

MARKET REACTION TO EXECUTIVE COMPENSATION DISCLOSURE:  
EVIDENCE FROM THE SECURITY AND EXCHANGE COMMISSION'S  
1992 DISCLOSURE INITIATIVES

by

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## GLOSSARY

Market Valuation Variance - This is defined as the standard deviation of each firm's stock price divided by the equivalent mean stock price.

Bid-Ask Spread - Calculated by dividing the difference between the bid and ask prices by the midpoint.

Share Turnover - Computed by dividing monthly share volume by average total shares outstanding.

ABSTRACT

The SEC's disclosure initiatives passed in 1992 required increased levels of executive compensation disclosure accompanied by new formats for disclosure. I examine the market response to this new regulation at the firm level. I also test for external information spillovers. I find no evidence that the market systematically values the additional information provided by the new proxy format. I also find no evidence of new information spillovers being created by the new disclosure mandates; lending no support for proscriptive regulations.

## CHAPTER 1

## INTRODUCTION

In 1992 the Securities and Exchange Commission (SEC) introduced the first extensive revision to the rules governing executive compensation disclosure. These regulations required firms to disclose how they compensated their executives in a more detailed format. Although shareholder support for these new disclosure mandates was widespread and well documented,<sup>1</sup> no prior studies have examined this new regulation's effect on the market's ability to evaluate firm value. Furthermore, while some previous research has examined the effects of earlier disclosure requirements and tax code amendments on executive compensation, no paper of which I am aware examines the potential for information spillovers from the new disclosure regulations.

The goal of this paper is to evaluate whether the market valued the increased information regarding executive compensation provided by the new proxy format. Determining whether these regulation changes are valuable to the market will provide insight into the best methods for structuring new policies in this area. Desmond, Torain, and Zachary (2005) discuss several areas which may be subject to Security and Exchange Commission rule changes in the future. These areas include: how expenses and perks are categorized, how retirement benefits and deferred compensation are disclosed, and how disclosure of total compensation could be enhanced. The results in this paper will be useful in predicting the effects of any potential regulation change in those areas.

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<sup>1</sup> See SEC release no. 33-6963 for comments submitted to the SEC in support of various aspects of this regulation. These regulations are published in the *Federal Register* (Volume 57, No. 204, pages 48126-48159).

There have been several attempts to regulate executive compensation through both disclosure rule changes and new tax code amendments. In 1993 tax code changes were made limiting corporations' abilities to deduct executive salaries. In 2006 new regulations governing executive compensation disclosure were enacted,<sup>2</sup> and additional modifications are being proposed by both the SEC and the United States Congress. The methods used in this paper will be useful for future researchers interested in analyzing the effectiveness of current and future regulations.

Prior to 1992, executive compensation disclosure was primarily limited to an explanation of amounts payable under the individual's compensation plan. The Securities and Exchange Commission's 1992 changes were designed to give shareholders a more understandable presentation of the nature and extent of an executive's compensation. The new proxy rules attempt to provide more information to the shareholders, thereby enhancing the shareholder's ability to assess how well a corporation's directors are representing their (shareholder) interests.

This project extends the literature on executive compensation disclosure by examining the effects of an executive compensation disclosure regulation which has thus far been largely ignored in published literature. This study is novel because it is the only study seeking to evaluate one channel through which disclosure regulation may impact the market's ability to value firms. While other studies (e.g., Perry and Zenner 2001; Lewellen, Park, and Ro 1995) examine aspects of the 1992 SEC rule, I am unaware of

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<sup>2</sup> These regulations are published in the *Federal Register* (Vol. 71, No. 250, pages 78338- 78351).

any other study which considers whether the market values the new disclosure mandates.<sup>3</sup>

This paper also evaluates the possibility of externalities being created by this new disclosure mandate. These externalities, in the form of informational spillovers, are theoretically possible and would provide an additional justification for such a regulation even if a firm level effect does not exist.

The results presented here provide no evidence of the market systematically valuing the additional information provided by the new proxy format. To the extent that any of the results are statistically significant, they are not consistent with disclosure mandates supplying new and useful information to the market. Also I find no evidence of information spillovers, providing little support to the possibility for prescriptive mandates (e.g., IRS section 162 (m)) improving upon the current market outcome.

The remainder of this paper is structured as follows: Chapter 2 provides a discussion about the motivation behind the SEC disclosure rules. In this section the political environment, at the time this regulation was enacted is discussed. Chapter 3 explains the different aspects of the regulation and discusses those items which caused the most debate and controversy. Chapter 4 reviews the current literature on similar regulations, as well as the general disclosure literature. Chapter 5 covers the theoretical motivation behind this investigation. In Chapter 6 the results are presented with explanations of the methodology behind the estimation methods. Chapter 7 contains the concluding remarks and implications for future policy.

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<sup>3</sup> Perry and Zenner analyzed the effects of this enhanced disclosure in conjunction with Internal Revenue Code Section 162(m) to see the effects on executive salaries. Lewellen, Park, and Ro look at how firms estimate the value stock options.

## CHAPTER 2

## MOTIVATION FOR RULE

In the early 1990s executive compensation became a hot topic in both academic and political arenas. Academic research during the period found a weak relationship between executive pay and firm performance during the 1970s and 1980s. Jensen and Murphy (1990) indicated the relationship between Chief Executive Officer (CEO) wealth and shareholder wealth was small and had fallen over the 50 year period ending in the late 1980s. With a recession underway and unemployment rising, the public grew ever more critical of the levels and growth of executive pay. The Wall Street Journal captured the critical view of the public by interviewing individuals from various walks of life. In this article various individuals from actors and athletes to CEOs and non profit directors weigh in on how CEO pay is too high.<sup>4</sup> Congress responded by introducing several bills to regulate executive compensation while large state pension funds protested the levels of some large public companies.<sup>5</sup>

The political environment at the time of SEC release no 33-6962 governing executive compensation disclosure was ‘populist’ in nature, and therefore lead to political hostility toward what was viewed as excessive executive compensation. During this period there was also a documented increase in shareholder activism (e.g. Smith 1996; Wahal 1996). Although the political responses ultimately reflected a mix of the populist

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<sup>4</sup> “Highly Paid Chiefs Earn Criticism, Too,” *Wall Street Journal*, June 4, 1991

<sup>5</sup>In 1993, the *Wall Street Journal* reported on a Wisconsin pension system effort to unseat four Paramount board members, because of poor stock performance and high executive compensation (*Wall Street Journal*, March 4, 1993).

opinion and shareholder activism, the true effect of the increase in shareholder activism was distorted by public pension funds targeting companies for excessive executive compensation.<sup>6</sup> The effect of shareholder activism was distorted because large state pension funds were influenced by political pressures. By the early 1990s there were several proposals before Congress that attempted to address and reign in executive compensation.

