

Did New Regulations Target the Relevant Corporate Governance Attributes?

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Abstract

Recent corporate scandals have led to new governance rules by the United States Congress as well as by stock exchanges. This study examines the changes in corporate governance practices during 2001-2005, which covers the period before and after the new regulations. We analyze a comprehensive set of 64 governance attributes for more than 5,200 firms. Our findings indicate that corporate governance practices beyond those mandated by new regulations changed substantially over this period. We find significant differences in governance across firm size and industries. After controlling for size and industry we find a positive and significant relation between governance and firm value. We find that new regulations are associated with higher firm value in firms that adopted the regulations prior to them being mandated. In this sense our findings suggest that the new regulations did target relevant governance attributes. However, the analysis also indicates that the markets were already rewarding firms that had better governance. Finally, we find that the positive relationship between governance attributes not mandated by regulations and firm value continues even in the post-regulatory period which supports the argument of the impact of quality of governance on firm value.

Did New Regulations Target the Relevant Corporate Governance Attributes?

Corporate governance mechanisms have been broadly classified as either internal or external. Internal mechanisms primarily include issues related to the board of directors and the equity ownership structure of the firm while external mechanisms include the market for corporate control and the legal/regulatory structure. Due to the recent corporate governance scandals, such as Enron and WorldCom, it was believed that aspects of both internal and external governance mechanisms failed and therefore new governance rules were mandated by the U.S. Congress and stock exchanges to improve the quality of corporate governance.¹ The new regulations have resulted in much debate concerning their costs and benefits and whether they were needed or if market forces could efficiently address the issues. This study examines the relevance of the new governance regulations.

The main changes imposed by Congress in late 2002 through the Sarbanes-Oxley legislation (SOX) were meant to strengthen financial disclosure and internal governance mechanisms. These specifically include new rules for accounting firms, financial analysts, corporate officers, and directors. Additional responsibility is placed on corporate officers and directors with increased penalties for corporate fraud. In addition to SOX, stock exchanges mandated their own rules that were approved by the Securities and Exchange Commission in November 2003. The new rules impact several areas of the corporate governance mechanism. A key requirement is that boards should have majority independent directors with a more elaborate definition of independence. Also, the audit, compensation, and nominating committees must consist of only independent directors. Furthermore, the audit committee members must be “financially literate” as described in the rules. Additionally, the board is required to hold regular

¹ See Chhaochharia and Grinstein (2005) for a discussion of the new regulations.

executive sessions without management being present. With few exceptions, firms were expected to incorporate these changes, with full compliance expected by the end of 2004.

This paper examines the importance of corporate governance and how it varies across firm attributes, and additionally, how this relation has changed over the recent past. In particular, we examine the association between these new regulations and firm value. In order to examine the relevance of new regulations, we construct an index that captures the governance provisions that were targeted by new regulations. Our index is based on corporate governance attributes provided by Institutional Shareholder Services (ISS). ISS is one of the most influential shareholder advisory firms and provides governance data to the market for the purpose of equity research, risk management, legal and compliance issues, credit analysis and investments. Most previous academic studies have used governance provisions provided by the Investor Responsibility Research Center (IRRC) that covers a limited number of governance attributes. ISS covers a much larger set of companies and provides 64 governance attributes that go far beyond the anti-takeover provisions addressed by the IRRC metrics.² We are able to study a much wider set of governance provisions and also specifically focus on the ones targeted by new regulations. Our cross-sectional study examines the relation between governance and valuation for the period 2001-2005 using a sample of as many as 5,259 firms.

Firms differ in their operations and other characteristics that could impact governance attributes. Therefore, before examining the impact of governance changes over time, we evaluate the differences in governance across firm size and industries. We find statistically significant differences in governance across firm size and industries. Smaller firms have much lower governance scores than larger firms. After controlling for size and industry, we still find a positive and significant relation between governance and value. Governance mechanisms

² ISS acquired IRRC in August 2005.

associated with board structure, audit, executive and director compensation, state of incorporation, ownership and progressive practices are found to be significant in explaining firm value. However, governance attributes associated with company charter and by-laws and director education are not significant. Bebchuk, Cohen and Ferrell (2004) and Brown and Caylor (2005) cast doubt on the benefits of creating a very large number of governance provisions and point out that only a specific group of governance attributes are important to firm value. Our findings are consistent with these arguments.

The main focus of the study is to determine whether the provisions imposed by the new regulations have a significant relation with firm value. Our results show that large and significant cross-sectional differences existed in the governance attributes that were later mandated. We find that there are statistically significant cross-sectional differences in governance at the firm and the industry level. For example, smaller firms have very different governance structures than larger firms. Therefore, adopting the new regulations will be far more expensive for smaller firms than larger firms. This raises the question of whether the one-size-fits-all approach to governance is appropriate. After controlling for size and industry we find that the new regulations mandated by Congress and exchanges were associated with higher firm value. The firm value impact is particularly strong for firms that adopted the new governance attributes voluntarily, before the regulations were mandatory. The results are statistically and economically significant. In this sense our findings suggest that the new regulations did target relevant governance attributes. However, the analysis also indicates that the markets were already doing their job and rewarding firms that had overall stronger governance. After the new rules were put in effect, the cross-sectional differences between the governance mechanisms covered by the new regulations and firm value did not persist but the

results did show that better governance is still being rewarded. Therefore, it is not clear that new regulations were needed or whether market mechanisms would have forced stronger governance anyway. It should be recognized that the main interest of regulators is in protecting investors, and increasing transparency and accountability. Therefore, their interest is not just on firm value but on broader issues.

The rest of the paper is organized as follows: Section I reviews the related literature. Section II discusses the governance attributes studied in the paper and the attributes mandated by new regulations. Section III describes the data and methodology. Section IV shows the relation between governance and firm value; Section V reports the results of the relation between new regulations and firm value; and Section VI concludes.

I. Related Literature

The paper starts by examining the relation between governance and valuation and ends by specifically focusing on the new regulations. Therefore, we discuss two strands of academic literature. The first deals with the relation between governance and firm performance, and the second specifically examines the new regulations.

The internal governance mechanisms that have received considerable attention in the literature are issues related to the board of directors and equity ownership. The board of directors is expected to monitor management and represent the interests of shareholders. They are responsible for hiring, firing, and compensation. However, as Denis and McConnell (2003) discuss, the board itself can have conflicts and may not represent the interests of shareholders. The U.S. evidence on the relation between board structure and firm performance is that board

composition is not related to performance and board size is negatively related to performance.³ Dahya, McConnell and Travlos (2002) examine the impact of corporate governance changes in the U.K., and find that after the issuance of the Cadbury recommendations, CEO turnover increased and the relationship between turnover and performance became stronger, particularly for firms that adopted the new guidelines.⁴

Gompers, Ishi and Metrick (2003), henceforth GIM, combine 24 attributes of corporate governance, provided by the IRRC to create an index which proxies for shareholder rights to examine the relation between governance and equity returns. The paper finds that democratic portfolios earned significantly higher returns, were valued higher, and had better operating performance. Firms with strong shareholder rights are found to have risk-adjusted returns that are 8.5% higher than those of firms with low shareholder rights. However, they do not find significant operating underperformance when measured by return on equity. An entrenchment index consisting of six of the twenty-four IRRC governance provisions is constructed by Bebchuk, Cohen and Ferrell (2004) and found to substantially drive the GIM results. Brown and Caylor (2005) use ISS governance attributes, similar to this paper, and create a parsimonious index based on seven provisions that include both internal and external mechanisms. They find that their Gov-7 index fully explains the relation between governance and value. Bebchuk, Cohen and Ferrell (2004) and Brown and Caylor (2005), conclude that only a subset of governance attributes are related to firm value. The importance of both internal and external mechanisms is also documented by Cremers and Nair (2004). Firms with strong shareholder

³ See Hermalin and Weisbach (2003) for a complete review of the literature.

⁴ After the collapse of a number of prominent U.K. companies, such as Ferranti, Bank of Credit and Commerce International and Maxwell Communication, the Cadbury Committee was set up. The Committee issued *The Code of Best Practice* with the main recommendations being the separation of the CEO and Chairman role and that firms have a minimum of three outside directors.

rights and high institutional ownership are found to earn abnormal returns and have higher accounting profitability.⁵

In efficient markets, Core, Guay and Rusticus (2005) argue that there should be no relation between governance and stock returns. Based on an analysis of analysts' forecast errors and earnings announcement returns, they do not find that weak shareholder rights cause poor stock performance. They do find that weak shareholder rights are associated with significant operating underperformance.

There has been a good deal of debate over the costs and benefits of SOX. A number of recent studies have analyzed SOX's new regulations and several researchers have argued that the new regulations have limited effectiveness and considering the potential costs associated with their implementation they are not likely to be more effective than the markets (for example, Cunningham (2003), Ribstein (2002) and Romano (2004)). The limited empirical research does show that SOX has had a significant impact on publicly traded firms. In a comprehensive study Linck, Netter and Yang (2005) find that the costs associated with corporate boards, such as directors' fee, have increased substantially. The costs are particularly high for small firms. Boards have become larger and more independent; more firms separate the CEO and Chairman role; and more firms have established nominating and governance committees.

