Mandated Disclosure, Stock Returns, and the 1964 Securities Acts Amendments*

Michael Greeenstone, Paul Oyer, and Annette Vissing-Jørgensen

November 2003

PRELIMINARY – PLEASE DO NOT CIRCULATE

Abstract

We estimate the effects of the last major imposition of mandatory disclosure in US equity markets. The 1964 Securities Act Amendments required a group of firms traded over the counter (OTC) to periodically provide audited balance sheets, audited profit and loss statements, proxy information prior to shareholder meetings, and details on insider holdings and trades to their shareholders for the first time. This legislation left unchanged the disclosure requirements of all NYSE, all AMEX, and some OTC firms. When we use these unaffected groups as a counterfactual for the affected firms, we find that those firms that were newly required to make all types of disclosures required by the 1964 Act had a cumulative abnormal excess return of approximately 13% in the approximately year and a half between the initial calls for legislative action and the law's passage. In that same time period, firms for which proxy and insider information were the only new mandated forms of disclosure had a cumulative abnormal excess return of 6%-9%. In contrast, there is little evidence of a difference between the adjusted returns of affected and unaffected firms in a two year period subsequent to the law's passage.

*Greenstone: Department of Economics, MIT. Oyer: Graduate School of Business, Stanford University. Vissing-Jørgensen: Kellogg School of Management, Northwestern University. We thank the Stigler Center at the University of Chicago and the Olin Foundation for financial support. We thank Joshua Angrist, Kent Daniel, Lawrence Katz, Victor Lavy, Christopher Polk, and participants in various seminars for their suggestions. We thank Kenneth French for extending his factor series. We thank David Ahn, Pauline Chen, Justin Gallagher, Yuan Hou, Jason Kilsdonk, Yunling Lee, Adrian Mak, Zoe McManmon, Nora Richardson, Cheryl Sutherland, Sarah Tsee, Sarah Weber, Joe Winebrenner, Bill Young, Rosalind Young, and, especially, Scott Brave for excellent research assistance.

1 Introduction

Since the New Deal the federal government has actively regulated US equity markets and the centerpiece of these efforts has been the mandated disclosure of firm financial information. These interventions into the marketplace are controversial.[1] On the one hand, it is argued that such regulation is at best unnecessary, and at worst damaging. This argument is based on the notion that explicit contracts between involved parties and private litigation (and the threat of such) is a cost effective way to prevent misbehavior by insiders. Furthermore, reputational concerns of managers, underwriters and auditors reduce or eliminate the incentives for these to attempt to expropriate outside investors. In this case, mandated disclosure cannot have a positive effect on firms. On the other hand, the proponents of regulation argue that it may not be feasible to impose penalties (in litigation or in terms of lost reputation) that are high enough to insure honest disclosure. In addition, shareholders face free rider problems in monitoring. In principle either theory could be correct, so empirical evidence is necessary to help resolve this controversy.

This paper analyzes the consequences of the 1964 Securities Acts Amendments on the stock returns of affected companies. Notably, this legislation was the last major imposition of mandatory disclosure regulations in US equity markets but its consequences have gone unstudied. The 1964 Amendments required some firms traded on the Over the Counter (OTC) market that had been free of all mandatory disclosure requirements to comply with four different types of disclosure. Specifically, these firms had to: (1) register with the SEC; (2) provide quarterly updates on their financial position, such as audited balance sheets and income statements; (3) issue detailed proxy statements to shareholders, and (4) report on insider holdings and trades. Importantly, there were stiff statutory penalties associated with misstatements and the SEC was granted the power to investigate and issue fines. The Amendments also required a different set of OTC firms that had been complying with requirements (1) and (2) to begin issuing detailed proxy statements and reporting on insider holdings and trades.

The credibility of the analysis is aided by the availability of firms that were unaffected by this legislation. In particular, two separate sets of OTC firms and all firms traded on the New York and American Stock Exchanges were unaffected by the legislation. The benefit of this multitude of affected and unaffected groups is that it allows for multiple estimates of the effect of the mandatory reporting requirements.

One reason that an empirical analysis of the 1964 Amendments may not have been under-

[1] The debate about the efficiency of mandated disclosure laws extends back to at least the vigorous exchange between Stigler (1964) and Friend and Herman (1964).

taken previously is that the data to properly exploit the change in regulation were not available in machine-readable form. Using hard copies of *Barron's* newspapers from the 1960's and supplementing that with numerous other sources covering firms traded in the OTC market, we attempted to create the equivalent of the Center for Research in Security Prices (CRSP) data set that is commonly used in empirical studies of financial markets. The resulting data file contains information on share prices, dividends, stock splits, detailed financial information, and SEC filing status for OTC companies from 1963 through 1966.

We exploit the structure of the 1964 Amendments and the timing of its passage to devise a test of its consequences. Specifically, we classify firms into affected and unaffected groups. These classifications are based on the firm characteristics two years before the legislation's passage in order to abstract from the possibility that firms endogenously choose membership in the affected or unaffected groups. We then compare the returns of the affected groups to those of the unaffected groups from the beginning of 1963 when efforts to extend mandatory disclosure were initiated until the legislation became law at the end of August of 1964. We argue that during this event window, the probability of the extension of mandatory disclosure requirements to the affected groups increased steadily and eventually became one. Since equity markets are forward looking, we suspect any effect of the law will be limited to the event window where the expectation of passage was increasing. As a test that our groups are not correlated with a factor that predicts returns but is unrelated to the law, we also test whether the Amendments affected returns in the period after its passage (i.e., the "post-event window").

Our basic finding is that firms that were required to begin mandatory disclosure due to the Amendments had positive abnormal returns in the period leading up to the passage of the law. This finding holds after differencing out the returns of unaffected firms and adjusting for the market return and the Fama-French factors. Specifically, the group of firms that were required to engage in all four forms of mandatory disclosure for the first time had a cumulative abnormal excess return of roughly 13% during the event window. The second affected group, which was required to begin issuing detailed proxy statements and reporting on insider holdings and trades, had cumulative abnormal excess returns of approximately 6%-9%. The effect on the first group would be judged statistically significant by conventional criteria, but the second one would not. Importantly, the null hypothesis of zero abnormal excess returns in the post-event window cannot be rejected, which strengthens the support for the possibility that the Amendments are the causal reason for the positive abnormal returns during the event window.

These results provide striking evidence that for shareholders' the benefits of the 1964 Amendments far outweighed the cost of complying with this law. The implication is that prior to 1964

managers of affected firms withheld information from shareholders, or were unable to disclose it in a credible manner, although shareholders valued this information. One interpretation of this evidence is that the Amendments allowed shareholders to discipline managers in ways either cheaper or more effective than were possible prior to the law. Even if this is the case, we cannot rule out the possibility that insiders lost an amount equal to or greater than that gained by shareholders.

There are a number of scenarios where the loss to shareholders from management's diversion of resources is greater than insiders' monetary gain. One example is 'empire building' acquisitions or diversification into new lines of business, which may provide utility to company managers who enjoy being in charge of larger firm but have a substantial negative net present value to shareholders. Another example is when a positive net present value project is simply not undertaken because the fraction of profits shareholders expect to be paid is too low to cover the up-front investment cost. In this case both insiders and outsiders are hurt from the inability of insiders to commit to not expropriating outsiders. A further example of a negative net benefit caused by insider 'misbehavior' is the reduced liquidity of stocks caused by suspected insider trading. In summary, however, the finding of substantial abnormal stock returns is a necessary, but not sufficient, condition for a positive welfare effect.

In the next section, we describe prior theoretical views on the value of mandatory disclosure and outline a model that helps frame our empirical analysis. In section 3, we provide some historical background on disclosure regulation in U.S. equity markets, explain in more detail why the 1964 Amendments provides a unique opportunity to study the effects of mandatory disclosure, and discuss related empirical studies. Sections 4 and 5 describe our data and our empirical methodology, respectively. The main empirical results are presented and interpreted in section 6. Section 7 concludes and discusses future research.

2 Theoretical Background

One traditional view of economists studying securities market regulation, often attributed to Stigler (1964) and Coase (1960), is that government intervention in securities markets is at best ineffective and, at worst, damaging. Proponents of this view argue that private contracts combined with the possibility of litigation, between shareholders on the one side and managers, underwriters, auditors, and analysts on the other, is a cost effective way to ensure proper conduct by the parties involved in securities market transactions. Such private enforcement works particularly well when those in possession of superior information are concerned about their reputation due to repeated interactions with the market. In such a setting, the better informed will voluntarily and truthfully disclose all

relevant information to the point where additional information is not socially beneficial.

These views imply that firms efficiently limit the information they disclose. Thus, a firm's failure to provide some information must reflect a high costs of provision, lack of value relevance, or valid concerns that competitors may benefit from its release. Thus, mandatory disclosure legislation must either be inconsequential or cause firms to release a suboptimal amount of information.[2]

An alternative view posits that incomplete contracts and the high costs of enforcing private contracts may create an environment where mandatory disclosure regulation is welfare enhancing. There are at least three examples of why this may be the case. First, the cost of lawsuits induces a free rider problem among shareholders, whereas a regulator does not face such coordination problems in deciding whether to bring suit. Second, Glaeser and Shleifer (2003) argue that while regulations that mandate the costly provision of information may not be preferable on cost grounds, they are less vulnerable to subversion than litigation. The additional information provided under the regulatory regime implies a higher probability of detection, which assures compliance with lower fines. This contrasts with more cost efficient private litigation where misbehavior is detected with a lower probability and the necessary fines are correspondingly higher. In such cases the insiders sued have much larger incentives to bribe or subvert the process in some other way. Third, regulators may be more specialized and thus better at detecting misbehavior than judges.

Our analysis seeks to shed light on the net benefits to shareholders of an important piece of U.S. mandatory disclosure law, the 1964 Securities Acts Amendments. In a recent paper, Shleifer and Wolfenzon (2002) model financial markets when government regulation reduces insiders ability to divert firm resources to themselves. Their starting point is that private contracts cannot set the penalty for expropriation high enough to effectively deter malfeasance. The model is useful for our evaluation problem, because it illustrates the benefits to shareholders of reduced diversion. Furthermore, the model's penalty to insiders for getting caught stealing can be thought of more generally as a distortionary effect of misbehavior which reduces the total pie available to shareholders and insiders (examples of such distortions were given in the introduction). Finally, the general equilibrium version of the model illustrates possible additional welfare effects of the law.

As Shleifer and Wolfenzon point out, their model combines the basic economics of crime models (see, for example, Becker (1968)) with the basic agency models (Jensen and Meckling (1976)). The model, while quite simple, is consistent with a large set of empirical relationships between investor protection and securities markets. We briefly sketch a simplified version of the Shleifer

[2]See Verrecchia (2001) for a review of the theoretitical financial disclosure literatures in accounting, economics, and finance. Disclosure is also widely studied by legal scholars. See Easterbrook and Fischel (1984) for a discussion of the theoretical and empirical evidence in favor of mandatory national disclosure rules versus other forms of regulation aimed at preventing securities fraud.

and Wolfenzon (2002) model and state the relevant results, as we interpret them, that apply to our empirical analysis.

Shleifer and Wolfenzon (2002) consider an economy with many risk-neutral entrepreneurs.[3] In period 1, an entrepreneur (E) starts a company and contributes $R_E \leq W$ of her own funds to the firm. In return for fraction x of future cash flow, she raises R_M from the market and invests $I = R_M + R_E$ in the company. In period 2, the company generates $(1 + g)I$ of gross cash flow. Investments in an alternative security return $1 + i$. The entrepreneur can attempt to divert some of this cash flow to herself before paying the rest out as dividends.

Critically, any entrepreneur that can divert funds retains control of the firm regardless of how much she invests relative to outsiders.[4] The entrepreneur diverts a fraction, d, of cash flow to herself. She is caught with probability k^{non} if she does not make financial disclosures and $k^{dis} > k^{non}$ if she does. If caught, she returns diverted funds and pays a fine that is increasing in the amount diverted. Let $d^*(x^*, k)$ be the optimal diversion function for the entrepreneur given how much of the firm she chooses to keep $(1 - x^*)$ and the expected state of disclosure rules (k).

Consider first the case of *ex post mandatory disclosure* – that is, the effects on a firm that is established in a period where disclosure is not mandatory and it is not expected to become mandatory. The period 1 price of the firm's stock is based on the common expectation of $d^*(x^*_{non}, k^{non})$ and the stock-market value of the firm is $\frac{(1+g)I}{1+i}[1-(1-k^{non})d^*(x^*_{non}, k^{non})]$, where x^*_{non} represents the portion of the cash flow rights the entrepreneur will sell if she expects to not have to make any financial disclosures. Now suppose that after the firm is set up in period 1, but before both the paying of dividends and any diversion in period 2, the government requires all entrepreneurs to make substantial financial disclosures. As a result, the entrepreneur now chooses (and the market expects) diversion of $d^*(x^*_{non}, k^{dis})$.

Under reasonable assumptions, it can be shown that the expected value of diversion to the entrepreneur is decreasing in k. This is for two reasons. First, the entrepreneur diverts less because of the lower expected benefit and higher expected cost of attempted diversion (that is, $\frac{\partial d^*(x,k)}{\partial k} < 0$). Second, the probability of getting caught goes up. Given that $k^{dis} > k^{non}$, this suggests that diversion will go down after mandatory increases in financial disclosure. As a result

[3] The welfare implications of the model focus on new businesses, so we concentrate the discussion on "entrepreneurs." However, the distribution effects of the model apply just as well to other insiders, such as entrenched managers or majority shareholders, that may be able to divert resources to themselves.