Much of the contempt over executive compensation focused on the differences between executive pay and low level employee pay. This contempt led Martin Sabo to introduce a bill in 1991, which would prohibit corporate tax deductions for any executive's pay which exceeded twenty five times the pay of the lowest paid employee within the company. Although this tax bill stalled in the House Ways and Means Committee, the concerns over executive compensation were not limited to Sabo's bill. A final tax bill, IRS section 162 (m) was passed in 1993. Perry and Zenner (2001) discuss the intent of this tax bill as stated by the House Ways and Means Committee:

Recently, the amount of compensation received by corporate executives has been the subject of scrutiny and criticism. The committee believes that excessive compensation will be reduced if the deduction for compensation (other than performance-based compensation) paid to the top executives of publicly held corporations is limited to \$1 million per year.<sup>7</sup>

In 1991, Senator Carl Levin introduced the Corporate Pay Responsibility Act. This bill was aimed at forcing corporations to consider shareholder proposals regarding executive compensation, where such proposals previously were considered by the SEC to be

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<sup>6</sup> *Wall Street Journal*, March 4, 1993. Wahal 1996, argued that the effectiveness of pension fund activism is not a substitute for an active market for corporate control.

<sup>7</sup> The quote comes from the 1993 U.S. Code Congressional and Administrative News 887.

interfering with the company's ordinary business. This bill would also require a company to provide detailed data on options which were granted to highly compensated employees. Murphy (1994) argued that Sabo's proposal was a populist proposal while Levin's bill contained aspects of populism as well as shareholder elements. Although Levin appeared to consider the shareholder's needs in his bill, Murphy argued that he demonstrated a lack of understanding of stock markets and shareholder wealth creation. To back up his argument for Levin's lack of understanding of stock markets and shareholder wealth creation, Murphy maintained, "Levin implicitly adopted accounting profits rather than shareholder returns as the appropriate measure of performance, arguing that 'during the 1980s, American CEO pay rose dramatically while corporate profits went down.'"<sup>8</sup> Although Levin's bill was not enacted it provided the motivation for the SEC to reform the proxy rule and disclosure requirements.

Prior to 1992, executive compensation disclosure was primarily limited to the details of the amounts payable under compensation plans (Desmond, Torain, Zachary 2005). On October 16, 1992 the SEC implemented new rules governing the executive compensation disclosure requirements of publicly traded companies. Murphy argued the SEC's 1992 proxy reform was a response to the public outcry and to the various Senate proposals on shareholder rights and executive compensation. The goal of these new rules was "to make compensation disclosure clearer and more concise and more useful to shareholders" (SEC Release No. 33-6962).<sup>9</sup>

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<sup>8</sup> Murphy finds Carl Levin's quote in Joann Lublin, "Highly Paid Chiefs Earn Criticism, Too," *Wall Street Journal*, June 4, 1991).

<sup>9</sup> These regulations are published in the *Federal Register* (Volume 57, No. 204, pages 48126-48159).

## CHAPTER 3

THE NEW SECURITY AND EXCHANGE COMMISSION  
COMPENSATION DISCLOSURE REGULATIONS

The new regulations governing executive compensation disclosure became effective October 21, 1992. Any proxy statement filed after that date was allowed to use the new rules. The rules became mandatory for all corporations except small business issuers filing on or after January 1, 1993, unless the company's fiscal year ended on or after December 15, 1992 in which case they were required to use the new format for their next proxy filing. Small businesses were not required to comply with the new regulations until May 1, 1993.

The amended rule of 1992 changed several aspects of proxy filings. With regard to executive compensation, a new table displaying all compensation paid to the top four highest compensated executives in addition to the Chief Executive Officer (CEO) for the previous three years was to be presented in a "Summary Compensation Table". With the exception of the CEO, only executives with a combined salary and bonus total in excess of \$100,000 are listed in the summary compensation table. Following the summary compensation table, additional tables were required to provide more detailed information on the specific components of compensation for the last fiscal year.

The columns used to describe annual compensation are broken into three categories. These categories are: salary, bonus, and other annual compensation. In addition, the amended regulation required base salary and bonuses to be broken into two separate columns instead of being added together. The third column included under

annual compensation was labeled “other annual compensation,” which cover compensation that cannot be properly classified as salary or bonus such as, earnings on deferred compensation, restricted stock options, stock application rights (SAR), earnings on long term incentive plan compensation (LTIP), and discounted stock purchases.

The amended regulations set guidelines for a series of additional tables beyond the summary compensation table. These tables include the option/SAR table, long-term incentive plan table, aggregated option/SAR exercises table, and the ten-year option/SAR re-pricings table. The option/SAR table requires all executive officers to disclose information regarding individual grants of options and SARs made in the last completed fiscal year and their potential realizable values. The long-term incentive plan table displays information on awards under long-term incentive plans which are stock based. The amended rule mandated the disclosure of performance criteria and other material terms of the option or SAR granted. In the aggregated option/SAR exercises table, the executives must disclose the number of shares acquired on an exercise and the value realized from those exercises. In this table they must also disclose the number of unexercised options/SARs and the expected value of those unexercised options/SARs. The ten-year option/SAR re-pricings table includes information about any re-pricing of option/SARs held by any executive officer over the last ten completed fiscal years. The ten year period was selected to reflect the typical ten year term of a compensatory stock option.

