Independent director reputation incentives and stock price informativeness

Vathunyoo Sila*
Angelica Gonzalez
Jens Hagendorff

January 14, 2016

Preliminary draft. Please do note quote.

Abstract

This study examines whether the reputation incentives of independent directors increase the incorporation of firm-specific information into stock prices. We find that the proportion of directors who deem their directorships to be more important based on firm market capitalization is associated with higher firm-specific information content in stock prices. This is consistent with the argument that boards which are incentivized to protect their reputation can deter managers from withholding information. We find this relation to be stronger when other external monitoring mechanisms are weak and when there is uncertainty regarding future prospects of the firm. We also find evidence that the presence of directors with high reputation incentives is negatively associated with stock price crash.

JEL classification: G10, G34

Keywords: director incentives, director reputation, stock price informativeness, idiosyncratic volatility

**Corresponding author. Tel.: +44 (0) 131 6502796 email: ben.sila@ed.ac.uk. Sila and Gonzalez are with the University of Edinburgh, 29 Buccleuch Place, Edinburgh EH8 9JS, UK. Hagendorff is with Cardiff University, Aberconway Building, Cardiff CF10 3EU, UK. The authors are grateful for the helpful comments and suggestions from Sabri Boubaker, Elyas Elyasiani, Louis Nguyen, Maria Michou, Dimos Kambouroudis, Patrick Herbst, the participants at the 2015 Financial Management Association European Conference, the 2015 Multinational Financial Society Conference and seminar participants at the University of Edinburgh and University of Stirling.

1. Introduction

This paper examines whether the reputation incentives of independent directors are related to firm stock price informativeness. The empirical evidence presented by Masulis and Mobbs (2014, 2015) on reputation incentives shows that boards in which independent directors are incentivized to protect their reputation are associated with better governance. We argue that this can facilitate firm-specific information disclosures to the market and ultimately leads to higher stock price informativeness.

One of the functions of financial markets is to produce and aggregate information via the trading process that transmits information produced by traders into market prices (Grossman and Stiglitz, 1980). Managers can learn about the firm's prospect from this information (Dow and Gorton, 1997; Subrahmanyam and Titman, 1999) and it can guide them in decision makings such as capital structure, cash holding and investment decisions (see, e.g. Chen, Goldstein, and Jiang, 2007; Durnev, Morck, and Yeung, 2004; Foucault and Gehrig, 2008; Fresard, 2012).

The extent to which firm-specific information is incorporated into stock prices is broadly influenced by two factors. The first factor is the degree of investor protection. Better investor protection can encourage incorporation of information into stock prices as it deters managerial expropriation and enhance the gain of information-based trading to outside investors (e.g. Morck, Yeung, and Yu, 2000; Ferreira and Laux, 2007). The second factor is the firm's information environment. The quality of firm financial information and the extent to which firm discloses information to the public can affect the level of firm specific information in stock prices (Gelb and Zarowin, 2002). The evidence in this study suggests that reputation incentives of directors are linked to stock price informativeness through this second factor.

In this paper, we hypothesize that monitoring from independent directors can increase stock price informativeness through better public disclosures[1]. As outsiders to the firm, inde-

[1]Monitoring from independent directors can also reduce managerial expropriation (Fama and Jensen,

pendent directors require firm-specific information in order to perform their monitoring and advising functions effectively (Adams and Ferreira, 2007). It is unlikely that these directors rely solely on private sources of information such as internal financial reports and private discussions with managers (Armstrong, Guay, and Weber, 2010). Information from private sources are supplied by the managers who may not be willing to disclose information that is detrimental to their own interests (Jensen, 1993). Jin and Myers (2006) argue that managers may withhold firm-specific information in order to capture private benefits. In contrast, information from public sources can carry greater credibility as it is subject to regulatory rules and enforcement, auditor oversight, and scrutiny by security analysts (Bushman, Chen, Engel, and Smith, 2004a). Therefore, in the process of obtaining the information about the firm, independent directors can increase stock price informativeness through enhanced firm transparency and greater level of disclosures.

The ability of a board to monitor the managers is traditionally associated with the proportion of outside or independent directors. Hence, regulations and exchange listing rules require firms to have an independent majority board. However, the literature provides mixed evidence regarding the influence of board independence on information asymmetry between managers and shareholders. Some studies find that the presence of outside directors can deter earnings management, reduces the likelihood of financial fraud and issue more frequent as well as more accurate earnings forecasts (e.g. Dechow, Sloan, and Sweeney, 1996; Beasley, 1996; Ajinkya, Bhojraj, and Sengupta, 2005). In contrast, other studies find no relation between director independence and information asymmetry (e.g. Agrawal and Chadha, 2005; Larcker, Richardson, and Tuna, 2007). These conflicting results could possibly be explained by the fact that independent directors cannot be treated as if each of them was identical. Recent literature explores the heterogeneity of independent directors

1983). This can enhance the benefits of gathering and trading private information and, as a result, lead to more information being incorporated into stock prices.

in terms of demographics, connection, firm ownership and expertise. (see e.g. Adams and Ferreira, 2009; Knyazeva, Knyazeva, and Raheja, 2009; Coles, Daniel, and Naveen, 2014). In particular, Masulis and Mobbs (2014) present evidence that independent directors are more effective at monitoring when working in firms that provide them with higher visibility.

In this paper, we focus on independent directors who arguably more effected by the level of firm transparency i.e. those directors who have higher incentives to protect their reputation in the directorship labor market. The literature has long recognized the incentive for directors to build and maintain their reputation (Fama, 1980; Fama and Jensen, 1983). Adams and Ferreira (2008) argue that it is prestige, reputation and career concerns rather than financial remuneration that motivate directors to perform their board functions. Thus, it is logical that directors would focus their effort on the directorships that give them the highest visibility. Masulis and Mobbs (2014) find that directors with multiple directorships do not allocate their time and effort uniformly across their different directorships. Instead, they are more attentive in boards of larger firms, which are deemed as more prestigious (Shivdasani, 1993; Ryan and Wiggins, 2004).

We employ the reputation incentive measures from Masulis and Mobbs (2014, 2015). For each independent director with multiple directorships, we sort all the directorships by market capitalization. A directorship is considered the most (least) important to the director when it is for the largest (smallest) firm of all directorships. Figure 1 presents an example of a director in the data set employed in this chapter. In 2012, Geraldine Laybourne were independent directors of three companies – Symantec, Electronics Arts and JC Penny. Symantec has a market capitalization of 17.22 billion dollars and is the largest amongst the three firms. Based on the reputation incentive measures employed, Laybourne is assumed to consider Symantec as the most important directorship. Correspondingly, JC Penny is Laybourne's smallest directorship and is considered to be the least important directorship.

We then construct two board-level measures that capture reputation incentives of inde-

pendent directors: the proportion of independent directors that deem the directorship to be the most and least important. Masulis and Mobbs (2014, 2015) suggest that these directors are more motivated due to higher visibility of the directorship and find that boards in which more directors rank the firm highly are associated with more effective monitoring and fewer adverse outcomes such as luck CEO option grants, dividend cuts and debt covenant violations. Moreover, these boards are associated with better financial information environment i.e. the firms are less likely to engage in earnings management and have their financial reports reinstated. Thus, wehypothesize that the proportion of directors to whom the directorship is the largest is positively associated with stock price informativeness.

To measure stock price informativeness, we follow Morck et al. (2000) and use firm-specific stock return variation. This measure is employed as a proxy of the rate of information flow into stock price in various studies (e.g. Ferreira and Laux, 2007; Fernandes and Ferreira, 2008, 2009; Gul, Srinidhi, and Ng, 2011). We find that stock price informativeness increases with the proportion of the directors for whom the director is highly ranked. This suggests that firms where directors are motivated due to their reputation incentives can increase the firm-specific information in stock price. The relation is robust to the inclusion of various other board characteristics (board size, board independence, the presence of "busy" directors and directors who only hold one directorship) and many other firm-level controls. This evidence is consistent with the hypothesis that directors with high reputation incentives can increase stock price informativeness.

