
Swedish House of Finance Research Paper No 15-03

# Corporate Governance and the Creation of the SEC

Arevik Avedian
Harvard University

Henrik Cronqvist
China Europe International Business School (CEIBS) and SIFR

Marc Weidenmier
Claremont Colleges - Robert Day School of Economics and Finance and NBER

# Corporate Governance and the Creation of the SEC*

Arevik Avedian, Henrik Cronqvist, and Marc Weidenmier†

This draft: March 2, 2015

**Abstract**

We study the effects of the creation of the Securities and Exchange Commission (SEC) on corporate governance. Established in 1934, the SEC effectively applied the listing standards of the NYSE to all regional stock exchanges in the U.S. We therefore examine the impact of the SEC by comparing non-NYSE listing firms before and after the landmark legislation was adopted, using the NYSE as a control group. Our estimates reveal that there was a 30% reduction in board independence, i.e., the creation of the SEC caused boards to become significantly less independent. We find no corresponding effects on firm valuations. Our evidence is consistent with a "substitution of governance mechanisms" hypothesis, i.e., firms endogenously trade off market-based (board) governance and government-sponsored (SEC) governance. This evidence has implications for corporate governance regulation around the world.

*We are thankful for comments from seminar participants at China Europe International Business School, Florida State University, Peking University (Guanghua School of Management), Shanghai Advanced Institute of Finance, Shanghai University of Finance and Economics (School of Accounting), University of California - Berkeley (School of Law), University of Hong Kong, and from Renée Adams, Ashwini Agrawal, James Ang, Lucian Bebchuk, Yingmei Cheng, Yuan Ding, Jill Fisch, Eric Helland, Eric Hilt, Cliff Holderness, Paul Hsu, Reinier Kraakman, Tse-Chun Lin, Angie Low, Ruichang Lu, Geoffrey Miller, Harold Mulherin, Mattias Nilsson, Jun Qian, Carol Simon, Paul Schultz, Ann Sherman, Dragon Tang, Mike Weisbach, Frank Yu, and Xiaoyun Yu. We also thank Aanchal Kapoor, Jennifer Volk, and Nancy Yao for excellent research assistance. We acknowledge research funding from China Europe International Business School and the Financial Economics Institute and the Lowe Institute of Political Economy at Claremont McKenna College. This project was pursued in part when Cronqvist was Olof Stenhammar Visiting Professor at the Swedish Institute for Financial Research (SIFR), which he thanks for its support.

†Avedian: Harvard Law School (aavedian@law.harvard.edu); Cronqvist: China Europe International Business School (hcronqvist@ceibs.edu); Weidenmier: Claremont McKenna College, Robert Day School of Economics and Finance, and NBER (mweidenmier@cmc.edu).

# I Introduction

Significant turmoil in financial markets – whether the Panic of 1826, the Wall Street Crash of 1929, or the Global Financial Crisis of 2008 – tends to raise significant concerns about the effectiveness of pre-existing securities market regulation. In turn, such concerns tend to result in calls for additional and stricter government regulation of corporations and financial markets. It is widely considered that the most significant change to U.S. financial regulation in the past 100 years was the Securities Act of 1933 and the subsequent creation of the Securities and Exchange Commission (SEC) to enforce it. Before the creation of the SEC, federal securities market regulations were essentially absent in the U.S. The goal of this paper is therefore to examine how companies listing in the U.S. responded to this significant increase in the provision of government-sponsored corporate governance. Specifically, did this landmark legislation have any significant effects on board governance (e.g., the independence of boards) and firm valuations in the U.S.?

Before the creation of the SEC, corporate governance among U.S. publicly listed companies was largely deferred to private markets. In fact, the emergence of board governance predates much regulation, as emphasized by, e.g., Adams, Hermalin, and Weisbach (2010). Monitoring by the board, in particular by independent directors and chairmen, may be expected to reduce asymmetric information related to the sale of new securities. Other noticeable sources of market-based governance that already existed in the early 20th century include stock exchange regulations (i.e., "listing standards"), which had been strengthened significantly, particularly on the New York Stock Exchange (NYSE), during the 1920s (e.g., Berle and Means (1932) and Simon (1989)). Industry self-regulation had also been enhanced leading up to the SEC creation, in particular with the creation of the Investment Bankers' Association of America (IBAA) in 1912 (e.g., Carosso et al. (1970)), one of the predecessors of some of today's self-regulatory organizations.

Corporate governance may also exist in the form of government-sponsored governance. For example, the State of New York passed general incorporation laws as early as in the 19th century. State-level securities regulation was first adopted by the State of Rhode Island in 1910, and by 1931 all U.S. states except one had so-called "blue sky laws" (e.g., Agrawal (2013)). Regarding federal securities market regulation, it was limited to the Clayton Antitrust Act of 1914, which contained

provisions that were designed to force investment bankers sitting on railroad company boards to resign or stop providing services to these companies (e.g., Frydman and Hilt (2013)).[1]

The observation that securities markets in the U.S. were subject to many potentially important sources of corporate governance already before the SEC creation results in two hypotheses which we confront empirically in this paper. One view is that there was insufficient provision of market-based governance in U.S. securities markets before the creation of the SEC. Under this hypothesis, the creation of the SEC constituted an exogenous increase in the supply of government-sponsored governance that may resolve a market failure and improve the governance and valuation of publicly listing companies in the U.S. An alternative hypothesis is that there was already sufficient provision of corporate governance mechanisms. If there are costs of both too little, but also too much, governance (e.g., Hermalin and Weisbach (2012)), substitutions of governance mechanisms may be expected around regulation changes that affect the provision of governance, as long as firms are allowed to freely choose their corporate governance designs. For example, an increase in government-sponsored (e.g., SEC) governance may be expected to reduce the need for market-based (e.g., board) governance.

Our empirical identification approach makes use of an important feature of the regulatory change: The SEC effectively took the NYSE listing standards at the time, converted them into federal law, and applied them to all U.S. firms on all regional stock exchanges, i.e., both NYSE and non-NYSE firms were governed by the same regulation post-SEC. This prompted Simon (1989) to conclude that: "It is difficult to identify information required by the 1933 Act that had not been previously required by the NYSE." This approach to the regulation change resulted in a quasi-natural experiment which we exploit in this study. Specifically, non-NYSE listing firms are in the treatment group because they were affected by the regulation, and NYSE listing firms are in the control group because they were not expected to be affected as they had to comply with the listing standards of the NYSE even during the pre-SEC period. As a result, we may compare the difference

[1] One of the first corporate governance scandals affecting Wall Street occurred in 1826, i.e., more than 100 years before the creation of the SEC. After revelations of fraudulent financial practices by their management, several prominent firms went bankrupt unexpectedly, causing the "Panic of 1826." These events resulted in significant changes to securities market regulation in the State of New York. In addition, Massachusetts enacted legislation that required corporations to file an annual balance sheet, which became public record (e.g., Hilt and Valentine (2012)). For details about corporate governance prior to the creation of the SEC, we refer to Hilt (2014).

in board governance and firm valuations for affected (non-NYSE) firms and non-affected (NYSE) firms before and after the SEC. The difference of those differences is our empirical estimate of the regulation's effect on the studied governance and valuation measures.

We find that the creation of the SEC resulted in a large and statistically significant reduction in board and chairman independence among affected non-NYSE listing firms. Our estimates reveal that there was a 30% reduction in board independence, i.e., one of the most significant effects of the creation of the SEC was to cause the boards of affected firms to become less independent. In other words, an independent board and an independent chairman appear to have been more valuable in the pre-SEC era compared to in the post-SEC period. There is also some statistically weaker evidence that board governance was affected more broadly. For example, the creation of the SEC resulted in larger boards and less local director monitoring. These results are robust to using a variety of model specifications and robustness checks and controlling for the 1929 Wall Street Crash and the ensuing Great Depression.

The evidence reported in this paper is supportive of a "substitution of governance mechanisms" hypothesis, in which firms endogenously trade off market-based and government-sponsored governance. These results are broadly consistent with the endogenous nature of corporate governance, as previously argued by, e.g., Demsetz and Lehn (1985) and Hermalin and Weisbach (1998, 2012). The evidence of a substitution effect suggests that it is not clear that firm valuations should be significantly affected by the creation of the SEC. Indeed, in our search for valuation effects of the creation of the SEC, we find no significant effects on firm valuations.

This study contributes to the pre-existing literature on the effect of significant changes to corporate governance regulations.[2] The past decade has produced a very large number of studies on the impact of the Sarbanes-Oxley (SOX) Act of 2002. An incomplete list of studies which examine a broad set of SOX effects includes Chhaochharia and Grinstein (2007), Zhang (2007), Leuz et al. (2008), Linck, Netter, and Yang (2009), and Doidge, Karolyi, and Stulz (2010). A recent review of SOX studies by Coates and Srinivasan (2014) includes references to over 120 papers. This significant volume of SOX studies stands in sharp contrast to SEC studies, which

[2]For a recent and detailed review of research related to securities market regulation, we refer to Mulherin (2007).

are relatively few and far between (e.g., Stigler (1964b), Benston (1973), Jarrell (1981), and Simon (1989)). At least two conclusions emerge from these previous studies of the creation of the SEC. First, there is no consensus regarding the economic effects of the creation of the SEC. Second, there are no previous studies of the effects of the SEC creation on corporate governance and firm valuations. These gaps in the current literature motivate our study. Our study also contributes to recent law and economics research related to the effectiveness of public versus private enforcement of securities laws (e.g., La Porta et al. (2006) and Jackson and Roe (2009)).