[4] Therefore, an efficient market for corporate control would take away the opportunity for diversion. Alternatively, we could assume the entrepreneur will always invest enough relative to outsiders that she always remains in control. In this case, in addition to the standard large shareholder/small shareholder conflict (see, for example, Burkart, Gromb and Panunzi (1997)) we would be allowing the large shareholder to attempt to engage in fund diversion that the government declares to be illegal.

of the change in shareholder disclosure rules, the value of the stock receives a one-time increase of $\frac{(1+g)I}{1+i}[(1-k^{non})d^*_{non} - (1-k^{dis})d^*_{dis}]$ where $d^*_{non} = d^*(x^*_{non}, k^{non})$ and $d^*_{dis} = d^*(x^*_{non}, k^{dis})$. That is, value increases by the discounted value of reduced diversion and increased recovery of diverted funds. In percentage terms, the increase is $\frac{(k^{dis}-k^{non})d^*_{non}+(1-k^{dis})(d^*_{non}-d^*_{dis})}{[1-(1-k^{non})d^*_{non}]}$.

This example of ex post mandatory disclosure, with an exogenous and unexpected change in disclosure policy, suggests the imposition of disclosure may generate positive abnormal excess returns for firms that were set up without expectation of mandatory disclosure and that were still operating when the law was enacted. While the existence of abnormal excess returns when mandated disclosure is imposed would certainly document that information provided is valuable, such a finding would not, by itself, document that increased disclosure improved welfare. Excess returns could simply reflect a transfer of a fixed set of resources from one party (the entrepreneur) to another (the outside investor). However, it is also possible that reduced diversion by existing firms could generate welfare improvements. This would occur if the act of diversion is costly (e.g., entrepreneurs may only be able to keep a fraction of each diverted dollar) or if fines are deadweight losses.

Within the Shleifer-Wolfenzon framework, welfare gains could also be generated through the effect of *ex ante mandatory disclosure* on new investment projects that rely on financing from equity markets. Rather than welfare improvements coming from a reduction in wasteful diversion, they would stem from the fact that reduced opportunities for diversion can lead to more efficient investment in productive resources. Increased disclosure tilts entrepreneurs' incentives toward less diversion and increases their demand for outside funds. If the supply of funds is less than perfectly elastic, the increase in demand pushes up the equilibrium interest rate. This induces entrepreneurs with marginally profitable projects in the absence of disclosure regulation to not start their projects and instead invest their funds in higher quality projects of other entrepreneurs. As a result, projects with low g will not be funded and the average project that receives funding will be of higher quality (that is, will have higher g). Because the average project is of a higher quality, investors gain. In the Shleifer and Wolfenzon (2002) model this welfare gain relies on imperfect capital mobility across countries.

Finally, it is important to bear in mind that expected diversion is reflected in stock prices under any of these regimes. So, while stock values, amount owned by insiders, and number of firms that go public are all affected by diversion, stock *returns* are not affected as long as the disclosure regime is constant. We do not expect any difference in returns between firms subject to mandatory disclosure and those not subject to disclosure either before or after the change in disclosure rules. Rather, we would expect the shift to mandatory disclosure to lead to a one-time gain in the price

of firms that shift from not disclosing to disclosing.

3 Background on Federal Disclosure Regulations and a New Research Design

Our empirical analysis studies the effects of increased mandated disclosure resulting from the 1964 Securities Acts Amendments. In the context of the model, we interpret this law as increasing the probability of catching diverting insiders from k^{non} to k^{dis}. In this section, we provide background on Federal disclosure rules, how they were changed by the 1964 law, and how we construct our empirical analysis. We also provide background on related empirical studies.

3.1 The Federal Securities Laws of the 1930's

Prior to 1933, the Federal Government was essentially not involved in securities regulation.[5] Some states regulated brokerages, but there were no rules governing firms that issue securities. The only regulation of publicly traded firms came from rules imposed by securities exchanges. For example, the New York Stock Exchange (NYSE) required firms to show proper practices before they could list on the exchange and once listed they had to make important and regular disclosures to shareholders. However, the NYSE rules were enforced inconsistently. Further, there was essentially no regulation of firms traded Over the Counter (OTC). Although there were many examples of securities frauds both on and off exchanges prior to the Depression, proposals to add more Federal oversight were not seriously considered.

The 1933 Securities Act and 1934 Securities Exchange Act marked the first substantive federal regulation of securities markets. These Acts specified four forms of mandated disclosure that some publicly traded companies were required to comply with. As we detail below, the Acts' requirements did not apply equally to all categories of firms. The first type of mandated disclosure required any firm making a new or secondary offering to file a registration statement and send a prospectus to purchasers. The registration and prospectus statements must include a "Schedule A" with detailed financial information and descriptions of the firm's business, officers, costs of issuing the security, and intended use of any capital.

The second type of required disclosure is that firms listed on the NYSE and the American Stock Exchange (AMEX) must file annual (Form 10-K) and semi-annual (9-K) reports with the SEC, as

[5] This section draws heavily from Seligman (1995), as well as *New York Times* and *Wall Street Journal* articles from the 1960's.

well as report whenever a material event occurred (8-K). A 1936 law extended these periodic disclosure requirements to companies that issued securities through an initial or secondary offering after May 1936, regardless of whether they were traded on an exchange.[6] Consequently, periodic reporting was required of all listed firms and of those large OTC firms that had issued securities after May 1936.

The third type of mandated disclosure requires firms to provide proxy statements in advance of shareholder meetings or votes and sets minimum standards for information provided in these statements. In particular, these statements are required to report the qualifications of directors and nominees for directors, executive compensation, and transactions between the company and its officers or directors. The fourth type requires firms to list the identities of officers, directors, and large shareholders. Further, they must report these individuals' holdings of the company's equities and provide monthly statements of any changes. The Act also allows companies to recover any profits that an insider realizes from the purchase and sale of the company's stock in any period of less than six months. The third and fourth types of mandated disclosure only applied to firms on exchanges, leaving OTC firms uncovered.[7]

The 1933 and 1934 Acts were revolutionary forays into the regulation of securities markets, but their limitation was that all firms were not regulated equally. In particular, mandated disclosure requirements varied with firms' industry, the date they issued securities and whether they were listed on the NYSE or American Stock Exchange (AMEX). Harvard Law Professor Louis Loss (1983) wrote[8]:

> For thirty years after enactment of the Exchange Act there was a double standard of investor protection – a standard that resulted, more by accident than by design, from the piecemeal adoption of the SEC statutes but that nevertheless glowed with an incandescent illogic: if an investor happened to be a stockholder of a listed company, or a public utility holding company or a subsidiary of such a company or an investment company, he had the protections afforded by the reporting requirements as well as (with

[6] The specific requirement was that any company making a primary or secondary offering which increased the total market capitalization of all classes of securities issued by the company to above $2 million had to file a registration statement and periodic reports with the SEC. Such a firm could cease filing these reports if and while the value of the newly issued security class issued dropped below $1 million as of the last issue of the security.

[7] The insurance and banking industries received preferential treatment under the 1933 and 1934 Acts. In the case of insurance companies, the legislation imposed slightly less burdensome periodic reporting requirements. The Acts "temporarily" exempted banks until appropriate disclosure rules could be determined. The rules were never written, however, and the temporary exemption lasted until 1964. Banks and insurance companies that chose to list on exchanges were not exempt from rules imposed by exchanges, so most remained unlisted.

[8] Loss was Kennedy's first choice to head the SEC. When Loss declined, Kennedy appointed William Cary.

some exceptions) the proxy rules and the insider-trading provisions. If, on the other hand, he happened to hold a security that did not fall within any of these categories but that had been offered to the public and registered under the 1933 Act since 1936, he was likely to have current information by virtue of Section 15 D of the Exchange Act, but that was all; Section 15 D, enacted that year, subjected certain Securities act registrants to the reporting requirements of the Exchange Act but not to the proxy or insider-trading provisions. The third investor, who held an unlisted security in an industrial corporation that had not had any public financing since 1936, was still further from the fire; so far as he was concerned, the whole series of SEC statutes might just as well not have existed except for a few fraud provisions, no matter how large the corporation or how widely distributed its securities. (pp. 462-463)

Approximately three decades later the passage of the 1964 Securities Acts Amendments aimed to rectify the seemingly arbitrary inequities in regulatory intensity across categories of firms. It is these efforts that form the basis of this paper's examination of the consequences of mandated disclosure laws.

3.2 The Impacts of Differential Reporting Requirements

In response to complaints of fraud and manipulation on securities markets, Congress commissioned a study in 1961 of the operations of securities markets in the US. This study took over two years to complete and became known as the *Special Study of the Securities Markets*. It found that the existing system of differential reporting requirements had at least two undesirable effects on US equity markets.

First, the management of companies traded on the OTC market were not forthcoming with important details about firms' operations. For example, the *Special Study* said that roughly half of the complaint letters that the SEC received were from investors who either could not obtain information about a company in which they had invested or felt that the information sent to them was inadequate.

In a 1962 survey, the SEC randomly sampled one fifth of the OTC securities in which trades had been made during the last quarter of 1961. Of 1,965 OTC firms approached, 1,618 replied. 1227 has assets above $1 million, of which about half had at least 500 shareholders. The survey found that:

1. More than a quarter of the firms did not provide any reports on the firms' financial position or results in that year.

2. In 73 percent of proxy solicitations for voting on the Board of Directors, the shareholders were not told the names of the nominees. The proxy solicitations listed the directors' qualifications in only 11 percent of the proxy solicitations. Thus, in the vast majority of cases, shareholders were asked to vote blindly for current management or their nominees.

3. In 95 percent of proxy solicitations, management compensation was not reported.

4. 29 percent of the firms did not solicit proxies before shareholder meetings.

These findings applied to OTC firms. It seems reasonable to assume that the frequency of poor communication between management and shareholders were disproportionately concentrated among the firms that were completely free of SEC disclosure requirements.

Second, the legislative differences in mandated disclosure requirements appeared to distort firms' decisions on where to list their shares. The *Special Study* concluded that the system of differential regulation affected firms' decisions on where to list (*Special Study*, Part III, p. 16). Loss (1983) also argued that regulation affected listing decisions when he said, "For, just as surely as water flows downhill, business will move from a regulated to an unregulated market" (p. 464.) Prominent examples of firms that chose not to list on exchanges prior to the 1960's, but joined exchanges shortly before or after the Act took effect, included Time Inc., G.D. Searle, and Weyerhauser. Also, virtually all major banks remained unlisted until after the law was passed. By all accounts, many companies that met the listing requirements of the more liquid New York and American Stock Exchanges chose to keep their shares on the OTC market, although this may not have been in shareholders' best interests.[9]

3.3 Negotiation and Passage of the 1964 Amendments

We now trace out the time line of important events that led to the passage of the Securities Acts Amendments in August, 1964. In the subsequent analysis, the primary outcome variable is equity returns. Because equity markets are forward looking, any effect of the law should be concentrated in the period preceding its passage. Table 1 summarizes the key dates that are described in this subsection.

Before 1963, politicians and the public expressed little interest in revising the 1933 and 1934 Acts. On a fairly regular basis, SEC staff, a few legislators, or some other prominent public figure

[9] Despite repeated efforts, we were unable to determine the precise listing requirements of the NYSE and AMEX in this period. However, market capitalization has always been an important factor in determining eligibility for listing on both exchanges.

would call for an extension of the mandated reporting requirements to all OTC firms. However, these recommendations never seemed to gain any traction in Congress (see Loss (1983), page 464.) For example, Senator Frear of Delaware introduced a bill to extend mandatory disclosure in 1949, but no action was taken because attention turned to higher priorities such as the Korean War (*Special Study*, part 3, page 7.) In 1961, the SEC's budget was increased and William Cary, the new head of the SEC, called for the agency to be granted new powers, including the extension of disclosure rules to all OTC securities. However, there was little evidence that the Kennedy Administration was willing to push for substantive legislative changes in its first year in power. In our examination of 1961 and 1962 newspapers, we failed to find any evidence that market participants thought that these actions foreshadowed substantive legal changes.

The release of the first part of the *Special Study* in April, 1963 appeared to change the political climate. The *Special Study* was accompanied by a letter from William Cary that said that the SEC would make several legislative recommendations, including expanding the disclosure requirements for OTC securities. The Senate quickly reacted to this event. On July 9, 1963, a subcommittee unanimously approved a bill extending disclosure rules to all OTC firms. The release of the second installment of the *Special Study* on July 17, 1963 recommended major overhaul of the OTC markets. Less than 2 weeks later on July 30, 1963, the full Senate passed the Securities Act Amendment which held OTC firms with at least $1 million of assets and 500 shareholders to the same disclosure rules as the 1934 Act imposes on securities traded on the NYSE and AMEX.[10]

The bill moved on to the House, where it stalled. The size requirements were contentious. For example, some argued that there should not be an asset minimum and others thought that the shareholder floor should be lowered to 300. Further, insurance companies argued that they were already regulated by state insurance commissions so they should be exempted from the legislation. Banks contended that their supervision by the Comptroller of the Currency was sufficient, although the Comptroller had no mandated disclosure rules. While these issues proved difficult to resolve, the bill's general principle of increased disclosure was never seriously contested.[11]

---

[10] The staff that put together the *Special Study* argued that all OTC firms with at least 300 shareholders should be forced to comply with the mandated disclosure requirements imposed on firms on listed exchanges and that there should be no asset test. This would have forced approximately 5,500 firms of the roughly 25,000 OTC firms to comply. The cut-offs in the bill passed by the Senate were endorsed by the SEC commissioners.