We further characterize the results and show evidence supporting the hypothesis that independent director reputation incentives and stock price informativeness are related to monitoring. Informativeness of stock prices can also be influenced by monitoring activities of those outside of the firm. For instance, stock analysts can facilitate dissemination of information about the firm (e.g. Piotroski and Roulstone, 2004). Similarly, the openness of the firm to the corporate control market also encourages investors to collect firm-specific

information (Ferreira and Laux, 2007). Therefore, We include as additional controls two proxies for external monitoring – analyst coverage and an entrenchment index (Bebchuk, Cohen, and Ferrell, 2009). We find that our results continue to hold. Moreover, we find that the relationship between the reputation measures and stock price informativeness is stronger when external monitoring is weak. These results suggest that directors act as substitutes to these other monitoring mechanisms in term of information. Additionally, we find that the relation is robust to the inclusion of various measures for financial report quality, which suggests that director incentives induce the firm to become more transparent through other channels in addition to better financial report quality.

Based on the empirical results, we argue that the relation between the reputation incentive measures and stock price informativeness is because independent director who see the directorship as important encourage more firm-specific information to be released to the public. However, there are some alternative explanations to our results. First, the statistically significant relation may be due to other factors that are not controlled for the model. Second, the choice of independent director appointments can be influenced by the firm information environment (e.g. Coles, Daniel, and Naveen, 2008; Linck, Netter, and Yang, 2008; Lehn, Patro, and Zhao, 2009). It is possible that when appointed to a larger firm, independent directors may prefer firms that are more transparent. These explanations can also lead to the significant relation between the reputation incentive measures and stock price informativeness as observed in the data.

To address these possible endogeneity concerns, we analyze the effect of exogenous shocks to directorship ranking on stock price informativeness. Specifically, we look at the effect of increases in directorship ranking that are caused by large decreases in market capitalization in other firms. To do this, we identified a group of treatment firms in which at least one director experience an exogenous increase in directorship ranking due to a large decrease in size of other firms in their directorship portfolio. These change in ranking can be considered

exogenous because the changes are caused by the decrease in size of other firms apart from those we investigate. The decrease in size can be due to a number of reasons such as poor performance or diversitures. These reasons are specific to other firms and thus can be considered as exogenous to the firms we currently investigate. However, the decrease in size of these other firms leads to the change in ranking that allow us to identify the causal effect of the change in directorship importance to stock price stock price informativeness. We match these treatment firms with a group of control firms by industry and size and perform a difference-in-difference analysis. We find that after the increase in directorship ranking of at least one independent director in the firm, the level of price informativeness increases for treatment firms in relation to the control firms. This is consistent with our hypothesis that it is the reputation incentives of independent directors that influences stock price informativeness. As the difference-in-difference setting only exploits the change in stock price informativeness and reputation incentives within the firm, it also reduces the possibility that the relation between the two variables are driven by other unobserved factors.

As our results indicate that independent directors induce the firm to become more transparent through other channels in addition to better financial report quality, we next provide evidence of one additional mechanism through which independent directors can influence stock price informativeness. We analyze Form 8-K filings as one possible channel for firms to voluntarily disclose information to the market. The Securities and Exchange Commission requires firms to disclose information deemed to be material to investors a continuous basis. These disclosures are mostly triggered by certain corporate events such as when new directors are nominated or when the company is conducting an acquisition. One exception is category #8 ("other events") where firm can choose to disclose any information it deems material. We use the frequency of category #8 disclosures relative to other disclosures as a proxy for the extent to which firm voluntarily disclose information. We find that, after the exogenous shock in directorship ranking, disclose more Category #8 items but only when there are

more disagreements amongst analysts in terms of earnings forecasts. This result suggests that high ranked directors try to reduce the firm's information risk, i.e. disagreements about future prospects of the firm, by voluntarily disclosing more firm-specific information to public. Additionally, we also observe the reduction in extreme negative outcomes (crash risk) in firm's stock. The overall evidence suggests that firms in which directors see as relatively important for their reputation tend to be more transparent.

This study makes two main contributions to the literature. First, we document a capital market effect of director reputation incentives. In particular, we show that the presence of directors with high reputation incentives can increase the firm-specific information content in stock price. This evidence helps further our understanding of board of directors as a monitoring mechanism through a variable that is directly relevant to investors i.e. firm-specific risk. There is documented evidence of the relationship between idiosyncratic volatility and equity returns (e.g. Ang, Hodrick, Xing, and Zhang, 2006; Fu, 2009). Jiang, Xu, and Yao (2009) find that idiosyncratic volatility is negatively related to future earning shocks. Additionally, information in stock prices is also relevant to firm decision making. Durnev et al. (2004) argue that stock price informativeness can facilitate more efficient capital budgeting decisions as managers can obtain feedbacks from the market regarding their decisions.

Secondly, we contribute to studies that link corporate governance to return volatility. Prior literature documents the relationship between idiosyncratic risk and shareholder rights, ownership structure, and board structure (Ferreira and Laux, 2007; Ferreira, Ferreira, and Raposo, 2011; Panousi and Papanikolaou, 2012). Our findings are consistent with the view that independent directors alter firm information environment to accommodate their demand for information (Armstrong, Core, and Guay, 2014). This study also contributes to the literature that links characteristics of directors to stock price informativeness (e.g. Gul et al., 2011).

2. Literature review and hypothesis development

2.1. Firm-specific information and stock returns

Under the efficient market hypothesis, stock prices reflect the information set available to the market participants. This information set can either be market-wide information or information specific to the firm. Roll (1988) uses R^2 from the market model regression to measure the extent to which stock price movement can be explained by market-related information. High R^2 means that market returns can explain a large portion of return variation. Low R^2, on the other hand, suggests that a higher proportion of stock return volatility can be attributed to firm-specific information. Thus, a high proportion of idiosyncratic volatility can be considered a proxy for the level of firm-specific information being released to the market by the firm.

The extent to which firm-specific information is incorporated into stock returns is broadly influenced by two factors. First is the incentive for investors to collect firm-specific information. Morck et al. (2000) find R^2 to be high in economies with low property rights. They argue that low property rights reduce the benefits of informed arbitrage; thus, investors are discouraged from collecting firm-specific information. Similarly, Ferreira and Laux (2007) argue that fewer takeover restrictions can induce more private information collection. They document a negative relation between the number of anti-takeover provisions, a proxy for managerial entrenchment, and idiosyncratic volatility. Capital market liberalization and stronger investor protection such as the enactment of insider trading laws also leads to greater informativeness of stock prices (Li, Morck, Yang, and Yeung, 2004; Fernandes and Ferreira, 2009). Overall, evidence shows that the ability to use information to make a profitable trade is linked to informativeness in stock prices.

The second factor is the information environment of the firm. One of the barriers preventing information from being incorporated into stock price is the cost of obtaining that

information (Grossman and Stiglitz, 1980). Veldkamp (2006) suggests that R^2 is on average higher than what the comovement of firm fundamentals would suggest because firm-specific information has a higher per-unit cost than market information. Therefore, when the cost of obtaining firm-specific information is high, rational investors rely on market-level information to infer firm cash flows. Jin and Myers (2006) show that the lack of a firm's information transparency can lead to an increase in R^2. In their model, investors cannot observe firm's true cash flows. To extract wealth from the company, the manager captures part of the firm's cash flow and, in the process, reduces firm-specific variance. Fox, Morck, Yeung, and Durnev (2003) find the introduction of enhanced disclosure rules leads to more firm-specific information in stock prices. Bushman, Piotroski, and Smith (2004b) find R^2 to be lower in countries with higher levels of financial transparency i.e. the availability of financial information to those outside the firm. At the firm level, stock prices of companies with a higher level of analyst coverage tend to have a higher proportion of firm-specific information content in their stock prices (Chan and Hameed, 2006). Fernandes and Ferreira (2008) find a rise in stock price informativeness when developed market firms are cross-listed in the US and they attribute this increase to the increase in analyst coverage for these firms. Rajgopal and Venkatachalam (2011) find a negative relationship between idiosyncratic volatility and the quality of firm accounting information. The overall findings from these studies suggest that the more widely available firm information is to the investors, the more informative the stock price.