Two methods are allowed for estimating the potential value of stock options granted to the executive officers. The first method for evaluating stock options and SARs

is to use a hypothetical rate of stock appreciation, presenting potential realizable values of stock options and SARs. The second method allowed under the amended regulation is to use the recognized valuation formula known as the “Black Scholes” option pricing model. The Black Scholes pricing model is an ex ante mathematical model used to estimate of the value of the option.

Executive officers often receive restricted stock awards. This regulation requires a footnote disclosure of vesting terms for awards that vest in part or in full during a period of less than three years. Footnotes are also required for restricted stock awards not reflecting typical conditions. A typical condition is defined as full ownership of restricted shares lapsing over a period of three to five years.

Another major change associated with the new rule was the inclusion of the performance graph. The performance graph requires all companies who are included in the S&P 500 to present a line graph of the registrants cumulative total shareholder return compared to the performance of the S&P 500. Companies not included in the S&P 500, have the option of including a performance graph of their company compared to the S&P 500, a broad market index that includes their stock, or a basket of securities that trade in the same national securities exchange.

The final major change from the SEC amendment was the requirement of a report by the compensation committee. This report must explicitly identify quantitative or qualitative performance measures used to evaluate managers. This aspect of the amended rule provoked the strongest debate.<sup>10</sup> The SEC argued that it was in the interest of the

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<sup>10</sup> Although shareholders generally supported the report, many members of the corporate community argued the report was too much of an intrusion into the internal affairs of the company. Others argued it

investment community to require the compensation committee report: “the Commission continues to believe that disclosure of the Compensation Committee’s policies will enhance shareholder’s ability to assess how well directors are representing their interests...”

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would deter people from serving as directors. Some respondents even questioned the authority of the commission to require such disclosure.

## CHAPTER 4

## SUMMARY OF LITERATURE

Although current coverage by the popular press may give the impression that interest in executive compensation is a recent phenomenon, it has never escaped the scrutiny of academic research. Rules requiring contractual disclosure for securities were first established in the 1930s, and research studying the effectiveness of those regulations is still being done today. In 1933, the Securities Act became law. This act required Form A-1 to be used as the primary registration form for corporate disclosure information. This form required disclosure of management's compensation, transactions between the company and its directors, officers, underwriters, and promoters. It also required a list of principal shareholders and a description of any binding contracts not made in the normal course of business. Mahoney and Mei (2006) found almost no evidence that the 1930s disclosure regulations reduced information asymmetries.<sup>11</sup>

The rules from the 1930s did not undergo any major alteration until 1992 when the Securities and Exchange Commission changed how publicly traded companies were required to disclose the manner in which their executives were compensated. As previously discussed there are several aspects of the implemented rule change of 1992. Lewellen, Park, and Ro (1995) looked at how firms choose to estimate the values of executive stock option grants as required under the 1992 rules. Firms are given two options for estimating the value of potential compensation from the realization of stock

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<sup>11</sup> Their results show changes that were in directions expected and consistent with reduced information asymmetries, however, the only statistically significant change was measured for number of no-trade days.

option grants. One option would be for a firm to estimate the potential compensation realization from the option with hypothetical situations. The second is to estimate ex ante using a recognized option pricing model such as the Black-Scholes model. Lewellen, Park, and Ro argue most firms systematically choose the reporting format which provides the least amount of additional information. Ultimately this leads to only a modest improvement in the information content of the proxy statement.

In 1993 Congress enacted tax legislation which limited non-performance related compensation deductions over one million dollars. This tax legislation is known as Internal Revenue Code Section 162(m). This new tax code was never intended to raise additional revenues; rather the goal of the new tax code was to alter firm behavior, and provides a clear example of congress moving beyond only disclosure rules (Perry and Zenner 2001).<sup>12</sup> Perry and Zenner found growth in both performance and non performance salary components, but for those companies close to the one million dollar threshold, there was a reduction in non performance salaries.

### Disclosure Literature

There is a large theoretical literature which attempts to link financial development to economic growth. Academic research has found strong correlations between financial development and economic growth<sup>13</sup>. One aspect of this financial development is a well

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<sup>12</sup> Perry and Zenner cite Former Treasury official Megan Reilly who discusses executive compensation on February 3, 1994.

<sup>13</sup> Ross Levine and Sara Zervos (1998) provide an empirical investigation, testing whether well functioning stock markets and banks advance economic, capital, and productivity growth in the long-run. The authors

functioning equity market. It has been argued that accounting and disclosure systems are essential for a well-functioning equity market.<sup>14</sup> Although it is generally accepted that disclosure reduces information asymmetries, the need for mandates requiring disclosures is less clear. Firms can reduce their cost of capital with increased disclosure, thus realize benefits with increased disclosure. With firms facing various incentives with regard to how much information should be voluntarily disclosed it has been argued that a firm will disclose more when the quality of information being disclosed is higher. Verrecchia (1990) argues that higher quality information will lead to a lower threshold level for disclosure. The disclosure of quality information would prevent the market from discounting the value of the asset. Penno (1997) demonstrates that high quality information is not necessarily more likely to be disclosed.

The Securities Exchange Act was passed in 1934. This act required more detailed financial reports to be filed by firms whose stock was traded on a U.S. securities' market. Benston (1973) claims most firms filed much of the newly regulated information voluntarily. The one piece of information which was not normally provided by companies was sales revenue information. Benston compared firms who voluntarily

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find, even after controlling for many factors, that stock market liquidity and banking development are both positively and robustly correlated with both contemporaneous and future rates of economic growth. Levine (1991) explains how stock markets increase steady state levels of growth in two ways. First stock markets allow investors to diversify their holdings providing protection against productivity shocks, thus leading to an increase in the fraction of resources devoted to human capital-augmenting firms. Second they allow agents to cope with liquidity shocks by allowing an agent to sell their shares to other investors.