The rest of the paper is organized as follows. Section II reviews the relevant institutional background and develops our hypotheses. Sections III and IV discuss our methodology and data. Section V reports our results and robustness checks. Section VI contains conclusions and implications.

# II Institutional Background and Hypotheses

In this section, we discuss the sources of corporate governance that existed in the U.S. before the creation of the SEC. This discussion naturally leads to the development of two hypotheses related to the effects of the creation of the SEC on corporate governance.

## A Corporate Governance before the SEC

Economists have long recognized the so-called "lemon's problem" which may arise in markets in which heterogeneous quality differences are not observable beforehand by a buyer, and in which there exist financial incentives for sellers to engage in "quality shading" and sell low-quality products as higher-quality ones (e.g., Akerlof (1970)). This problem plagues securities markets, but may be reduced by a variety of corporate governance mechanisms. It is important to emphasize that we would expect a market for governance to arise endogenously even in the absence of any government-mandated securities regulation, e.g., through board governance (independent directors engaged in monitoring), stock exchange regulation, and industry self-regulation (e.g., Stigler (1964b), Easterbrook and Fischel (1984), and Hermalin and Weisbach (1998)). In this section, we provide institutional background information by discussing the following question: Who provided corporate governance in the U.S. before the creation of the SEC?

### A.1 Board Governance

Board governance is one source of governance that existed in the U.S. well before the creation of the SEC (e.g., Adams et al. (2010)). Boards may be viewed as a market solution to an organizational design problem, i.e., a governance mechanism which reduces the asymmetric information problems that affect listed firms ability to raise external financing (e.g., Hermalin and Weisbach (2003)). Independent directors' concerns for a strong reputation in the director market may cause them to be effective monitors (e.g., Fama (1980) and Fama and Jensen (1983)).[3] In a board-specific model, Hermalin and Weisbach (1998) emphasize that the board governance of a firm, e.g., the proportion of independent directors, is endogenously determined. Several empirical studies have examined board governance and estimated the economic factors that result in changes in the composition of boards (e.g., Hermalin and Weisbach (1988), Baker and Gompers (2003), Boone et al. (2007), and Linck, Netter, and Yang (2008)).[4]

### A.2 Stock Exchange Regulation

In the early 20th century, there existed a large number of regional stock exchanges in the U.S. (e.g., Arnold, Hersch, Mulherin, and Netter (1999) and Brown, Mulherin, and Weidenmier (2008)). Because of reputational concerns, a stock exchange may provide a signal of a firm's quality to investors by approving (or not approving) a company's listing application, and listing standards may also require companies to disclose material financial information once the company is listed on the stock exchange. Berle and Means (1932) summarize the NYSE's disclosure requirements before the SEC: "The NYSE insists on certain expert data, notably the opinion of independent counsel as to the validity of the securities and financial statements and a report of a qualified engineer covering the physical conditions of the assets." It is widely considered that the NYSE had the most stringent listing standards before the creation of the SEC.

[3] There exists empirical evidence consistent with such an argument. Directors of poorly performing firms who, as a result, may be perceived to have done a poor monitoring job, are less likely to obtain directorships at other firms (e.g., Kaplan and Reishus (1990)).

[4] Board composition appears to have changed during the past century. Lehn, Patro, and Zhao (2009) study 82 firms that survived as publicly listed companies from 1935 to 2000. These firms' boards became more independent, with inside directors dropping from 43% in 1935 to 13% in 2000. Survivorship bias complicates the interpretation of these results, and a part of this effect may be explained by the life-cycle of these firms, i.e., changing firm characteristics.

Table 1 shows the evolution of stock exchange regulation in the U.S. before the creation of the SEC. The NYSE disclosure requirements strengthened significantly following the so-called "Money Trust" investigation and the Pujo Committee Report in 1913. Importantly, during the 1920s, the NYSE implemented further steps to increase information disclosure and improve the governance of listed firms, and the exchange also revised its constitution to include the phrase "in the public interest."

### A.3 Industry Self-Regulation

Industry self-regulation is another source of corporate governance that existed before the SEC (e.g., Cary (1963)).[5] In 1912, representatives from brokerage firms and investment banks in the U.S. established the Investment Bankers' Association of America (IBAA), with the specific goal of "improving the standards of those engaged in investment banking" and "protecting the investing public." The IBAA was engaged in industry regulation, and its members were requested to disclose material financial information before selling securities, and fraudulent practices were published in the IBAA newsletter (e.g., Goldschmidt (1937) and Carosso et al. (1970)).

### A.4 State-Level Regulation

There was no state-level securities regulation in the U.S. to protect the investing public in new securities sales until the early 20th century. The State of Rhode Island was the first to adopt "blue sky laws" in 1910, followed by Kansas in 1911 (e.g., Mulvey (1914) and Macey and Miller (1991)). Within two years, 22 other states had passed similar laws, largely modeled on the Kansas statute. By the time of the SEC creation, all U.S. states except Nevada had adopted laws which governed sales of securities in those states (e.g., Seligman (1983)).

Blue sky laws generally required a firm to submit information about its operations and finances to the State Securities Commission before issuing securities (e.g., Reed and Washburn (1921) and Mahoney (2003)). Blue sky laws are considered by some legal scholars as more "paternalistic" in

[5]Even in the absence of any industry self-regulation, it is to be expected that there are strong profit-maximization incentives for at least some investment banks that underwrite new issues to cultivate a reputation for bringing sound companies to the market by monitoring the claims by issuer-clients (e.g., Booth and Smith (1986)).

that they impose certain qualitative standards to be met before an application for registration is approved (e.g., Cowett (1959)).[6] In other words, many of the blue sky laws go considerably further compared to the disclosure principle underlying the 1933 Act.

In a recent study, Agrawal (2013) examines the staggered passage of blue sky laws to estimate the causal effects of state-level securities regulation, and concludes that the laws had a significant impact on corporate policies and increased firm performance. This result is consistent with state-level securities regulation in the U.S. increasing the supply of government-sponsored governance, and private markets not supplying a socially optimal quantity of governance before the emergence of blue sky laws.

## B Hypotheses

Based on the above discussion, we develop two hypotheses related to the effects of the creation of the SEC on corporate governance.

One hypothesis is that there was insufficient provision of market-based governance before the creation of the SEC (e.g., Friend (1966) and Coffee (1984)). Proponents of this view may point to several reasons for a failure of private markets to provide an optimal quantity of governance. For example, intense competition among the more than 30 regional stock exchanges may have had a perverse effect on enforcement, in order to attract listings and thus commissions. In addition, the self-regulating IBAA experienced free-rider problems among its brokerage firm members and lacked legal authority to engage in effective enforcement. Furthermore, there was significant variation in blue sky laws across states and in New York, where a large portion of the sales of public securities took place, the statutes were limited to laws regulating brokerage firms. Franklin D. Roosevelt, a candidate in the 1932 presidential election, promised to introduce federal regulation of securities markets as a part of his "New Deal" reforms, and embraced a view that a great deal of investors' recent losses were attributable to the failure of market-based sources of corporate governance.[7]

[6] Carosso et al. (1970) state that: "[T]he Kansas law [was] the most comprehensive and vigorously enforced securities statute enacted in the United States up to this time. Never before had a state statute sought to prevent its citizens from making unwise investments. The law went far beyond the fraud and disclosure principles incorporated in the British Companies Act or earlier state statutes regulating securities."

[7] There had been previous attempts in the U.S. to introduce federal regulation of the new issues market (including the Taylor and Volstead Bills in 1919 and the Denison Bill in 1922), but they had all stalled one way or another.

An alternative hypothesis is that there was no need for federal securities regulation as there was already sufficient market-based governance (e.g., Stigler (1964b), Jarrell (1981), and Easterbrook and Fischel (1984)). In other words, standard economic mechanisms, such as profit-maximization combined with reputation of firms, directors, stock exchanges, investment banks, and state-level blue sky laws, produce an equilibrium that provides investor protection, even in the absence of federal securities regulation.[8]

## C Previous Studies of the Creation of the SEC

Studies of the 1933 Act and the creation of the SEC are few and far between. Stigler (1964a,b) was the first to study the change in regulations.[9] Stigler compared the returns to investors in pre-SEC and post-SEC securities, but found no statistically significant differences, which prompted him to conclude that "doubts exist whether, if account is taken of costs of regulation, the SEC has saved the purchasers of new issues one dollar." This study created several responses (e.g., Friend and Herman (1964, 1965) and Robbins and Werner (1964)).

Benston (1973) finds that the change in return volatility following the creation of the SEC was no different for firms that had previously disclosed accounting information compared to those that had not previously disclosed information, a finding which was criticized by some other researchers (e.g., Friend and Westerfield (1975)).