2.2. Director reputation incentives and board monitoring.

Fama and Jensen (1983) argue that directors have incentives to maintain and increase their reputation as monitors. In the labour market of directors, signaling that they are good monitors can increase the value of their human capital and the opportunity for additional directorships (Fama, 1980). Outside directorships can reflect the demand of that director's

service in the directorship market and, ultimately, their ability. Shivdasani (1993) argue that the number of outside directorships serves as a measure for that director's reputation – a proxy for ability.

In addition to the positive signaling effect of outside directorships, sitting on multiple boards may allow directors to increase their ability to perform board functions. Directors who have more connections tend to have better access to information that can be useful in decision making (Coles, Lemmon, and Meschke, 2012). Field, Lowry, and Mkrtchyan (2013) finds that younger firms can benefit from having well-connected directors on their boards.

Despite these positive evidnce, many studies see directors with multiple directorships as "busy directors" and associate them with poor monitoring (e.g. Kaplan and Reishus, 1990; Beasley, 1996; Core, Holthausen, and Larcker, 1999). These studies usually classify busy directors as those who hold three or more board seats or use the total number of external board seats as a proxy for overall board "busyness". An implicit assumption of this measure is that the time and efforts of these directors are distributed uniformly across directorships. Recent literature shows that this is not the case.

Masulis and Mobbs (2014, 2015) show evidence that directors do not allocate their time and effort equally among their multiple directorships. Instead, they allocate more of their limited human capital on firms they deem most desirable. Directors are more incentivized to preserve their reputation in large firms because their higher visibility can increase the likelihood of obtaining additional directorships (Shivdasani, 1993). Ryan and Wiggins (2004) find that director pay is generally higher in large firms, although Adams and Ferreira (2008) argue that directors do not care so much about monetary compensation: they are more motivated by prestige and reputation. Masulis and Mobbs (2014) rank directorships by firm size and find that directors who view their board seat as being more prestigious are more likely to attend meetings more regularly and serve on more committees. Their results show that directors who have high incentives to monitor are indeed more active monitors.

Linking this to firm outcomes, Masulis and Mobbs (2015) find that firms have a lower level of discretionary accruals in the presence of directors who deem their directorship to be relatively important. They also find that these firms are less likely to restate their earnings. Thus, it is possible that reputation incentives can induce better monitoring and as a result increase firm-related information in the stock market.

2.3. Hypotheses

Existing empirical evidence suggests that independent directors are incentivized to monitor when they believe their performance is more likely to be observed by the labor market. They require information about the company in order to be effective at monitoring. Although independent directors may have access to firm-specific information via private channels e.g. internal financial reports and informal communications with the managers, they arguably prefer information from public channels. Information from private channels mainly come from managers, who have incentives to withhold information that is detrimental to their interest (Jensen, 1993; Jin and Myers, 2006). Additionally, the information can be distorted in a way that reduces effectiveness of monitoring from independent directors (Bushman et al., 2004a).

The increased level of monitoring would then lead to a higher level of firm-specific information content in firm stock price. Therefore, we should observe a positive relation between reputation incentives and stock price informativeness. Therefore, our first hypothesis is as follows.

Hypothesis 1: The proportion of directors to whom the directorship is the highest ranked is positively related to stock price informativeness.

The literature also documents the impact of monitoring by parties outside of the firm on firm-specific information content in stock price. Ferreira and Laux (2007) find a link

between openness of the firm to the market for corporate control and stock price informativeness. They postulate that investors are more incentivized to collect information about firms that are more likely to become takeover targets. Similarly, Piotroski and Roulstone (2004), amongst others, find firm-specific information content in stock price to be higher among firms that are extensively covered by analysts.

We investigate whether monitoring from external parties are complementary or substitutes to monitoring from directors. If internal and external monitoring mechanisms are complements, we should find the relationship between reputation incentives and stock price informativeness to be stronger when outside monitoring is strong. On the other hand, if these mechanisms are substitutes, We would find the relationship to be stronger when outside monitoring mechanisms are weak.

Hypothesis 2: The strength of the association between the proportion of directors for whom the directorship is the highest ranked and stock price informativeness is stronger in firms covered by fewer financial analysts.

Hypothesis 3: The strength of the association between the proportion of directors for whom the directorship is the highest ranked and stock price informativeness is stronger in firms with more takeover defenses.

Prior literature shows some evidence that price informativeness is positively linked to financial report quality (e.g. Hutton, Marcus, and Tehranian, 2009) whilst Masulis and Mobbs (2015) document a positive relation between earnings quality and reputation incentives. To assess whether director reputation incentives can increase firm-specific information in stock price through other channels, we need to take into account the effect of earnings quality in the model. If the link between reputation incentives and stock price informativeness occurs through channels other than better financial reporting, we would observe a statistically sig-

nificant relationship between the two variables even when we control for quality of earnings.

Hypothesis 4: The positive association between the proportion of directors for whom the directorship is the highest ranked and stock price informativeness is not completely accounted for by the quality of financial reports.

3. Data

This study employs 18,538 observations (firm-years) of 2,463 firms between 1996-2012 from the following data sources. The information of each directors and firm's anti-takeover provisions are obtained from the RiskMetrics database, which covers Standard and Poor's (S&P) 500, S&P MidCaps and S&P SmallCap firms.

We obtain information of each director and firm's anti-takeover provisions from the RiskMetrics database, which covers Standard & Poor's (S&P) 500, S&P MidCaps and S&P SmallCap firms. Financial accounting variables are constructed using the information from the S&P Capital IQ Compustat database. The stock price informativeness measure is calculated using daily stock price information from the Centre for Research in Security Prices (CRSP). We use CRSP NYSE/Amex/NASDAQ Value-Weighted Market Index as our proxy for the market portfolio. Analyst coverage data is obtained from the I/B/E/S database. Following prior literature, we exclude financial service (SIC code 4900-4999) and utility firms (SIC code 6000-6999) from the sample. All variable definitions are provided in Table A1.

[Table A1 about here]

3.1. Stock price informativeness

This study follows Morck et al. (2000) and employs idiosyncratic volatility as the key proxy for stock price informativeness. For each firm-year, we estimate the following single-

factor market model:-

$$r_{id} = \alpha_i + \beta_i \times r_{md} + e_{id} \tag{1}$$

where r_{id} is the daily return for stock i on day d and r_{md} is the value-weighed market return on day d.

The residuals e_{id} have mean of zero and are orthogonal to the market return i.e. $E(e_{id}) = cov(r_{md}, e_{id}) = 0$. Thus return volatility of stock i (σ_i^2) can be divided into two components.

$$\sigma_i^2 = \beta_i^2 \times \sigma_m^2 + \sigma_{ie}^2 \tag{2}$$

Here, idiosyncratic volatility ($\sigma_{ie}^2 = \sigma_i^2 - \beta_i^2 \times \sigma_m^2$) is the variance of the component of the stock return that cannot be explained by the market return. We measure stock price informativeness as the variance of firm-specific returns scaled by the variance of total return ($\frac{\sigma_{ie}^2}{\sigma_i^2} = 1 - \frac{\beta_i^2 \times \sigma_m^2}{\sigma_i^2}$), which is equivalent to $1 - R_{i,t}^2$ from the market model regression (Equation 1).

As $1 - R_{i,t}^2$ only has possible values between zero and one, we follow other studies (e.g. Ferreira and Laux, 2007) and construct our measure of idiosyncratic volatility ($idiovol_{i,t}$) as a logistic transformation of $1 - R_{i,t}^2$. Formally,

$$\text{Price Informativeness}_{i,t} = \ln(\frac{\sigma_{ie,t}^2}{\sigma_{i,t}^2 - \sigma_{ie,t}^2}) = \ln(\frac{1 - R_{i,t}^2}{R_{i,t}^2}) \tag{3}$$

A high (low) level of stock price informativeness can be interpreted as stock price having a greater (smaller) level of firm-specific information content because the market return can explain a smaller (greater) portion of the stock total volatility.