<sup>14</sup> Arthur Levitt, former chairman of the SEC, in a speech to the Inter-American Development Bank on September 29, 1997. published in Accounting Horizons (1998) argues, "In the U.S., our accounting and disclosure system supports—indeed, makes possible—the willingness of both institutions and individual households to invest in our capital markets. This broad participation provides a much larger pool of investor funds than would otherwise be available. I firmly believe that the success of capital markets is directly dependent on the quality of the accounting and disclosure system. Disclosure systems that are founded on high quality standards give investors confidence in the credibility of financial reporting—and without investor confidence, markets cannot thrive."

disclosed sales information prior to 1934 to those who did not and found no significant difference. In fact, because stock redemptions exceeded new issues following the 1934 rule change and capital formation through the stock market decreased, Benston suggested the act of 1934 might have reduced the value of stock markets to corporations and investors.

The private firm only considers its private cost and benefits when it make its decisions about how much to disclose and the timing of the disclosure. Just because firms voluntarily disclose some information, does not mean mandated disclosures are unwarranted. If there are external effects from disclosures, mandating disclosure can improve economic efficiency. Foster (1980) discusses different sources of externalities due to financial reporting. These sources are the timing of information releases, and content of information releases. He also discusses various ways to deal with these externalities. Foster (1981) empirically looks at the possible spillover effects from information releases and shows larger spillover effects for a sample of firms which have a larger percentage of their revenues in the same line of business as the releasing firm. He found an impact on a firm's stock price in response to another firm's earnings information release. The greater the share of the firm's revenue that comes from within the industry in which the information releasing firm operates, the greater the response in that firm's stock price. This suggests a reduction in asymmetric information. The economic consequences of requiring disclosure, however, are far from clear. Coffee (1984) discusses, theoretically, the potential costs and benefits of disclosure mandates.

Coffee suggests four main discussion points to consider for disclosure mandates. These four points are:

1. The standard public good story. If the information being disclosed is a public good then it would tend to be under provided. In such a case mandating disclosure would improve efficiency.

2. The possibility that resource expenditure on behalf of an information searching investor who is pursuing trading gains would be reduced. Collectivization could minimize the social waste associated with the pursuit of trading gains by the information seeking investor. Mandating disclosure could reduce the misallocation of resources leading to efficiency gains.

3. The self induced disclosure theory. If management's and investor's incentives are in line, then management would choose the optimal quantity of disclosure for both the firm and investor. Mandated disclosure has the potential to worsen the outcome under such a scenario.

4. The idea that mandating disclosure will force firms to provide the necessary information needed for a rational investor to optimize their security portfolio.

Other studies find evidence of a positive impact from disclosure regulations. Ferrel (2004) finds a reduction in Over the Counter market (OTC) volatility relative to the overall market after the 1964 regulation mandating disclosure for companies with more than \$1 million in assets and 750 shareholders. In July of 1999, the Securities and Exchange Commission began requiring all firms quoted on the Over the Counter Bulletin Board to start filing reports annually using Form 10-K and quarterly and current reports

using Form 10-Q and 8-K. Failure to file the required reports, in a timely manner, would result in the firm being removed from the OTCBB. Research by Bushee and Leuz (2005) shows permanent increases in liquidity and positive stock returns for OTCBB firms who started filing their respective reports. None of these studies examine the possibility that externalities, in the form of information spillovers, were created by these various disclosure regulations.

## CHAPTER 5

## THEORY

Voluntary Disclosure vs. Mandatory Disclosure

When deciding if, when, and how much information to disclose, management must consider the costs and benefits associated with disclosure. The costs of disclosing includes the cost of preparing and distributing the information, the cost of informing competitors about the internal workings of a company, and the potential of misinforming investors if the information is inaccurate. The main benefit of disclosing is a reduced cost of capital for the firm as information asymmetries are reduced.

Management might not fully disclose, or disclose at all, if they do not properly estimate the benefits of the information to be disclosed. The possibility of defrauding investors also exists, in which case a manager with discretion over how much to disclose may mislead investors by only disclosing aspects which are deemed by the manager to be beneficial. Benston (1973) discussed two different types of fraud which could occur with respect to disclosure. The first example of fraud would exist if a firm published statements that contained false or misleading data. The second example of fraud would be if desired information was not published at all and, instead, was released to the public as news releases rumors in an attempt to manipulate the stock price. A mandated disclosure may be one manner in which the possibility of fraud may be reduced.<sup>15</sup> A mandatory

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<sup>15</sup> Although mandating disclosure may prevent valuable information from being withheld, Benston (1973) argues they may make disclosures more misleading. According to Benston, there was very little evidence of fraud before the 1934 securities act. The 1934 act made it possible for any investor who believed they were

disclosure can also serve as a commitment device by forcing firms to disclose even when it is not optimal from the management's perspective.

There is also the possibility of externalities in the form of information spillovers from disclosures. If information spillovers are created by disclosing, then some of the benefits of disclosing are captured by agents other than the firm. With information spillovers, the level of disclosure chosen would not be socially optimal.

The information disclosed may also be considered a public good. In the case of a public good, the information would be under-provided without a mandatory disclosure. Hirshleifer (1971) argues market information does have aspects of public good, and the expenditure of real resources to acquire information in order to achieve speculative gain is socially wasteful. Dye (1990) suggests one firm's disclosures may affect a potential investor's ability to evaluate another firm. With investors facing an incentive to undertake costly search costs in an attempt to acquire speculative gains, mandatory disclosures have the potential to reduce this socially wasteful process.

#### Mandatory Disclosure vs. Prescriptive Mandates

A firm considers its own private costs and benefits when it is deciding whether to disclose or withhold information. With firms ultimately bearing the costs of withholding information (i.e., higher costs of capital) they will choose the optimal level in order to

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misled by a financial disclosure to sue the involved accountants and it puts the responsibility on the accountant to prove that the investor's loss was not a outcome of the financial statement in question. As a result of accountants being considerably more liable for the financial statements, accountants often followed more conservative practice making it more difficult for them to be sued successfully. Benston claims the implementation of this act actually lead to financial statements becoming more misleading than they previously were.

help the firm maximize its profits. Since the firm will not consider the social costs when making its decision to disclose, it is possible for externalities in the form of information spillovers to be present. Brown, Falaschetti, and Orlando (2007) suggest firms facing correlated market and governance forces may produce information spillovers when they disclose. If an information spillover exists, then the decision of one firm may influence the decision of another firm. For example, a firm may choose to change the structure of their executive compensation contracts once a competitor's contract information becomes available. Mandatory disclosures can serve as a coordination device forcing firms to consistently disclose information even when it is not in the interest of the firm. With the implementation of a mandatory disclosure, the possibility of such informational spillovers increases.