Jarrell (1981) finds that the abnormal return performance of pre-SEC new issues is superior to that of the post-SEC new issues. In other words, the creation of the SEC did not improve the net-of-market returns to investors who purchased new equity issues. This finding has also been challenged by other researchers (e.g., Smith (1981)).

Simon (1989) studies both new and seasoned issues on both the NYSE and regional stock exchanges. She finds that only new issues floated on the non-NYSE exchanges were associated

[8] Dyck, Morse, and Zingales (2010) report that the SEC, during a more recent period, was indeed responsible for uncovering only a very small (7%) proportion of the examined corporate fraud cases.

[9] Earlier studies focused on stock market liquidity (e.g., Dolley (1938), Sweezy (1938), and Beach (1939)).

with higher abnormal returns in the post-SEC period.[10]

At least two conclusions emerge from a review of previous studies of the creation of the SEC. First, there is no consensus on the economic effects of the creation of the SEC.[11] Second, there are no previous studies of the effects of the creation of the SEC on corporate governance and firm valuations.

# III Methodology

## A Empirical Identification Approach

Simply comparing listing companies' board governance (e.g., the percentage of firms with independent chairmen) or firm valuations (e.g., Tobin's Q) before and after the SEC creation may cause problems if macroeconomic conditions also changed around the time of the regulation. This is a particularly relevant concern for this study, as the SEC was enacted during the Great Depression. To control for confounding macroeconomic events, we would ideally have a treatment group of firms that are expected to be affected by the creation of the SEC, which can then be compared to a control group of firms that are expected not to be affected by the regulation.

Our empirical identification approach makes use of an important feature of the regulatory change: The SEC effectively took the NYSE listing standards at the time, converted them into federal law, and applied them to all U.S. firms on all regional stock exchanges. In other words, both NYSE and non-NYSE firms were governed by the same federal regulations post-SEC, but not pre-SEC. This approach to the regulation change resulted in a quasi-natural experiment which we exploit in this study. Specifically, non-NYSE listing firms are in the treatment group because they were affected by the regulation, and NYSE listing firms are in the control group because they were

[10] In the 25 years since the study by Simon (1989), research in financial economics has experienced significant developments. For example, the CAPM model used by Simon (1989) to compute abnormal returns has been replaced by multi-factor models (e.g., Fama and French (1992, 1993)). In ongoing empirical work, we are therefore examining whether the conclusion by Simon (1989) is robust to using contemporary asset pricing models to calculate abnormal returns.

[11] This conclusion of non-consensus among previous studies extends to related quasi-natural experiments, including the 1964 Securities Acts Amendments, i.e., the extension of SEC disclosure requirements to the over-the-counter (OTC) market in 1964 in which different researchers report different findings (e.g., Greenstone, Oyer, and Vissing-Jorgensen (2006) and Battalio, Hatch, and Loughran (2011)).

not expected to be affected in that they had to comply with the listing standards of the NYSE even during the pre-SEC period. As a result, we may compare the differences in board governance and firm valuations of affected (non-NYSE) firms and non-affected (NYSE) firms before and after the SEC. The difference of those differences is our empirical estimate of the regulation's effect on the studied governance and valuation measures.

## B Model Specification

We estimate the effects of the creation of the SEC by using the following model specification:

$$y_{ijkt} = \alpha_j + \alpha_k + \alpha_t + \beta_1 X_{it} + \beta_2 SEC_t + \beta_3 Non-NYSE_i + \beta_4 SEC \times Non-NYSE_{it} + \epsilon_{ijkt} \quad (1)$$

where $i$ indexes firms, $j$ industries, $k$ regions, and $t$ years. $y_{ijrt}$ is the dependent variable of interest, for example, a board governance measure (e.g., indicator for board being majority-independent) or a company valuation measure (e.g., Tobin's Q). $\alpha_j$, $\alpha_k$ and $\alpha_t$ are industry, region, and year fixed effects, respectively. $X_{it}$ are time-varying control variables (e.g., log of assets as a firm size measure). $SEC_t$ is an indicator variable that is one after 1933, and zero otherwise. $Non-NYSE_i$ is an indicator variable that is one for non-NYSE firms, and zero otherwise. $SEC \times Non-NYSE_{it}$ is the interaction variable of interest in our empirical analysis, capturing the firms that are expected to be affected by the regulation. $\epsilon_{ijkt}$ is an error term. Reported standard errors are heteroskedasticity-robust and clustered at the year-level.

We include industry, region, and year fixed effects to control for unobservable heterogeneity, reducing the potential for omitted variable problems. Industry fixed effects control for the most common industries at the time of the creation of the SEC – manufacturing, retail, service, and transportation industries – and are based on the classification reported in the Commercial and Financial Chronicle (CFC).[12] Region fixed effects control for the broad U.S. Census Bureau regions – Northeast, Midwest, South, and West – and are based on the location of the corporate headquarters as reported in the CFC.

[12]We do not include issues by public utilities and financial institutions (including investment trusts), a practice that is common both in previous studies of the SEC and studies of contemporary corporate governance effects.

## C Discussion of Empirical Challenges

One challenge specific to our study is the relatively small sample size, which makes it difficult to find statistically significant effects. Some other challenges are not specific to our study, but apply to studies of financial regulation more generally.

First, the SEC was created during the Great Depression era, one of the most severe economic downturns in U.S. history, which significantly affected the macroeconomic conditions of the country.[13] This suggests that there was a potentially confounding macroeconomic event during the period that we study. Our model specification in equation (1), with treatment and control groups of firms, was chosen to explicitly confront concerns about the impact of a changing macroeconomic environment. As a robustness check, we will also exclude the Wall Street Crash years (1929-1930) entirely from the sample. A related concern is that some regions of the U.S. may have been disproportionately affected by the Great Depression (e.g., the Dust Bowl). As a robustness check, we will therefore include region-year fixed effects.

Second, changes in the composition of NYSE versus non-NYSE listing firms may confound the measured effects of the regulation. For example, we may expect non-NYSE listing firms to be smaller on average compared to NYSE listing companies. This may cause problems if the composition of firms with respect to size changed among NYSE versus non-NYSE listing firms at the same time as the regulation. To confront such concerns, we control for firm size, as well as other firm characteristics, in our model specification.

Finally, the choice to list on the NYSE versus a non-NYSE stock exchange is an endogenous choice by the company. Because of technological constraints and the high cost of communication in the early 20th century, the market for equity offerings in the U.S. was much more geographically segmented in the early 1900s. This circumstance helps the empirical identification in this study.

[13] The observation that the regulation coincided with financial market turmoil is not particularly surprising from a political economy perspective, as many significant pieces of financial regulation follow a similar pattern. For example, the Sarbanes-Oxley Act of 2002 was introduced after several cases of corporate fraud. For a detailed discussion of the political economy of financial regulation, we refer to, e.g., Benmelech and Moskowitz (2010) and the references therein.

# IV Data

## A Description of Data Collection Procedure

There does not exist any commercial providers of the firm-level data set required for this study. As a result, most of the information was collected manually from the "New Capital Flotations" section of the Commercial and Financial Chronicle (CFC). Starting in 1918, the CFC was a monthly publication and the main source of data on new stock listings in the early 20th century and used by other researchers who have analyzed historical data (e.g., Arnold et al. (1999), Brown, Mulherin, and Weidenmier (2008), and Agrawal (2013)). We also use Moody's Industrial Manuals and the Investment Dealers' Digest to verify the data and to collect any additional required information. For new issues listed on the NYSE, the Center for Research in Security Prices (CRSP) is an additional source of verification of stock market related data starting in 1926.

From these data sources, we are able to compile a sample of new stock listings before and after the creation of the SEC. To the best of our knowledge, the sample that we analyze is the largest and most complete among all of the studies which have analyzed the 1933 Act. We focus on initial offerings of common stock to the public for several reasons. First, they are expected to be most affected by asymmetric information and the 1933 Act, as argued by, e.g., Simon (1989). Specifically, seasoned issues may not be affected much as the asymmetric information problem is muted for already listed firms. Second, new stock listings are more likely to be governance-changing events for companies, compared to seasoned offerings. In other words, corporate governance of listed firms generally changes only slowly.

Our data set covers the period 1925 to 1940, i.e., both the pre-SEC and the post-SEC period. The most common industries at the time of the regulation were manufacturing, retail, service, and transportation. We include new offerings of common stock exceeding $2 million, i.e., the same size restriction as in, e.g., Jarrell (1981). Only about 5% of the stocks cross-list on multiple exchanges, and we classify these stocks as listing on the largest exchange in terms of market capitalization.

Table 2 reports a summary of the sample. Our final sample consists of a total of 439 firms.[14]

## B Definitions of Variables

We study the effect of the SEC creation on a broad set of governance measures related to board independence, size, and director location. *Independent Board* is an indicator variable that is one if a majority of the directors on the firm's board are independent, and zero otherwise. All officers of the company are classified as inside directors. While a classification of "gray" directors is challenged by our data being from the early 20th century, we classify all directors with the same family name as an officer as inside directors (e.g., Weisbach (1988)).[15] In other words, we classify non-inside directors as independent directors. *Independent Chairman* is an indicator variable that is one if the firm's chairman is independent, and zero otherwise. *Board Size* is the number of directors of the company's board. *Local Board* is an indicator variable that is one if a majority of the directors on the firm's board are local, defined as listed in the CFC in a city within 50 miles of the corporate headquarters, and zero otherwise.