3.2. Independent director reputation incentives

The measures for independent director reputation incentives follow Masulis and Mobbs (2014, 2015). We collect director information from the universe of S&P 1500 firms between 1996-2012. We focus on independent directors with multiple directorships because their human capital is in high demand, signaling that they have higher ability[2]. Executive directors or directors with any other affiliation with the firm are not considered when constructing these measures as potential conflicts of interest may inhibit their willingness to reveal firm-specific information to public[3]. For each independent director, we rank all directorships in his/her portfolio by firm market capitalization. We assume that the firm that is highest ranked based on size is the most important firm for that director and correspondingly the lowest ranked is the least important.

We then consolidate the director data into firm-level variables. The main board-level reputation incentive of directors, *% Independent Directors - Highest*, is the proportion of directors for whom this directorship is the highest ranked i.e. the largest firm. Correspondingly, we define *% Independent Directors - Lowest* as the proportion of directors for whom the directorship is the lowest ranked i.e. the smallest firm.

To also capture the relative importance of the directorships in independent directors' directorship portfolio, we construct two additional variables *% Independent Directors - High* and *% Independent Directors - Low*. The variable % Independent Directors - High (Low) is the proportion of directors for whom this directorship is at least 10% larger (smaller) than their smallest (largest) directorship. These two variables recognize that directors may not only deem their largest directorship to be important but may also pay more attention to their directorships of relatively larger firms. Referring back to the example in Figure 1,

[2]We note that directors with only one directorship may also have strong incentives to retain their directorship. Thus, we also include the presence of sole directors in the model as a control variable.

[3]We account for the impact of executive and affiliated directors in the model by controlling for the level of board independence.

Laybourne would consider her directorship for Symantec to be of high rank whereas both JC Penny and Electronic Art would be considered low ranked. These two measures exploit greater variability in the data and are also able to capture the relative reputation incentives for independent directors with more than two directorships.

3.3. Summary statistics

The summary statistics in Table 1 show that on average only 24% of stock price movements can be explained by market returns (Panel A). This leaves 76% of unexplained variation that can be attributed to the incorporation of firm-specific information. The key dependent variable, *Price Informativeness*, which is a logistic transformation of $1 - R^2_{i,t}$ has a mean of 1.529.

[Table 1 about here]

Panel B shows the summary statistics of the board of directors in the sample. On average a board comprise nine directors. About 69% of directors on an average board are considered independent by RiskMetrics. Independent directors are those who are neither executives not affiliated with the company[4]. In more than 80% of the observations, independent directors represent a majority of the board. More than half of these independent directors hold at least one additional directorship in other RiskMetrics firms (about 38% on an average board) which implies that a large proportion of the directors may have different reputation incentives across their directorships and within each firms different directors may also have different reputation incentives. Only a small fractions of firms in our observations have busy boards i.e. those where the majority of directors hold more than 3 directorships.

The means of the key independent variables *% Independent Directors - Highest* and *% Independent Directors - Lowest* are 10% and 13% respectively. This means that on an average

[4]RiskMetrics classify directors as affiliated if they are a former employee; an employee of or is a service provider, supplier, customer; a recipient of charitable funds; are considered an interlocking or designated director; or are a family member of a director or executive of the firm.

board, about 10% of directors are independent and work in the firm that is the largest in their directorship portfolios whereas about 13% work in the firm that is the smallest in their directorship portfolios. The relative measures *% Independent Directors - High* and *% Independent Directors - Low* have slightly higher means – 11% and 15% respectively. Their standard deviations are also slightly larger. This is because these relative measures also capture the variation in reputation incentives for each independent director from working in firms that are considerably larger and smaller than other firms but are not the largest or smaller firms.

Panel C displays a number of summary statistics for a number of firm characteristics. The average return on equity of the sample firms are 6% with a five-year rolling standard deviation of 36%. An average firm has a leverage of 19% and the market value of the firm is 3.6 times larger than the book value. Firm size and firm age are reported in log form. An average firm has a market capitalization of 1.7 billion dollars and is about 20 years old. About 52% of the firms in the sample pay dividends and 61% operates in more than one industry.

In Panel D, we report two measures that proxy monitoring from parties outside of the firm. First is the entrenchment index from Bebchuk et al. (2009) which counts the number of entrenchment provisions adopted by the firm. Out of six provisions[5], the sample firms on average adopt two provisions that can be considered anti-takeover. These provisions can decrease the probability of the firm being taken over and discourage people outside of the firms from collecting firm-specific information (Ferreira and Laux, 2007). Another measure is analyst coverage which is the number of earnings forecast made by security analysts for each firm-year. On average, a firm is covered by 11 analyst in each year.

Lastly, we report the summary statistics for earnings quality measures from Jones (1991),

[5]Staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and super-majority requirements for mergers and charter amendments.

(Dechow et al., 1996), Dechow and Dichev (2002) and McNichols (2002). These measures capture the level of discretionary accruals i.e. the part of accounting accruals that cannot be captured by the assumed theoretical models. The ways these measures are computed are discussed further in Section 4.3. High values of these measures suggest that the firm's accounting accruals cannot be explained by economic conditions and as such the quality of the firm's earnings is low. Low values of these earnings quality measures on the other hand suggests that the quality of the firm's earnings is high.

4. Results

4.1. Stock price informativeness and reputation incentives

We first test the hypothesis that the proportion of directors to whom the directorship is the highest ranked is positively related to stock price informativeness (Hypothesis 1). To estimate the relation between stock price informativeness and the reputation incentive measures, we estimate the following model:

$$\begin{aligned}\text{Price Informativeness}_{i,t} = \beta_0 &+ \beta_1 \times (\%\ \text{Independent Directors - Highest})_{i,t} \\ &+ \beta_2 \times (\%\ \text{Independent Directors - Lowest})_{i,t} \\ &+ \mathbf{CONTROLS}_{i,t}\mathbf{\Pi} + \varepsilon_{i,t} \qquad (4)\end{aligned}$$

Having multiple directorships can severely constrain directors' time and attention and may inhibit them from performing their functions effectively. If they see the directorship as less important, they may allocate less monitoring effort and the lack of monitoring may allow the managers to withhold firm-specific information from the public. Independent directors to whom the directorship is the highest ranked are assumed to be incentivized to decrease information asymmetry between managers and shareholders. Therefore, we expect price

informativeness to increase with the proportion of directors for whom this directorship is highly ranked. On the other hand, independent directors to whom this directorship is the least important may not be incentivized to reduce firm information asymmetry. Therefore, we also expect price informativeness to decrease with the proportion of directors for whom the directorship is of low ranked.

Following prior literature, we include a number of board and firm characteristics are included in the matrix $\mathbf{CONTROLS}_{i,t}$. We include board size and board independence as Ferreira and Laux (2007) suggest that stock market and board of directors can be substitutes in terms of monitoring and advising functions. We also include a number of firm-level control variables that are employed in prior literature (e.g. Hutton et al., 2009). Profitability is defined as return on book equity. We also include profit variability as measured by the variance of the firm's return on equity. Chan and Hameed (2006) argue that firms with volatile returns produce more firm-specific information and their prices are less affected by industry- and market-wide information. We include leverage as higher levered firms may have high idiosyncratic volatility (Rajgopal and Venkatachalam, 2011). We include firm size as **?** finds that larger firm tend to incorporate more market-wide information compared to small firms. Firm size is measured as the logarithm of total market capitalization. We also include firm age (in log form) and a dumour variable indicating whether the firm is diversified i.e. operating in more than one industry. Diversified firms may be sensitive to macroeconomic shocks and thus their stock prices may better reflect firm-specific information (Piotroski and Roulstone, 2004). However, diversified firms can also be seen as diversified portfolios and thus the movement of their stock prices may resemble that of the market (Roll, 1988). Finally, we proxy for liquidity using stock turnover, which is defined as the number of trades divided by the number of shares outstanding. Stock liquidity facilitates informed trading and thus can be a determinant of stock price informativeness (Chordia, Roll, and Subrahmanyam, 2008). Finally, we include industry (2-digit SIC code) and year

dummies in all specifications to control for the possibility of differences in levels of stock price informativeness across industries and years. Standard errors are robust to heteroskedasticity and serial correlations within firm-level clusters.