The market reaction to news about SOX has been studied using an events study approach by Li, Pincus and Rego (2004), Rezaee and Jain (2005), Chhaochhairsa and Grinstein (2004) and Zhang (2005), among others, and the conclusions are mixed. The first three studies show a positive reaction, but Zhang finds a negative reaction. The studies differ in terms of identifying the event and the methodologies used. SOX has also resulted in significant changes in the audit

⁵ Other studies that have used the IRRC provisions include Bebchuk and Cohen (2005), Amit and Villalonga (2004), Cremers, Nair and Wei (2004) and Litov (2005).

market, increasing audit fees and audit quality, enhanced auditor independence, and changing the competitive landscape.⁶ The provisions of SOX have addressed internal control mechanisms under section 404 and studies have examined changes in these controls pre- and post-SOX. Ge and McVay (2005) find that disclosing of material weaknesses are positively associated with firm complexity and negatively related to firm size and profitability. Based on an analysis of firms that report internal control deficiencies De Franco, Guan and Lu (2005) conclude that small investors benefit more from these disclosures than large investors, hence supporting the conjectures made by regulators.

II. Governance Attributes and New Regulations

Corporate governance covers many facets of the relation across stakeholders that may be associated with firm value. Using the ISS data, we consider 64 governance attributes that may impact the relation between governance and value. These attributes are classified into eight subcategories. The number of attributes assigned to each subcategory are: board composition and structure – 22, charter and by-laws – 11, compensation – 10, state of incorporation – 7, ownership – 3, audit – 4, progressive – 6 and director education – 1. The information contained in each of these categories is compiled to determine an overall governance rating for each firm. The weight of each category is primarily determined by the number of possible outcomes in each attribute and is not merely a yes or no response. The detail allows us to evaluate the relative importance of each category of corporate governance during our sample period.

Our composite governance index and the eight subcategories are quite different from the anti-takeover index used by GIM and several recent studies including Core, Guay, and Rusticus (2005), Cremers and Nair (2005), Bergstresser, Desai and Rauh (2004), Christofferson, Geczy,

⁶ See Asthana, Balsam and Kim (2004) and Lai (2005).

Musto and Reed (2004). The GIM shareholder rights index is equal to the number of provisions that a firm has that restrict shareholder rights. Restrictions can be due to state law or charter provisions and include 24 provisions, such as poison pills, classified boards, supermajority requirements, and golden parachutes. Until 1998, only large companies were included in the database and GIM report a total of 1,708 firms. These governance metrics primarily focus on takeover provisions and may not incorporate other important aspects of corporate governance. This study utilizes a dataset that incorporates several areas of governance, beyond anti-takeover provisions, that are of interest to policy makers and investors.

The ISS data used in our study is for the period December 2001 to June 2005. The governance rating on each firm is evaluated and updated periodically by ISS. The 64 attributes were updated for most of the data collection period and thus will allow for investigation of time series effects of the governance attributes. After conducting an initial analysis of all 64 attributes covered by ISS, we are able to focus on six of the governance attributes that were mandated by changes in new regulations. Therefore, we examine the following six new regulations:

1. The Board must consist of majority independent directors.
2. Non-management directors must have executive session without management.
3. Nominating Committee must have only independent directors.
4. Compensation Committee must have only independent directors.
5. Audit Committee must have only independent directors and a minimum of three members.
6. Firms must adopt corporate governance guidelines.

In addition to these six provisions, the new regulations had several other requirements, for example, certification of the accuracy of financial statements by the CEO, and that the audit committee must consist of directors who are financially literate. With the ISS data we can directly examine six of the new regulations. It is important to point out that the ISS criteria are not exactly the same as the regulation mandated. For example, the ISS definition of independent

director is more stringent than that mandated by regulation. Another example is that new regulations only require that firms adopt corporate governance guidelines but ISS in addition requires that they be published. The ISS criterion not only requires the audit, compensation and nominating committee to be composed solely of independent directors but also requires that each committee be able to hire its own advisors. These higher standards held by ISS could impact the inferences because companies at the minimum level of compliance could lead to some cross-sectional differences even after compliance.

We do believe that the six governance attributes covered serve as a good proxy for new regulations. Some companies already had these provisions in place before they were mandated by the new regulations. Therefore, we are able to examine the relation between these governance attributes and firm value in the period before regulation required them. Other control mechanisms, for example, CEO certification of financial statements, was not being done by any firm during 2001, therefore it would not have been possible to study these attributes before the regulation was mandated.

Although SOX was passed in 2002 and exchange regulations were approved by the Securities and Exchange Commission in November 2003, firms were given time to implement these new rules. The new rules in general should have been in place by the end of 2004, however a number of exceptions were granted. For example, companies with staggered boards were allowed an additional year for compliance. Listed companies were given until their first annual meeting after June 30, 2005, to replace directors in order to satisfy the revised definition of independence. Exemptions were also granted to certain types of companies, for example, controlled companies in which more than 50% of the voting power is held by a single individual, group or another company were not required to have independent boards and independent

nominating and compensation committees. Similarly, small firms were allowed extra time to comply. Therefore, even in mid-2005 we do find that not every company met all six of the new regulations. However, many companies already had these attributes in place long before regulation addressed them while there were other companies that started to implement the rules during the 2003-2004 period in order to meet the compliance deadline.

Figure 1 shows the percentage of companies that were compliant with the six new regulations over time. Two conclusions can be reached by examining this figure. First, a large proportion of firms were already meeting the requirement of independent boards, and independent audit and compensating committees. Second, in 2001 only a small proportion of firms were meeting the other three requirements of independent nominating committee, regular executive sessions without the presence of management, and the adoption of corporate governance guidelines. By early 2005 the proportion of firms meeting the requirements had increased considerably but was still far from 100%. As discussed earlier, this is quite possible because certain companies were allowed a longer time period to comply, some others were exempt from the new regulations, and ISS definitions may differ.

III. Data and Methodology

As mentioned earlier, the data on the 64 governance attributes is obtained from ISS. ISS started providing the Corporate Governance Quotient (CGQ) to the market in 2002, however they back-filled the data to 2001. The CGQ is a relative measure of a firm's quality of governance and indicates the quality of a firm's governance relative to firms in its industry and within an index in which the firm is included, such as the S&P 500. ISS coverage includes U.S. firms that are included in any of the following indices: Standard and Poor's 500, Standard and

Poor's SmallCap 600, and Russell 3000. Russell 3000 captures 98% of the market capitalization of the U.S. markets. In addition, a number of smaller firms are covered as long as they file on EDGAR. ISS excludes firms that have not filed a proxy in the last 18 months. Also excluded are funds and trusts (except Real Estate Investment Trusts). A company needs to be a U.S. company and also needs to be incorporated in a U.S. state in order to be included. This means that companies like Tyco and Ingersoll-Rand that are part of the S&P 500 are not included because they are incorporated in Bermuda. Our data consists of 21 quarters from December 2001 to June 2005. The sample size for 2001 and 2002 is limited to approximately 2,300 companies but for the period 2003-2005 more than 5,259 companies are covered. The analysis in Brown and Caylor (2005) using the ISS data is based on 2,327 companies from 2002. The earlier periods in the data are weighted more heavily towards larger firms. In this paper, the analysis is conducted for each quarter but most results are reported for the 2003-2005 period. We exclude firms with dual-class structures because several of the new regulations do not apply to firms with concentrated voting rights. Similar to Bebchuk and Cohen (2005) we also exclude real estate investment trusts (REITs), i.e. firms with an SIC code of 6798 because they have a unique governance structure.

Based on the 64 attributes, eight sub-categories are analyzed: 1) board of directors, 2) audit, 3) charter/by-laws, 4) anti-takeover provisions, 5) ownership, 6) executive and director compensation, 7) progressive practices, and 8) director education. *Board* attributes attempt to capture the aspects of the board of directors that relate to board independence, composition of committees, size, transparency and how work is conducted; *Audit* includes questions regarding independence of the audit committee and the role of auditors; *Charter* refers to anti-takeover provisions, capital structure rules and how changes can be made to these rules; *Ownership* is

concerned with the ownership structure of the firm by directors and the guidelines thereof; *Compensation* deals with executive and director compensation on issues related to options, stock ownership and loans and how these types of compensation are determined and monitored; and *Progressive* practices include questions related to board appointments, board review, external advisors and CEO succession plan.

Table 1 provides a description of the minimally accepted criterion used by ISS for each of the 64 governance attributes. The governance attributes are arranged by sub-categories. There are several minimally accepted standards that are being met by most firms. For example, by 2005, 10 of the 64 criterion are being met by more than 90 percent of the firms in our sample. These include: all directors attended 75% of board meetings or had a valid excuse, CEO serves on the board of two or fewer companies, consulting fees paid to auditors are less than audit fees paid to auditors, single class of stock (no dual class), cash-out statute does not exist, interlocks among compensation committee members, board has express authority to hire its own advisors, and shareholder proposals are not ignored.

We also examine changes in governance practices from 2001 to 2005 and also from 2003 to 2005. We do not report the comparisons for 2001 to 2005 because the number of firms covered by ISS more than doubled in 2003 with proportionally more small companies being included. Therefore, we believe the samples are not directly comparable. Some of the largest changes in governance practices are related to the new regulations. SOX places much more responsibility and accountability on the board and therefore it is not surprising to see that almost 91% of companies give boards the authority to hire their own advisors. In the beginning of 2003 only 5% of companies gave this authority. By 2005 many more companies had outsider directors meetings without the CEO, companies disclosed auditor rotation policies, consulting

fees paid to auditors were less than audit fees and companies started adopting governance guidelines. Some of these practices were almost non-existent in 2003. We can conclude that certain governance standards are now being met by a very large proportion of firms; certain standards were almost non-existent even in 2003; and a large number of companies satisfied some of the standards mandated by new regulations.