We also study the effect of the creation of the SEC on firm valuations. Specifically, we follow a large literature in corporate governance research that uses *Tobin's Q*, i.e., the market value of equity plus the book value of debt divided by the book value of equity plus the book value of debt, as a measure of firm valuation.

In addition, we include several time-varying firm-level control variables. Log ($Assets$) is the natural log of the total book value of the firm's assets. *Capex* is capital expenditures scaled by sales. *Leverage* is long-term debt scaled by the book value of the firm's total book assets. These variables are measured at the time of the listing on the stock exchange.

[14] Our sample is most comparable to that of Simon (1989), but there are two differences. First, her sample period is two years shorter. Second, she drops firms with less than 30 months of post-IPO data (e.g., infrequently traded firms) and imposes other constraints as she analyzes stock returns. As a result, Simon's sample is significantly smaller than ours.

[15] Hermalin and Weisbach (2003) report that gray directors represent about 10% of directors, although it is possible that this percentage has decreased over time.

# V Results

## A Descriptive Evidence

Table 3 Panel A reports summary statistics for the board governance and firm valuation measures that we study. We report data for the full sample period (1925–1940), and also separate mean values for the pre-SEC subsample period (1925–1933) and the post-SEC subsample period (1934–1940).[16] For each of these subsamples, we report the mean values separately for NYSE and non-NYSE firms. Panel B contains similar data for the firm-level variables that we include as controls.

Several interesting results emerge from these summary statistics. First, for each of the board governance measures, we find that firms which list on non-NYSE stock exchanges post-SEC (i.e., the firms most affected by the SEC creation) choose to adopt weaker corporate governance designs compared to pre-SEC non-NYSE listing firms. Specifically, the proportions of firms with majority-independent boards and with an independent chairman decrease, boards become larger, and the proportion of firms with majority-local directors goes down. Second, after the creation of the SEC, we find that non-NYSE listing firms have lower Tobin's Q compared to pre-SEC non-NYSE listing firms. Of course, these results may simply be explained by a confounding event affecting all firms listing in the U.S. or by changing firm characteristics of companies that issue public equity, concerns that we address when we estimate equation (1).

## B Regression Evidence

In this section, we will use the model specification in Section III.B to estimate the impact of the creation of the SEC on board governance and firm valuations.

### B.1 Board and Chairman Independence

Table 4 reports estimates from equation (1) in which the dependent variable is *Independent Board*. The estimated effects from linear probability models are in columns (1) and (2), and the marginal effects from Probit models are in columns (3) and (4). We find that the creation of the SEC

[16] Because there are so few new listings in our sample in 1934, our results are qualitatively and quantitatively very similar if we define the pre-SEC period to end in 1934 and the post-SEC period to start in 1935 (untabulated).

significantly reduced board independence among affected firms, i.e., firms listing on non-NYSE stock exchanges post-SEC. The effect is statistically significant at the 5%-level, and the economic magnitude of the estimated effect is large at 29.8%. It is important to emphasize that the estimated effect for affected non-NYSE listing firms is relative to NYSE listing firms, and after controlling for industry, region, and year fixed effects, as well as time-varying firm characteristics. In other words, the proportion of non-NYSE firms with majority-independent boards is reduced by about a third after the SEC, i.e., firms listing on non-NYSE stock exchanges became much more likely to appoint insiders as directors after the creation of the SEC.

We also report results for the independence of the firm's chairman, generally the most important director on the firm's board. Table 5 reports the estimated effects from linear probability models and marginal effects from Probit models, with *Independent Chairman* as the dependent variable. Consistent with the result for the overall independence of the board, we find that the creation of the SEC significantly reduced chairman independence among non-NYSE listing firms. The effect is statistically significant at the 10%-level, and the economic size is large at 25.8%. This result suggests that the reduction in overall board independence is often attributable to a reduction in the independence of the board's chairman as opposed to other directors.

Our evidence suggests that the exogenous increase in the provision of government-sponsored governance resulted in the firms most affected by the change responding by adopting weaker market-based governance designs. This result is supportive of a "substitution of governance mechanisms" hypothesis, i.e., firms endogenously trade off market-based (board) governance and government-sponsored (SEC) governance. Before the SEC creation, an independent board constituted an important governance mechanism to reduce asymmetric information when selling new equity issues to investors. Independent directors may provide a more credible signal of the quality of the firm. After the SEC creation, this benefit was significantly smaller because of the disclosure rules of the

1933 Act, and our results suggest that firms' board governance designs responded to this change.[17]

We conclude that the creation of the SEC resulted in a substantial reduction in board and chairman independence among affected firms. In particular, non-NYSE firms, which we expected to be most affected by the creation of the SEC, responded to the SEC creation by reducing the amount of board governance as the exogenous supply of government-sponsored governance increased significantly. From a corporate governance perspective, one of the most significant effects of the creation of the SEC seems to have been to cause the boards of the most affected firms to become less independent.

### B.2 Other Board Governance Measures

While board and chairman independence are perhaps the most central board governance measures, we also examine whether the SEC affected other aspects of board governance, in particular board size and local board monitoring.

It has been argued that larger boards are associated with weaker governance, and as a result worse firm valuations (e.g., Yermack (1996), Eisenberg, Sundgren, and Wells (1998), and Bennedsen, Kongsted, and Nielsen (2008)). Table 6 Panel A reports the estimated effects from an ordinary least squares model of equation (1) with *Board Size* as the dependent variable. In column (1), the estimated effect is economically large, and statistically significant at the 5%-level. Specifically, the point estimate shows that the SEC increased board size on average by 2.2 directors among affected non-NYSE listing firms relative to unaffected NYSE listing firms. This corresponds to 24.0% compared to the mean board size before the creations of the SEC. When controlling for firm characteristics in column (2), the estimated effect is statistically weaker, although the economic effect is still sizable, with an increase in average board size by 0.9 directors (10.0% compared to the mean pre-SEC board size).

[17] In addition to the reduction of the benefit of board independence, the 1933 Act may also have increased the personal cost of serving as an independent director. Specifically, post-SEC each registration statement for a securities offering was required to have not only the signature of the issuer but also the signatures of the issuer's "principal executive officer or officers, its principal financial officer, its comptroller or principal accounting officer, and at least the majority of its board of directors or persons performing similar functions." The 1933 Act makes each such signer liable to investors buying the security if the registration statement contains materially false or misleading statements. Because this change affected both NYSE and non-NYSE listing firms, it is addressed by the model specification in equation (1).

It has also been argued that directors' monitoring costs increase with the distance to the firm (e.g., Lerner (1995) and Alam, Chen, Ciccotello, and Ryan (2014)). In the early 20th century, it would seem that local directors were able to monitor a firm at a lower cost compared to those who were located further away from the corporate headquarters. It is therefore not surprising that the firms that we study, both non-NYSE and NYSE firms, have a large proportion of local directors. Table 6 Panel B reports the estimated effects from linear probability models and marginal effects from Probit models, with *Local Board* as the dependent variable. Our results are consistent with the creation of the SEC resulting in a reduction of the proportion of majority-local boards. The effect is not statistically significant in our small sample, but the economic size is large at 12.5%.

We conclude that the creation of the SEC resulted in a weakening of market-based governance among non-NYSE listing firms, i.e., the subset of firms that we predicted to be most affected by the regulation. The estimated board governance effects are the strongest for the board and chairman independence measures. The evidence for other measures (e.g., board size and local board) is statistically weaker, although all of the estimated effects are economically sizable and support a consistent hypothesis, i.e., that the SEC creation resulted in a substitution of different governance mechanisms.

### B.3 Firm Valuations

In this section, we examine whether or not the previously found substitution from market-based (board) governance to government-sponsored (SEC) governance was value-enhancing for the affected firms. On the one hand, if SEC governance constituted a more efficient source of governance compared to board governance, we would expect increasing firm valuations among affected firms. On the other hand, if the market already provided sufficient governance, we would expect no effect on firm valuations. We may even expect an adverse effect on firm valuations if the regulation change resulted in crowding out of more efficient sources of governance. We offer evidence on which effect dominates empirically.

Table 7 reports the estimated effects from an ordinary least squares model of equation (1) with *Tobin's Q* as the dependent variable. In column (1), the estimated effect is economically very large

(−0.437), but not statistically significant. When controlling for firm characteristics in column (2), the estimated effect remains statistically insignificant and the economic size is then virtually zero.

We conclude that the SEC creation did not significantly increase firm valuations, as measured by Tobin's Q, among affected non-NYSE listing companies. In other words, it is not clear that the creation of the SEC had any significant valuation effects that market-based governance was not able to attain already pre-SEC.

## C Robustness Checks

In this section, we address some of the challenges of our empirical analysis and report a series of robustness checks.