Table 2 reports the regression results. Consistent with Hypothesis 1, we find a positive and statistically significant relationship between stock price informativeness and the proportion of directors to whom the directorship is the highest ranked. Price informativeness is also negatively related with the proportion of directors to whom the directorship is the lowest ranked.

Considering Model 1, an 11% increase in *% Independent Directors - Highest* (equivalent to one additional director on a nine-person board perceiving their directorship to be the most important) is associated with a 0.0573 unit increase in stock price informativeness. In contrast, the relation between stock price informativeness and *% Independent Directors - Lowest* is also negative and significant although the relation is weaker in both economic magnitude and statistical significance.

In Model 2, we introduces two additional control variables – *Busy Board* and *Sole Director Majority*. As the reputation measures only exploit the variation of independent directors who hold multiple directorships, controlling for busy boards may further isolate the effect of reputation incentives from the effect of having multiple directorships. The variable *Busy Board* is a dumour variable that takes the value of one when the majority of directors hold three or more directorships. The results show that a busy board has lower stock price informativeness although the coefficient is not statistically significant. By controlling for *Sole Directorship Majority*, we recognize directors to which the firm is their only directorship may also be incentivized to protect their only directorship and thus the board where the majority of directors have sole directorship may be effective at monitoring. The results however indicate that *Sole Directorship Majority* is not statistically related to price informativeness and the coefficient is close to zero. In this model, the coefficient for both *% Independent*

Directors - Highest and *% Independent Directors - Lowest* remain statistically significant.

[Table 2 about here]

In Models 3 and 4, we replace the key independent variables with the relative measures of reputation incentives – *% Independent Directors - High* and *% Independent Directors - Low*. The results are consistent with those using the absolute measures. The overall results in this table suggests that directorship ranking of directors matters in term of stock price informativeness. This is consistent with Hypothesis 1 i.e. directors who see the firm as important can deter managers from withholding firm specific information and as such are associated with a higher level of stock price informativeness.

4.2. Controlling for external monitoring mechanisms

The argument we put forward in this study is that director reputation incentives is related to stock price informativeness through monitoring of directors that see the firm as important. In this section, we look at the interaction between monitoring of these directors and other monitoring mechanisms from outside parties that can also affect stock price informativeness as documented by prior literature.

The first monitoring mechanism is firm coverage by security analysts. Prior literature has documented the relationship between analyst coverage and information asymmetry (Piotroski and Roulstone, 2004; Chan and Hameed, 2006; Yu, 2008; Derrien and Kecskés, 2013). The presence of financial analysts may lead to more price informativeness as firm-specific information is disseminated. However, analysts may not have access to firm-level information; therefore, they may focus on producing market- and industry-wide information which could then lead to a lower level of firm specific information (Piotroski and Roulstone, 2004). The second mechanism is monitoring by outside investors. Ferreira and Laux (2007) argue that the openness of a firm to the market for corporate control encourages investors to collect firm-specific information and ultimately leads to more informative stock price. Both these

external monitoring mechanisms may be correlated with the reputation incentive measures. Additionally, the relation between reputation incentives and stock price informativeness may be conditional on the activities of parties outside of the firm. On one hand, directors may respond to informational demand of outside parties (i.e., analysts and the corporate control market) by encouraging more firm-specific information to be released into the market. On the other hand, directors may act as a substitute to information collection from outside parties and release more information to decrease information asymmetry between insiders and outsiders.

We first confirm that our results hold after controlling for external monitoring mechanisms. To do this, we introduce two additional control variables to the models in Table 2. The first variable, *Analyst Coverage*, is defined as the number of earnings forecast made by analyst in each financial year. The analyst forecast data is obtained from the Institutional Brokers' Estimate System (I/B/E/S). For the firm-years where there is no information in the database, we follow prior literature and set this variable to zero. The second variable is *Entrenchment Index*, which is the index based on six anti-takeover provisions from Bebchuk, Kraakman, and Triantis (2000). This variable takes values between 0 and 6 and higher values mean the firm has put in place more anti-takeover provisions. Thus, firms with high *Entrenchment Index* are considered to be more hostile to takeover attempts.

[Table 3 about here]

In Columns 1-4 of Table 3, we introduce *Analyst Coverage* and *Entrenchment Index* to the model separately. In Columns 1-2, *Analyst Coverage* enters the model with a statistically significant (p ¡ 0.01) and positive coefficient. The results indicate that analyst coverage facilitates the incorporation of firm-specific information rather than market- and/or industry-wide information into stock prices. Columns 3-4 show that results with *Entrenchment Index* as a control variable. We find *Entrenchment Index* to be negatively related to stock price informativeness. Consistent with Ferreira and Laux (2007), the evidence suggests that less

entrenched firms encourage more firm-specific information collection.

In Columns 5-6, both variables are included in the model. The coefficients for *Analyst Coverage* and *Entrenchment Index* remain similar in terms of sign, magnitude and statistical significance. The proportion of directors to whom the director is highest ranked remains a statistically significant determinants of stock price informativeness. Both the coefficients for *% Independent Directors - Highest* and *% Independent Directors - High* are statistically significant at 1% level. There are also some evidence that directors to whom the directorship is of low rank are associated with low price informativeness. However, the coefficient for *% Independent Directors - Lowest* becomes statistically insignificant whereas the coefficient for *% Independent Directors - Lowest* are significant at 5% level. Overall, the results suggest that reputation incentives of independent directors are significantly related to stock price informativeness even after controlling for other monitoring mechanisms that can affect firm information environment.

[Table 4 about here]

We then look at the interaction between the reputation incentive measures and these two external monitoring mechanisms. In Panel A of Table 4, we split our sample into two groups based on the number of earnings forecasts made by financial analysts. The low (high) analyst coverage group comprises firm-years where the analyst coverage is below (above) the median of 5. We have 5,062 and 7,751 observations in the low and high analyst coverage groups respectively. We estimate the same equation as Columns 5-6 of Table 3 using these two subsamples. The results indicate that the higher proportion of directors with reputation incentives is associated with more firm-specific information in the stock price when firms lack monitoring from financial analysts: the coefficients for both *% Independent Directors - Highest* and *% Independent Directors - High* are larger in magnitude in the subsample where analyst coverage is below median.The coefficients for *Highest* and *High* are 0.459 and 0.556 respectively in the low coverage subsample compared to 0.101 and 0.127 for the high coverage

subsample. This evidence suggests that monitoring from analysts and director reputation incentives are substitutes in term of information; that is, when firms are well-covered by analysts, directors may not need to encourage more information disclosures even when they see the directorship as important.

The results for the monitoring from the market for corporate control (Hypothesis 3) is less conclusive; nonetheless, the evidence also suggests the substitution effect between monitoring from the market for corporate control and director reputation incentives. In Panel B, we estimate the same model on subsamples of firm-years with low and high levels of *Entrenchment Index*. A firm is considered to have low (high) Entrenchment Index when it adopts 0-1 (3-6) anti-takeover provisions in that financial year. The low (high) Entrenchment Index subsample comprises 3,454 (3,955) observations[6]. We find that the coefficient of *% Independent Directors - Highest* (0.388) in the low Entrenchment Index group is similar in magnitude compared to the coefficient in the high Entrenchment Index group (0.329). Statistical significance for both coefficients are also at the same level ($p < 0.10$). However, the relationship between *% Independent Directors - High* and stock price informativeness is stronger when Entrenchment Index is high. This is suggestive of a substitution effect: a director whose directorship ranking is relatively high compared to their other directorships appears to be associated with a higher level of information revelation to the market when the corporate control market is not incentivized to collect firm-specific information.