ISS uses proprietary weights to construct the CGQ. We obtain details on the 64 individual attributes that ISS used to construct the composite CGQ. We create a composite governance index, Gov_{64} , for each company for each time period. Gov_{64} is based on assigning a value of one to a governance attribute if the company meets minimally acceptable guidelines else a value of zero is assigned. Similar to GIM, Brown and Caylor (2005), Bebchuk, Cohen and Ferrell (2004), Bebchuk and Cohen (2005) each of the 64 attributes is assigned equal weight and we sum the dummy variables. The correlation between our governance index Gov_{64} and ISS's CGQ index varies from 0.64 to 0.72 during our sample years. We also calculate a governance score for each of the eight sub-categories.

In order to examine the new regulations, we create a composite index, REG , for the six new regulations. Each new regulation is assigned a value of one if the firm satisfies the regulation else the value is zero. The dummies for these six governance attributes are summed to create an index of new regulations, REG , which can have a minimum value of zero and a maximum value of six. In any time period if a firm does not meet any of the six new regulations then REG has a value of zero. The value of REG for a firm that meets all the six new regulations will be six. As discussed earlier, several firms met many of these requirements even before they were mandated by new regulations. Next, we examine the relation between the governance attributes and firm value.

IV. Governance and Firm Value

The governance attributes adopted by firms may vary by firm characteristics as well as industries. Therefore we next examine variations in governance across firm size and industries.

IV.A. Differences in Governance across Firm Size

We divide the sample into deciles based on 2004 market capitalization in order to examine the differences in governance across firm size. Panel A of Table 2 shows the composite governance score and also the score for each of the eight sub-categories for each size group. Gov_{64} has a score of 31.34 for all the firms in our sample. There is a monotonic increase in the governance score with the smallest firms having a score of 26.54 and the largest group of firms having a score of 37.86. The five smallest deciles have scores that are significantly less than the mean for the full sample at the 1% level while the four largest deciles have scores that are significantly higher than the average for the sample.

The increasing monotonic pattern is generally observed for the sub-categories, *Board*, *Audit*, *Compensation*, *Progressive* and *Ownership*. The pattern that larger firms have higher governance scores is not necessarily observed for the remaining three categories of charter and by-laws, state of incorporation, and director education. Based on these results, it is not surprising that Linck, Netter and Yang (2005) find the costs of compliance to be much higher for smaller firms. We find that even at the end of 2004, major differences continue to exist between the governance of small and large firms. These results suggest that complying with new governance regulations can be a very costly burden for small firms. It might also result in fewer smaller companies going public.

IV.B. *Differences in Governance across Industries*

The sample of 5,259 firms in 2004 is divided into 24 ISS identified industries and governance scores for each industry are reported in Panel B of Table 2. The four largest industries in our sample consist of: banks (599), software (530), technology (436) and health care (433) companies. The t-statistic indicates whether the composite governance score, Gov_{64} , for the industry is significantly different from the overall sample mean of 31.34. Industries that have a composite governance index significantly higher from the sample average include utilities, real estate, insurance, materials and capital goods. The governance score is significantly lower than the sample average for software, telecommunications, and banks.

We also estimate a multivariate regression (not reported) with the composite governance score, Gov_{64} as the dependant variable and industry dummies as independent variables in order to examine whether governance varies across industries. After controlling for several firm-specific variables, many of the industry dummies are still significant implying cross-sectional differences in governance based on industry characteristics. Industries such as utilities and pharmaceuticals and biotechnology have a positive and significant coefficient. It can be concluded that 1) governance mechanisms vary across industries; 2) regulated industries tend to have stronger governance; 3) composite governance scores do not necessarily match along sub-categories of governance. Surprisingly, banks are regulated but they tend to have lower governance scores. This may be because banks are more focused on a different set of regulatory requirements. Based on these findings, we control for firm size and industry differences when analyzing the relation between governance and firm value. The new regulations are mandated across the board

for all publicly traded companies and do not account for differences across firm size or across industries.

IV. C. Composite Governance and Value

Similar to previous work in the corporate governance literature (see, GIM (2003), Demsetz and Lehn (1985) and Morck, Shleifer and Vishny (1989)) we use Tobin's Q as the measure of valuation. We use both firm Q, denoted as Q , and industry-adjusted Q (adjusted by industry median), denoted as $Q-adj$, as our measures of the dependant variable. Q is defined as ((total assets + market value of equity – total common equity –deferred taxes)/ total assets). $Q-adj$ is industry median-adjusted using the 24 ISS defined industries. The following model is estimated:

$$Q_i = \alpha + \beta G_i + \gamma F_i + e_i, \quad (1)$$

Where, G_i is a proxy for firm-specific governance, and F_i are a set of firm characteristics. The firm characteristics included for control purposes are log of book value of assets ($SIZE$), inclusion in the S&P 500 index ($SP500$), dividend yield ($YIELD$) and sales growth ($SGROWTH$). These variables have been found to be associated with value (see for example, GIM (2003), Shin and Stulz (2000), Morck and Yang (2001)). If the dependent variable is Q then we also include industry dummies as independent variables. However, in estimations that use the industry-adjusted, $Q-adj$, industry dummies are not included. Similar to prior work, we winsorize extreme (1st and 99th) percentiles of Tobin's Q. For robustness, the analysis is repeated without winsorizing.

Table 3 summarizes the results for December 2004. The accounting data is not available for 2005 therefore the analysis that requires accounting data stops at 2004. Columns 1-2 use Q

as the dependent variable and also include industry dummies (coefficients for industry are not reported in the table). Columns 3-4 use industry-adjusted, Q_{adj} , as the dependant variable and do not include industry dummies. Columns 1 and 3 present the reduced form model that includes governance, measured by the composite governance index, Gov_{64} , and $SIZE$, measured as log of assets, as the two explanatory variables. Columns 2 and 4 also include the other three firm characteristics: S&P500, $YIELD$ and $SGROWTH$. We use White (1980) robust standard errors to account for potential heteroskedasticity.

The coefficient on our governance index is positive and statistically significant at the 1% level in all four models in Table 3. The mean and median values of Q for our sample are 1.56 and 1.13, respectively. A coefficient of 0.04 on Gov_{64} implies that if a firm adopts just one additional governance attribute then the Tobin's Q for the median firm increases by 4%. Therefore the relationship is not just statistically significant but is also economically significant. We can conclude that firm value is positively associated with firm-specific corporate governance.

Not surprisingly, the coefficient on $Size$ is negative and significant in all four models. Consistent with Morck and Yang (2001) we find that inclusion in the S&P 500 is associated with higher valuation. Our governance index is positive and significant in all four models. Therefore, we can conclude that firm value is positively associated with firm-specific corporate governance, firm size, and with inclusion of firms in the S&P 500. We find no significant relation with dividend or sales growth. The results remain the same if we do not winsorize Q , however, using the winsorized sample does result in a considerably higher R^2 in the range of 12%-22%. The results are similar for 2003 and are not reported. In addition to the control variables included in Table 3, for robustness in unreported regressions, we also include other control variables used in

the literature: capital expenditure to assets, return on assets, debt/assets and R&D to sales. The governance results remain the same.

We repeat the analysis using the GIM shareholder rights governance index for our sample period and do not find it to be significant.⁷ Our results may be different for a number of reasons: 1) Our governance index is much broader than GIM's shareholder index; 2) using the GIM index reduces our sample by more than half because GIM's index is available for far fewer firms; 3) the time periods in the two studies are different, we are examining data for a different and more recent time period; and 4) based on the objective of each paper, the methodologies used are different.

IV.D. Governance Sub-Categories and Value

Next, in order to isolate the impact of each of the subcategories we replace the composite governance index Q with each of the eight subcategories: *Board*, *Audit*, *Charter*, *State Anti-Takeover*, *Compensation*, *Progressive*, *Ownership*, and *Education*. Based on the eight subcategories, Table 4 reports results for eight different models in which the dependent variable is Q -adj. Six of the eight sub-categories have a positive and significant association with firm value. The coefficients on *Board*, *Audit*, *State*, *Compensation*, *Progressive* and *Ownership* are positive and significant at 1% level. However, governance mechanisms related to state provisions and director education are not significant. This shows that certain aspects of governance have a significant impact on firm value while others are not as important for value as measured by Tobin's Q . These findings are consistent with those of Bebchuk, Cohen and Ferrell (2004) and Brown and Caylor (2005) showing that only a small subset of factors are of significance.

⁷ The results are not reported here.

Similar to earlier findings, *Size* is negative and significant in all estimations. Inclusion of a firm in the S&P 500 is also significant and positive in all models. For robustness the analysis is separately repeated, 1) without winsorization of Tobin's Q ; 2) with Q instead of $Q-adj$ as the dependant variable; and 3) for two other periods, March and December 2003 which is prior to the implementation of new regulations. The results are consistent under various specifications and reinforce the idea that certain aspects of governance are more important than others.

In summary, we have so far shown that governance is important for firm valuation which is consistent with previous work. We have also shown that there are differences in governance across firms and there is a significant industry component to corporate governance. The difference in governance across industry is important since it may indicate that policy makers may want to consider the implications of governance decisions at the industry level rather than across all firms. Finally, we have shown that sub-categories of governance have a significant impact on firm value after controlling for the industry effect. Next, we focus on an examination of the six governance attributes that were mandated by new regulations and are also included in our set of 64 governance attributes.