### C.1 Wall Street Crash and Great Depression Effects

The Wall Street Crash and the Great Depression are potentially confounding events during the period that we study. First, in Table 8 Panel A we drop the crash years 1929–1930 as a robustness check. The estimated effects are similar, but statistically somewhat weaker because the sample size is reduced to about 300 firms (29% reduction). The evidence for this subsample suggests that our results are not directly attributable to the stock market crash.

Second, our model specification in equation (1), with treatment and control groups of firms, was chosen specifically to address concerns about the impact of a changing macroeconomic environment during the regulation change. As a result, it is important to emphasize that for the Wall Street Crash or the Great Depression to be able to explain our evidence, these events must have caused a significant change in the analyzed board governance and firm valuation measures only among the subsample of firms affected by the creation of the SEC, i.e., non-NYSE listing firms. Because some regions of the U.S. were arguably more adversely affected by the Great Depression (e.g., the Dust Bowl) compared to other regions, in Panel B we report model specifications with region-year fixed effects, which control for regional effects that are potentially time-varying. The results are even stronger with this model specification, further reducing concerns that our previous findings may be

explained by the Great Depression.[18]

Finally, we want to emphasize that the effect of the Great Depression on board governance is not clear a priori. We may hypothesize that when firms are doing poorly, as many did during the Great Depression era, independent directors are more likely to be added to the board (e.g., Hermalin and Weisbach (1988)). As a result, we might have been more concerned about a confounding effect of the Great Depression if we had found that the creation of the SEC caused stronger market-based governance among non-NYSE listing firms; however, we find evidence of the opposite.

While the Wall Street Crash and the Great Depression were events that coincided with the creation of the SEC, we conclude that these events per se cannot easily explain our results.

### C.2 Placebo Effects

Another empirical approach to confront confounding macroeconomic events is to estimate placebo effects. In Table 9, we estimate such effects by using the year of the Wall Street Crash (1929) rather than the actual year of the creation of the SEC (1934) to specify pre- and post-periods. Specifically, the post-period is defined as 1929–1933 to avoid any confounding effects of the actual SEC creation. We find no statistically significant effects on the board governance measures for non-NYSE listing firms in the post-1929 period. The interaction term of interest in the Tobin's Q regression is not statistically significant.[19] These insignificant placebo effects strengthen the conclusion that our reported results are attributable to the creation of the SEC rather than the Wall Street Crash or the Great Depression.

### C.3 Dosage Effects

The dosage of the treatment of the creation of the SEC varied depending on the pre-SEC listing standards of the regional exchanges. While it is challenging to objectively classify the pre-SEC disclosure requirements and listing standards of each regional exchange on a continuum, it is widely

[18] A similar argument may be raised regarding some industries being more adversely affected by the Wall Street Crash or the Great Depression, but the conclusion does not change if using a model specification with industry-year fixed effects (untabulated).

[19] If we drop the $GD \times Non-NYSE$ interaction term, the $GD$ point estimate is negative and statistically significant at the 5%-level, suggesting lower firm valuations on average after the stock market crash (untabulated).

considered that the stock exchanges in San Francisco, Philadelphia, Chicago, and Boston had stronger listing standards. In other words, we predict that the dosage of the treatment was the strongest on the exchanges with the weakest pre-SEC listing standards. Consistent with such a prediction, we find that the estimated effects on board and chairman independence are the strongest among firms listing on the exchanges with the weakest pre-SEC listing standards. For example, we find that the creation of the SEC reduced board independence among the firms with the strongest dosage of treatment by about 57%, i.e., more than for the average non-NYSE listing firm. Thus, we find the strongest substitution of governance mechanisms effects among listing firms that were the most affected by the creation of the SEC.

### C.4 Sample Selection Effects

To list on the NYSE versus a non-NYSE stock exchange is an endogenous choice by a firm, thus potentially resulting in sample selection bias. It is important to emphasize that the listing choice was significantly constrained in the early 20th century. Because of the high cost of communication and other technological constraints, the market for new equity offerings in the U.S. was more geographically segmented compared to today (e.g., Brown, Mulherin, and Weidenmier (2008)). This circumstance helps the empirical identification in this study.

To further confront sample selection bias, we implement a kernel density propensity score matching (PSM) model to compare the mean differences between NYSE and non-NYSE firms' corporate governance measures. Specifically, we match based on variables that may be expected to be confounders in that they affect the analyzed governance measures, i.e., industry, region, and firm size. PSM addresses selection with respect to these covariates, e.g., the notion that larger firms choose to list on the NYSE, and firms from some industries choose to list on a specific non-NYSE exchange. With this PSM model, the control group constitutes all untreated firms (i.e., NYSE firms) with propensity scores in the neighborhood of the treated (i.e., non-NYSE) firm, in which a control firm receives a higher weight the closer its propensity score is to the treated firm. The average treatment effect on the treated compares the differences between post- and pre-treatment corporate governance measures among treated and control firm pairs. In Table 10, we show that the

results from the PSM model are very similar to the previously reported findings. In particular, the average treatment effect of the SEC on board and chairman independence is statistically significant at least at the 5%-level, and the size of the estimated effects are unchanged, or somewhat larger. Non-NYSE firms on average had 37% and 36% less independent boards and chairmen, respectively, after the SEC.[20] These results reduce concerns about sample selection effects.

A separate concern related to sample selection bias is a change in the quality of non-NYSE listing firms post-SEC. Specifically, it is possible that there was a significant increase in the quality of these firms, i.e., only higher quality companies choose to list post-SEC. This may introduce a bias into our previously reported results; however, our firm valuation results contradict such a hypothesis. The average quality, as measured by Tobin's Q, of the affected non-NYSE listing firms post-SEC was found in Section V.B.3 to be statistically indistinguishable from the quality of unaffected NYSE listing firms.

Another concern is that firms with a legitimate preference for less disclosure (e.g., because of significant costs of compliance or costs of disclosing information to competitors) may choose an over-the-counter (OTC) listing in the post-SEC period. While OTC listings remained a small proportion of stock issues over the period in this study (e.g., Goldschmidt (1937)), the creation of the SEC may have contributed to the growth of OTC issues. At the start of our sample period (1925), OTC stocks accounted for 7% of the market value of equity; however, by the end of our sample period (1940), this proportion had increased to about 17% (e.g., Friend et al. (1958)). Excluding OTC issues in this study may create a sample selection bias, if the creation of the SEC shifted listings with stronger board governance to the OTC market. Firms that choose an OTC listing, with significantly lower disclosure requirements by definition, may need to have stronger market-based governance (e.g., an independent board and chairman) as a substitute, in order to reduce asymmetric information, which would be consistent with the conclusion of our study.

[20]The PSM model may be evaluated based on the covariates balance between the treated and control groups. Importantly, we find that the bias from the kernel-based matching is very close to zero and statistically insignificant.

### C.5 Measurement Error

While the book values that are used to compute Tobin's Q are potentially mis-measured, it is not clear that the data would be systematically biased in a way that produces the reported results. A significant event with the potential of systematically affecting book values, by changing U.S. accounting standards, is the American Institute of Accountants' creation of the "Committee on Accounting Procedure," the predecessor of the Financial Accounting Standards Board (FASB). This event did not occur until 1939, i.e., at the very end of our sample period and our conclusions are qualitatively and quantitatively unchanged if dropping listings in 1939 and 1940 (untabulated). As a result, it appears more likely that any measurement error in Tobin's Q increases the size of the standard errors of our regression point estimates, rather than introducing a bias.

## VI Conclusions and Implications

We examine the corporate governance effects of one of the most significant changes to U.S. financial regulations in the past 100 years – the creation of the SEC. This landmark legislation caused a significant increase in the provision of government-sponsored governance among firms listing in the U.S. The SEC effectively took the NYSE listing standards at the time, converted them into federal law, and applied them to all U.S. firms on all regional stock exchanges, i.e., both NYSE and non-NYSE firms were governed by the same set of rules post-SEC, but not pre-SEC. This resulted in a quasi-natural experiment which we exploit in this paper. Specifically, we examine how the board governance design of affected (non-NYSE listing) companies responded to the creation of the SEC by comparing these firms to unaffected (NYSE listing) companies.

We find that the creation of the SEC resulted in a large and significant reduction in board and chairman independence among affected non-NYSE listing firms. Specifically, our estimates reveal that there was a 30% reduction in board independence, i.e., one of the most significant effects of the creation of the SEC was to cause the boards of affected firms to become less independent. An independent board and an independent chairman appear to have been more valuable in the pre-SEC era compared to in the post-SEC period. There is also some evidence that board governance was

affected more broadly as the creation of the SEC resulted in larger boards and less local director monitoring; however, these findings are statistically weaker than the board independence results.

The collage of evidence supports an economic model that involves "substitution of governance mechanisms" in which firms endogenously trade off market-based (e.g., board) governance versus government-sponsored (e.g., SEC) governance. Suppose that there is an optimal amount of governance for each firm, i.e., there are costs of both too little but also too much corporate governance. In this case, we may expect significant substitutions around regulation which affects the provision of governance, as long as firms are allowed to freely change their governance mechanisms elsewhere. Our evidence suggests that market-based governance (i.e., what firms may do on their own without regulation) is largely a substitute for government-sponsored governance. These results are supportive of the endogenous nature of corporate governance (e.g., Demsetz and Lehn (1985) and Hermalin and Weisbach (1998, 2012)).

