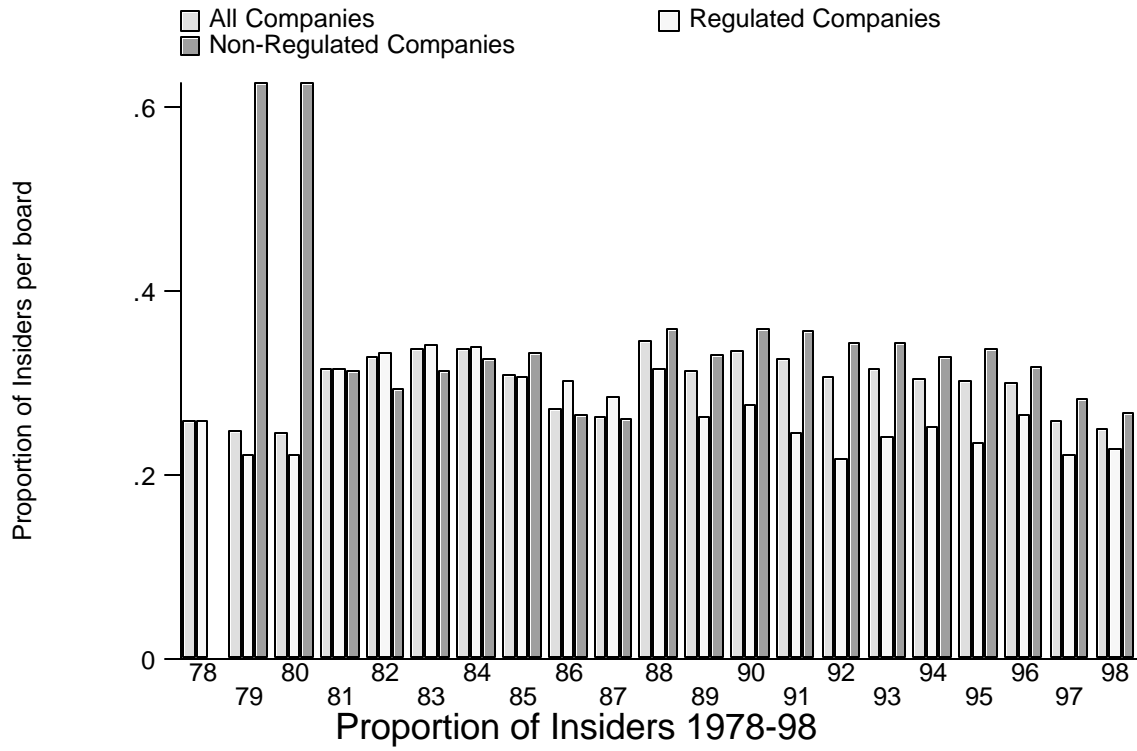


Figure 23