V. New Regulations

The main objective of this paper is to analyze whether the relevant governance attributes that were mandated by the new regulations of 2002 and 2003 are relevant for firm valuation. As discussed earlier, due to a series of corporate scandals, such as Enron and WorldCom, the U.S. Congress and the stock exchanges imposed new rules and regulations on publicly-traded firms. The Securities and Exchange Commission approved the exchange rules and played a major role in the implementation of SOX. SOX was voted and approved in July 2002. SOX imposed new

requirements on corporate directors, corporate executives, and requires more detailed financial disclosure as discussed in detail by Chhaocharia and Grinstein (2005). Stock exchanges imposed additional rules that require: majority independent directors with a revised and more stringent definition of independence; the compensation, nominating and audit committees are required to be composed of only independent directors; restrictions are put on the composition of the audit committee; boards are required to conduct separate executive sessions without the presence of management; and companies are required to have corporate governance guidelines. The exchange rules were approved by the SEC in November 2003.

Six governance attributes targeted by the new regulations are part of the ISS dataset and therefore we are able to study these attributes before and after the new regulations went into effect. Table 5 shows the number of companies that met these requirements over the period, 2002-2005. In 2002, 562 firms (13.27%) did not meet any of the six requirements and only 44 firms that made up about 1% of the sample met all the six requirements. By May 2005, only 81 firms did not meet any of the requirements and 1,351 firms met all the requirements. An examination of Table 5 shows that over the period 2002 to 2005 firms gradually complied with the requirements. As discussed earlier, the ISS criteria tend to be more stringent and are not exactly the same as those mandated by the new regulations. In addition, some firms were allowed additional time (beyond May 2005) to comply with the new regulations.

V.A. *New Regulations and Firm Value*

In order to directly examine the relation between these new regulations and firm value we follow an approach similar to Bebchuk and Cohen (2005). Each governance attribute is assigned a value of one if the firm satisfies the new regulation else the value is zero. The dummies for the

six attributes are summed to create an index of new regulation, *REG*, which can have a minimum value of zero and a maximum value of six. In order to control for the remaining governance attributes, we create an index, *Gov₅₈* of the remaining 58 (64-6) attributes that equals (*Gov₆₄* - *REG*). We have therefore divided our original *Gov₆₄* index into two parts, namely, the new regulations, *REG*, and all the remaining attributes, *Gov₅₈*.

The correlation between *Gov₅₈* and *REG* is 0.56 in 2004. This positive correlation implies that firms not only complied with the required new regulations but they were also more likely to have better governance in other areas not mandated by regulations. We also estimate at the change in *Gov₅₈* and the change in *REG* from 2002 to 2004. The correlation between ΔGov_{58} and ΔREG is 0.43. This positive correlation again suggests that firms not only adopted new regulatory changes but at the same time they also improved governance in other areas not mandated by regulation.

Table 6 shows the relation between firm value measured as industry-adjusted Tobin's *Q*, and the two governance variables, *Gov₅₈* and *REG*, as explanatory variables.⁸ For each year, 2002, 2003 and 2004, two models are estimated. Far fewer companies are covered by ISS in 2002 than during 2003-2005. Therefore in order to make our results comparable for 2002, we use governance indexes for March 2003 and accounting data from December 2002 so that a similar set of companies are compared across the years. We assume that the governance indexes do not change much between December 2002 and March 2003. For each year three models are estimated: the first model includes the new regulations index, *REG*, and also includes *SIZE* as a control variable; the second model also includes *Gov₅₈*. In addition, the third model includes *SP500*, *SGROWTH* and *YIELD* as other control variables.

⁸ The analysis was also repeated using *Q* instead of *Q-adj* and the results are similar and not reported.

There is a positive and significant relation between firm value and the index of new regulations, *REG*, in 2002 and 2003 in each of the three models. This suggests that in the period before the rules became mandatory a positive relation existed between the new rules and firm value. This positive association might have always existed or it could have been the result of new attention focused specifically on these six governance attributes because they were potential targets for new regulation. The analysis was repeated using *Q* instead of *Q-adj* and the results remain unchanged and are not reported. Based on that analysis the increase in Tobin's *Q* of a firm that moved from adopting none of the six regulations to adopting all six regulations would be 0.36. The median *Q* for our sample is 1.13, therefore the change would imply a 32% increase in *Q*. The findings imply that the results are not only statistically significant but are also economically significant.

By the end of 2004 many more companies were fulfilling the requirements mandated by the new regulations and the cross-sectional differences based on new regulations declined. For 2004 the second and third models that include *Gov₅₈* and other firm-level control variables the coefficient on *REG* is not significant. However, it is positive and significant in the first model without the additional control variables.

The remaining governance attributes, measured by *Gov₅₈*, are positive and statistically significant in five of the six models. Based on these results we can conclude that there was a positive and significant relation between an index that measures new regulations and firm value during 2002 and 2003, the period before the rules became mandatory. The market put higher values on companies that had voluntarily adopted these measures. This suggests that from a market perspective the new regulations targeted some relevant governance attributes. In addition to the new regulations, the market continued to value other governance attributes that were not

required by regulation. In 2004 as more firms started complying with the new regulations and also improved other governance attributes not mandated by law, but captured by Gov_{58} , the effect of new regulations is reduced. It is again important to point out that our measure of new regulations is based on the ISS data and is not exactly the same as that mandated by regulations. The ISS measures are more stringent.

In studies of corporate governance there is always concern about endogeneity in that it could be the case that firms with high Tobin's Q have good governance rather than the reverse. The differences in year-by-year results above suggest that endogeneity is less of an issue in our analysis. In our sample we have data from 2002 to 2004, thus we can use the time series to test for endogeneity. Since relative governance does not change much over time, especially over such a short period of time, the assumption is that the governance in 2002 should be exogenous with the valuation in 2004. Therefore we address endogeneity by running a regression using firm value, Q, from 2004 as the dependent variable, and the governance attributes, Gov_{64} from 2002 as the explanatory variables. The model also includes other firm-level exogenous control variables for 2004. We find that coefficient of Gov_{64} for 2002 is significant. If governance in 2002 is associated with firm value in 2004, then governance and value are not endogenous. The analysis is repeated using governance attributes from 2003 and similar results are found. These results again suggest that endogeneity is less of an issue in our study. The results are not reported here. We will discuss this issue further in the robustness section.

V.B. *Changes in Governance and Firm Value*

In addition to *REG*, we estimate an alternative measure of compliance with new regulations, *GAP*. *GAP* is the proportional increase in *REG* needed to reach regulatory

compliance. In order to determine the extent of the penalty for firms that are further away from meeting all regulations we construct *GAP*. This proportional measure is different from using *REG* because *REG* only captures the number of regulations for which the firm is in compliance. This distinction is an alternate measure that captures the specific effects of compliance with new regulation across a continuous scale.

$$GAP = (7-NREG)/NREG; \text{ and } NREG \text{ is } (1+REG).$$

As discussed earlier, *REG* is an index of new regulations calculated by summing the six governance provisions that were mandated. A one has been added to *REG* to avoid dividing by zero. The maximum value of *GAP* can be six and the minimum value can be zero. Firms that do not meet any of the six regulatory provisions in any year have a *GAP* value equal to six and firms that meet all the six provisions have a *GAP* value of zero. For each year, 2002, 2003 and 2004, we estimate three models with Tobin's Q as the dependent variable and *GAP* as the measure of the gap from complying with new regulations. In the reduced models with *GAP* and *SIZE* as the explanatory variables the coefficient of *GAP* is negative and significant in 2002 and 2003 as shown in Table 7. The coefficient of *GAP* is negative and significant in each of the three models in 2003. This implies that the farther a firm is from complying with the new regulations the lower is Tobin's Q. In 2004 as firms converge towards compliance the coefficient is no longer significant in any of the three models for 2004. These results are consistent with those obtained earlier using the measure *REG*.

In addition to annual regressions, we also present results of pooled regressions in Table 8. Columns 1 & 2 of Table 8 report OLS estimates which are White (1980) robust to account for potential heteroskedasticity, and columns 3 & 4 provide results with firm fixed effects. In the first column, the reduced model is reported with *Gov₅₈* and *SIZE* as the control independent variables. Column 2 in addition includes other firm-specific attributes. In both models the coefficient of *GAP* is negative and statistically significant. The coefficient of *Gov₅₈* is positive

and statistically significant at the 1% level. The results indicate that firms that were far off from adopting governance attributes required by new regulations had lower valuations.

We next run regressions using firm fixed effects in order to control for unobserved firm heterogeneity that remains constant over the 2002-2004 period. The fixed effect regressions, reported in columns 3 and 4 of Table 8, examine the effect on firm value of changes that firms made in governance during the time period. *GAP* should decrease over time as firms adopt new governance standards in order to comply with new regulations. As columns 3 and 4 indicate, in the firm fixed effect regressions, the coefficient values for the *GAP* variable remain negative and statistically significant at the 1% level. Other governance attributes captured by *Gov₅₈* are positive and statistically significant at the 10% level in the firm fixed effect regressions. These results suggest that, 1) the farther firms were from complying with new regulations the lower their firm value, and 2) a positive relation exists between firm value and other governance attributes not mandated by regulation.