[11] We have found no public arguments against the Act on the grounds that disclosure was a bad idea. It was probably difficult to make such a case because, according to Seligman (1995), the available evidence seemed to indicate that the "vast majority of securities fraud occurred among firms not subject to the SEC's periodic reporting requirements" (p. 313-4). There was some resistance by business groups such as the US Chamber of Commerce and National Association of Manufacturers on the grounds that compliance would be costly and that business should be free of regulatory burdens. However, Edwin Etherington, the president of the American Stock Exchange, estimated the annual compliance costs at approximately $1500 to $3000 for most OTC companies that were to be covered by

The solution to the slowdown in the House came in late January and early February of 1964 when President Johnson made two public endorsements of the legislation before the House. Johnson applied his famous skills of persuasion and the controversy over the particular provisions began to evaporate.[12] A House subcommittee passed the bill on March 19, 1964. It was soon evident that it would become law and in May Cary announced that he would resign soon, noting that his work was complete. On August 5 and 6, 1964 the full House and Senate passed identical versions of the bill, thereby sending it on to Johnson who signed it into law on August 20, 1964.

The most important provision of the law was that it extended all four forms of mandated disclosure to new categories of firms. It specifically required that any firm that had at least 750 shareholders and $1 million of assets as of the last day of its first fiscal year to end after July 1, 1964 (or any year after that) must register with the SEC within 120 days of the end of the fiscal year.[13] The compliance date for firms that met the asset test and had between 500 and 750 shareholders was the last day of its first fiscal year to end after July 1, 1966.[14] Firms with fewer than 500 shareholders and/or $1 million in assets were unaffected by the 1964 Amendments.

3.4 The 1964 Amendments as a New Research Design

This paper exploits the timing and structure of the 1964 Amendments to implement an event study analysis of the effect of mandated disclosure laws on the value of covered firms. Here, we describe why the form of this legislation may provide the conditions necessary for valid inference.

In the ideal event study, the event is a surprise to the affected parties. This is especially important when financial markets are used to study the impact of an event, because these markets are forward looking and quickly capitalize changes in expectations about the future. As the previous subsection documented, the 1964 Amendments were the result of a long process that can be traced back to at least the origins of the *Special Study* and perhaps longer. During this period, the

---

the bill and Congress seemed to find this estimate compelling.

[12] Largely due to the actions of House Commerce Committee Chairman Oren Harris, the securities bill was not seriously considered in the House until the Spring of 1964. Seligman (1995) suggests that Harris eventually helped enact the legislation in return for Johnson appointing Harris to be a Federal district judge (which Johnson did in 1965.)

[13] In order to give companies more time to prepare their initial statements and to give themselves a chance to prepare for the onslaught of new filings, the SEC extended the deadline to April 30, 1965 for firms whose first fiscal year end was before the end of 1964. The first wave of new filings with the SEC took place in April, 1965, but first information disclosures were made as late as October 31, 1965.

[14] The *Special Study* survey of OTC firms indicates that, as of 1961, approximately 32% of OTC firms had enough assets and shareholders that they would be bound by the new disclosure rules initially with another 8% becoming bound two years later. These firms account for a substantial majority of all OTC firm assets.

probability that the disclosure requirements would be extended to OTC firms increased from some unknown level to one.

We define the event window as lasting from January 1, 1963 through August 30, 1964. Although the Special Study was released on April 3, 1963, we suspect that its basic findings may have begun to permeate the investment community earlier. How much earlier is unknown, so there is an element of arbitrariness in the choice of January 1. Others may find it appropriate to begin the window earlier or later, but below we demonstrate that the basic results are insensitive to modest changes in the beginning date. The choice of August 30, 1964 as an end date seems relatively noncontroversial, given that this is only 10 days after Johnson signed the bill.

We attempted to identify sub-periods when there were unexpected increases or decreases in the probability of passage but ultimately were unsuccessful in these efforts. For example, we initially suspected that Johnson's announcement that he supported the bill on January 22, 1964 represented a sharp increase in the probability of passage. That same day, Representative Harris made statements indicating the House would soon act on the bill. Upon closer inspection, however, we found that the *New York Times* had given relatively limited coverage to Johnson's announcement. The relevant article was printed on page 50 and highlighted the fact that Johnson had not allocated any new funds to help enforce the proposed legislation. By contrast, when Johnson more aggressively pushed for the bill as part of a February 5 "Special Message on Consumer Interests", the *Times* reported the endorsement prominently the next day and followed up with a February 9 story declaring that the endorsement had made the prospects for the bill "suddenly bright." Thus, it is unclear which actions surprised the markets.

As an alternative falsification exercise, we test for an effect in the post-event window of September 1964-1966. The idea is that forward looking asset markets should have fully capitalized the law upon passage. If this test shows an "effect" of the law in the late 1964-1966 period, then this would undermine the validity of the estimates from 1963 - August 1964.

In light of the uncertainties about the beginning and end of the event window, the credibility of this research design is greatly enhanced by the availability of cross-sectional variation in which firms were affected by the change in mandated disclosure laws. We use the structure of the 1964 Amendments to divide firms into groups that were affected or unaffected by the law, based on their pre-legislation characteristics and whether they were already covered by the 1933 and 1934 Acts. The assumption is that the unaffected groups are a valid counterfactual for what would have happened to the affected firms in the absence of the law.

The 1964 Amendments caused two groups of firms traded over-the-counter to become subject to the same four types of disclosure requirements as firms on the NYSE and AMEX. The first

group consists of firms that switched from being free of all SEC reporting requirements to having to comply with all four types of disclosure. We refer to this as the "0-4" group. It is comprised of firms that only issued shares before 1936, or issued shares after 1936 but without bringing the total market value of the share class above $2 million, had at least 500 shareholders, and had at least $1 million in assets. The second affected group is labelled "2-4". These firms were required to comply with the SEC registration and periodic reporting requirements before 1964 by virtue of having had a primary or secondary offering of shares since 1936 bringing the total market value of a share class above $2 million, had at least 500 shareholders, and had at least $1 million in assets. The 1964 Amendments compelled them to also comply with the proxy and insider trading types of disclosure. Importantly, this group can be compared to the 0-4 group to estimate the effect of the registration and periodic reporting requirements.

There are three groups of firms that were unaffected by the 1964 legislation. The first is the "0-0" group, which was free of reporting requirements before and after the 1964 Amendments. These firms only issued shares before 1936, or issued shares after 1936 but without bringing the total market value of the share class above $2 million, and fell below the 500 shareholders and/or $1 million in assets floor. The second is the "2-2" group that was subject to the registration and periodic reporting requirements before and after the 1964 Amendments. These firms were below either the shareholders floor or assets floor of the 1964 Amendments. The third unaffected group is comprised of the firms that trade on the NYSE and AMEX. This "4-4" group was subject to all 4 forms of disclosure before and after 1964. These firms generally had higher market capitalizations than OTC firms. We therefore create two subsamples of the "4-4" group that are intended to serve as unaffected comparisons for the 0-4 and 2-4 groups, respectively. Each of the subsamples are chosen to match one of the affected group's distribution of market capitalization. We describe the selection process further below. Table 2 summarizes the different affected and unaffected groups, as well as their disclosure requirements before and after the 1964 Amendments.[15]

3.5 Related Empirical Research

This is far from the first paper to study the effects of changes in Federal (and other) mandatory disclosure regulations in financial markets. Numerous previous researchers have studied the effects

[15] Banks were treated like other firms in the 1964 Act, while insurance companies were exempted from mandatory dislosure. We currently exclude both groups because the rules imposed on them by other regulators make it difficult to predict how much information they disclosed before and after the the 1964 Act.

of the increased disclosure requirements of the Securities and Exchange Acts of 1933 and 1934.[16] Some of the better known work in this area was designed to influence the securities regulation policy debates of the early 1960's. Important examples include Stigler's (1964) attack on the need for securities market regulation. Stigler (1964) looked at new issues in the pre-SEC and post-SEC periods. Analyzing the average price and the variance in prices across issues, he concluded that the laws had no effect on stock prices and lowered variance only by discouraging high variance issues from coming to market. Friend and Herman (1964) and Robbins and Werner (1964) defended the SEC and argued that Stigler (1964) could not effectively separate effects of the SEC from changes in the market overall.

Later, Benston (1973) took advantage of the fact that the 1934 law required NYSE firms to disclose their sales figures and that, prior to the law, some firms already disclosed this information while others did not. While Benston (1973) did have a comparison group, disclosure of this one piece of information might not be expected to have a large effect on stock performance. Possibly due to this weakness in his experiment, Benston (1973) found no effect of the 1934 law on volatility. Simon (1989) provided the strongest evidence that the early SEC Acts had a positive effect on stock markets. Using data from 1926-1940, she showed that issue-specific risk was significantly lower in the post-1933 period. She also compared IPO's in bull markets before 1933 to those after 1933 and exploited differences in pre-1933 disclosure rules for NYSE and other exchanges. Simon (1989) focused on risk for new issues and did not measure changes to price and volatility of existing issues. Because of data limitations, no study of the 1930's legislation has used the same empirical approach that we use to study the impact differential impact on exchange-listed firms (the "0-4" group of the 1930's legislation) and OTC firms (the "0-0" group at that time.) There may have been relatively little impact, given that exchanges already had some disclosure requirements. However, there is no reason such an undertaking could not be conducted by researchers who can gather appropriate OTC data from that time.

There is a large literature studying the effects of other changes in financial disclosure.[17] As noted by Leuz and Verrecchia (2000), the empirical evidence on the effects of disclosure is not strong or entirely consistent. In motivating their study of disclosure in Germany, they argue that disclosure changes outside the United States provide better opportunities to study large changes. We take a different strategy in finding an important change in disclosure regulation – rather than go

[16] Table 3 provides an overview of the samples, measures, and findings of several relevant papers studying the 1930's Securities Acts and other changes in disclosure.

[17] See Healy and Palepu (2001) for a review of the empirical financial disclosure literature. There is also a substantial body of work on the effects of disclosure in non-financial markets. A recent example is Jin and Leslie (2003) who study the effect of mandatory disclosure of restaurant health inspection scores using methodology similar to ours.

outside the U.S., we go back in time.[18] Our analysis also differs from Leuz and Verrecchia (2000), as well as many other papers in the disclosure literature, in that we focus primarily on a case of mandatory disclosure.

Bushee and Leuz (2002) take an approach similar to ours by analyzing a noteworthy change in SEC disclosure regulation and by using a control group of unaffected securities. They study the OTC Bulletin Board (OTCBB), where rules similar to the 1934 Securities Act were enforced beginning in 1999. Prior to the rule change, approximately two-thirds of OTCBB firms were too small to be subject to SEC disclosure rules. That is, they were part of group 0-0 after the 1964 Amendments. Bushee and Leuz (2002) find that increased disclosure led to increased liquidity (as proxied by share turnover, trading volume, number of days where trades took place, and number of market makers) and decreased cost of capital. There are two important differences between our study and Bushee and Leuz (2002). First, OTCBB firms had more discretion over whether or not to adopt the new rules relative to most of the firms we study in 1964 because they could choose to leave the OTCBB for less liquid markets. In fact, approximately three-quarters of OTCBB firms who were newly required to file with the SEC chose to delist from the OTCBB. One important finding of Bushee and Leuz (2002), therefore, is that many firms have a strong preference for avoiding SEC disclosure requirements. The option to delist limits Bushee and Leuz's (2002) ability to study price and volatility effects of changes in disclosure because not that many firms actually changed their level of disclosure and because any market reaction is probably as much a reaction to the firms' decisions regarding disclosure as to disclosure itself. Secondly, the OTCBB is a trivial portion of the U.S. equity market. The average and median *nominal* market capitalization of affected firms in the Bushee and Leuz (2002) sample is smaller than these same statistics for affected groups in our sample, despite forty years difference.[19]

Lo (2003) also takes an approach similar to ours in his analysis of the SEC's 1992 extension of executive compensation information that had to be disclosed. He studies how market capitalizations changed in the eight months from the SEC's initial announcement that they were considering an extension until the detailed rules became known. He forms relatively affected and unaffected groups by using the amount of lobbying firms did to influence the SEC. Lo (2003) finds that increased disclosure created shareholder value, which is consistent with a reduction in diversion.

Disclosure rules are not the only means by which regulators attempt to make markets more

[18] See Butler, Kraft and Weiss (2003) for another paper that uses SEC changes in the mid-1900's to examine the effects of disclosure. They analyze SEC rule changes in 1955 and 1970 that forced exchange-listed firms to provide more frequent financial reports.

[19] The Dow Jones Industrial Average increased fourteenfold in the time between the beginning of our sample and the beginning of Bushee and Leuz's (2002).

efficient. There is a literature that compares securities laws and institutions across countries to determine what factors are most important in making a country's markets efficient. A recent example is Porta, de Silanes and Shleifer (2002), who study securities laws and markets in 49 countries. They argue that more developed and efficient stock markets are associated with mandatory disclosure and with holding firms that issue securities, as well as their investment advisors and accountants, liable for misleading information. They find no evidence that criminal penalties for financial misdeeds affect market development. Glaeser, Johnson and Shleifer (2001) draw similar conclusions from a comparison of development of the Czech and Polish stock markets. These studies provide useful general rules for what factors are associated with well developed markets. However, they generally cannot evaluate specific disclosure policy choices because they do not distinguish clearly between the effects of various types of disclosure, they have very coarse measures of market efficiency, and they do not look at any within-country changes.