What does our evidence suggest about the importance of the creation of the SEC? On the one hand, our results suggest that the regulation had a significant effect on listing firms' board governance design, and that this effect cannot be easily explained by the Wall Street Crash or the Great Depression. On the other hand, did the creation of the SEC accomplish anything that firms could not already have attained on their own with respect to corporate governance? Our board governance findings suggest that it is not clear that firm valuations should be significantly affected by the creation of the SEC. Indeed, in our search for firm valuation effects, we found no significant effects on Tobin's Q. Our evidence indicates that the creation of the SEC may have imposed "too much" governance on some firms, but that they were able to offset the governance imposed on them. While the creation of the SEC did seem to broadly affect corporate governance design among listing firms in the U.S., it is much less clear whether the regulation added any significant firm value.

Drawing parallels to today's debates, our findings may provide guidance for financial regulations and are of interest to a broad set of financial economists, legal scholars, and public policy-makers. One implication of our evidence is that governance reforms are inherently difficult, or perhaps even impossible, if firms are able and allowed to freely change their corporate governance designs. Our evidence indicates that encouraging, rather than suppressing, a diversity of market-based gover-

nance mechanisms across stock exchanges (e.g., differential listing standards resulting in sorting of firms depending on firm and investor preferences) as well as across countries and states in the U.S. (e.g., differential blue sky laws endogenously shaped by listing firms' and investors' preferences) may result in more competition related to efficient governance design, and in the end more value creation. Imposing the same federal securities regulation on all firms, with an implicit assumption that "one size fits all," may not be expected to result in any substantial firm valuation improvements. This is a relevant conclusion even many decades after the 1933 Act and the creation of the SEC.

## References


Adams, R. B., Hermalin, B. E., Weisbach, M. S., 2010. The role of boards of directors in corporate governance: A conceptual framework and survey. Journal of Economic Literature, 58–107.

Agrawal, A. K., 2013. The impact of investor protection law on corporate policy and performance: Evidence from the blue sky laws. Journal of Financial Economics 107 (2), 417–435.

Akerlof, G. A., 1970. The market for 'lemons': Quality uncertainty and the market mechanism. Quarterly Journal of Economics 84 (3), 488–500.

Alam, Z. S., Chen, M. A., Ciccotello, C. S., Ryan, H. E., 2014. Does the location of directors matter? Information acquisition and board decisions. Journal of Financial and Quantitative Analysis 49 (1), 131–164.

Arnold, T., Hersch, P., Mulherin, J. H., Netter, J., 1999. Merging markets. Journal of Finance 54 (3), 1083–1107.

Baker, M., Gompers, P. A., 2003. The determinants of board structure at the initial public offering. Journal of Law and Economics 46 (2), 569–598.

Battalio, R., Hatch, B., Loughran, T., 2011. Who benefited from the disclosure mandates of the 1964 Securities Acts Amendments? Journal of Corporate Finance 17 (4), 1047–1063.

Beach, W. E., 1939. Stock market continuity. American Economic Review, 774–789.

Benmelech, E., Moskowitz, T. J., 2010. The political economy of financial regulation: Evidence from U.S. state usury laws in the 19th century. Journal of Finance 65 (3), 1029–1073.

Bennedsen, M., Kongsted, H. C., Nielsen, K. M., 2008. The causal effect of board size in the performance of small and medium-sized firms. Journal of Banking and Finance 32 (6), 1098–1109.

Benston, G. J., 1973. Required disclosure and the stock market: An evaluation of the Securities Exchange Act of 1934. American Economic Review 63 (1), 132–155.

Berle, A. A., Means, G. G. C., 1932. The modern corporation and private property. New York.

Boone, A. L., Casares Field, L., Karpoff, J. M., Raheja, C. G., 2007. The determinants of corporate board size and composition: An empirical analysis. Journal of Financial Economics 85 (1), 66–101.

Booth, J. R., Smith, R. L., 1986. Capital raising, underwriting and the certification hypothesis. Journal of Financial Economics 15 (1), 261–281.

Brown, W. O., Mulherin, J. H., Weidenmier, M. D., 2008. Competing with the New York Stock Exchange. Quarterly Journal of Economics 123 (4), 1679–1719.

Carosso, V. P., Sears, M. V., Katz, I., 1970. Investment banking in America: A history. Harvard University Press, Cambridge, MA.

Cary, W. L., 1963. Self-regulation in the securities industry. American Bar Association Journal 49, 244.

Chhaochharia, V., Grinstein, Y., 2007. Corporate governance and firm value: The impact of the 2002 governance rules. Journal of Finance 62 (4), 1789–1825.

Coates, J. C., Srinivasan, S., 2014. SOX after ten years: A multidisciplinary review. Forthcoming Accounting Horizons.

Coffee, J. C., 1984. Market failure and the economic case for a mandatory disclosure system. Virginia Law Review, 717–753.

Cowett, E. M., 1959. Federal-state relationship in securities regulation. George Washington Law Review 28, 287.

Demsetz, H., Lehn, K., 1985. The structure of corporate ownership: Causes and consequences. Journal of Political Economy 93 (6), 1155–1177.

Doidge, C., Karolyi, G. A., Stulz, R. M., 2010. Why do foreign firms leave U.S. equity markets? Journal of Finance 65 (4), 1507–1553.

Dolley, J. C., 1938. The effect of government regulation on the stock-trading volume of the New York Stock Exchange. American Economic Review, 8–26.

Dyck, A., Morse, A., Zingales, L., 2010. Who blows the whistle on corporate fraud? Journal of Finance 65 (6), 2213–2253.

Easterbrook, F. H., Fischel, D. R., 1984. Mandatory disclosure and the protection of investors. Virginia Law Review, 669–715.

Eisenberg, T., Sundgren, S., Wells, M. T., 1998. Larger board size and decreasing firm value in small firms. Journal of Financial Economics 48 (1), 35–54.

Fama, E. F., 1980. Agency problems and the theory of the firm. Journal of Political Economy 88 (2), 288.

Fama, E. F., French, K. R., 1992. The cross-section of expected stock returns. Journal of Finance 47 (2), 427–465, english.

Fama, E. F., French, K. R., 1993. Common risk factors in the returns on stocks and bonds. Journal of Financial Economics 33 (1), 3–56, english.

Fama, E. F., Jensen, M. C., 1983. Agency problems and residual claims. Journal of Law and Economics 26, 327–349.

Friend, I., 1966. Broad implications of the SEC Special Study. Journal of Finance 21 (2), 324–332.

Friend, I., Herman, E. S., 1964. The SEC through a glass darkly. Journal of Business 37 (4), 382–405.

Friend, I., Herman, E. S., 1965. Professor Stigler on securities regulation: A further comment. Journal of Business 38 (1), 106–110.

Friend, I., Hoffman, G., Winn, W., 1958. The Over-the-Counter Securities Markets. McGraw-Hill, New York.

Friend, I., Westerfield, R., 1975. Required disclosure and the stock market: Comment. American Economic Review, 467–472.

Frydman, C., Hilt, E. D., 2013. Predators or watchdogs? Bankers on corporate boards in the early twentieth century. Working Paper, Northwestern University, Kellogg School of Management.

Goldschmidt, R., 1937. Registration under the Securities Act of 1933. Law and Contemporary Problems 4 (1), 19–31.

Greenstone, M., Oyer, P., Vissing-Jorgensen, A., 2006. Mandated disclosure, stock returns, and the 1964 Securities Acts Amendments. Quarterly Journal of Economics 121 (2), 399–460.

Hermalin, B. E., Weisbach, M. S., 1988. The determinants of board composition. Rand Journal of Economics 19 (4), 589–606.

Hermalin, B. E., Weisbach, M. S., 1998. Endogenously chosen boards of directors and their monitoring of the CEO. American Economic Review 88 (1), 96–118.

Hermalin, B. E., Weisbach, M. S., 2003. Boards of directors as an endogenously determined institution: A survey of the economic literature. Economic Policy Review 9 (1), 7.

Hermalin, B. E., Weisbach, M. S., 2012. Information disclosure and corporate governance. Journal of Finance 67 (1), 195–233.

Hilt, E. D., 2014. History of American corporate governance: Law, institutions, and politics. Forthcoming Annual Review of Financial Economics.

Hilt, E. D., Valentine, J., 2012. Democratic dividends: Politics, wealth, and stockholding in New York, 1790-1826. Journal of Economic History 72, 332–363.

Jackson, H. E., Roe, M. J., 2009. Public and private enforcement of securities laws: Resource-based evidence. Journal of Financial Economics 93 (2), 207–238.

Jarrell, G. A., 1981. The economic effects of federal regulation of the market for new security issues. Journal of Law and Economics 24 (3), 613–675.

Kaplan, S. N., Reishus, D., 1990. Outside directorships and corporate performance. Journal of Financial Economics 27 (2), 389–410.