In order to further examine the changes before and after the new regulations, we create a dummy variable *DPOST* that equals one if the period is post-regulations else the value of *DPOST* is zero. In the results reported, the post-regulation period is considered to be 2004 and the pre-regulation period is 2002 and 2003.⁹ The dependent variable is Tobin's Q. In addition to *DPOST*, in column 1 of Table 9 we include *GAP* and *DPOST* GAP* as explanatory variables. In the pre-regulations period firms may have voluntarily adopted the governance attributes that were later mandated by regulation. The coefficient on *GAP* is negative and statistically significant at the 1% level. This implies that firms that did not voluntarily adopt the governance attributes were valued lower by the market during the pre-regulation period. By examining the

⁹ For robustness we also repeat the analysis by defining 2003 and 2004 as the post-regulation period. The results are essentially the same and are not reported.

net effect on the coefficient of *GAP* (-0.03) and the coefficient on *DPOST* GAP* (0.02) one can see that the impact of not adopting the governance attributes is much lower in the post-regulations period. The same conclusion can be reached by analyzing the coefficients on *REG* and *REG*DPOST*. In the pre-regulation period the coefficient of *REG* is positive and statistically significant at the 1% level. But in the post regulation period the net effect of the coefficient on *REG* (0.08) and *REG*DPOST* (-0.07) is far less. Columns 3 & 4 report results with firm fixed effects and the results are similar.

One interesting result is that in 2004, even though there are some firms that still did not meet the regulations, there appears to be no penalty for the firms that did not meet the new regulations. To examine this phenomenon we evaluated those firms that did not meet the regulations by the deadline in 2004. It turns out that the most common denominator in these firms is firm size. To test this directly we separate firms into deciles and use the bottom three deciles as small firms and the top three deciles as large firms. As expected there is little cross-sectional difference in the large firm sample but there is still weak cross-sectional difference in the small firm sample. Overall, the results indicate that the new regulations addressed important areas of governance but when we look at small firms that did not meet the regulations the penalty is much smaller if at all. This could indicate that a one-size-fits-all approach is not appropriate for governance and firm level characteristics are important.

V.C. *New Regulations and Board Independence*

Next, we attempt to identify which of the six governance attributes included in the new regulations index were most relevant by estimating six different regressions. The annual analysis of Table 6 is repeated by replacing the index of new regulations, *REG*, by each of the six

separate governance provisions, REG_1-REG_6 . We find that no single regulation dominates consistently instead it is the cumulative effect that is powerful. The results are not reported here. We also repeat the analysis by including all six individual regulations in the same model and again find that no single regulation dominates consistently across years.

The new regulations only require that the board be composed of majority independent directors. But we also have more detailed information on board independence: we know whether the board consists of greater than or equal to 50% or 67% or 75% or 90% independent board members. We replace the dummy associated with this regulation that uses the 50% cutoff with additional dummies that capture other cutoffs. In 2003 both the 50% and 67% cutoffs are positive and significant. After the regulations have been mandated, in 2004 in the reduced model the 50% cutoff is negative and significant at the 10% level, the 67% cutoff is positive and significant at the 10% level, and the 75% and 90% cutoff is positive and significant at the 5% level. The results are not reported here but they suggest that after the regulations mandated the 50% requirement, companies that had an even higher proportion of board independence were valued higher.

VI. Robustness

Previously we addressed the issue of endogeneity by using governance in 2002 to predict the firm value in 2004. This shows that governance and value are not endogenously determined. It may be argued that because we are using a relatively short period of time and the firm management is likely to remain the same, this is not a strong enough test. For robustness in this section we conducted a 2SLS analysis to more directly test for endogeneity. In the first stage we use the exogenous variable SIZE, SP500, and SGROWTH to predict GOV_{64} . We then use the

control variables and the predicted GOV_{64} values as the independent variables in the second stage. In results not shown, this is supportive of the previous finding of no endogeneity in governance and firm value.

For another test of endogeneity, we again make use of the time series data. In 2002, firms did not have to meet the new regulations, therefore there should not be any association between the REG variable in 2002 with the Q in 2004. On the other hand, there should still be significance between the other governance attributes, namely the GOV_{58} variable in 2002 and Q in 2004, since relative governance does not change over time. When we run the regression in Table 5 with 2002 GOV_{58} and REG along with 2004 exogenous variables we find that as expected the 2002 GOV_{58} is significant but the REG is not. This again shows that endogeneity is not an issue in the results.

For robustness, we combine the data for 2003 and 2004 and introduce dummy, *DYEAR*, that equals one if the year is 2004 and zero otherwise. *DYEAR* is interacted with each explanatory variable. This analysis also shows that the relation between new regulations and firm value decreases over time. The results are not reported here. Therefore, as expected, regulations reduced cross-sectional differences across firms.

VII. Conclusions

Attention on the quality of corporate governance has increased substantially over the past several years driven by a number of corporate scandals. These scandals have driven the U.S. Congress as well as stock exchanges to implement certain corporate governance rules that are targeted at investor protection and strengthening internal control procedures. This has resulted in

heated debate over the costs and benefits of the new regulations and whether they were needed or if the market was quite capable of addressing these issues.

This paper examines the relation between the new regulations and firm value. First, the study shows that corporate governance is important for firm value and supports prior work on the value of governance. Second, the paper finds that there are statistically significant cross-sectional differences in governance at the firm and the industry level. For example, smaller firms have very different governance structures than larger firms. Therefore, adopting the new regulations will be far more expensive for smaller firms than larger firms. This raises the question of whether the one-size-fits-all approach to governance is appropriate. Third, the paper shows that new regulations mandated by Congress and exchanges were associated with higher firm value. These governance attributes are reflected in the valuation of firms that adopted them voluntarily. The results are statistically and economically significant. In this sense, our findings suggest that the new regulations did target relevant governance attributes. However, the analysis also indicates that the markets were already doing their job and rewarding firms that had better quality governance. Therefore, it is not clear that new regulations were needed. As expected, relative to the pre-regulations period, in the post-regulations period the relation between governance attributes addressed by regulation and firm value is much weaker.

We also cannot rule out the fact that more valuable firms opt for better governance. As discussed by Bebchuk and Cohen (2005), simultaneity issues make it difficult to interpret the results with regard to causal links. However, the paper suggests that better governance causes and not merely reflect higher firm value. Our results are consistent with their conclusions. We also recognize that Congress and the exchanges mandated new regulations to protect individual

investors and improve transparency and accountability in U.S. markets. Therefore, it is possible that governance attributes unrelated to firm valuation are important for other purposes.

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Figure 1
Percentage of Firms Meeting the Six New Regulations

Board Independence reflects the provision that the board must consist of a majority of independent directors. *Executive Session* reflects the provision that non-management directors must have an executive session without management. *Nominating Committee* reflects the provision that a nominating committee must have only independent directors. *Compensation Committee* reflects the provision that a compensation committee must have only independent directors. *Audit Committee* reflects the provision that an audit committee must have only independent directors and a minimum of three members. *Governance Guidelines* reflects the provision that firms must adopt corporate governance guidelines.

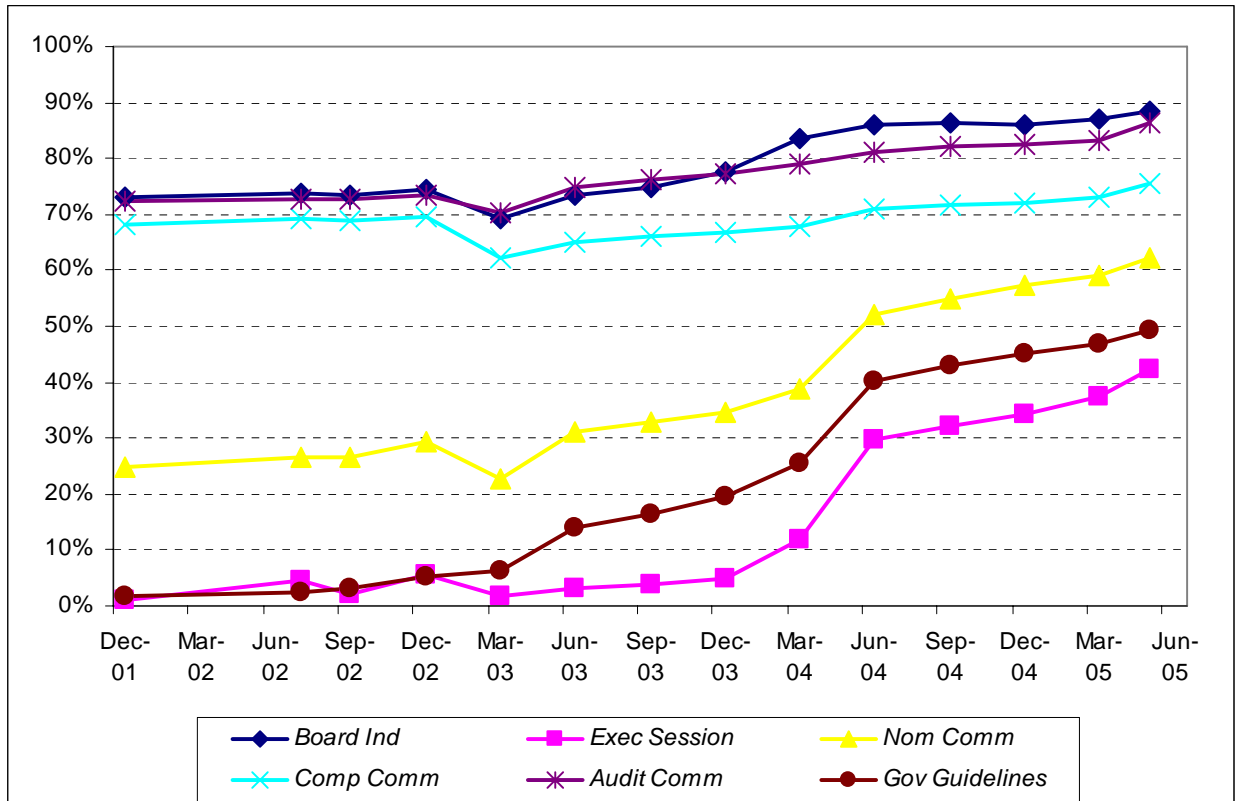


Table 1
Firms Satisfying Acceptable Governance Standards

The 64 governance attributes are divided into eight sub-categories: Board, Audit, Charter, State, Compensation, Progressive Practices, Ownership and Director Education. For each category we report the percentage of firms that satisfy the minimally acceptable governance standard. The numbers are reported for 2003 and 2005. There are 5156 firms in the 2003 sample and 5397 firms in the 2005 sample.