4 Data

4.1 Data Sources

To implement our analysis, we created the first electronic data set containing information on securities traded Over the Counter (OTC) from 1961-1968. This database contains information on bid and ask share prices, dividends, stock splits, whether the firms disclosed information to the SEC, and financial information for the subset of firms for which this was available. We also collected similar information for equities traded on the American and New York Stock Exchanges. The forthcoming Data Appendix will contain more details.

The basis of the analysis is a comparison of weekly and monthly returns across different categories of firms from 1961-68.[20] The Center for Research in Security Prices (CRSP®) database, which is the standard source for historical equity returns data, only begins coverage of OTC firms in December 1972. Therefore, we created our own database of OTC firms' returns.

The resulting database is based upon the hand entry of data from 8 separate sources on OTC firms and the CRSP electronic data file. We collected weekly bid and ask prices for OTC companies from 1962-66 and monthly prices for 1961, 1967, and 1968 from the weekly publication *Barron's*. The relevant pages of this publication were photocopied and these copies were then scanned. The image files were sent to Mascon Computer Services (P)Ltd. of India. They hand entered the

[20] The current analysis is based on the weekly data for 1963-66. Future work may also exploit data from 1961, 1962, 1967, and 1968.

security name, the bid price, and the ask price from each issue of *Barron's*.[21]

To create a panel data file of prices, we matched firms across issues of *Barron's* by using their reported names. Elaborate checking was performed to minimize spurious exit of firms in cases where name abbreviations differed slightly between Barrons issues.[22]

We hand entered all dividend and stock split information from *Standard and Poor's Annual Dividend Record*. In particular, we started with a list of all the names of the firms in *Barron's* for each year and entered the amounts and dates of every cash, property, and liquidating dividend and stock split. The S&P publication is an ideal data source for this information, because it aims to be a "record of dividend payments on virtually every American and Canadian preferred and common stock."[23] Approximately 80% of the firms in our primary sample of OTC firms were in the S&P book. We also used the *National Stock Summary* and the *Directory of Obsolete Securities* to verify dividends, especially in cases where firms ceased operations.

These price and dividend data were then used to calculate the weekly and monthly returns for each company. The first step in this process was to account for all stock splits. We adjusted all bid and ask prices so that for each company there is a time series of bid and ask prices for one share of the company in the beginning of each period. We adjusted the cash dividends analogously. The returns were then calculated as the change in the mean of the bid and ask price between consecutive weeks (months) plus any cash dividends divided by the mean of the bid and ask price in the first of those weeks (months) in 1962-66 (1961, 1967, 1968).

Securities that disappeared from *Barron's* posed a particular challenge. In these cases, the first step was to ascertain the reason that the firm's share price was no longer reported in *Barron's*. We relied on a myriad of sources for this task, including the *Standard and Poor's Annual Dividend Record, National Stock Summary* and the *Directory of Obsolete Securities.* For securities that exited *Barron's* due to mergers, name changes, liquidations, or bankruptcies, we used the *National Stock Summary* and the *Directory of Obsolete Securities* to generate "delisting" returns similar to procedures used by CRSP when a firm leaves their sample. For firms that moved to the NYSE or

[21] Mascon guarantees a data accuracy rate of 99.9%. To achieve this high level of accuracy, Mascon double entered 20% of every operator's entries. If a single error is found, then all of that operator's entries were reentered. This iterative procedure was followed until there were not any mistakes.

[22] To avoid incorrect matches, we also assessed the quality of the match by checking for implausibly large changes in the bid and ask prices between *Barron's* issues. The roughly 500 largest weekly changes in price were investigated by research assistants in the United States. These investigations included rechecking the Barron's entries and the stock split information, as well as verifying the match between firm names across issues of *Barron's*. Any documented errors were corrected. Otherwise, the observation was unchanged.

[23] The average number of firms covered in this publication during the 1961-68 period was 10,000. Notably, there were roughly 2,000 firms on the American and New York Stock Exchanges in these years, so approximately 80% of the entries were for OTC (and Canadian) firms.

AMEX, we used *CRSP* to continue the time series of prices. The forthcoming Data Appendix will provide further details on how returns were calculated for firms that disappeared from *Barron's*.

An essential component of the analysis is the accurate identification of the firms that disclose financial information through official SEC channels. The *Directory of Companies Filing Annual Reports with the SEC Under the Securities Exchange Act of 1934* and *US SEC News Digest* reveal the identities of each company that complies with mandated disclosure requirements and which of the four types of information they disclose. The *US SEC News Digest* reveals when a company has filed information with the SEC for the first time. Each company's filing status and the type of filing was collected annually and matched to our primary sample of *Barron's* firms.

We gathered accounting information on the firms in the *Barron's* sample from two sources. The *Standard & Poor's Investment Service Stock Guide* is published annually and contains information on firms' S&P rating, number of shares held by institutional investors, the consecutive number of years that dividends have been paid, long-term debt, and total shares outstanding. We supplemented this information with data from the *Over-the-Counter Securities Handbook*, which contains data on employees, number of shareholders, assets, sales, net income, dividends, and total shares outstanding. These two publications' coverage of the OTC firms is not comprehensive. The incomplete coverage underscores that it was difficult to obtain basic financial information about many OTC firms. We return to this point below.

4.2 Sample Details

Our primary OTC sample is comprised of the 1,325 OTC firms that appeared in the January 7, 1963 issue of *Barron's*. We form a panel data file of these companies that runs through the end of 1966. These firms are then divided into the affected and unaffected groups to form equally weighted portfolios. We do not add new firms to the portfolios because our focus is on the effect of changing the mandated disclosure requirements on an existing set of firms.[24] Here, we provide some summary statistics on this panel and describe how the firms are divided into the affected and unaffected groups.

Table 4 details the attrition from the *Barron's* sample, starting at the beginning of 1963. The weekly return for each portfolio is based on the firms for which we were able to ascertain a price that week. In cases where the firm disappears from *Barron's* and we cannot continue the series, it is assigned a delisting return in the first week that a price cannot be located. For all subsequent weeks, it does not enter the calculation of the portfolio's return. This is equivalent to assuming that

[24] Another interesting question is whether the 1964 Act changed private firms' decisions on where to have its shares trade upon going public. This is beyond the scope of the current paper.

the missing firms' return in the subsequent weeks are equal to the mean return of the remaining firms.

The first row of the table reports the sample size for the first observation in each of 1963, 1964, 1965, and 1966, as well as the final week of the panel (week 52 of 1966). Rows (a) through (f) report the 6 different reasons that firms leave *Barron's* and the numbers that leave for each of these reasons between each of the dates. For each exit reason, the table presents the number of firms for which we assigned a delisting return upon the exit from *Barron's* and whether we were able to continue the series. The largest single source of attrition from the sample is firms that move to an exchange. Over the course of four years, roughly 21% of the firms move to the NYSE or the AMEX. The movement to exchanges is especially high in 1963 and 1964, slows somewhat in 1965, and slows even more in 1966. This foreshadows our results in that as mandatory disclosure began to look more likely, the value of staying unlisted declined. The other forms of attrition were smaller and of a roughly equal number across years.

The one exception is that *Barron's* removed an unusually large number of firms from its OTC listings during 1963. Smaller OTC firms were overrepresented in this group and these firms are disproportionately likely to be assigned to the 0-0 and 2-2 groups. If the returns at these firms subsequent to their departure from *Barron's* differ from the remainder of the firms in their respective groups, it will bias our results. For example if these firms performed relatively poorly, this would bias us towards finding that "unaffected" firms performed relatively well as passage of the 1964 Amendments neared.[25]

4.3 Composition of the Affected and Unaffected Groups

To conduct the analysis, each of the 1,325 *Barron's* OTC firms was assigned to either the 0-4, 0-0, 2-4, or 2-2 group. Since it is likely that some firms attempted to evade the mandated disclosure rules either by going private or altering their assets or the number of shareholders, an analysis of the firms that comply with the disclosure requirements would suffer from classic selection bias.[26] Consequently, we assign firms to four groups based on their characteristics in 1962, which predates the event window. This assignment rule means that the affected group will include firms that complied with the 1964 Amendments and some that evaded their requirements. However, our

[25] We contacted *Barron's* and tried to determine how they decided which stocks to include in their 1960's listings, but we were not able to gather any useful information.

[26] Another negative consequence of defining the groups based on post-1964 observed filing status is that this would induce a mechanical correlation between filing status and returns in the 1963-64 period. This is because firms with high returns in 1963-4 will have to file simply because their high returns are likely to push them above the asset and shareholder thresholds.

estimated effect of the law is the policy parameter of interest because it allows for the inevitable efforts to evade the disclosure requirements.

In assigning the *Barron's* firms to the groups we used 1962 information to mimic the statutory requirements of the 1964 Amendments. This was complicated by the absence of information on the number of shareholders and/or assets for a number of firms. In cases where assets data was unavailable, a firm's market capitalization was substituted. The 0-4 group is comprised of firms that did not file with the SEC in 1963 and had measured assets in 1962 exceeding $1 million and more than 500 shareholders.[27] Firms that did not file in 1963 and fell below the asset or shareholder floor or were missing data on both variables were assigned to the 0-0 group. The 2-4 group includes firms that filed with the SEC in 1963 and had measured assets in 1962 exceeding $1 million and more than 500 shareholders. The 2-2 group is comprised of firms that filed with the SEC in 1963 and fell below the asset or shareholder floor or were missing data on both variables.

We created two other unaffected groups from the AMEX and NYSE firms, both of which had no change in filing status. The first is labeled "4-4 with market capitalization <= $36 million." It is comprised of all AMEX and NYSE firms with market capitalizations less than $36 million at the beginning of 1963. This cut-off was chosen because the median market capitalization as this group is $9 million, which is the same median market capitalization of the 0-4 group. Thus, this 4-4 group is used as a counterfactual for the 0-4 group. Analogously, the "4-4 with market capitalization <= $63 million" group is chosen to match the $11 million median market capitalization of the 2-4 group and is used as a counterfactual for this group. These two unaffected groups are a small fraction of the overall listed markets. The "4-4 with market capitalization <= $36 million" group comprised 3.7% of CRSP market capitalization at the beginning of 1963, while the "<= $63 million" group comprised 6.6% of CRSP market value.

4.4 Attrition and Filing Status by Groups

Panel A of Table 5 displays the sample sizes of each of the six groups of firms at the start of our analysis, as well as showing the attrition from each group over the analyzed period. The two largest OTC groups are the two "affected" groups. The 0-4 group has 274 firms in the beginning of 1963. This group is considerably smaller than the 2-4 group because many firms that were trading in the OTC market as of 1963 had raised equity in the previous twenty-seven years. Sample attrition is similar among these two groups, with approximately 80% of each group still trading as a stand-alone firm at the end of 1966. Sample attrition is much higher in the unaffected OTC groups

[27] If a firm exceeded the asset or shareholder floor but was missing information on the other variable, we treated it as if it exceeded both floors.

because *Barron's* dropped so many firms from its 1963 listings and the survival rate of small firms is generally lower.

Panel B of Table 5 shows the annual SEC filing status of firms in the initial *Barron's* sample. It is evident that the law affected the filing status of the 0-4 group. In particular, the proportion of these firms that filed in 1963 increased from 0% to 66.3% in 1965. Since our assignment rule is based on 1962 information and actual filing status is based on 1964 information, it is to be expected that some of our affected groups do not file after the Amendments become law and that some firms in the unaffected group do file. The table demonstrates that this is in fact the case. However, there is a sharp difference between the proportion of "0-4" firms that actually file in 1965 (66.3%) and "0-0" firms that file (23.1%.) It is evident that our classifications into these two groups is highly correlated with eventual disclosure status.

4.5 1962 Characteristics of Groups.

Table 6 reports the means of a number of important variables at the end of 1962, by group.[28] It also reports the number of firms with nonmissing observations for each variable by group. The first panel reports the mean market and median capitalization and mean share price for each of the groups. The entries suggest that the market capitalization of the affected "0-4" and "2-4" groups is roughly an order of magnitude greater than the market cap for the unaffected groups. The reliability of this finding is limited by the small number of firms with nonmissing market capitalization data in the unaffected groups. However, it has been noted elsewhere that the price per share is correlated with market capitalization and if this holds true here then the affected firms are indeed larger. This finding is not surprising in light of the law's intent to focus on larger firms.

The second panel reports on a series of firm-level variables that were collected from *Standard & Poor's Investment Service Stock Guide* and the *Over-the-Counter Securities Handbook*. The most striking finding is that these variables are missing for the majority of OTC firms. This highlights the difficulty that current and prospective shareholders of OTC firms faced in obtaining relatively basic information about these companies before the 1964 Amendments. Further, it underscores that this legislation was likely to substantially increase the level of information available about these firms. It is also evident from this panel that the fraction of variables with missing observations is much greater in the unaffected group. This is summarized in the last row which reports the number of firms with at least one nonmissing variable.

[28] Table 6 inadvertently includes a few firms with incomplete data. As a result, the sample size is slightly different from tables 4 and 5. This will be corrected in the next version of the paper.

5 Empirical Methodology

Our analysis compares the returns to shareholders of firms affected and unaffected by the 1964 Amendments' disclosure requirements. Here, we discuss the econometric models used to estimate whether abnormal excess returns accrued to shareholders of affected firms.