In cases where mandatory disclosures have proven effective in improving efficiency and producing externalities, prescriptive mandates present an option to improve upon the outcome even further. By observing how the market reacts to various disclosures, a prescriptive mandate could theoretically be designed to force a firm to behave in a certain manner. For it to even be a possibility for an improved outcome using prescriptive regulations, evidence of such spillovers must exist. If evidence about information spillovers exists, then the channel through which the efficiency improvement occurs must then be identified for an appropriate incentive altering policy to be implemented. Prescriptive mandates are costly to develop, enact, and enforce, and the possibility that a prescriptive mandate will worsen the situation does exist.

### Theory Regarding Executive Pay

Executive pay has increased at a faster rate than that of other employees' at large companies over the past decade.<sup>16</sup> During the 1980's executive pay increased dramatically even though performance and profits went down.<sup>17</sup> One possibility for the rapid increase in executive pay may be a market failure. Shareholders, in general, should not be overly concerned with the amount of executive compensation as long as the executive creates wealth for shareholders. The shareholder's main concern is whether the executive's marginal revenue product is at minimum, equal to the level of the executive's compensation. Since the marginal revenue product is difficult to observe, a shareholder may want to observe the nature of the incentives in the executive's contract. If the shareholder deems a firm's current executive compensation package to be unreasonable or weakly prepared, the shareholder can sell the stock, ultimately leading to falling equity prices for the company. The converse is also true; a company who has an executive pay contract which puts the executive's goals inline with the shareholders will be rewarded through stock price appreciation.

Economic theory provides insight into why executive pay is appreciating. If the market is working efficiently, then the marginal revenue product of the executive talent must be increasing at a rate faster than the supply of executive talent. If this is the situation, then the concern for policy makers should not be the rising rates of executive pay but rather why the supply of talent not increasing at a faster rate.

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<sup>16</sup> In their book "Pay Without Performance", Lucian Bebchuck and Jesse Fried point out how large-company CEO pay has grown from approximately 140 times the pay of the average employee in 1991 to 500 times the average pay in 2003.

<sup>17</sup> "Highly Paid Chiefs Earn Criticism, Too," *Wall Street Journal*, June 4, 1991

Executive compensation should be part of a firm's strategy to maximize profits. Even when the ownership and executive control of a firm is separated, firms can efficiently organize through contracting. Boards of Directors are employed by and accountable to shareholders, and they are charged with the responsibility of representing the shareholder's best interest. If a Board of Directors hires executives with lucrative contracts, then it could be argued it is a necessary investment by the firm. Fama (1980) argues "the firm is disciplined by competition from other firms, which forces the evolution of devices for efficiently monitoring the performance of the entire team and of its individual members". This is consistent with economic theory's postulate of firms maximizing profits.

Bebchuck and Fried (2004) suggest a market failure is to blame for the rapid increase in executive compensation. They argue that problems in corporate governance have produced a costly distortion in executive compensation, leading to compensation structures which are excessive, unwarranted, and not in the best interest of the shareholder. They argue that the redistribution of wealth from shareholders to management is greater than the penalty imposed on the management by the market. Informational costs imposed on the shareholder will only exacerbate the shareholders' inability to monitor and punish the firm's executives.

Although Bebchuck and Fried argue the market may not impose a strong enough penalty on executives with payment schemes not in line with the interests of the shareholders, they do recognize there is some market response. They also note that some firms are better governed than others. With a broad range of well governed firms and

poorly governed firms, an investor is capable of switching his investment if he questions or is in disagreement with the structure of the executive compensation contracts of the corporations in which he is contemplating investment.

If any distortions exist, which lead to contracts not being in line with the interest of the shareholder, the new proxy filing format examined in this study might expose them. If the information is new and valuable for evaluating a firm, then an efficient market should respond as the new information becomes available. This paper does not seek to investigate how investors were previously obtaining their information on shareholder compensation prior to the rule change. The goal of this paper is to evaluate whether the market appeared to value the 1992 SEC disclosure mandates. If markets are efficient and a new disclosure provides new and valued information, then we should see a response in equity prices. If there is no response then the information is either not new, or does not assist investors in forecasting a company's true asset value. Assuming markets are efficient, if executives are withholding information regarding their compensation levels and structure, then additional information should lead to a market response. If a market response does occur, this does not provide insight into whether an executive is over or underpaid, but it shows that investors are now better able to evaluate a company's value.

## CHAPTER 6

## DATA AND ECONOMETRIC SPECIFICATION

Data Collection

To study the impact of the 1992 disclosure rule, I began with the list of firms from the 1992 Russell 1000 index. This index is composed of the 1000 largest publicly traded firms, representing approximately 92 percent of the value of the U.S equity market. To be confident that firms were not filing in this format prior to the rule change, I examined several firms' 1992 proxy statements. These proxies were obtained through Lexis Nexis. Not a single company examined used a format similar to the new, required format. To find the proxy filing dates of the Russell 1000 firms, I used Thompson Research. After sorting the Russell 1000 Index alphabetically, I choose approximately every other company in an attempt to develop a random sample.<sup>18</sup> The date used for the analysis was for the date of the first DEF 14A filing after October 21, 1992. After recording the necessary proxy file dates, I ended up with a sample of 514 firms.