Minimally Acceptable Corporate Governance Standard	% of firms satisfying minimum governance standard		
	2003	2005	% Change (05-03)
BOARD			
1. All directors attended 75% of board meetings or had a valid excuse	93.0%	99.8%	7.3%
2. CEO serves on the boards of two or fewer public companies	95.9%	98.4%	2.6%
3. Board is controlled by more than 50% independent outside directors	69.3%	88.4%	27.6%
4. Board size is at greater than five but less than 16	81.1%	82.4%	1.5%
5. CEO is not listed as having a related-party transaction	75.3%	81.3%	8.0%
6. No former CEO on the board	81.6%	78.3%	-4.1%
7. Compensation committee comprised solely of independent outsiders	62.1%	75.4%	21.4%
8. Chairman and CEO are separated or there is a lead director	52.6%	73.8%	40.3%
9. Nominating committee comprised solely of independent outsiders	22.6%	62.2%	175.4%
10. Outsider controlled board or board controlled by 50% to 75% of independent outsiders with officer and director ownership between 5% to 30%	45.5%	59.8%	31.3%
11. Governance committee exists and met in the past year	16.2%	55.0%	239.2%
12. Shareholders vote on directors selected to fill vacancies	33.6%	53.0%	57.8%
13. Governance guidelines are publicly disclosed	6.1%	49.3%	701.3%
14. Annually elected board (no staggered board)	44.5%	47.3%	6.3%
15. Directors are subject to stock ownership requirements	4.6%	14.2%	211.8%
16. Executives are subject to stock ownership guidelines	6.7%	12.1%	80.3%
17. Policy exists on outside directorships (four or fewer boards is the limit)	0.6%	9.3%	1398.7%
18. Shareholders have cumulative voting rights	7.9%	7.6%	-4.2%
19. Shareholder approval is required to increase/decrease board size	20.2%	3.8%	-81.3%
20. Qualifies for proxy contest defenses combination points	1.0%	1.6%	67.7%
21. Director term limits exist	0.6%	1.3%	102.6%
22. Board controlled by 50% or more independent outsiders and all committees are comprised solely of independent outsiders	14.7%	1.3%	-91.4%
AUDIT			
23. Consulting fees paid to auditors are less than audit fees paid to auditors	64.0%	98.0%	53.0%
24. Audit committee comprised solely of independent outsiders	70.3%	86.2%	22.7%
25. Auditors ratified at most recent annual meeting	56.4%	65.5%	16.2%
26. Policy disclosed regarding auditor rotation	2.8%	45.7%	1548.1%
CHARTER			
27. Single class, common	91.9%	94.1%	2.5%
28. Majority vote requirement to approve mergers (not supermajority)	59.4%	63.5%	6.9%
29. Shareholders may call special meetings	39.6%	44.3%	11.9%
30. Majority vote requirement to amend charter/bylaws (not supermajority)	42.9%	44.2%	2.9%
31. Poison pill with a trigger \geq 20%	26.1%	24.4%	-6.8%
32. Shareholder may act by written consent	20.4%	23.9%	16.9%
33. Company is not authorized to issue blank check preferred and either has no poison pill or a pill that was shareholder approved.	10.5%	11.2%	7.1%
34. Poison pill with a qualified offer clause	3.0%	7.5%	151.3%

35. Poison pill with TIDE provision	1.6%	4.3%	171.1%
36. Board cannot amend bylaws without shareholder approval or can only do so under limited circumstances	2.0%	2.1%	7.7%
37. Poison pill with sunset provision	0.3%	0.4%	44.5%
STATE			
38. Incorporation in state w/o a control share cash-out statute, or with a control share cash-out statute but company has opted out	97.5%	98.1%	0.6%
39. Company has no pill or state does not endorse poison pills	88.4%	89.4%	1.2%
40. Incorporation in a state without stakeholder laws, or independent directors comprise 75% or more of the board	77.7%	79.3%	2.2%
41. Incorporation in state w/o a control share acquisition statute, or with a control share acquisition statute but company has opted out	77.3%	78.8%	1.9%
42. Incorporation in state with a fair price provision	32.1%	31.5%	-1.9%
43. Incorporation in state w/o a freezeout provision, or with a freezeout but company has opted out	14.7%	16.0%	9.3%
44. Incorporation in state without any state anti-takeover provisions	4.0%	3.8%	-5.4%
COMPENSATION			
45. No interlocks among compensation committee members	98.6%	100.0%	1.4%
46. Non-employee directors participate in pension plan	96.6%	98.0%	1.5%
47. No option repricing within last three years	94.3%	91.6%	-2.8%
48. Directors receive all or a portion of their fees in stock	84.5%	84.7%	0.2%
49. All stock-incentive plans adopted with shareholder approval	92.4%	84.3%	-8.7%
50. The last time shareholders voted on an option plan, ISS deemed the cost reasonable	62.9%	69.8%	11.0%
51. Company does not provide any loans to executives for exercising options	82.0%	60.9%	-25.8%
52. Repricing prohibited	15.5%	31.9%	105.9%
53. Options grants align with company performance and reasonable burn rate	20.3%	24.6%	21.0%
54. Company expenses stock options	2.6%	9.6%	274.9%
PROGRESSIVE PRACTICES			
55. Board has the express authority to hire its own advisors	5.3%	90.7%	1624.9%
56. Performance of the board is reviewed regularly	6.8%	61.0%	798.8%
57. Board approved succession plan in place for the CEO	5.4%	44.9%	732.3%
58. Outside directors meet without CEO and disclose number of times met	1.7%	42.4%	2440.6%
59. Directors are required to submit resignation upon a change in job	4.1%	20.6%	398.8%
60. Mandatory retirement age for directors	7.8%	18.2%	133.8%
OWNERSHIP			
61. Does not ignore shareholder proposal	99.6%	99.2%	-0.4%
62. All directors with more than one year of service own stock	93.1%	87.2%	-6.3%
63. Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding	69.1%	72.3%	4.5%
DIRECTOR EDUCATION			
64. Majority of directors have participated in a director education program.	0.1%	2.2%	2694.4%

Table 2
Governance Scores by Firm Size and Industry

Mean governance scores are reported by firm size (market capitalization) in Panel A and by industry in Panel B. *Gov₆₄* is the governance index based on summation of the 64 governance attributes that are considered to be minimally acceptable. *Board*, indicates the board of directors attributes; *Charter* is the charter and by laws attributes; *Audit* is audit-related attributes, *State* is provisions of the state of incorporation, *Compensation* Relates to executive and director compensation, *Progressive* are qualitative factors based on progressive practices, *Ownership* is officers and directors ownership of the firm, *Education* is director education. N is the number of firms in the industry. The t-statistic measures the difference between the composite governance rating *Gov₆₄*, for the group versus the mean for all firms. *, **, *** reflects the significance at the 10%, 5% and 1% levels.

Panel A: Governance Scores by Firm Size

	<i>Gov₆₄</i>	<i>Board</i>	<i>Audit</i>	<i>Charter</i>	<i>State</i>	<i>Comp.</i>	<i>Progressive</i>	<i>Ownership</i>	<i>Education</i>	<i>t-stat</i>
<i>Smallest</i>	26.54	8.16	2.42	2.98	4.02	5.71	0.89	2.35	0.00	-28.61***
<i>Size 2</i>	28.04	8.88	2.66	2.93	3.89	5.82	1.38	2.47	0.00	-20.75***
<i>Size 3</i>	29.15	9.43	2.68	2.97	3.97	5.87	1.68	2.54	0.00	-13.98***
<i>Size 4</i>	29.86	9.64	2.72	2.93	3.91	6.07	1.92	2.65	0.02	-9.46***
<i>Size 5</i>	31.19	10.16	2.80	3.11	4.03	6.15	2.29	2.63	0.01	-2.97***
<i>Size 6</i>	31.97	10.58	2.95	2.92	3.94	6.30	2.64	2.62	0.02	0.76
<i>Size 7</i>	33.34	11.27	2.88	2.94	3.92	6.45	3.18	2.68	0.02	7.00***
<i>Size 8</i>	34.41	11.51	2.93	2.95	3.95	6.64	3.69	2.70	0.04	11.19***
<i>Size 9</i>	35.66	12.03	3.07	2.82	3.92	6.91	4.11	2.74	0.05	17.49***
<i>Largest</i>	37.86	13.03	3.34	2.85	3.99	7.22	4.75	2.63	0.05	32.04***
<i>Total</i>	31.34	10.27	2.80	2.93	3.95	6.28	2.50	2.58	0.02	