4.3. Controlling for earnings quality

Masulis and Mobbs (2015) shows that the presence of directors who view the board as high ranked is negatively associated with the level of firm discretionary accrual and earnings

[6]The median firm-years in our sample adopts two anti-takeover provisions. The number of observations with *Entrenchment Index* equals to 2 is 3,903, which comprises approximately 21% of the sample in which earnings quality data is available (18,442). To ensure similar numbers of observations across two subsamples, we only include those observations where *Entrenchment Index* is above (below) the median in the high (low) subsample. The results are qualitatively similar when the median firms are included in the high or low group.

restatements. This suggests that monitoring from directors with high reputation incentives discourages managers from earnings management. Accounting information quality is one channel through which reputation incentives can affect stock price informativeness (e.g. Hutton et al., 2009; Chen, Huang, and Jha, 2012). However, not only can directors affect firm information environment by improving the quality of mandatory disclosures such as financial reports, they can also release firm-specific information through other channels including voluntary information disclosures. To test this hypothesis (Hypothesis 4), we introduce measures of accounting information quality into the model. If the impact of reputation incentives on idiosyncratic volatility also occur through other channels, the coefficient for the proportion of directors with high reputation incentives should remain significant.

In this section, we employ four measures of *Earnings Quality*. The first measure is the measure of earnings management through the use of discretionary accruals from Jones (1991). Intuitively, Jones (1991) hypothesizes that a firm's total accruals can be explained by changes in the firm's economic conditions. Therefore, the component of total accruals that come from managerial discretion would be captured by the residuals (ε_t) in the following equation:

$$TA_t = b_0 + b_1 \Delta REV_t + b_2 PPE_t + \varepsilon_t \tag{5}$$

where TA_t is the level of total accruals, ΔREV_t is the change in revenue and PPE_t is the value of property, plant and equipment. The level of discretionary accruals is the component of total accruals that cannot be explained by any of the independent variables in the model. Thus, it is estimated as the fitted value of the error term ($\hat{\varepsilon}_t$). Earnings quality is deemed to be high when $\hat{\varepsilon_t}$ is close to zero. As we are only interested in the magnitude of the discretionary accruals but not in whether the earnings are overstated or understated, we use the absolute value of the residuals as the proxy for earnings quality (i.e. *Earnings Quality* $= |\hat{\varepsilon}_t|$). Higher values of *Earnings Quality* suggest that much of the accruals cannot

be explained by the changes in revenue and the value of property, plant and equipments.

The second measure is the absolute value of the residuals from the modified–Jones model of Dechow, Sloan, and Sweeney (1995):

$$TA_t = b_0 + b_1(\Delta REV_t - \Delta REC_t) + b_2 PPE_t + \varepsilon_t \tag{6}$$

This model relaxes the implicit assumption of Jones's model and allows for earnings to be manipulated through discretionary adjustments of firm revenue. Assuming that changes in credit sales come from earnings management, this model adjusts the change in revenue by the change in account receivables (ΔREC_t) which is easier to manipulate compared to cash sales.

The third earnings quality model is that of Dechow and Dichev (2002):

$$\Delta WC_t = b_0 + b_1 CFO_{i-1} + b_2 CFO_t + b_3 CFO_{t+1} + \varepsilon_t \tag{7}$$

Instead of directly looking at total accruals, Dechow and Dichev (2002) look at how well the change in working capital accruals can be explained by operating cash flow realization. Similar to the models above, we use the absolute values of the residuals as the proxy for earnings quality.

The fourth measure (McNichols, 2002) comes from a modification of Dechow and Dichev's model:

$$\Delta WC_t = b_0 + b_1 CFO_{i-1} + b_2 CFO_t + b_3 CFO_{t+1} + b_4 \Delta REV_t + b_5 PPE_t + \varepsilon_t \tag{8}$$

McNichols (2002) extends the model of Dechow and Dichev (2002) by introducing factors from Jones (1991) – the change in revenue and the value of property, plant and equipment. Overall, these four measures are used as proxies for quality of firms' financial statements.

If the relationship between director reputation incentives and idiosyncratic volatility occur through channels besides accounting information quality, we should observe significant coefficients for the main independent variables, particularly for *% Independent Directors - Highest* and *% Independent Directors - High*, when any of these four measures is included in the model.

[Table 5 about here]

In Table 5, we report the results where these measures of earnings quality are introduced to the estimation model. We lose some observations from the sample due to the inclusion of the earning quality measure. For the measures calculated using Jones (1991) and modified-Jones models (Columns 1-4), 18,442 observations are included in the estimation. The loss of observations is more severe for the models of Dechow and Dichev (2002) and McNichols (2002) (only 7,138 observations remain) as we require both lead and lag values of operating cash flows in order to estimate their measures of accrual quality. Except for the model of Dechow and Dichev (2002), *Earnings Quality* enters the equation significantly at the 5% level with a negative sign, suggesting that firms with noisy accruals tend to have lower firm-specific information content in their stock prices. More importantly, we find that the coefficients for director reputation incentive measures remain significant in all eight specifications. These results support our hypothesis that, in addition to better accounting information quality, the presence of directors with high reputation incentives is associated with a high level of firm-specific information being released to the market (Hypothesis 4).

5. Robustness checks

5.1. Alternative measure of stock price informativeness

As robustness checks, we employ several measures of stock price informativeness. First, we use weekly data instead of daily data and find that our results continue to hold. In

addition to the the single-factor market model in Equation 1, we employ the residuals from the three-factor Fama and French (1993) model and find similar results. Additionally, we follow Dimson (1979) and employ the following expanded market model:

$$r_{i,d} = \alpha_i + \beta_1 r_{m,d-2} + \beta_2 r_{m,d-1} + \beta_3 r_{m,d} + \beta_4 r_{m,d+1} + \beta_5 r_{m,d+2} + \varepsilon_{i,d} \tag{9}$$

where $r_{i,d}$ is the return of stock i on day d and $r_{m,d}$ is the return of the CRSP value-weighted market index on day d. The dependent variable in this section is the log ratio of $1 - R^2$ from the model above. The lead-lag terms are included to allow for nonsynchronous trading. Dimson (1979) argue that parameter estimates can be severely biased if stocks are not frequently traded. This could affect our measure of idiosyncratic volatility as it is calculated from the estimated values of the residuals. Dimson finds the inclusion of the lead and lag terms eliminates most of the bias[7]. The results are similar to those using our original measure of idiosyncratic volatility.

There is a debate in literature whether firm-specific stock returns are associated with noise rather than firm-specific information (see e.g. Dasgupta, Gan, and Gao, 2010; Gassen, LaFond, Skaife, and Veenman, 2015). Therefore, we employ the illiquidity ratio of Amihud (2002). This measure is defined as the annual average of absolute daily returns scaled by the stock's daily volume (in dollars):

$$\text{Iliquidity Ratio} = \frac{1}{D_i} \sum_{t=1}^{D_i} \frac{r_{i,t}}{vold_{i,t}} \tag{10}$$

where D_i is the number of valid observation days for stock i in that fiscal year and $\text{vold}_{i,t}$ is the dollar volume of stock i on day t. This measure gives the absolute price change per dollar (in percent) of daily trading volume and proxies for the price impact of order flow.

[7]This is identical to the measure used in Kim, Li, and Zhang (2011) amongst others. Some studies e.g. Jin and Myers (2006) and Hutton et al. (2009) also include value-weighted industry indices in the model. We control for industry variation by including industry dumour variables in all of our estimations.

The magnitude of price impact can be seen as the amount of informed trade on a stock (Kyle, 1985). We also find that our results hold using this measure.

[Table 6 about here]

5.2. Endogeneity

In this chapter, we posit that the directors are tougher monitors when the firm has the highest visibility and thus more firm specific information is being released to investors. This is consistent with studies which argue that corporate information environment can be altered to suit the informational demand of independent directors (Armstrong et al., 2014) and that the presence of independent directors can influence firm information environment (e.g. Gul and Leung, 2004; Ajinkya et al., 2005). However, it is recognized in the literature that corporate information environment may influence attributes of a firm's board structure (e.g. Coles et al., 2008; Linck et al., 2008; Lehn et al., 2009). Specific to this case, the first explanation is that both sets of variables are jointly determined. This is in line with the adverse selection model and empirical results of Ferreira et al. (2011) that price informativeness and board monitoring are substitutes. Information embedded in stock prices enable more efficient monitoring from external players such as the corporate control market. As a result, firms with higher price informativeness may not require directors with a strong monitoring experience. These directors may come from smaller firms. Another explanation is self-selection by the directors. If directors are appointed into a new directorship that is larger than their other directorships, they may be more inclined to work for a more transparent firm which she can monitor more effectively. Both these explanations can lead to the documented positive (negative) relation between *p_high* (*p_low*) and *idiovol*.