I retrieved daily stock price, bid ask spreads, and volume data using the Center for Research in Securities Prices (CRSP). After merging these 514 firms with the CRSP dataset, 25 firms were lost because of missing price data in CRSP. Of the remaining 489 firms, the average size as measured by market value was 4.155 billion. The largest firm, General Electric, had a market value of 79.914 billion, while the smallest firm, McClatchy

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<sup>18</sup> The process involved in obtaining the necessary dates is very costly with respect to time that is why the sample is limited.

Newspapers, had a market value of 91.79 million. Of the remaining 489 firms, 25 had filing dates during the optional filing period between October 16<sup>th</sup> and December 31, 1992. To be sure that these firms were not filing using the new format, I looked at a random sample of 10 of those firms. Not a single company used the new filing method.<sup>19</sup>

### Mathematical Motivation

The new proxy rules attempt to provide more information to shareholders, thus enhancing the shareholders ability to assess how well directors are representing the interests of the shareholders (i.e., making decisions that improve the financial performance of the firm). If markets are efficient and the new proxy filing formats provide additional useful information, then forecasting a firm's financial performance should become more accurate, and errors in calculating a firm's true asset value should diminish.

To formally understand this implication, I follow Brown, Falaschetti, and Orlando (2007). Suppose the true value of the firm is  $v \in R_+$ , and information about the value of the firm in an efficient market is represented by  $v \in V \subset R_+$ .  $E[v | v \in V] - v = 0$ , shows that forecast errors equal zero in a perfectly efficient market.

Note that  $E[v | v \in V]$  represents the market value of the firm. If the new proxy format provides additional information to the market, which would allow for a more precise valuation of the firm, then  $v \in V'$  and  $V' \subset V$ . This implies that, as uncertainty

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<sup>19</sup> The rule did not affect small business issuers until May 1, 1993. Not knowing an efficient way to examine whether a company is considered a small business, I omitted firms that were members of the Russell 2000 index. Members of the Russell 2000 index are the 2000 smallest firms traded, and only make up 7 percent of the total U.S securities market.

surrounding a firm's value decreases, then the confidence interval around the firm's true value should narrow. The implication for calculated variance is:

$E[(E[v | v \in V', V' \subset V] - v)^2] < E[(E[v | v \in V] - v)^2]$ . Thus, if markets are efficient and the new rules provide new information, then the variability of forecast errors would decrease. Expected values for the firm would not necessarily change.

For evaluating whether the additional information is valued by the market, one can also look at the liquidity of a firm's stock. As disclosure increases and the market becomes more transparent, information asymmetries should decrease, and the asset should become more liquid. A reduction in information asymmetries should allow for more effective evaluation of a firm's value, and reduce the occurrence of adverse selection. Assuming markets are efficient, more information regarding the stock should therefore lead to higher liquidity for that stock.

### Estimation Results

To assess whether the new format leads to a decrease in a forecasting errors, I compare a firm's stock price variance and liquidity for periods before and after their proxy date filing. I define variance as the standard deviation of each firm's stock price for both 30 day and 60 day periods immediately before and after the proxy filing date, divided by the equivalent mean stock price. Evaluating whether a firm's measured variance changes will provide insight into whether there was new and valuable information provided by the new filing format. To determine if a firm's variance changes, it is necessary to calculate the mean and median firm variance for all firms for the 30 and

60 days immediately before and after the proxy release. Using the Wilcoxon Rank Sum Test, I compare the medians from the before and after periods to see if the difference between the two are statistically different from zero. To check the hypothesis that the mean variance before equals the mean variance after, a two-tale t-test was performed. Table 1 presents the results.

Table 1. Median and Means of Market Valuation Variance.

Days Relative to Filing date	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Stock Price Volatility	.037	.036	-0.422	.025	.027	-1.397
Mean Stock Price Volatility	.049	.052	-1.22	.037	.042	-1.48

The results from this analysis provide no statistical evidence that the variance decreased or even changed. The results are not significant over any period window. All results but one (the median over the 60 day window) are inconsistent with new information leading to a decrease in forecast errors. These results suggest that any additional information did not reduce variance. Without an observed change in valuation variance, it can be assumed these new proxy formats were not systematically valued by the market. More specifically, any additional information about how a firm compensates its executive officers, which was provided within this new proxy format, does not prove valuable in decreasing forecast errors.

To measure a firm's liquidity, I followed Bushee and Luez (2005). Bushee and Luez use three proxies (bid ask spread, share turnover, and percentage days traded) to

evaluate liquidity. In the sample I study there are only seven firms that had more than one day where the stock was not traded. I, therefore, focus only on bid-ask spread and share turnover. The former is calculated by dividing the difference between the bid and ask price by the midpoint. To test if the bid-ask spread changes after the proxy release date, I again perform a simple two-tailed t-test on the mean of the average bid ask spread and a Wilcoxon Rank Sum Test on the medians. Table 2 presents the results.

Table 2. Median and Mean of Bid-Ask Spread.

Days Relative to Filing date	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Bid-Ask Spread	17.418	17.497	-0.328	17.448	17.371	-0.157
Mean Bid-Ask Spread	19.957	20.249	-2.48	20.137	20.287	-1.8667

The results from the analysis on the bid-ask spreads are inconsistent with the new proxy format leading to more liquidity. Both median results are statistically insignificant, and, of those results, only the 30 day window shows a change in a direction consistent with increased liquidity. Looking at the mean of the bid ask spread, I do find statistically significant results. These results, however, suggest the proxy releases led to the securities becoming less liquid. With no statistically significant results found in the analysis of the medians, one possible explanation for the means being statistically different from each other is that outliers are driving the result.

The second measure of liquidity used in this examination was share turnover. Share turnover was computed by dividing monthly share volume by average total shares outstanding. I checked whether the medians and means of the periods before and after the proxy release and were statistically different. Table 3 presents the results.

Table 3. Median and Mean of Average Share Turnover.

Days Relative to Filing date	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Share Turnover	.003	.002	1.202	.002	.002	0.001
Mean Share Turnover	.004	.004	1.588	.004	.004	-1.306

The results of the analysis of average share turnover were inconsistent with the proxies reducing information asymmetries. Not only were the results statistically insignificant, but 3 of the results show no change.