We begin by constructing a time series of the equal weighted portfolio returns for each of our groups. This is denoted as:

$$R_{gt} = \frac{1}{N}\Sigma_{i=1}^{N} R_{igt} = \frac{1}{N}\Sigma_{i=1}^{N}(P_{igt} - P_{igt-1} + D_{igt})/P_{igt-1} \tag{1}$$

where R_{gt} is the return for holding the group g portfolio from the end of week $t-1$ to the end of week t. The return for each firm in the portfolio, R_{igt}, is calculated as the change in the price per share at the ends of week t and $t-1$ (i.e., $P_{igt} - P_{igt-1}$) plus any dividends paid between the price observations (i.e., D_{igt}) all divided by the price at the end of week $t-1$. N is the number of firms in each group. Because the market capitalization for many of the firms in the sample is missing, we cannot calculate the value weighted return.

The vectors R_{gt} are then used to estimate the following equation separately for each group:

$$R_{gt} - R_{ft} = \alpha_g + \beta_{1g}\,(R_{mt} - R_{ft}) + \beta_{2g} SMB_t + \beta_{3g} HML_t + \beta_{4g} MOM_t + \varepsilon_{gt}, \qquad \varepsilon_{gt} = \lambda_t + \nu_{gt} \tag{2}$$

where R_{ft} is the return on a risk-free asset, which is measured as the Treasury bill rate. This equation controls for the difference between market and risk-free returns, two factors based on Fama and French (1993), and a momentum factor based on Carhart (1997). The market return is measured as the value weighted CRSP return that uses both NYSE and AMEX firms. The three factors are measured as the difference in the returns of portfolios of small and large stocks (SMB), the difference in returns of portfolios of value and growth stocks (HML), and the difference in returns of portfolios of stocks with high and low returns over the period from two to twelve months prior to the current date.[29] These three factors are obtained with NYSE and AMEX data so the absence of market capitalization and accounting data for all the OTC firms does not pose a problem for estimation.[30] The g subscript on the parameters underscores that this equation can

[29] Kenneth French generously provided us with the SMB and HML daily series and extended them back an extra year so we can perform analysis through all of 1963. Using daily return data, we calculated the weekly momentum series based on the formulas on French's web page (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.)

[30] Another advantage of using SMB, HML, and MOM series calculated with NYSE and AMEX data is that all of

be estimated separately for each of our groups and that the effect of the factors can vary across groups. ε_{gt} is the unobserved determinant of group g's return and is composed of a time-specific factor (i.e., λ_t) and an idiosyncratic factor (i.e., ν_{gt}).

In this setting, α_g is the parameter of interest because it provides a measure of the abnormal excess returns, specific to group g. The appeal of this measure of return is that it has been purged of any covariance with the overall market and with the three factors. This is important here because our groups may have high or low returns in the examined period simply because of their riskiness relative to the market or because they are disproportionately comprised of small, value, and/or high momentum firms.

An important limitation of equation (2) is that it is impossible to separately identify α_g and λ_t, so the estimated α_g may measure the g's abnormal excess return *and* time varying factors that are common to multiple groups. For instance, suppose there was a positive shock to the returns of all OTC firms during the event window, then the estimated α_{0-4} would capture the effect of the 1964 Amendments *and* the shock. In this case, it would be invalid to interpret the estimated α_{0-4} as a causal estimate of the abnormal excess returns for group 0-4.

An attractive feature of our research design is that the multitude of groups can be used to purge the estimated α_g of these common time factors. This is accomplished by differencing equation (2) for two groups. An example of special interest is the difference between groups 0-4 and 0-0, which becomes:

$$\begin{aligned} R_{0-4t} - R_{0-0t} &= (\alpha_{0-4} - \alpha_{0-0}) + (\beta_{1,0-4} - \beta_{1,0-0})\,(R_{mt} - R_{ft}) + (\beta_{2,0-4} - \beta_{2,0-0})SMB_t \\ &\quad + (\beta_{3,0-4} - \beta_{3,0-0})HML_t + (\beta_{4,0-4} - \beta_{4,0-0})MOM_t + (\nu_{0-4t} - \nu_{0-0t}) \quad (3) \end{aligned}$$

Note that λ_t has been differenced out of equation (3), so time varying factors common to the two groups cannot bias the estimated parameters. The estimated β's are the difference in the loadings between the 0-4 and 0-0 groups. The parameter of interest is $\alpha_{0-4} - \alpha_{0-0}$, which is interpreted as the difference in the abnormal excess returns between groups 0-4 and 0-0. The null hypothesis is that this difference is equal to zero.

An important feature of this research design is that it divides the 1963-1966 period into the event and post-event windows. We fit equation (3) separately in these two periods. If the 1964 Amendments affected the returns of covered firms, then we will reject the null in the event window.

---

these firms are 4-4's. So, these portfolios do not reflect the effect of the 1964 Amendments.

The post-event window provides an opportunity to investigate the validity of our research design. In particular, we expect that in $\alpha_{0-4} = \alpha_{0-0}$ this period. If this null hypothesis is rejected, it will undermine confidence in the validity of the statistical model and the credibility of the results from the event window.

Four other features of our approach merit highlighting. First, we will exploit the availability of three unaffected groups for each affected group to present three different estimates of the effect of the law on each of the affected groups. For example, we use equation (3) to separately estimate the effect of the legislation on the 0-4 group with the 0-0, 2-2, and 4-4 groups. Second, the estimation of equation (3) with group by week data, rather than firm by week data, is a conservative solution to the likely correlation in unobserved returns across firms within the same week. In particular, this grouping of the data will generally yield larger standard errors than a GLS approach or the formula for standard errors that accounts for clustering.

Third, our estimates are average abnormal excess returns so they are equivalent to a portfolio that is rebalanced every week to ensure an equal weighting across all firms in the portfolio. The shortcoming of this approach is that it does not mimic the buy and hold strategy that investors generally employ. Its advantages are that it is possible to control for the three factors without accounting information on OTC firms and normality assumptions are closer to being valid for average abnormal excess returns than for buy and hold returns (see Fama (1998)).

Fourth, equation (3) relies on estimated β's that are obtained from data during the event window. This is a valid approach if the law does not affect the β's. It would be inappropriate, however, if the policy changed investors' expectations of the β's in the affected group, because we would be using endogenously determined β's to estimate the abnormal excess return. We also present results when the β's are estimated from the post-event window. This too would be inappropriate if the law permanently changed the β's, since these estimates would also reflect the effect of the 1964 Amendments. We are currently cleaning the data from 1961 and 1962. Once this is finished, we will be able to estimate the effect of the law using β's estimated with data from before the event window.

6 Results

6.1 Unadjusted Returns

We begin with a graphical analysis of the unadjusted returns by group. Figure 1 depicts the unadjusted cumulative returns for the 0-4, 2-2, 0-0, and the 4-4 group that was chosen to match the 0-4 group. Thus, each point represents the current week's return for each group added to the

sum of the return in all previous weeks. The vertical line denotes the end of the event window. During the event window, the 0-4 and 4-4 groups each had cumulative returns of approximately 20%, indicating that the market value of these equally weighted and weekly rebalanced portfolios each increased by 20%. In contrast, the cumulative return was approximately 0% for the 0-0 group and slightly negative for the 2-2 group. The figure shows that in two out of three cases, affected firms outperformed unaffected firms in the event window.

The figure also allows for an exploration of the unadjusted relative returns in the post-event window. Although there is considerable variability across the groups, the plots reveal that the returns look quite similar across most groups in the post-period window. However, this is not the case when the 2-2 group is the unaffected group. About a year after the event window is over, the 2-2 group begins to significantly underperform all the other groups. Consequently, the cumulative excess return for the 0-4 - 2-2 comparison is on the order of 30%. This finding is surprising and we plan to investigate it further. It is reassuring though that the bulk of this excess return occurs roughly a year after the event window has ended.

Figure 2 performs an analogous analysis for the 2-4 group. The figure shows that the 2-4 group outperformed the 2-2 and 0-0 groups during the event window, but that groups 2-4 and 4-4 had comparable returns. The post-event windows results are also similar to those in Figure 1. Specifically, the 2-4 - 2-2 cumulative return in the post period is large and appears to be largely due to the relative decline in returns for the 2-2 group about a year after the event window ends.

6.2 Abnormal Returns

We now turn to estimates of the adjusted, or abnormal, returns. Table 7 presents the estimation results from the fitting of two versions of equation (2) during the event window. For each specification, the equations are fit separately for all six groups.

Specifications #1 and #2 lead to the same qualitative conclusions, so here we focus on specification #2, which controls for all four factors. The first entry in column (1) is the estimated α_{0-4}, which indicates that the abnormal average return for the 0-4 firms was roughly 0.15% per week during the event window. Thus, the cumulative abnormal return over the 86 week event period was roughly 12.9%. The estimated α_{2-4} implies a cumulative abnormal return of 8.3%. Notably, α_{0-4} borders on statistical significance when judged by conventional criteria, while α_{2-4} is estimated less precisely.

The α's of the unaffected groups fail to produce evidence of a significant abnormal return. The estimated α's from the OTC unaffected groups (i.e., 0-0 and 2-2) are both negative. If the standard errors are ignored, the estimates imply that there was a secular factor that negatively

affected the returns of firms on the OTC exchange and that the estimated effect of the 1964 Act will be larger if this factor is differenced out. The alphas from the listed exchange unaffected groups are close to zero and estimated relatively precisely, highlighting the success of the four factor model in predicting the returns of these groups. It is evident that allowing for a common time effect between these unaffected groups and the affected groups will have little effect on the overall estimate.

There are two other noteworthy findings apparent in Table 7. First, the β's, or loadings, on the factors, differ substantially across the groups. For example, the parameters on the market return are 0.40 for the 0-4 group, 0.17 for 0-0, 0.52 for 2-4, 0.36 for 2-2, 0.80 for 4-4 market capitalization <= \$36 million, and 0.83 for 4-4 market capitalization <= \$63 million. Although we have not conducted a formal test, these coefficients differ substantially across groups. Further, differences in the β's are also evident in the case of the other three factors and together these findings highlight the heterogeneity across groups. Second, the R-squared statistics for the OTC groups are notably smaller than for the 4-4 groups, which underscores the difficulty in explaining returns on the OTC market in this period.

The plots to the left of the vertical lines in Figures 3 and 5 graphically display these results. The figures are obtained by fitting a version of equation (2) that allows the parameters on the four factors to differ during the event and post-event windows and uses the sum of the intercept α and the residual as a measure of the abnormal return for a given week. These abnormal returns are then summed cumulatively and plotted.

It is apparent from the figures that the abnormal returns for the affected groups occur throughout the event window. This is consistent with our impression that the probability of the passage of the legislation increased consistently throughout the event window. In other words, these graphs do not reveal a sharp increase (or decrease) in abnormal returns consistent with an unexpected jump upward (or downward) in the probability that mandated disclosure requirements would be extended to the 0-4 and 2-4 groups.

Overall, the results in Table 7 and Figures 3 and 5 suggest that the 1964 Amendments were associated with abnormal returns for the affected 0-4 and 2-4 groups. If the four factor model successfully adjusts for all heterogeneity, then it sufficient to end the analysis here. We next test whether these findings are robust to allowing for a time factor that is common to the affected and unaffected groups.

Table 8 presents our primary results, which come from fitting equation (3) during the event window. The table reports estimates of α, the abnormal average excess returns for the affected group relative to an unaffected group. Specification #1 adjusts for the market return, #2 adjusts for the 4 factors, and #3 adjusts for the market but the loading is estimated in the post-event

window. In columns (1)-(3), the unaffected groups are 0-0, 2-2, and 4-4, respectively. Because we are unaware of a compelling a priori reason to believe that any of the unaffected groups forms a more credible counterfactual than the others, we also present a group consisting of an equal weighted average of the stocks in groups 0-0, 2-2, and 4-4.

Panel A reports estimates of α, the abnormal average weekly excess return for the 0-4 group. In columns (1) and (2), the estimates range between 0.17% and 0.28% and would generally be judged to be statistically significant by conventional criteria. The estimates in column (3) are smaller and not as precisely estimated but also point to a substantial positive abnormal excess returns. The similarity of the estimates across specifications and unaffected groups is reassuring. The column (4) estimates that utilize a combination of the three unaffected groups are all in the range of 0.15% and are statistically significant. These estimates suggest that by the end of the event window the 0-4 group's cumulative abnormal excess return was approximately 13%. In the context of the Shleifer-Wolfenzon model, these results suggest that shareholders expect dividends to increase by 13% due to reduced insider diversion of profits.

Column (5) reports the results of fitting equation (3) when the dependent variable is $R_{0-4t} - R_{2-4t}$. The intention is to infer the effect of periodic reporting disclosure requirements relative to the proxy and insider trading requirements. Here, the point estimates range from 0.05% to 0.08% although none of them meet conventional criteria for statistical significance. If the effects of each of the forms of disclosure are additive and these results are taken literally, the estimates suggest that by themselves the registration and periodic reporting requirements are responsible for a cumulative abnormal excess return of 4% to 7% during the event window.

Panel B repeats this analysis for the 2-4 group. These results provide direct evidence on the effect of compliance with the proxy and insider trading types of mandated disclosure. All of the estimates of α in columns (1)-(3) are positive, although they are generally not statistically significant. The estimates are smallest when the 4-4 group is the unaffected group. The column (4) estimates, which are more precisely estimated (though still not statistically significant), indicate that the 1964 Amendments are associated with a cumulative abnormal excess return of six to nine percent for the 2-4 group.

Table 9 is identical to Table 8, except that it reports the estimated α's from the fitting of equation (3) in the post-event window (instead of the event window). It is intended as a test of the validity of the method used in Table 8. Because forward looking equity markets should have fully capitalized the value of the change in disclosure requirements by the end of the event window, we expect that the affected firms' abnormal excess return should be zero in this period. If this null hypothesis is rejected by the data, it raises the possibility that our research design is invalid which

would undermine the credibility of the results in Table 8.