Table 2 Continued

Panel B: Governance Scores by Industry

	<i>N</i>	<i>Gov</i> ₆₄	<i>Board</i>	<i>Audit</i>	<i>Charter</i>	<i>State</i>	<i>Comp.</i>	<i>Progressive</i>	<i>Ownership</i>	<i>Education</i>	<i>t-stat</i>
<i>Automobiles & Components</i>	77	30.92	10.18	2.61	2.90	3.92	6.34	2.64	2.32	0.01	-0.56
<i>Banks</i>	599	30.66	9.93	2.70	2.54	3.96	6.50	2.26	2.75	0.01	-3.44***
<i>Capital Goods</i>	380	31.92	10.59	2.67	2.92	3.82	6.57	2.74	2.58	0.02	1.93*
<i>Commercial Services</i>	224	30.75	9.98	2.75	2.94	3.94	6.25	2.34	2.53	0.02	-1.45
<i>Consumer Durables</i>	237	30.88	10.09	2.75	2.89	3.91	6.35	2.48	2.39	0.02	-1.18
<i>Diversified Financials</i>	110	32.04	10.56	2.96	2.86	3.99	6.30	2.92	2.42	0.02	1.25
<i>Energy</i>	195	32.24	10.50	2.81	2.94	4.08	6.47	2.82	2.58	0.04	2.13**
<i>Food & Staples Retailing</i>	45	32.60	11.02	2.89	3.04	3.76	6.58	2.84	2.44	0.02	1.58
<i>Food Beverage & Tobacco</i>	109	31.05	10.20	2.81	2.81	4.01	6.29	2.63	2.27	0.03	-0.44
<i>Health Care</i>	433	30.71	10.12	2.74	2.96	3.94	6.19	2.13	2.62	0.02	-2.48**
<i>Hotels Rest. & Leisure</i>	148	30.62	9.97	2.86	2.87	3.76	6.28	2.51	2.36	0.00	-1.5
<i>Household & Personal</i>	47	30.00	9.38	2.87	2.91	4.00	6.26	2.49	2.09	0.00	-1.57
<i>Insurance</i>	118	33.10	10.94	2.83	2.98	3.92	6.88	3.03	2.50	0.02	3.03***
<i>Materials</i>	236	32.63	10.66	2.83	2.89	3.96	6.68	2.96	2.63	0.03	3.23***
<i>Media</i>	133	30.95	10.05	2.77	2.93	4.04	6.30	2.50	2.37	0.00	-0.86
<i>Pharma. & Biotech.</i>	314	31.29	10.21	2.96	3.08	3.98	6.08	2.24	2.74	0.01	-0.17
<i>Real Estate</i>	210	33.59	10.85	3.00	3.18	3.62	7.01	3.26	2.64	0.02	5.55***
<i>Retailing</i>	235	31.30	10.09	2.87	2.83	3.95	6.46	2.60	2.50	0.00	-0.09
<i>Semiconductors</i>	149	32.15	11.02	2.95	3.13	4.24	5.51	2.53	2.75	0.02	1.94*
<i>Software & Services</i>	530	29.76	9.71	2.85	3.05	4.00	5.49	2.03	2.61	0.02	-7.63***
<i>Technology</i>	436	30.92	10.18	2.75	3.16	3.98	5.90	2.26	2.66	0.03	-1.59
<i>Telecomm. Services</i>	97	29.76	9.36	2.59	3.25	4.01	6.09	2.03	2.42	0.01	-2.94***
<i>Transportation</i>	82	32.37	10.85	2.62	2.82	3.91	6.52	3.15	2.48	0.01	1.58
<i>Utilities</i>	115	37.07	12.77	3.00	2.86	4.11	7.32	4.21	2.69	0.11	10.71***

Table 3
Governance and Firm Valuation

This table shows the relation between firm valuation, measured as Tobin's Q, and corporate governance for 2004. Q is Tobin's Q defined as ((total assets + market value of equity – total common equity – deferred taxes)/ total assets). $Q-adj$ is industry median-adjusted using the 24 ISS defined industries. Gov_{64} is the governance index based on summation of the 64 governance that are considered to be minimally acceptable. The control variables are: $SIZE$, natural log of assets; $SP500$, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; YLD is dividend yield; and $SGROWTH$ is sales growth. Columns 1 & 3 include only size as the control variable; columns 2 & 4 also include $SP500$, $YIELD$ and $SGROWTH$ for control purposes. Columns 1 & 2 include industry dummies for control but the coefficients are not reported here. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	Q	Q	$Q-adj$	$Q-adj$
Gov_{64}	0.05*** (7.24)	0.04*** (6.61)	0.04*** (7.35)	0.03*** (5.69)
$SIZE$	-0.38*** (13.30)	-0.46*** (13.71)	-0.34*** (14.26)	-0.39*** (14.18)
$SP500$		1.37*** (12.00)		1.19*** (12.04)
$YIELD$		-1.25 (1.05)		0.56 (0.52)
$SGROWTH$		0.01 (1.47)		0.01 (1.47)
$Constant$	3.16*** (10.23)	3.61*** (11.57)	1.11*** (7.09)	1.63*** (9.49)
Observations	4133	4046	4133	4046
R-squared	0.23	0.25	0.12	0.14
F test	58.71	51.43	103.85	45.65

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4
Governance Sub-Categories and Firm Valuation

This table shows the relation between firm valuation, measured as Tobin's Q, and corporate governance sub-categories for 2004. Tobin's Q is defined as ((total assets + market value of equity – total common equity – deferred taxes)/ total assets). The dependent variable, *Q-adj*, is industry median-adjusted using the 26 ISS defined industries. The eight governance sub-categories are: *Board*, *Charter*, *Audit*, *State*, *Compensation*, *Progressive*, *Ownership* and *Education*. The control variables are: *SIZE*, natural log of assets; *SP500*, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; *YIELD* is dividend yield; and *SGROWTH* is sales growth. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	<i>Board</i>	<i>Audit</i>	<i>Charter</i>	<i>State</i>	<i>Compens.</i>	<i>Progressive</i>	<i>Ownership</i>	<i>Education</i>
<i>Category</i>	0.05*** (4.00)	0.10*** (3.39)	-0.01 (0.30)	0.09*** (2.74)	0.06*** (2.75)	0.07*** (4.54)	0.10* (1.90)	0.19 (1.21)
<i>SIZE</i>	-0.37*** (14.04)	-0.36*** (14.28)	-0.35*** (14.09)	-0.35*** (14.13)	-0.36*** (13.97)	-0.38*** (13.85)	-0.35*** (14.09)	-0.35*** (14.10)
<i>SP500</i>	1.22*** (12.18)	1.24*** (12.12)	1.27*** (12.42)	1.27*** (12.45)	1.25*** (12.36)	1.21*** (12.18)	1.28*** (12.42)	1.26*** (12.43)
<i>YIELD</i>	0.47 (0.43)	0.55 (0.51)	0.35 (0.33)	0.51 (0.47)	0.04 (0.04)	0.6 (0.56)	0.3 (0.28)	0.36 (0.33)
<i>SGROWTH</i>	0.01 (1.51)	0.01 (1.55)	0.01 (1.56)	0.01 (1.52)	0.01 (1.54)	0.01 (1.57)	0.01 (1.53)	0.01 (1.55)
<i>Constant</i>	2.05*** (12.92)	2.15*** (13.02)	2.42*** (14.14)	2.05*** (10.75)	2.09*** (12.23)	2.39*** (15.68)	2.16*** (11.76)	2.40*** (15.59)
Observations	4046	4046	4046	4046	4046	4046	4046	4046
R-squared	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
F test	45.06	45.66	44.59	45.05	44.83	45.14	44.67	44.62

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5
Frequency of Firms Meeting New Regulations

Six new regulations are analyzed in the paper. The table shows the number of firms (# *Firms*) that meet 0, 1, 2, 3, 4, 5 or 6 of the new regulations. The numbers are also reported on a cumulative percentage basis (% *Cumulative*). In 2002, 562 firms did not meet any of the new regulatory requirements but by 2005 only 81 firms do not meet any requirement.