The results from the liquidity measures suggest the new proxy format does not provide any additional or useful information to the market. Theory suggests if markets are efficient, and the increased disclosure reduced information asymmetries, then stocks would become more liquid. Liquidity did not increase by either measure. In fact, by one measure, mean share bid ask spread, it appeared to decrease.

When the firm level liquidity results are combined with firm level stock price volatility results, it appears this regulation did not accomplish its goal of making compensation disclosure more concise and useful to shareholders. That is not to say the information provided by this new proxy is not useful to investors. It may simply not be new. It is not possible to distinguish between the information being not useful verses not being new.

Are There Information Spillovers  
Caused by this New Filing Format?

Although evidence from the firm level analysis suggest the 1992 disclosure regulation was not useful for helping investors better evaluate firm values, this analysis ignores the potential for this regulation to provide informational spillovers or externalities. Even without a firm level response, if compliance with the new proxy format produces informational spillovers, then this rule change could lead to improved market efficiency. If there are information spillovers, then earlier filers should be more informative to the market than late filers and any market response should be greater for the early group when compared the late group. If early filers help the market form expectations for later filing firms, then the response for late filers would be minimal, and could obscure any relationship in the overall results. To check for such effects I broke the sample of firms into first half filers and second half filers. The date chosen was March 26, 1993 which cuts the sample in half. I tested for firm level volatility and liquidity for first half firms and compared it to second half firms. Table 4 presents the market level volatility for first half firms and table 5 presents results for second half firms.

Table 4. Half of companies who filed before 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Stock Price Volatility	.035	.034	0.718	.024	.023	1.087
Mean Stock Price Volatility	.049	.052	-1.113	.037	.041	-0.768

Table 5. Half of companies who filed after 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Stock Price Volatility	.037	.044	-1.150	.026	.031	-3.004
Mean Stock Price Volatility	.050	.053	-0.647	.037	.043	-1.41

The results for stock price volatility are not consistent with there being any external information spillovers. I did not discover any statistically significant relationship for first half filers. The only statistically significant relationship found suggests that volatility actually increased for the second half filers during the 30 day window after their filing date. The volatility increase is probably correlated with market volatility. Figure 1 represents the volatility of the S&P 500 over the period.

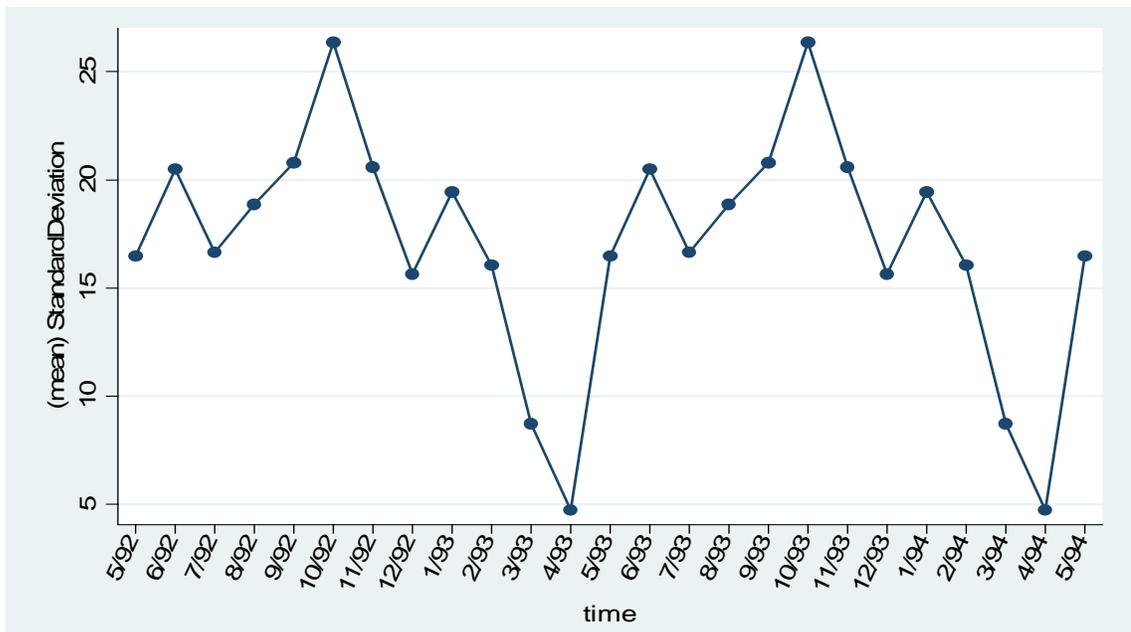


Figure 1. S&amp;P Volatility.

Since the date used to split the sample was March 26 1993, it would be necessary to look at market volatility after that date. Looking at the graph, we see the volatility between April, 1993 and June 1993 increases dramatically in the market. 68 percent of the second half filers filed between March 26, 1993 and June 1, 1993 and 88 percent of filers filed before October 1, 1993 when volatility for the period peaked. This likely explains why our second half filers experienced an increase in share price volatility.

Although the analysis of price volatility provides no evidence of information spillovers, to be confident, I also examine liquidity changes before and after March 26, 1993. Tables 6 and 7 present bid ask spreads for first half and second half filers.

Table 6. Bid-Ask spread for companies who filed before 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Bid Ask Spread	18.792	18.895	-0.415	18.971	18.808	-0.254
Mean Bid Ask Spread	21.175	21.566	-2.112	21.45	21.705	-2.095

Table 7. Bid-Ask spread for companies who filed after 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Bid Ask Spread	15.518	15.357	-0.018	15.571	15.417	0.031
Mean Bid Ask Spread	18.74	18.932	-1.328	18.824	18.868	-0.425

The results are not consistent with there being spillover effects. Although the means of the bid ask spread for the first half filers are statistically different from each

other they actually do show an increase in the spread. This suggests the firm's stock actually became less liquid. None of the other results are statistically significant, and only second half filers showed changes in the expected direction for median bid ask spread.

Tables 8 and 9 show the results from looking at first half and second half filers for average share turnover.