To circumvent these possibilities, we exploit the exogenous shock in directorship ranking and conduct a difference-in-difference analysis similar to Masulis and Mobbs (2014, 2015). Specifically, we identify treatment firms in which at least one independent director experi-

ences and exogenous increase in their directorship ranking as other firms in their directorship portfolio decrease in market capitalization. We exclude firms that experience significant size change (greater than 10%) and firms that the change in their own market capitalization lead to any change in directorship ranking. We identify 392 treatment firms through these criteria. We then match each treatment firm with a control firm, which is in the same industry and are closest in size, but does not have any treatment director. Firms that change significantly in size or cause directorship ranking to change are also excluded from the control group. For each firm, we include three years prior to the shock and three years after the shock in the analysis. The estimation model is as follows:

$$\begin{aligned}\text{Price Informativeness}_{i,t} = \alpha_0 + \alpha_1(\text{Ranking Increase}_{i,t} \times \text{Post Period}_{i,t}) \\ +\alpha_2\text{Ranking Increase}_{i,t} + \alpha_3\text{Post Period}_{i,t} \\ +\mathbf{CONTROLS}_{i,t}\mathbf{\Pi} + \varepsilon_{i,t} \qquad (11)\end{aligned}$$

The variable *Ranking Increase* equals one for treatment firms and zero for control firms. The variable *post* equals one for the three years after the exogenous shock in director ranking and zero for the three years before. The coefficient of interest is the interaction between *Ranking Increase* and *Post Period* (α_1). If monitoring from directors in directorships with relatively high ranking leads to more firm-specific information in stock price, we expect a higher level of idiosyncratic volatility in treatment firms after the exogenous shock in ranking. The difference-in-difference results in Table 7 shows that the coefficients for *Ranking Increase* $\times$ *Post Period* are positive and significant. In Column 1, the average idiosyncratic volatility of the treatment firms is 10% higher than after the shock in directorship ranking. In Column 2, we introduce board and firm control variables and find that the coefficient remain statistically significant ($p < 0.10$) and the magnitude remains similar to Column 1. The results in this section indicate that the exogenous change in directorship ranking leads

firm-specific information to increase.

Another concern in our analysis is that the relation may be driven by market capitalization; that is, larger firms are more likely to have more independent director that rank the firms as their most important directorship. In this analysis, the average market capitalization of firms in the treatment and control groups are similar to each other[8].

[Table 7 about here]

6. Additional results

6.1. Voluntary disclosures

We find that the relation between reputation incentive measures and stock price informativeness holds after controlling for proxies for earnings quality. This suggests that there are other ways that motivated directors can shape firm information environment beside the quality of financial reports. In this section, we explore a channel where firm could disclosure information to the public. Following prior literature (e.g. Pastena, 1979; Carter and Soo, 1999), we examine Form 8-K filings as a channel where companies can voluntarily disclose information. The Securities and Exchange Commission requires firms to report certain corporate events on a continuous basis. Companies must file Form 8-K to disclose major events to shareholders within four days after the events. The events that trigger the filing of 8-K reports can be grouped into 9 categories (see Table A2). We focus on category #8 of 8-K filing ("other events") and use this as our proxy for voluntary disclosures. Unlike other categories of 8-K filing, category #8 allows the firm to disclose any information that they deem material to investors. As there is no clear definition of what constitutes materiality (Debreceny and Rahman, 2005), a level of discretion is left with the managers and directors to decide what

[8]The average market capitalization of the treatment group is 11,032 million dollars whereas the average market capitalization of the control group is 9,556 million dollars. We conduct a two-sample t test (with unequal variances) and obtain a test statistic of 1.93 (p ¡ 0.1).

events they will disclosure under this category. For each firm-year, we identify the number of disclosures under category #8 and construct a variable *Voluntary Disclosures*$_{i,t}$ as a natural logarithm of one plus the number of category #8 events in 8-K reports of firm i in fiscal year t.

Firms may decide to file category #8 events in 8-K filings as additional disclosures to other events that trigger 8-K report; therefore, we follow Gul et al. (2011) and include filings in other categories as an additional control variables. The variable *Other Disclosures*$_{i,t}$ is defined as a natural logarithm of one plus the number of events in other categories in firm i's 8-K reports in fiscal year t.

We conduct a difference-in-differnce estimation to evaluate the effect of the exogenous shock in director ranking on voluntary disclosures. The model is similar to Equation 11 but with *Voluntary Disclosures*$_{i,t}$ as the dependent variable.

$$\begin{aligned}\text{Voluntary Disclosures}_{i,t} = \alpha_0 &+ \alpha_1(\text{Ranking Increase}_{i,t} \times \text{Post Period}_{i,t}) \\ &+ \alpha_2 \text{Ranking Increase}_{i,t} + \alpha_3 \text{Post Period}_{i,t} \\ &+ \mathbf{CONTROLS}_{i,t}\mathbf{\Pi} + \varepsilon_{i,t} \qquad (12)\end{aligned}$$

We also estimate an extended difference-in-difference analysis which incorporates analyst disagreements into the model. The most important motivation for voluntary disclosures is to reduce uncertainty about the firm's future prospects. Specifically, voluntary disclosures can reduce the "information risk" of the firm and "tightens the distribution of perceived cash flows" (Graham, Harvey, and Rajgopal, 2005). We anticipate the relation between the exogenous change in reputation incentives and voluntary disclosures to be more pronounced when the market-wide beliefs of the firm's prospect are dispersed and incorporate the dispersion

of analyst forecasts in to our extended model:

$$\begin{aligned}
&\text{Voluntary Disclosures}_{i,t} \\
&= \alpha_0 + \alpha_1(\text{Ranking Increase}_{i,t} \times \text{Post Period}_{i,t} \times \text{Disagreement}_{i,t}) \\
&+\alpha_2(\text{Ranking Increase}_{i,t} \times \text{Disagreement}_{i,t}) \\
&+\alpha_3(\text{Post Period}_{i,t} \times \text{Disagreement}_{i,t}) \\
&+\alpha_4(\text{Ranking Increase}_{i,t} \times \text{Post Period}_{i,t}) \\
&+\alpha_5\text{Ranking Increase}_{i,t} + \alpha_6\text{Post Period}_{i,t} + \alpha_7\text{Disagreement}_{i,t} \\
&+\mathbf{CONTROLS}_{i,t}\mathbf{\Pi} + \varepsilon_{i,t} \qquad (13)
\end{aligned}$$

The dumour variable *Disagreement* equals one when EPS forecast dispersion is above the industry median and zero otherwise. We use two measures of EPS forecast dispersion. One is forecasted EPS standard deviation adjusted by the mean and the other is the range of forecasted EPS (maximum less minimum) adjusted by the median.

The results are displayed in Table 8. In Columns 1-2, we do not find the increase category #8 filings in 8-K reports after the exogenous increase in directorship ranking (the coefficients for *Ranking Increase* × *Post Period* are not statistically significant). However, we find that when there is high disagreement amongst analysts in regards to earnings (as proxied by EPS forecasts), treated firms increase their voluntary disclosures by about 20% after the shock. The results are consistent regardless of the measures of analyst disagreement employed and the coefficients for *Ranking Increase* × *Post Period* × *Disagreement* remain statistically significant after controlling for other disclosure items in 8-K reports as well as other board and firm characteristics. The coefficients for *Disagreement* are significant and positive, supporting the findings of Graham et al. (2005) that firms use voluntary disclosures in response to information risk. Overall, the results indicate that the the exogenous increase

in directorship ranking is associated with a higher level of voluntary disclosures through 8-K filings when analyst forecasts are dispersed. This suggests that voluntary disclosure is one channel where directors can release firm specific information to public.