The estimated α's in columns (1) and (3) are small in magnitude, of varying signs, and all statistically indistinguishable from zero. However, when the 2-2 group is used as the unaffected group as in column (2), the estimated α is approximately 0.25% and is precisely estimated. In column (4) all three unaffected groups are combined again to produce summary estimates and in all four cases, the null of zero cannot be rejected. In contrast the null is always rejected in column (4) of Table 8. Nevertheless the 2-2 results remain puzzling. Overall, we do not think that the Table 9 column (4) results invalidate our research design.

Figures 4 and 6 provide graphical versions of the results in Tables 8 and 9. The lines are obtained by fitting a version of equation (3) that allows the parameters on the four factors to differ during the event and post-event windows. We then again use the sum of the intercept and the residual as a measure of the abnormal return for a given week. These abnormal returns are then summed cumulatively and plotted. The figures provide an opportunity to better understand the source of the point estimates in Tables 8 and 9. Again, it is evident that the abnormal excess return in the event window occurs throughout this period. Thus, small alterations in the beginning or end dates of the event window would not affect our qualitative conclusions. It is also evident that the bulk of the post-event window abnormal excess return due to the 2-2 group occurs in the latter part of 1966. We plan to investigate this further in the future.

6.3 Buy and Hold Returns

We now consider an alternative portfolio construction methodology to insure that our results do not depend on the exact framework we have adopted. In Table 10, we reproduce the four factor results ("specification #2") in Tables 8 and 9. However, instead of implicitly rebalancing the equal-weighted portfolios every week, we allow the portfolio weights to develop based on prior returns. That is, we implement a "buy and hold" strategy.

Given the lack of information on market to book ratios and (for some firms) size in the OTC data we cannot implement a standard buy and hold analysis where average buy and hold returns for affected firms are compared to average buy and hold returns for a sample of unaffected matching firms with similar market to book ratio, size etc. However, a simple modification of the portfolio construction allows us to use the 4 factor model to consider a buy and hold strategy.

Specifically, we constructed portfolios for each of our groups in which the weight on a given stock in a portfolio for a given week equals the weight the stock would have in a buy and hold strategy. Thus, we start by putting an equal dollar value in each stock of the portfolio. In calculating the portfolio return from date t to $t+1$, we assume that the share invested in stock i equals (value

of investment in stock i at t)/(total value of portfolio at t) where the investors is now assumed to make no trades between the initial portfolio formation and date t. Once these new portfolios are constructed, we proceed as before and estimate the factor model and test if alphas are different from zero.

As Table 10 makes clear, the use of these buy and hold portfolios does not have an important impact on our conclusions. In general, the affected groups outperform the unaffected groups by amounts that are similar to those when we use the methodology in Tables 8 and 9.

7 Conclusion and Future Research

We studied the last major change in mandatory disclosure in American financial markets – the Securities Acts Amendments of 1964. The Act imposed new disclosure standards on some OTC firms. The Act did not affect the disclosure requirements of firms listed on exchanges because they were already quite strict and it also did not affect very small OTC firms. Therefore, we used the Act to compare the effects of disclosure changes on a group of affected firms while using various groups of unaffected firms to create a counterfactual.

We found that firms in the most affected group (that is, those firms that the Act forced to make periodic financial disclosures, to release proxy information before shareholder meetings, and to provide details on holdings and trades by insiders) had a cumulative abnormal excess return of about 13% from the time of the first serious calls for changes in disclosure rules through the time the Act passed. During this same period, those firms that were affected by the imposition of proxy and insider mandates had a cumulative abnormal excess return of approximately 6%-9%. This suggests that mandatory disclosure lowers the cost of capital. Our findings are consistent with disclosure reducing insiders' ability to divert resources away from outsiders and to themselves.

References

Becker, Gary S., "Crime and punishment: An economic approach," *Journal of Political Economy*, 1968, *76*, 169–217.

Benston, George J., "Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934," *American Economic Review*, 1973, *63*, 132–155.

Burkart, Mike, Denis Gromb, and Fausto Panunzi, "Large shareholders, monitoring, and fiduciary duty," *Quarterly Journal of Economics*, 1997, *112*, 693–728.

Bushee, Brian J. and Christian Leuz, "Economic Consequences of SEC Disclosure Regulation: Evidence from the OTC Bulletin Board," 2002. The Wharton School, University of Pennsylvania.

Butler, Marty, Arthur Kraft, and Ira S. Weiss, "The Effect of Reporting Frequency on the Timeliness of Earnings: The Cases of Voluntary and Mandatory Interim Reports," 2003. University of Rochester, London Business School, and Columbia University.

Carhart, Mark M., "On persistence in mutual fund performance," *Journal of Finance*, 1997, *52*, 57–82.

Chow, Chee W., "The Impacts of Accounting Regulation on Bondholder and Shareholder Wealth: The Case of the Securities Acts," *The Accounting Review*, 1983, *58*, 485–520.

Coase, Ronald, "The problem of social cost," *Journal of Law and Economics*, 1960, *3*, 1–44.

Easterbrook, Frank H. and Daniel R. Fischel, "Mandatory Disclosure and the Protection of Investors," *Virginia Law Review*, 1984, *70*, 669–715.

Fama, Eugene F., "Market efficiency, long-term returns, and behavioral finance," *Journal of Financial Economics*, 1998, *49*, 283–306.

___ and Kenneth R. French, "Investor protection and equity markets," *Journal of Financial Economics*, 1993, *33*, 3–56.

Friend, Irwin and Edward S. Herman, "The SEC Through a Glass Darkly," *Journal of Business*, 1964, *37*, 382–405.

Glaeser, Edward L. and Andrei Shleifer, "The Rise of the Regulatory State," *Journal of Economic Literature*, 2003, *41*, 401–425.

Glaeser, Edward, Simon Johnson, and Andrei Shleifer, "Coase versus the Coasians," *Quarterly Journal of Economics*, 2001, *116*, 853–899.

Healy, Paul M. and Krishna G. Palepu, "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature," *Journal of Accounting and Economics*, 2001, *31*, 405–440.

Jarrell, Gregg A., "The Economic Effects of Federal Regulation of the Market for New Security Issues," *Journal of Law and Economics*, 1981, *24*, 613–675.

Jensen, Michael and William Meckling, "Theory of the firm: Managerial behavior, agency costs, and ownership structure," *Journal of Financial Economics*, 1976, *3*, 305–360.

Jin, Ginger and Philip Leslie, "The Effect of Information on Product Quality: Evidence from Restaurant Hygiene Grade Cards," *Quarterly Journal of Economics*, 2003, *118*, 409–451.

Leuz, Christian and Robert E. Verrecchia, "The Economic Consequences of Increased Disclosure," *Journal of Accounting Research*, 2000, *38*, 91–124.

Lo, Kin, "Economic consequences of regulated changes in disclosure: The case of executive compensation," *Journal of Accounting and Economics*, 2003, *35*, 285–314.

Loss, Louis, *Fundamentals of Securities Regulation*, Boston: Little, Brown and Company, 1983.

Porta, Rafael La, Florencio Lopez de Silanes, and Andrei Shleifer, "What Works in Securities Law?," 2002. working paper, Harvard University.

Robbins, Sidney and Walter Werner, "Professor Stigler Revisited," *Journal of Business*, 1964, *37*, 406–413.

Seligman, Joel, *The Transformation of Wall Street*, Boston: Northeastern University Press, 1995.

Shleifer, Andrei and Daniel Wolfenzon, "Investor protection and equity markets," *Journal of Financial Economics*, 2002, *66*, 3–27.

Simon, Carol J., "The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues," *American Economic Review*, 1989, *79*, 295–318.

Stigler, George, "Public Regulation of the Securities Markets," *Journal of Business*, 1964, *37*, 117–142.

Verrecchia, Robert E., "Essays on Disclosure," *Journal of Accounting and Economics*, 2001, *31*, 97–180.

Table 1

Key Dates Associated with the Securities Acts Amendment of 1964

1. November 8, 1960: John F. Kennedy elected President.
2. November 28, 1961: Chairman Cary said the SEC would advocate new powers for the agency including subjecting OTC securities to the same rules as applied to those listed on exchanges.
3. April 3, 1963: The SEC released the first part of the Special Study. It recommended imposing exchange disclosure rules on OTC securities.
4. July 9, 1963: A Senate subcommittee unanimously approved a bill extending disclosure rules to OTC firms.
5. July 17, 1963: The SEC released second part of Special Study, which recommended major overhaul of OTC market. The Wall Street Journal gave the study significant coverage and argued that the proposals in the report were dramatic.
6. July 30, 1963: The Senate passed the bill extending disclosure rules to OTC firms.
7. February 6, 1964: President Johnson focused on the SEC's proposed legislation in a "Special Message."
8. March 19, 1964: A House subcommittee passed the bill. But, it appeared banks and insurance companies would not be as affected as other firms in Group 0-4.
9. May 7, 1964: A House committee passed the bill.
10. August 5-6, 1964: The full House and Senate passed the bill.

Table 2

Effects of Securities Acts Amendment of 1964 on Various Types of Securities

Type of Disclosure	Registration		Periodic Reporting		Proxy		Insider Trades	
Period[1]	Pre	Post	Pre	Post[2]	Pre	Post	Pre	Post
Group 4-4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group 2-4	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Group 2-2	Yes	Yes	Yes	Yes	No	No	No	No
Group 0-4	No	Yes	No	Yes	No	Yes	No	Yes
Group 0-0	No	No	No	No	No	No	No	No

"Group 4-4" = Securities listed on major exchanges

"Group 2-4" = Unlisted securities issued (original or secondary) after 1936

"Group 2-2" = Unlisted securities issued (original or secondary) after 1936 that had fewer than 500 shareholders and/or less than $1million in firm assets

"Group 0-4" = Unlisted securities issued before 1936 with at least 500 shareholders and at least $1million in firm assets

"Group 0-0" = Unlisted securities issued before 1936 with fewer than 500 shareholders or less than $1million in firm assets

[1] "Pre" refers to before the Securities Acts Amendments of 1964 and "Post" refers to after the law.

[2] If the number of shareholders for any given class of securities falls below 300 as of the end of a fiscal year, the reporting requirement is suspended for the subsequent fiscal year.

Table 3

Review of Selected Prior Research

Paper	Change Analyzed	Market/Sample	Outcome Variable(s)	Key Findings
Stigler (1964)	1933 and 1934 Securities Acts	All public markets; New issues only; Compares 1923-1928 (pre-law) to 1949-1955 (post-law)	New issue price relative to market index and variance across new issue's price	Average return of new issues did not change after law, but variance among new issues fell substantially. Interpreted as evidence that law limited access to markets.
Friend and Herman (1964)	1933 and 1934 Securities Acts	Expanded version of Stigler's sample	Same as Stigler	Average return higher after law and volatility dropped more than Stigler's estimate.
Benston (1973)	1933 and 1934 Securities Acts	NYSE firms; Compares firms that disclosed sales levels before Acts with those that did not; Looks at 1926-1934 ("Pre-SEC") and 1935-1941 ("Post-SEC")	Beta, volatility, and NYSE listing status	No effect on beta or volatility; More firms that disclosed sales levels delisted from NYSE
Jarrell (1981)	1933 Securities Act	New manufacturing or railroad common stock issues of $2MM or more between 1926-1933 ("Pre-SEC") and 1934-1939 ("Post-SEC")	Abnormal returns; volatility; bond yields and defaults	No effect on returns; Lower volatility for new issues after the Act; Bonds registered with SEC have lower yield and default rates (relative to government bonds) than pre-SEC bonds
Chow (1983)	1933 and 1934 Securities Acts	196 NYSE firms (affected) and 66 OTC firms (unaffected) that traded 1926-1935; 38 bonds of NYSE firms traded 1933-1935 (no control group)	Event study of reaction to 11 "critical" reports affecting likelihood of new securities regulation	1933 Act's accounting provisions lowered shareholder value; no effect of 1934 Act; no significant effect on bondholders
Simon (1989)	1933 Securities Act	New issues on NYSE or other exchange between 1926 and 1940; Divided into pre-law and post-law	Abnormal return; volatility	Higher return for new issues in "high information cost" (secondary exchange) markets after Act but no effect on NYSE returns; Lower volatility for new issues on all markets after Act
Leuz and Verrecchia (2000)	Voluntary switch from standard German accounting to an international reporting regime	German DAX 100 firms	Bid-ask spread, volume, and volatility – event study of response to increased disclosure and cross-sectional analysis of level of disclosure	More disclosure associated with smaller spreads and higher volume; no relationship to volatility
Bushee and Leuz (2002)	Extension of SEC disclosure rules to OTC Bulletin Board	All firms on OTCBB in 1999	Decision to delist or disclose, returns, and measures of liquidity (turnover, volume, market makers, and days traded).	74% choose to delist rather than disclose. Newly compliant firms' liquidity increases. Previously compliant firms' liquidity also increases (which they interpret as suggesting positive externalities. Newly compliant firms have excess returns upon announcement and delisting firms have negative excess returns
Lo (2003)	1992 extension of executive compensation disclosure requirements	Firms that lobbied (affected) and those that did not (unaffected)	Abnormal return; operating performance	Affected firms had excess stock returns of 6% leading up to the regulation and improved operating performance after