La Porta, R., Lopez-de Silanes, F., Shleifer, A., 2006. What works in securities laws? Journal of Finance 61 (1), 1–32.

Lehn, K. M., Patro, S., Zhao, M., 2009. Determinants of the size and composition of U.S. corporate boards: 1935-2000. Financial Management 38 (4), 747–780.

Lerner, J., 1995. Venture capitalists and the oversight of private firms. Journal of Finance 50, 301–318.

Leuz, C., Triantis, A., Yue Wang, T., 2008. Why do firms go dark? Causes and economic consequences of voluntary SEC deregistrations. Journal of Accounting and Economics 45 (2), 181–208.

Linck, J. S., Netter, J. M., Yang, T., 2008. The determinants of board structure. Journal of Financial Economics 87 (2), 308–328.

Linck, J. S., Netter, J. M., Yang, T., 2009. The effects and unintended consequences of the Sarbanes-Oxley Act on the supply and demand for directors. Review of Financial Studies 22 (8), 3287–3328.

Macey, J. R., Miller, G. P., 1991. Origin of the blue sky laws. Texas Law Review 70, 347–398.

Mahoney, P. G., 2003. The origins of the blue sky laws: A test of competing hypotheses. Journal of Law and Economics 46 (1), 229–251.

Mulherin, J. H., 2007. Measuring the costs and benefits of regulation: Conceptual issues in securities markets. Journal of Corporate Finance 13 (2), 421–437.

Mulvey, T., 1914. Certified securities. American Economic Review 4 (3), 588–601.

Reed, R. R., Washburn, L. H., 1921. Blue Sky Laws: Analysis and Text. Clark Boardman Co. Ltd.

Robbins, S., Werner, W., 1964. Professor Stigler revisited. Journal of Business, 406–413.

Seligman, J., 1983. The historical need for a mandatory corporate disclosure system. Journal of Corporate Law 9, 1.

Simon, C. J., 1989. The effect of the 1933 Securities Act on investor information and the performance of new issues. American Economic Review 79 (3), 295–318.

Smith, R. T., 1981. Comments on Jarrell. Journal of Law and Economics 24 (3), 677–686.

Stigler, G. J., 1964a. Professor Stigler revisited: Comment. Journal of Business 37, 414–422.

Stigler, G. J., 1964b. Public regulation of the securities markets. Journal of Business, 117–142.

Sweezy, P. M., 1938. The thinness of the stock market. American Economic Review 28, 747–748.

Weisbach, M. S., 1988. Outside directors and CEO turnover. Journal of Financial Economics 20, 431–460.

Yermack, D. L., 1996. Higher market valuation of companies with a small board of directors. Journal of Financial Economics 40 (2), 185–211.

Zhang, I. X., 2007. Economic consequences of the Sarbanes-Oxley Act of 2002. Journal of Accounting and Economics 44 (1), 74–115.

**Table 1: Evolution of NYSE Regulation and Industry Self-Regulation in the U.S.**

| Year | Event |
|---|---|
| 1869 | NYSE listing requires disclosure of a firm's financial conditions. |
| 1895 | The NYSE recommends listed companies to send their shareholders annual reports with an income statement and a balance sheet. |
| 1911 | The NYSE creates a "Listing Department" and listing standards. |
| 1912 | Representatives from brokerage firms and investment banks establish the Investment Bankers' Association of America (IBAA), with the goal of "improving the standards for those engaged in investment banking" and "protecting the investing public." |
| 1914 | NYSE listed companies are required to publish a statement of financial and physical conditions (including an income statement and balance sheet) for the corporation and its subsidiaries once a year, and at least 15 days before the annual meeting. |
| 1917 | Semiannual income statements and balance sheets are required for NYSE listed firms. |
| 1923 | The NYSE establishes a "Fraud Bureau." |
| 1924 | Quarterly earnings statements become common among NYSE listed companies. |
| 1927 | The NYSE's regulations governing proxy solicitation are created (and refined in subsequent years). |
| 1928 | NYSE listing requires independent audits. |
| 1930 | Listing standards include a pledge to supply "any reasonable" information requested by the NYSE |

The table shows important NYSE regulation and industry self-regulation events before the Securities Act of 1933 and the creation of the SEC.

**Table 2: Sample Summary**

| Year | Pre-SEC Period (*N*) | Post-SEC Period (*N*) |
|---|---|---|
| 1925 | 36 | - |
| 1926 | 26 | - |
| 1927 | 50 | - |
| 1928 | 113 | - |
| 1929 | 116 | - |
| 1930 | 15 | - |
| 1931 | 2 | - |
| 1932 | 2 | - |
| 1933 | 3 | - |
| 1934 | - | 1 |
| 1935 | - | 6 |
| 1936 | - | 29 |
| 1937 | - | 21 |
| 1938 | - | 4 |
| 1939 | - | 8 |
| 1940 | - | 7 |
| Full Sample | 363 | 76 |
| NYSE Subsample | 182 | 53 |
| Non-NYSE Subsample | 181 | 23 |

The table reports a summary of the sample of NYSE and Non-NYSE listing firms before and after the creation of the SEC. The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle.

**Table 3: Summary Statistics**

| Panel A: Board Governance and Firm Valuation Measures | | | | | |
|---|---|---|---|---|---|
| | Independent Board | Independent Chair | Board Size | Local Board | Tobin's Q |
| Full Sample Period (1925-1940) | | | | | |
| Mean | 0.57 | 0.60 | 10.55 | 0.82 | 1.16 |
| Median | 1 | 1 | 9 | 1 | 0.60 |
| St. dev. | 0.50 | 0.49 | 4.73 | 0.38 | 2.43 |
| *N* | 439 | 439 | 439 | 439 | 429 |
| Pre-SEC Period (1925-1933) | | | | | |
| Non-NYSE | | | | | |
| Mean | 0.56 | 0.70 | 9.03 | 0.87 | 1.19 |
| *N* | 181 | 181 | 181 | 181 | 175 |
| NYSE | | | | | |
| Mean | 0.60 | 0.52 | 12.1 | 0.77 | 1.24 |
| *N* | 182 | 182 | 182 | 182 | 180 |
| Post-SEC Period (1934-1940) | | | | | |
| Non-NYSE | | | | | |
| Mean | 0.35 | 0.48 | 10 | 0.78 | 0.59 |
| *N* | 23 | 23 | 23 | 23 | 21 |
| NYSE | | | | | |
| Mean | 0.58 | 0.55 | 10.64 | 0.83 | 1.00 |
| *N* | 53 | 53 | 53 | 53 | 53 |

**Table 3: Summary Statistics - Cont'd**

| Panel B: Control Variables | | | |
|---|---|---|---|
| | Assets | Capex | Leverage |
| Full Sample Period (1925-1940) | | | |
| Mean | 68.1 | 0.06 | 0.09 |
| Median | 21.0 | 0.01 | 0.00 |
| St. dev. | 185.0 | 0.16 | 0.17 |
| *N* | 429 | 428 | 429 |
| Pre-SEC Period (1925-1933) | | | |
| Non-NYSE | | | |
| Mean | 36.5 | 0.04 | 0.09 |
| *N* | 174 | 174 | 175 |
| NYSE | | | |
| Mean | 116.0 | 0.09 | 0.11 |
| *N* | 180 | 180 | 180 |
| Post-SEC Period (1934-1940) | | | |
| Non-NYSE | | | |
| Mean | 15.4 | 0.01 | 0.07 |
| *N* | 22 | 21 | 21 |
| NYSE | | | |
| Mean | 31.3 | 0.04 | 0.04 |
| *N* | 53 | 53 | 53 |

The table reports summary statistics for NYSE and Non-NYSE firms for the full sample period (1925-1940), the pre-SEC period (1925-1933) and the post-SEC period (1934-1940). The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). *Independent Board* is an indicator variable that is one if a majority of the directors of the board are independent, and zero otherwise. *Independent Chairman* is an indicator variable that is one if the firm's chairman is independent, and zero otherwise. *Board Size* is the number of directors of the firm's board. *Local Board* is an indicator variable that is one if a majority of the directors on the firm's board are local, defined as listed in a city within 50 miles of the firm's corporate headquarters, and zero otherwise. *Tobin's Q* is the market value of equity plus the book value of debt divided by the book value of equity plus the book value of debt. *Assets* is the total book value of firm's assets (in millions of dollars). *Capex* is capital expenditures scaled by sales. *Leverage* is long-term debt scaled by the book value of the firm's total book assets.