<i># of New Regulations Met</i>	2002		2003		2004		2005	
	<i># Firms</i>	<i>% Cumulative</i>	<i># Firms</i>	<i>% Cumulative</i>	<i># Firms</i>	<i>% Cumulative</i>	<i># Firms</i>	<i>% Cumulative</i>
0	562	13.27	364	8.2	216	4.74	81	1.91
1	559	26.48	424	17.75	261	10.48	166	5.83
2	856	46.69	742	34.47	468	20.76	324	13.48
3	1,358	78.77	1,211	61.75	728	36.75	496	25.19
4	680	94.83	959	83.35	1,060	60.03	1,044	49.85
5	175	98.96	578	96.37	775	77.05	773	68.1
6	44	100	161	100	1,045	100	1,351	100

Table 6
New Governance Regulations and Firm Valuation

This table shows the relation between firm valuation, measured as Tobin's Q, and new regulations mandated by Congress and the exchanges for 2002, 2003 and 2004. The dependent variable is *Q-adj*, industry median-adjusted using the 24 ISS defined industries. *REG* is an index of new regulations calculated by summing the six governance provisions that were mandated. *Gov₆₄* is the total governance index based on summation of the 64 governance that are considered to be minimally acceptable. Therefore, *Gov₅₈* is an index of the 64 total attributes minus the six new provisions. The control variables are: *SIZE*, natural log of assets; *SP500*, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; *YIELD* is dividend yield; and *SGROWTH* is sales growth. Columns 1, 3 & 5 include only *SIZE* as the control variable; columns 2, 4 & 6 also include *SP500*, *YLD* and *SGROWTH* for control purposes. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	2002			2003			2004		
	<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>	<i>Col.4</i>	<i>Col. 5</i>	<i>Col. 6</i>	<i>Col. 7</i>	<i>Col. 8</i>	<i>Col. 9</i>
<i>REG</i>	0.06*** (4.31)	0.04*** (2.90)	0.02* (1.69)	0.11*** (6.40)	0.07*** (3.97)	0.07*** (3.78)	0.05*** (2.75)	0 (0.05)	0.01 (0.57)
<i>Gov58</i>		0.02*** (3.22)	0.01 (1.51)		0.03*** (4.20)	0.01* (1.95)		0.05*** (6.99)	0.04*** (4.96)
<i>SIZE</i>	-0.06*** (5.71)	-0.07*** (6.06)	-0.11*** (8.24)	-0.21*** (12.21)	-0.23*** (12.39)	-0.28*** (13.61)	-0.30*** (13.83)	-0.33*** (14.21)	-0.39*** (14.15)
<i>SP500</i>			0.74*** (10.94)			0.98*** (11.29)			1.19*** (12.02)
<i>YIELD</i>			-0.67* (1.70)			-0.39 (1.52)			0.48 (0.45)
<i>SGROWTH</i>			0.14*** (3.89)			0.02** (2.36)			0.01 (1.46)
<i>Constant</i>	0.51*** (7.18)	0.16 (1.31)	0.55*** (4.40)	1.35*** (12.95)	0.80*** (5.52)	1.41*** (8.55)	2.04*** (14.88)	0.92*** (5.67)	1.55*** (8.63)
Observations	3742	3742	3702	3938	3938	3891	4133	4133	4046
R-squared	0.02	0.02	0.07	0.07	0.08	0.1	0.12	0.13	0.14
F test	18.7	15	26.49	74.63	51.41	36.13	99.91	69.37	38.09

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7
Gap in Regulatory Compliance: Annual Analysis

This table shows the relation between firm value, measured as Tobin's Q, and the gap in regulatory compliance. The dependent variable is Q_{adj} , industry median-adjusted using the 24 ISS defined industries. The gap in regulatory compliance is measured by GAP . GAP equals $(7-NREG)/NREG$ where $NREG$ is $(1+REG)$. REG is an index of new regulations calculated by summing the six governance provisions that were mandated. A one has been added to REG to avoid dividing by zero. Gov_{58} is an index of the 64 total attributes minus the six new provisions. The control variables are: $SIZE$, natural log of assets; $SP500$, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; $YIELD$ is dividend yield; and $SGROWTH$ is sales growth. Columns 1, 3 & 5 include only $SIZE$ as the control variable; columns 2, 4 & 6 also include $SP500$, YLD and $SGROWTH$ for control purposes. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	2002			2003			2004		
	<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>	<i>Col. 4</i>	<i>Col. 5</i>	<i>Col. 6</i>	<i>Col. 7</i>	<i>Col. 8</i>	<i>Col. 9</i>
<i>GAP</i>	-0.02** (1.98)	-0.01 (1.14)	0 (0.61)	-0.06*** (4.17)	-0.04*** (2.83)	-0.05*** (3.35)	-0.02 (0.71)	0.02 (0.70)	-0.01 (0.60)
<i>Gov₅₈</i>		0.02*** (4.22)	0.01** (2.03)		0.04*** (5.64)	0.02*** (2.90)		0.06*** (7.63)	0.04*** (5.29)
<i>SIZE</i>	-0.06*** (5.13)	-0.07*** (5.76)	-0.11*** (8.12)	-0.19*** (11.86)	-0.22*** (12.24)	-0.28*** (13.53)	-0.28*** (13.49)	-0.33*** (14.05)	-0.39*** (14.05)
<i>YIELD</i>			-0.67* (1.68)			-0.39 (1.48)			0.48 (0.45)
<i>SGROWTH</i>			0.14*** (3.89)			0.02** (2.40)			0.01 (1.45)
<i>SP500</i>			0.74*** (11.11)			1.00*** (11.56)			1.19*** (12.01)
<i>Constant</i>	0.64*** (7.81)	0.15 (1.14)	0.55*** (4.06)	1.69*** (13.53)	0.89*** (5.43)	1.57*** (8.49)	2.18*** (14.33)	0.84*** (4.28)	1.60*** (7.48)
Obs.	3742	3742	3702	3938	3938	3891	4133	4133	4046
R-squared	0.01	0.02	0.06	0.07	0.07	0.1	0.11	0.13	0.14
F test	13.35	12.86	25.95	70.27	50	35.46	98.25	69.1	37.98

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8
Gap in Regulatory Compliance: Pooled Analysis

This table is a pooled regression showing the relation between firm value, measured as Tobin's Q, and the gap in regulatory compliance. The dependent variable is *Q-adj*, industry median-adjusted using the 24 ISS defined industries. The gap in regulatory compliance is measured by *GAP*. *GAP* equals $(7-NREG)/NREG$ where *NREG* is $(1+REG)$. *REG* is an index of new regulations calculated by summing the six governance provisions that were mandated. A one has been added to *REG* to avoid dividing by zero. *Gov₅₈* is an index of the 64 total attributes minus the six new provisions. The control variables are: *SIZE*, natural log of assets; *SP500*, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; *YIELD* is dividend yield; and *SGROWTH* is sales growth. Columns 1, 3 & 5 include only *SIZE* as the control variable; columns 2, 4 & 6 also include *SP500*, *YLD* and *SGROWTH* for control purposes. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	2002 - 2004			
	Pooled	Fixed Effects		
	<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>	<i>Col. 4</i>
<i>GAP</i>	-0.02** (2.37)	-0.03*** (3.50)	-0.02*** (3.24)	-0.02*** (3.24)
<i>Gov₅₈</i>	0.04*** (10.15)	0.02*** (6.41)	0.01* (1.96)	0.01* (1.71)
<i>SIZE</i>	-0.22*** (18.82)	-0.27*** (20.30)	-0.55*** (14.33)	-0.54*** (13.89)
<i>YIELD</i>		-0.38* (1.75)		-0.12 (0.78)
<i>SGROWTH</i>		0.02** (2.17)		0.02*** (3.00)
<i>SP500</i>		1.01*** (19.70)		0 (.)
<i>Constant</i>	0.75*** (8.05)	1.34*** (13.00)	3.47*** (15.36)	3.45*** (15.00)
Observations	11813	11639	11813	11639
Groups			4847	4778
R-squared	0.08	0.10	0.03	0.03
F test	118.11	80.63	70.01	40.29

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 9
Pre- and Post New Regulations

This table is a pooled regression showing the relation between firm value measured as Tobin's Q, and the gap in regulatory compliance. The gap in regulatory compliance is measured by *GAP*. *GAP* equals $(7-NREG)/NREG$ where *NREG* is $(1+REG)$. *REG* is an index of new regulations calculated by summing the six governance provisions that were mandated. A one has been added to *REG* to avoid dividing by zero. *Gov58* is an index of the 64 total attributes minus the six new provisions. *DPOST* equals one for the post-regulatory period, assumed to be 2004, and equals zero for the pre-regulatory period assumed to be 2002 and 2003. The control variables are: *SIZE*, natural log of assets; *SP500*, a dummy equal to one if the company is included in the S&P 500 Index else the value is zero; *YIELD* is dividend yield; and *SGROWTH* is sales growth. Columns 1, 2 are results of pooled regressions and columns 3 & 4 are with firm fixed effects. Tobin's Q is winsorized at 1% at the top and bottom of the distribution. Robust t-statistics are reported in parentheses.

	2002 - 2004			
	Pooled	Fixed Effects		
	<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>	<i>Col. 4</i>
<i>GAP</i>	-0.03*** (3.93)		-0.02*** (2.68)	
<i>REG</i>		0.08*** (5.97)		0.04*** (2.73)
<i>DPOST</i>	0.11*** (3.21)	0.33*** (5.93)	0.15*** (5.37)	0.32*** (8.85)
<i>DPOST*GAP</i>	0.02 (1.15)		0.02** (2.30)	
<i>DPOST*REG</i>		-0.07*** (4.36)		-0.05*** (4.11)
<i>Gov58</i>	0.02*** (4.85)	0.02*** (4.29)	-0.01** (2.18)	-0.01 (1.18)
<i>SIZE</i>	-0.26*** (20.28)	-0.26*** (20.41)	-0.60*** (15.34)	-0.60*** (15.22)
<i>YIELD</i>	-0.37* (1.73)	-0.37* (1.73)	-0.13 (0.81)	-0.13 (0.82)
<i>SP500</i>	1.02*** (19.72)	1.01*** (19.55)	0.00 (.)	0.00 (.)
<i>SGROWTH</i>	0.02** (2.15)	0.02** (2.16)	0.01*** (2.63)	0.01*** (2.60)
<i>Constant</i>	1.34*** (13.18)	1.09*** (11.33)	4.07*** (17.07)	3.82*** (15.82)
Observations	11639	11639	11639	11639
Groups	-	-	4778	4778
R-squared	0.1	0.1	0.04	0.04
F test	60.7	61.55	43.58	44.82

* significant at 10%; ** significant at 5%; *** significant at 1%