Table 4

OTC Sample Firm Counts, 1963-1966

	Jan 63	Jan 64	Jan 65	Jan 66	Dec 66
Sample size	1325	1221	1138	1073	992
(a) Move to NYSE/AMEX	92	84	64	40	
Assigned DR (continued/not cont.)	92 (92/0)	84 (84/0)	64 (64/0)	40 (40/0)	
Not assigned DR (continued/not cont.)	0 (0/0)	0 (0/0)	0 (0/0)	0 (0/0)	
(b) Name changes	12	15	14	13	
Assigned DR (continued/not cont.)	10 (7/3)	12 (8/4)	13 (7/6)	8 (7/1)	
Not assigned DR (continued/not cont.)	2 (0/2)	3 (1/2)	1 (0/1)	5 (2/3)	
(c) Mergers	23	27	30	22	
Assigned DR (continued/not cont.)	16 (13/3)	22 (19/3)	26 (17/9)	17 (11/6)	
Not assigned DR (continued/not cont.)	7 (4/3)	5 (5/0)	4 (3/1)	5 (5/0)	
(d) Liquidations	11	11	6	10	
Assigned DR (continued/not cont.)	8 (0/8)	4 (0/4)	3 (0/3)	7 (1/6)	
Not assigned DR (continued/not cont.)	3 (0/3)	7 (0/7)	3 (0/3)	3 (0/3)	
(e) Exit from Barrons, last price$>$ \$2	41	19	14	14	
Assigned DR (continued/not cont.)	38 (0/38)	14 (0/14)	13 (0/13)	13 (0/13)	
Not assigned DR (continued/not cont.)	3 (0/3)	5 (0/5)	1 (0/1)	1 (0/1)	
(f) Exit from Barrons, last price$\leq$ \$2	67	26	16	17	
Assigned DR (continued/not cont.)	64 (0/64)	24 (0/24)	16 (0/16)	13 (0/13)	
Not assigned DR (continued/not cont.)	3 (0/3)	2 (0/2)	0 (0/0)	4 (0/4)	
Total exits/changes	246	182	144	116	
Total series continued	116	117	91	66	

Note: "DR" = delisting return. The number of observations at the beginning of the following year does not exactly equal the number of observations at the beginning of the current year, minus the number of exits/changes, plus the number of series that are continued. The reason for this are twofold. Firstly, delisting returns are in some cases only available for a week during the following year. Until the delisting return is assigned, the firm's return series is filled in by zeros and the firm is thus present in the sample until the delisting return is assigned. Secondly, when a firm's return series is continued after a CRSP entry, a name change, or a merger, the continued series in some cases ends before the end of 1966. Such "double delistings" lower the number of firms still in the sample at the end of a given year, but for simplicity are not tabulated separately above. Note that in the case of "double delistings", another delisting return is assigned for the continued series.

Table 5

OTC Sample Firm Counts By Groups Defined Based on 1963 Filing Status and Size, 1963-1966

Panel A. Sample sizes

Group	Number of firms					Percent still in
	63 week 1	64 week 1	65 week 1	66 week 1	66 week 52	sample in 66, week 52
0-4	274	253	246	236	216	78.8
0-0	166	129	104	95	83	50.0
2-4	770	743	707	672	635	82.5
2-2	115	96	81	70	58	50.4
4-4 with mkt. cap. <=$36M (CRSP)	1126	1059	1009	951	902	80.1
4-4 with mkt. cap. <=$63M (CRSP)	1342	1265	1210	1145	1086	80.8

Note: All OTC and CRSP (NYSE/AMEX) firms tabulated are present in their respective samples as of week 1 of 1963. CRSP firms exclude firms that enter from the Barrons sample during the 63-66 period and exclude banks and insurance companies. The total number of firms on CRSP (excluding Barrons entrants) on the five dates above are 1971, 1902, 1877, 1859, 1895. Firms in the 4-4 group with market capitalization<=$36M constitute 3.7 percent of CRSP market capitalization in 1963, week 1. Firms in the 4-4 group with market capitalization<=$36M constitute 6.6 percent of CRSP market capitalization in week 1 of 1963.

Table 5, continued

OTC Sample Firm Counts By Groups Defined Based on 1963 Filing Status and Size, 1963-1966

Panel B. Number and percent of firms actually filing with the SEC

Group	Number of firms present in week indicated who file with the SEC as of the following July				
	63, week 1	64, week 1	65, week 1	66, week 1	66, week 52
0-4	17 (0)	30 (13)	177 (163)	169 (152)	163 (146)
0-0	3 (0)	6 (2)	29 (24)	37 (32)	34 (30)
2-4	770 (770)	736 (723)	689 (660)	640 (604)	617 (583)
2-2	115 (115)	94 (94)	76 (76)	63 (63)	53 (53)

Group	Percent of firms present in week indicated who file with the SEC as of the following July				
	63, week 1	64, week 1	65, week 1	66, week 1	66, week 52
0-4	6.2 (0)	11.9 (5.1)	72.0 (66.3)	71.6 (64.4)	75.5 (67.6)
0-0	1.8 (0)	4.7 (1.6)	27.9 (23.1)	33.7 (34.0)	41.0 (36.1)
2-4	100 (100)	99.1 (97.3)	97.5 (93.4)	95.2 (89.9)	97.2 (91.8)
2-2	100 (100)	97.9 (97.9)	93.8 (93.8)	90.0 (90.0)	91.4 (91.4)

Note: Numbers in parenthesis exclude firms that file because they merged with a firm that is filing.

Table 6

Firm Characteristics by Mandatory Disclosure Groups, 1962

	0-4		0-0		2-4		2-2	
	Sample	Mean	Sample	Mean	Sample	Mean	Sample	Mean
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)
# Firms	274	–	166	–	770	–	115	–
Market Cap.	271	$43.9	22	$2.0	761	$28.2	21	$4.3
Median	271	$9.3	22	$0.8	761	$11.4	21	$0.8
Share Price	274	$20.12	166	$5.80	770	$16.9	115	$6.44
Firm Characteristics								
# Shareholders	57	2,554	4	525	169	3,861	0	–
Assets	57	$27.4	5	$6.8	179	$40.7	0	–
Instit. Holders	145	4.8	8	1.5	516	6.2	7	4.7
Consec. Yrs. Divid.	173	20.7	7	14.6	490	15.4	7	9.1
Company Age	57	46.6	5	41.2	179	33.9	0	–
Employees	56	2,170	5	459	178	1,568	0	–
Sales	53	$35.4	5	$16.4	176	$35.0	0	–
Net Income	57	$2.4	5	$0.2	179	$1.5	0	–
LT Debt	176	$23.6	18	$0.5	619	$13.3	15	$33.8
At least 1 nonmissing characteristic	256		20		734		18	

All dollar figures are in millions, except per share data. All financial data are for 1962. "Mean" is the mean of each variable for those observations where the variable is available.

Table 7

Abnormal Average Returns: January 1963 - August 1964

	(1)	(2)	(3)	(4)	(5)	(6)
	0-4	0-0	2-4	2-2	4-4[1]	4-4[1]
Specification #1 (one factor)						
$\alpha_{1963-64}$ (%)	0.0944	-0.1500	0.0098	-0.1114	-0.0420	-0.0465
	(0.0803)	(0.1311)	(0.0875)	(0.1288)	(0.0707)	(0.0660)
Market Return	0.3593	0.1329	0.4663	0.3037	0.7658	0.7976
	(0.0709)	(0.1157)	(0.0772)	(0.1137)	(0.0624)	(0.0583)
R-squared	0.2251	0.0155	0.3028	0.0783	0.6419	0.6906
Specification #2 (four factors)						
$\alpha_{1963-64}$ (%)	0.1505	-0.1325	0.0963	-0.0619	0.0230	0.0103
	(0.0854)	(0.1399)	(0.0883)	(0.1342)	(0.0444)	(0.0374)
Market Return	0.3961	0.1674	0.5149	0.3600	0.7970	0.8263
	(0.0730)	(0.1196)	(0.0755)	(0.1147)	(0.0379)	(0.0320)
"SMB" Factor	0.3987	0.5611	0.5926	0.6581	0.9125	0.8791
	(0.1387)	(0.2271)	(0.1433)	(0.2179)	(0.0720)	(0.0607)
"HML" Factor	0.0186	0.3326	-0.0194	0.2794	0.2027	0.2257
	(0.1473)	(0.2413)	(0.1522)	(0.2315)	(0.0765)	(0.0645)
Momentum Factor	-0.1194	-0.2412	-0.1233	-0.3037	-0.0952	-0.1006
	(0.1265)	(0.2072)	(0.1307)	(0.1987)	(0.0657)	(0.0554)
R-squared	0.3264	0.1274	0.4479	0.2223	0.8905	0.9227

[1]Column 5 (6) includes includes AMEX firms with market capitalization under $36 million ($63 million) as of January 1, 1963. "SMB" Factor is Fama-French small minus big factor and "HML" is Fama-French high minus low factor. See Fama and French (1993) for details. "Momentum Factor" is calculated based on daily returns so as to be equivalent to the "UMB" factor available monthly from Kenneth French's web page (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

Table 8

Abnormal Average Excess Returns: January 1963 - August 1964

Panel A: 0-4 Excess Returns

	(1)	(2)	(3)	(4)	(5)
	0-4 - 0-0	0-4 - 2-2	0-4 - 4-4[1]	0-4 - Avg.[2]	0-4 - 2-4
Specification #1 (controls for market return)					
$\alpha_{1963-64}$ (%)	0.2444	0.2058	0.1365	0.1523	0.0847
	(0.0969)	(0.0977)	(0.0771)	(0.0681)	(0.0475)
R-squared	0.0770	0.0049	0.2981	0.2344	0.0721
Specification #2 (controls for four factors)					
$\alpha_{1963-64}$ (%)	0.2830	0.2124	0.1275	0.1498	0.0542
	(0.1071)	(0.1070)	(0.0792)	(0.0691)	(0.0519)
R-squared	0.1231	0.0731	0.4244	0.3875	0.1363
Specification #3 (controls for market return using $\beta_{post-Act}$)					
$\alpha_{1963-64}$ (%)	0.2809	0.1694	0.1051	0.1323	0.0715
	(0.0950)	(0.0958)	(0.0757)	(0.0664)	(0.0462)

[1]Column 3 includes includes NYSE and AMEX firms with market capitalization under $36 million as of January 1, 1963. Each regression is based on 86 weekly observations.

[2]Dependent variable is weekly 0-4 return - return on an equal-weighted portfolio including all 0-0, 2-2, and 4-4 firms.

Table 8, continued

Abnormal Average Excess Returns: January 1963 - August 1964

Panel B: 2-4 Excess Returns

	(1)	(2)	(3)	(4)
	2-4 - 0-0	2-4 - 2-2	2-4 - 4-4[1]	2-4 - Avg.[2]
Specification #1 (controls for market return)				
$\alpha_{1963-64}$ (%)	0.1598	0.1211	0.0563	0.0693
	(0.0900)	(0.0898)	(0.0704)	(0.0609)
R-squared	0.1733	0.0477	0.2527	0.1898
Specification #2 (controls for four factors)				
$\alpha_{1963-64}$ (%)	0.2288	0.1582	0.0860	0.1035
	(0.0994)	(0.0992)	(0.0759)	(0.0650)
R-squared	0.2169	0.0969	0.3246	0.2839
Specification #3 (controls for market return using $\beta_{post-Act}$)				
$\alpha_{1963-64}$ (%)	0.2094	0.0979	0.0315	0.0557
	(0.0897)	(0.0873)	(0.0689)	(0.0592)

[1]Column 3 includes includes NYSE and AMEX firms with market capitalization under $63 million as of January 1, 1963. Each regression is based on 86 weekly observations.

[2]Dependent variable is weekly 0-4 return - return on an equal-weighted portfolio including all 0-0, 2-2, and 4-4 firms.

Table 9

Abnormal Average Excess Returns: September 1964 - December 1966

Panel A: 0-4 Excess Returns

	(1)	(2)	(3)	(4)	(5)
	0-4 - 0-0	0-4 - 2-2	0-4 - 4-4[1]	0-4 - Avg.[2]	0-4 - 2-4
Specification #1 (controls for market return)					
$\alpha_{1965-66}$ (%)	-0.0643	0.2524	-0.0205	-0.0070	0.0337
	(0.0945)	(0.0823)	(0.0618)	(0.0576)	(0.0349)
R-squared	0.0160	0.0866	0.2799	0.2204	0.0467
Specification #2 (controls for four factors)					
$\alpha_{1965-66}$ (%)	-0.0101	0.2937	0.0674	0.0752	0.0431
	(0.0957)	(0.0839)	(0.0531)	(0.0493)	(0.0360)
R-squared	0.0759	0.1315	0.5131	0.4763	0.0663

Panel B: 2-4 Excess Returns

	(1)	(2)	(3)	(4)
	2-4 - 0-0	2-4 - 2-2	2-4 - 4-4[1]	2-4 - Avg.[2]
Specification #1 (controls for market return)				
$\alpha_{1965-66}$ (%)	-0.0979	0.2187	-0.0508	-0.0398
	(0.0923)	(0.0544)	(0.0523)	(0.0488)
R-squared	0.0439	0.1498	0.2695	0.2070
Specification #2 (controls for four factors)				
$\alpha_{1965-66}$ (%)	-0.0532	0.2506	0.0180	0.0253
	(0.0942)	(0.0806)	(0.0469)	(0.0434)
R-squared	0.0867	0.1855	0.4631	0.4260

[1]Column 3 includes includes NYSE and AMEX firms with market capitalization under $36 million (Panel A) or under $63 million (Panel B) as of January 1, 1963. Each regression is based on 121 weekly observations.

[2]Dependent variable is weekly 0-4 or 2-4 return - return on an equal-weighted portfolio including all 0-0, 2-2, and 4-4 firms.