**Table 4: Creation of the SEC and Board Independence**

| | Dependent Variable: Independent Board | | | |
|---|---|---|---|---|
| | Linear Probability Model | | Probit Model | |
| | (1) | (2) | (3) | (4) |
| Post-SEC × Non-NYSE | -0.256* | -0.264** | -0.259* | -0.298** |
| | (0.133) | (0.134) | (0.141) | (0.150) |
| Post-SEC | 0.003 | -0.297* | 0.003 | 0.075 |
| | (0.077) | (0.175) | (0.078) | (0.203) |
| Non-NYSE | -0.030 | 0.007 | -0.030 | 0.010 |
| | (0.052) | (0.060) | (0.052) | (0.061) |
| Log (Assets) | | 0.024 | | 0.025 |
| | | (0.020) | | (0.020) |
| Leverage | | 0.022 | | 0.024 |
| | | (0.162) | | (0.161) |
| Capex | | 0.123 | | 0.150 |
| | | (0.146) | | (0.163) |
| Industry Fixed Effects | No | Yes | No | Yes |
| Region Fixed Effects | No | Yes | No | Yes |
| Year Fixed Effects | No | Yes | No | Yes |
| *N* | 439 | 427 | 439 | 424 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variable is *Independent Board* , i.e., an indicator variable that is one if a majority of the directors of the board are independent, and zero otherwise. *Post-SEC* is an indicator variable that is one starting in 1934, and zero otherwise. Firm characteristics are defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 5: Creation of the SEC and Board Chairman Independence**

| | Dependent Variable: Independent Chairman | | | |
|---|---|---|---|---|
| | Linear Probability Model | | Probit Model | |
| | (1) | (2) | (3) | (4) |
| Post-SEC × Non-NYSE | -0.287** | -0.238* | -0.289** | -0.258* |
| | (0.138) | (0.145) | (0.136) | (0.148) |
| Post-SEC | 0.036 | -0.074 | 0.035 | 0.211 |
| | (0.078) | (0.215) | (0.075) | (0.207) |
| Non-NYSE | 0.182*** | 0.094 | 0.184*** | 0.095 |
| | (0.050) | (0.060) | (0.050) | (0.060) |
| Log (Assets) | | -0.074*** | | -0.082*** |
| | | (0.019) | | (0.021) |
| Leverage | | 0.033 | | 0.049 |
| | | (0.141) | | (0.154) |
| Capex | | 0.067 | | 0.082 |
| | | (0.134) | | (0.148) |
| Industry Fixed Effects | No | Yes | No | Yes |
| Region Fixed Effects | No | Yes | No | Yes |
| Year Fixed Effects | No | Yes | No | Yes |
| *N* | 439 | 427 | 439 | 420 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variable is Independent Chairman, i.e., an indicator variable that is one if the firm's chairman is independent, and zero otherwise. Post-SEC is an indicator variable that is one starting in 1934, and zero otherwise. Firm characteristics are defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 6: Creation of the SEC and Other Board Governance Measures**

Panel A: Board Size

| | Dependent Variable: Board Size<br>Ordinary Least Squares | |
|---|---|---|
| | (1) | (2) |
| Post-SEC × Non-NYSE | 2.171** | 0.930 |
| | (1.024) | (1.052) |
| Post-SEC | -1.366** | -2.634** |
| | (0.604) | (1.058) |
| Non-NYSE | -3.009*** | -1.249** |
| | (0.494) | (0.565) |
| Firm Characteristics | No | Yes |
| Industry Fixed Effects | No | Yes |
| Region Fixed Effects | No | Yes |
| Year Fixed Effects | No | Yes |
| *N* | 439 | 427 |

Panel B: Local Board Governance

| | Dependent Variable: Local Board | | | |
|---|---|---|---|---|
| | Linear Probability Model | | Probit Model | |
| | (1) | (2) | (3) | (4) |
| Post-SEC × Non-NYSE | -0.123 | -0.146 | -0.123 | -0.125 |
| | (0.109) | (0.102) | (0.103) | (0.122) |
| Post-SEC | 0.047 | 0.189** | 0.041 | -0.406 |
| | (0.061) | (0.084) | (0.053) | (0.251) |
| Non-NYSE | 0.094** | 0.083** | 0.093** | 0.089** |
| | (0.040) | (0.042) | (0.039) | (0.043) |
| Firm Characteristics | No | Yes | No | Yes |
| Industry Fixed Effects | No | Yes | No | Yes |
| Region Fixed Effects | No | Yes | No | Yes |
| Year Fixed Effects | No | Yes | No | Yes |
| *N* | 439 | 427 | 439 | 404 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variable in Panel A is Board Size, i.e., the number of directors of the firm's board. The dependent variable in Panel B is Local Board, i.e., an indicator variable that is one if a majority of the directors on the firm's board are local, defined as listed in a city within 50 miles of the firm's corporate headquarters, and zero otherwise. Post-SEC is an indicator variable that is one starting in 1934, and zero otherwise. Firm characteristics, defined in Table 3, are included but not tabulated. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 7: Creation of the SEC and Firm Valuations**

| | Dependent Variable: Tobin's Q<br>Ordinary Least Squares | |
|---|---|---|
| | (1) | (2) |
| Post-SEC × Non-NYSE | -0.437 | -0.030 |
| | (0.330) | (0.403) |
| Post-SEC | -0.212 | -0.873 |
| | (0.217) | (0.827) |
| Non-NYSE | -0.041 | -0.571** |
| | (0.279) | (0.291) |
| Log (Assets) | | -0.495*** |
| | | (0.155) |
| Leverage | | -0.760 |
| | | (0.606) |
| Capex | | 1.735 |
| | | (1.456) |
| Industry Fixed Effects | No | Yes |
| Region Fixed Effects | No | Yes |
| Year Fixed Effects | No | Yes |
| *N* | 429 | 427 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variable is Tobin's Q, i.e., the market value of equity plus the book value of debt divided by the book value of equity plus the book value of debt. Post-SEC is an indicator variable that is one starting in 1934, and zero otherwise. Firm characteristics are defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 8: Robustness Checks**

| Panel A: Exclude Wall Street Crash Years (1929-1930) | | | |
|---|---|---|---|
| Model | Probit | Probit | OLS |
| Dependent Variable | Independent Board | Independent Chairman | Tobin's Q |
| Post-SEC × Non-NYSE | -0.301* | -0.357** | -0.057 |
| | (0.158) | (0.158) | (0.551) |
| Post-SEC | 0.028 | 0.227 | -0.830 |
| | (0.219) | (0.223) | (0.698) |
| Non-NYSE | 0.024 | 0.166** | -0.619 |
| | (0.075) | (0.073) | (0.435) |
| Firm Characteristics | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes |
| Region Fixed Effects | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes |
| *N* | 300 | 296 | 303 |

| Panel B: Region-Year Fixed Effects | | | |
|---|---|---|---|
| Model | Probit | Probit | OLS |
| Dependent Variable | Independent Board | Independent Chairman | Tobin's Q |
| Post-SEC × Non-NYSE | -0.471** | -0.447** | 0.146 |
| | (0.186) | (0.179) | (0.427) |
| Post-SEC | 0.269 | 0.306* | 0.081 |
| | (0.175) | (0.176) | (0.531) |
| Non-NYSE | 0.016 | 0.094 | -0.690** |
| | (0.063) | (0.063) | (0.330) |
| Firm Characteristics | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes |
| Region-Year Fixed Effects | Yes | Yes | Yes |
| *N* | 405 | 407 | 427 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variables are specified for each model specification and defined in Table 3. Post-SEC is an indicator variable that is one starting in 1934, and zero otherwise. Firm characteristics are also defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 9: Placebo Effects**

| Model | Probit | Probit | OLS |
|---|---|---|---|
| Dependent Variable | Independent Board | Independent Chairman | Tobin's Q |
| GD × Non-NYSE | 0.003 | 0.267 | -0.507 |
| | (0.296) | (0.301) | (0.856) |
| GD | 0.008 | 0.209 | -1.505 |
| | (0.359) | (0.182) | (1.353) |
| Non-NYSE | 0.013 | 0.096 | -0.621** |
| | (0.062) | (0.062) | (0.303) |
| Firm Characteristics | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes |
| Region Fixed Effects | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes |
| *N* | 350 | 346 | 350 |

The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variables are specified for each model specification and defined in Table 3. GD is an indicator variable that is one starting in 1929, and zero otherwise. Firm characteristics are also defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are clustered at the year-level and reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 10: Propensity Score Matching**

| Dependent Variable | Treatment Group [1] | Control Group [2] | ATT = [1]-[2] |
|---|---|---|---|
| Independent Board | 0.29 | 0.66 | -0.37** |
| | | | (0.15) |
| Independent Chair | 0.41 | 0.77 | -0.36** |
| | | | (0.15) |
| Board Size | 10.12 | 8.99 | 1.12 |
| | | | (1.11) |
| Local Board | 85.18 | 87.66 | -2.48 |
| | | | (7.64) |

Results are based on kernel density propensity score matching (PSM). The "Treatment Group" is non-NYSE listing firms. The "Control Group" is NYSE listing firms. The kernel density PSM is based on industry, region, and firm size. The table reports the means for each group and the average treatment effect for the treated (ATT). The data are from the "New Capital Flotations" section of the Commercial and Financial Chronicle, Moody's Industrial Manuals, Investment Dealers' Digest, and Center for Research in Security Prices (CRSP). The dependent variables are specified for each model specification and defined in Table 3. Industry fixed effects control for manufacturing, retail, service, and transportation industries. Region fixed effects control for the U.S. Census Bureau regions Northeast, Midwest, South, and West and are based on the location of the corporate headquarters. Heteroskedasticity-robust standard errors are reported within parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.