Table 8. Half of companies who filed before 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Share Turnover	.002	.002	1.558	.002	.002	0.873
Mean Share Turnover	.003	.003	1.632	.003	.003	1.047

Table 9. Half of companies who filed after 3/26/1992

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Share Turnover	.003	.003	0.233	.003	.003	-0.819
Mean Share Turnover	.004	.005	0.902	.004	.005	-2.011

The results for share turnover show no change at all for the first half group. The second half group showed no change for the median share turnover, and almost no change for the mean of share turnover. The only statistically significant result is for the mean during the 30 day periods. Although the result is significant, the change is so small it does not

provide much confidence that this rule change had any real effect of firm liquidity as measured by share turnover.

The majority of firms in the sample had filing dates in the early part of the year, with multiple firms filing on most days during the early part of 1993. It is therefore possible that informational spillovers occurred before March 26, 1993. To check the robustness of the results, I broke the sample into the first 20 percent of filers, and the last 80 percent. This moved the day used to split the sample to March 12, 1993. The results from this analysis did not deviate significantly from the previous results.<sup>20</sup> Thus, there is no evidence of information spillovers being created by this regulation.

The results presented provide no evidence of the market systematically valuing the additional information provided by the new proxy format. To the extent that any of the results are statistically significant, they are not consistent with disclosure mandates supplying new and useful information to the market. There also is no evidence of information spillovers that might rationalize additional disclosure or proscriptive mandates.

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<sup>20</sup> These results are found in the Appendices at the end of the paper. Appendix A shows market valuation variance, appendix B presents the bid-ask spread, and appendix C presents the share turnover results.

## CHAPTER 7

## CONCLUSION

The results of my analysis provide no evidence of the market systematically valuing the information made available by the new proxy format. Not only were the majority of my results statistically insignificant, but the direction of change often was unexpected and inconsistent with what theory would predict for new and valuable information becoming available. The data also do not reveal evidence of externalities in the form of information spillovers. The robustness checks I performed were consistent with there being no external effects.

Prominent studies looking at similar regulations have presented mixed results (e.g. Bushee and Leuz, 2005; Brown, Falaschetti, and Orlando, 2007; Mahoney and Mei, 2005). Some studies have shown positive market responses to increased disclosure, while others have shown little or no response. Most studies have tried to look at abnormal returns and changes in liquidity for a firm's stock after filing. These studies often cite the potential for externalities to arise as disclosure is increased.

There have been attempts to move beyond disclosure mandates and prescriptively mandate how executives are paid. In 1993 a tax change prohibited deductions of over one million dollars in executive compensation from being made when the compensation is not performance based. This tax change is clearly an attempt to encourage firms to engage in certain methods of executive pay. Without evidence of information spillovers, it is not clear how prescriptive mandates will improve on the current situation.

My analysis focuses on the first proxy filing after the new disclosure mandate came into effect. Although the SEC announced that many firms were not in full compliance with the new disclosure requirements, after reviewing several firms' proxies I am confident that, at the very minimum, partial compliance was achieved. Although firms are not in perfect compliance according to the SEC, it is reasonable to assume my results would not vary much because the firms complied with the major aspects of the new regulation.

Although I was unable to find any evidence suggesting this new format was useful to the market, I have only ruled out one very obvious channel through which this regulation might be effective. With my research design I was unable to distinguish between information that is not considered useful by the market or simply not new. If the information that is provided in this proxy is useful, and was being previously obtained in other ways, then this new filing may reduce resource costs of acquiring this valuable information. If this possibility is true, then the true value of this regulation would be very difficult to measure.

The results of this analysis will provide insight into future policy design. Current policy initiatives are concerned with levels and structure of executive pay. With real resources being deployed to develop new disclosure regulations, it is important and beneficial to look at past attempts to regulate disclosure and learn from them. This paper provides insight into the first major change in executive compensation disclosure regulations since the 1930s. These results should be considered before additional

disclosure mandates or prescriptive regulations are passed. It is also important to consider the cost and benefits of those policies before they are implemented.

This paper will prove a useful resource in evaluating future policy design and the implications of those policies.

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APPENDICES

APPENDIX A

SPLIT SAMPLE MARKET VALUATION VARIANCE

## APPENDIX A

## SPLIT SAMPLE MARKET VALUATION VARIANCE

Table 10. Half of companies who filed before 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Stock Price Volatility	.036	.034	0.718	.023	.022	0.769
Mean Stock Price Volatility	.037	.039	0.345	.026	.026	-0.079

Table 11. Half of companies who filed after 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Stock Price Volatility	.036	.039	-0.563	.026	.028	-1.824
Mean Stock Price Volatility	.052	.056	-1.067	.039	.045	-1.485

APPENDIX B

SPLIT SAMPLE, BID-ASK SPREAD

## APPENDIX B

## SPLIT SAMPLE, BID-ASK SPREAD

Table 12. Bid-Ask spread for companies who filed before 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Bid Ask Volatility	28.738	29.843	-1.217	44.387	45.05	-1.271
Mean Bid Ask Volatility	30.496	33.442	-1.237	47.1	54.109	-1.164

Table 13. Bid-Ask spread for companies who filed after 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Bid Ask Volatility	27.655	26.171	0.426	38.82	36.42	1.777
Mean Bid Ask Volatility	32.79	32.89	-0.057	48.98	45.468	1.815

APPENDIX C

SPLIT SAMPLE SHARE TURNOVER

## APPENDIX C

## SPLIT SAMPLE SHARE TURNOVER

Table 14. Half of companies who filed before 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Share Turnover	1.481	1.623	-0.903	1.718	1.786	-0.238
Mean Share Turnover	1.588	1.666	-1.232	1.857	1.848	0.108

Table 15. Half of companies who filed after 3/12/1992.

Days Relative to Filing date T=0	-60 to -1	1 to 60	z/t stat	-30 to -1	1 to 30	z/t stat
Median Share Turnover	1.459	1.444	0.226	1.654	1.579	1.541
Mean Share Turnover	1.528	1.508	0.753	1.72	1.641	2.35