Table 10: Excess Returns, Buy-and-Hold Returns "Fama Style"

	0-4 - 0-0	0-4 - 2-2	0-4 - 4-4[1]	0-4 - Avg.[2]	0-4 - 2-4
Specification #2 (controls for four factors)					
$\alpha_{1963-64}$ (%)	0.2522	0.1739	0.1591	0.1712	0.0666
	(0.1049)	(0.1074)	(0.0766)	(0.0664)	(0.0522)
$\alpha_{1965-66}$ (%)	-0.0490	0.2320	0.0730	0.0723	0.0393
	(0.1173)	(0.1124)	(0.0589)	(0.0540)	(0.0394)
	2-4 - 0-0	2-4 - 2-2	2-4 - 4-4[1]	2-4 - Avg.[2]	
Specification #2 (controls for four factors)					
$\alpha_{1963-64}$ (%)	0.1855	0.1073	0.1033	0.1122	
	(0.0983)	(0.1032)	(0.0746)	(0.0639)	
$\alpha_{1965-66}$ (%)	-0.0883	0.1928	0.0246	0.0253	
	(0.1153)	(0.1079)	(0.0480)	(0.0435)	

Notes: α_{63-64} refers to the intercept from a regression estimated for January 1963 to August 1964, α_{65-66} refers to the intercept from a regression estimated for September1964 to December 1966.
[1]Column 3 includes NYSE and AMEX firms with market capitalization under $36 million as of January 1, 1963 when comparing to group 0-4 and under $63 million when comparing to group 2-4.
[2]Dependent variable is weekly 0-4 return - return on portfolio including all 0-0, 2-2, and 4-4 firms.

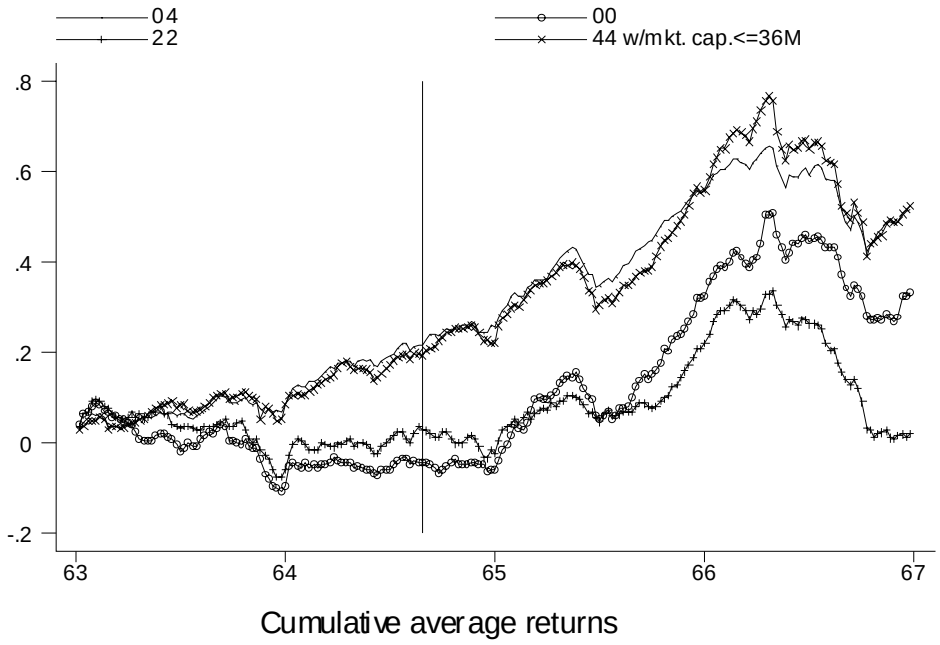

Figure 1: Returns by group, 1963-1966

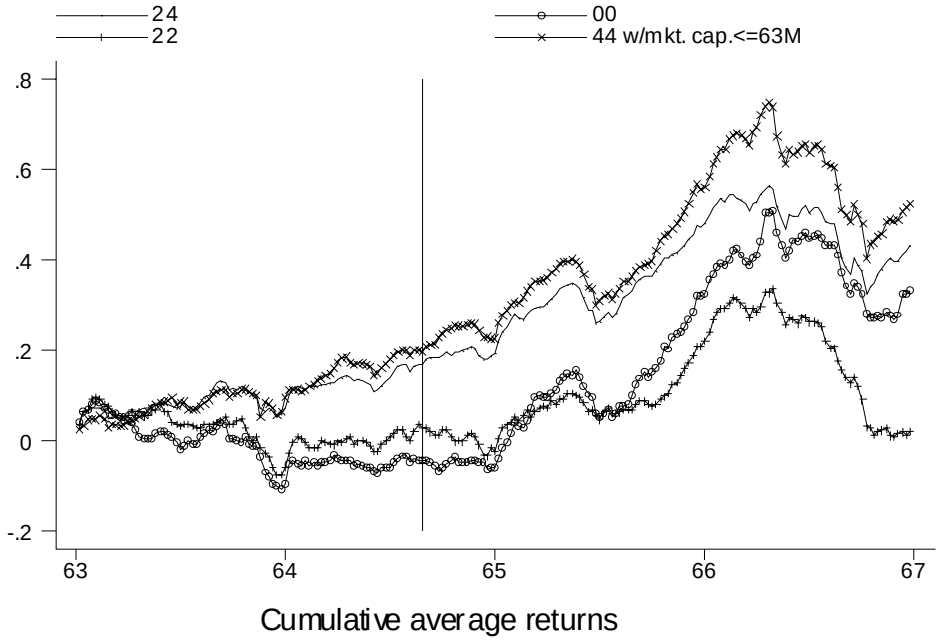

Figure 2: Returns by group, 1963-1966

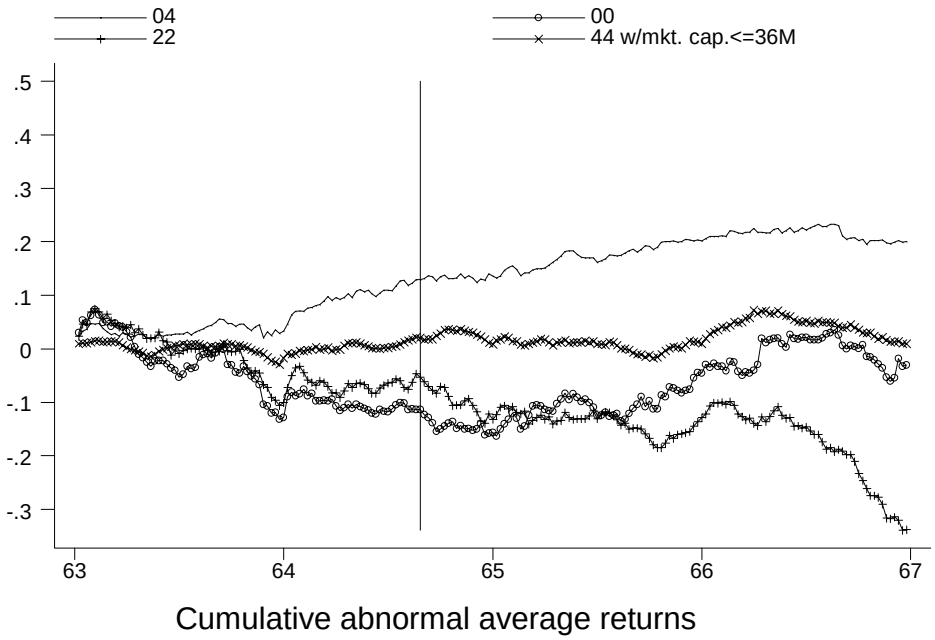

Figure 3: Abnormal returns by group, 1963-1966

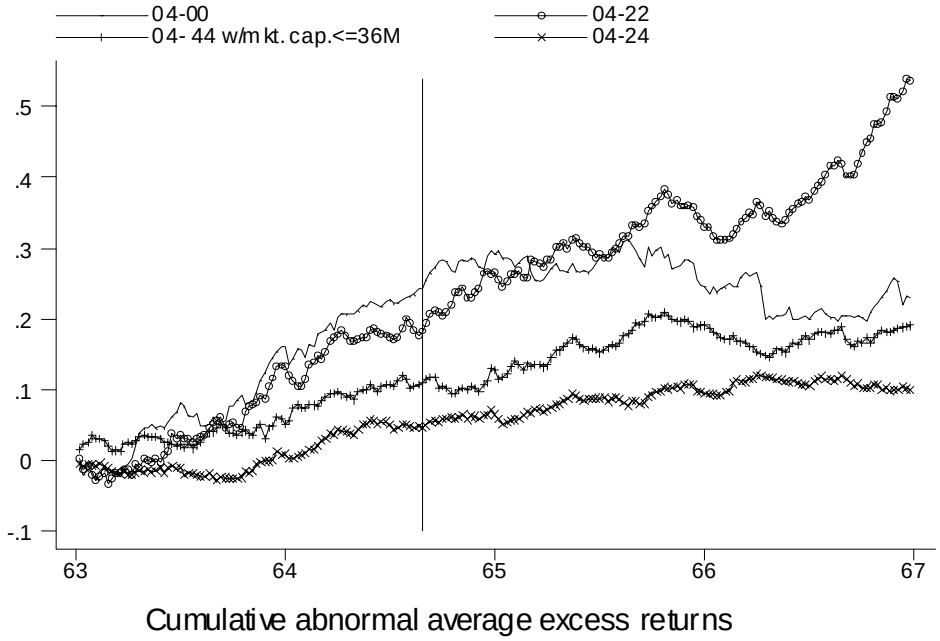

Figure 4: Abnormal excess returns of group "0-4"

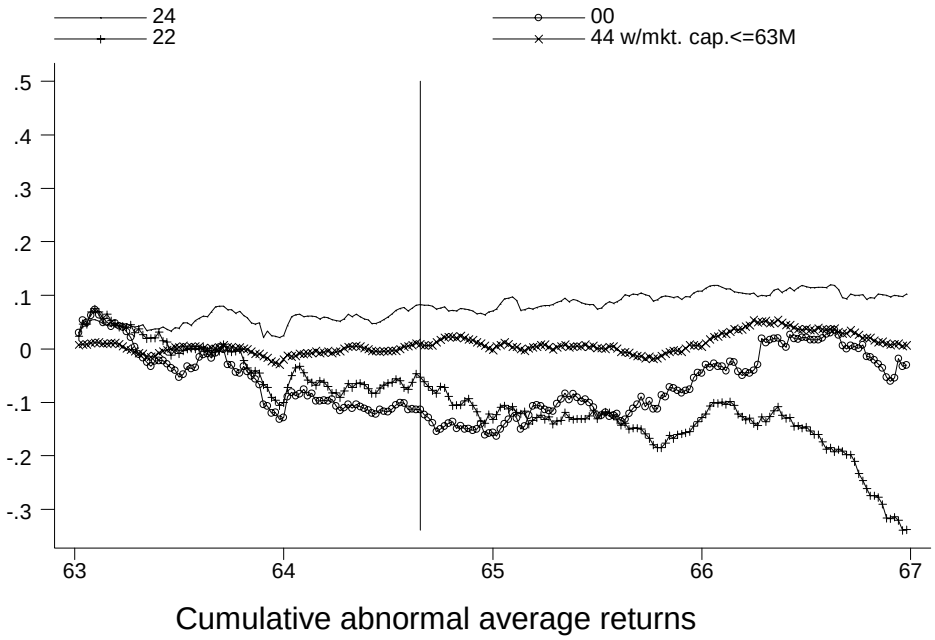

Figure 5: Abnormal returns by group, 1963-1966

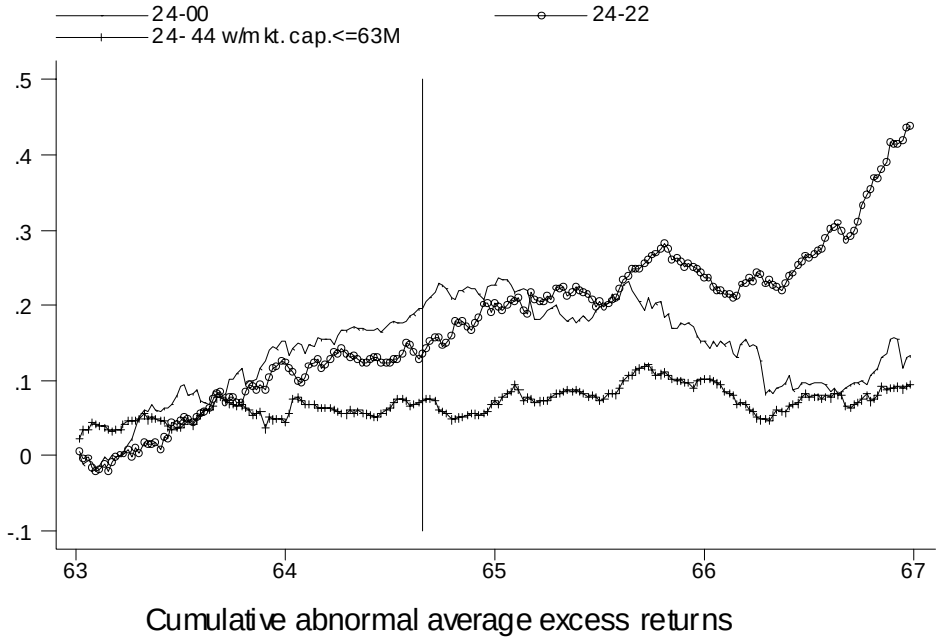

Figure 6: Abnormal excess returns of group "2-4"