[Table 8 about here]

6.2. Crash risk

The results so far in this chapter suggest that the presence of independent directors who rank the directorship highly is associated with greater transparency in firm information environment. In this section, we test the association between independent director reputation incentives and a negative outcome from the lack of transparency, stock price crash risk. There is a wide range of incentives that can motivate managers to conceal bad news from the stock market such as compensation and career concerns (Ball, 2009; Kothari, Shu, and Wysocki, 2009). When the amount of bad news reaches a tipping point after an extended period of accumulation and the news are released to the market, the stock market would respond in a form of a large negative firm-specific shock (Jin and Myers, 2006). Recent research suggests that information asymmetry increases future crash risk by allowing managers to hide and accumulate bad news (Jin and Myers, 2006; Hutton et al., 2009; Kim et al., 2011). Consistent with these arguments, we anticipate a negative association between independent director reputation incentives and crash risk measures.

To construct our crash risk measures, we collect firm-specific daily returns ($R_{i,d}$), which is defined as the natural log of one plus the residual return from the expanded market model regression; that is, $R_{i,d} = \ln(1 + \hat{\varepsilon}_{i,d})$ where $\hat{\varepsilon}_{i,t}$ is estimated using Equation 9.

We then use the firm-specific daily returns to compute the following measures of stock price crash. We define a crash incidence as an event where the firm experiences firm-specific daily returns 3.2 standard deviations below the mean over each fiscal year. We choose 3.2 because it corresponds to a 0.1% probability of occurrence under the normal distribution.

Four measures of firm-specific stock price crash are employed[9]. The first measure, *COUNT*, is the difference between the number of crash incidences (downside extreme returns) and the number of jumps (upside extreme returns) for each firm in each fiscal year. The jump incidents are when the firm experiences firm-specific daily returns 3.2 standard deviations above the mean over each fiscal year. A high value of *COUNT* indicates that stock price crashes occur more frequently than sharp increases in returns.

The second measure, *CRASH*, is a dumour variable which equals one for firms that experiences one or more crash during the fiscal year period. The third measure is the negative coefficient of skewness, *NCSKEW*, which is the negative value of the third moment of firm-specific daily returns for each firm year divided by the standard deviation of firm-specific daily returns raised to the third power. Specifically, *NCSKEW* is calculated as:

$$NCSKEW_{i,t} = -\frac{n(n-1)^{\frac{3}{2}} \sum_{d \in t} R_{i,d}^3}{(n-1)(n-2)(\sum_{d \in t} R_{i,d}^2)^{\frac{3}{2}}} \tag{14}$$

The last measure, *DUVOL*, is the natural log ratio of volatility in the "down" sample to volatility in the "up" sample. For each stock i over a fiscal year period, we separate the days with firm-specific daily returns above (below) the mean of the period and put them in an "up" ("down") sample. We then calculate the sample standard deviations and compute the natural log of the ratio of the variance in the "down" sample to the variance of the "up" sample. More specifically, we calculate the measure as follows.

$$DUVOL_{i,t} = \ln \left\{ \frac{(n_u - 1) \sum_{down} R_{i,d}^2}{(n_d - 1) \sum_{up} R_{i,d}^2} \right\} \tag{15}$$

where n_u and n_d are the number of up and down days over the fiscal year t respectively.

[9]These measures are widely-used in the crash-risk literature e.g. Chen, Hong, and Stein (2001); Hutton et al. (2009); Kim et al. (2011); Callen and Fang (2013).

A higher value of *DUVOL* means that stock returns for that particular firm-year are more volatile on the down side compared to the up side and thus the firm is more prone to crash in that particular financial year.

[Table 9 about here]

In Table 9, we employ the difference-in-difference estimator to analyze the relation between stock price crash risk and reputation incentives. The coefficient *Ranking Increase* × *Post Period* measures the difference in the change in crash risk measures for the treatment group, which experience an exogenous shock in directorship ranking, after the shock period compared to the change in crash risk measures of the control group. The sample period comprises three years before and after the shock in directorship ranking. we find evidence that crash risk decreases in the post shock period for treatment firms. The coefficients for *Ranking Increase* × *Post Period* are negative and significant for all crash risk measures except for *CRASH* where the coefficient is still negative.

In Columns 5-8, we include in the analysis control variables for the presence of busy directors and sole directors. Additionally, we include other variables that are found to affect stock price crash. We include annual stock return and stand deviation of daily returns as Chen et al. (2001) postulate that firms with high and volatile past returns are more likely to crash. To control for persistence in stock return skewness, we introduce the lag value of the negative coefficient of skewness into all our models. We also control for earnings quality (based on the model of Jones (1991)) and standard firm characteristics i.e. firm size, market-to-book ratio, leverage and return on equity. The results are similar in these specifications.

The overall evidence is consistent with our hypothesis that the presence of directors with high reputation incentives is negatively associated with stock price crash. Although we do not find any statistical evidence that the presence of high reputation incentive directors reduce the probability of crash, those firms on average experience fewer crash incidents in

each financial year. Returns of the firms in which directors have high reputation incentives are less negatively skewed and their negative returns are less volatile.

7. Conclusion

In this chapter, we find that the proportion of directors on board who perceived their directorship to be the most important is positively associated with the level of firm-specific information content in stock price. The evidence is consistent with our hypothesis that directors want to preserve their reputation in the directorship labour market; thus, they serve as a monitoring mechanism that prevents the managers from withholding firm-specific information from the shareholders. Our results are robust to the inclusion of factors that can explain the firm-specific component of stock returns including various measures of financial report quality, anti-takeover provisions and the presence of financial analyst coverage. We also find that the link between reputation incentives and firm-specific return volatility is stronger when monitoring from the market for corporate control and financial analysts are weak, suggesting that director reputation incentives may act as a substitute for these other monitoring mechanisms. Additionally, our findings are robust to alternative proxies for firm-specific information content and a treatment for endogeneity. We find that voluntary disclosures through 8-K report is a channel where directors may choose to disclose information to the public when there is a high uncertainty regarding firm future prospects. Finally, we document some evidence that director reputation incentives are linked to lower incidents of firm-specific stock price crash. This study extends the literature by establishing a link between the incentives of director to preserve their reputation and capital market outcomes. It also adds to the vast literature on director characteristics by showing that not all independent directors can be considered as identical as they do not have equal incentives to perform their monitoring function.

References

Adams, R. B., Ferreira, D., 2007. A theory of friendly boards. Journal of Finance 62, 217–250.

Adams, R. B., Ferreira, D., 2008. Do directors perform for pay? Journal of Accounting & Economics 46, 154–171.

Adams, R. B., Ferreira, D., 2009. Women in the boardroom and their impact on governance and performance. Journal of Financial Economics 94, 291–309.

Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. Journal of Law & Economics 48, 371–406.

Ajinkya, B., Bhojraj, S., Sengupta, P., 2005. The Association between Outside Directors, Institutional Investors and the Properties of Management Earnings Forecasts. Journal of Accounting Research 43, 343–376.

Amihud, Y., 2002. Illiquidity and stock returns: cross-section and time-series effects. Journal of Financial Markets 5, 31–56.

Ang, A., Hodrick, R. J., Xing, Y., Zhang, X., 2006. The cross-section of volatility and expected returns. Journal of Finance 61, 259–299.

Armstrong, C. S., Core, J. E., Guay, W., 2014. Do independent directors cause improvements in firm transparency? Journal of Financial Economics 113, 383–403.

Armstrong, C. S., Guay, W., Weber, J. P., 2010. The role of information and financial reporting in corporate governance and debt contracting. Journal of Accounting & Economics 50, 179–234.

Ball, R., 2009. Market and Political/Regulatory Perspectives on the Recent Accounting Scandals. Journal of Accounting Research 47, 277–323.

Beasley, M. S., 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. Accounting Review 71, 443–465.

Bebchuk, L. A., Cohen, A., Ferrell, A., 2009. What matters in corporate governance? Review of Financial Studies 22, 783–827.

Bebchuk, L. A., Kraakman, R., Triantis, G., 2000. Stock pyramids, cross-ownership, and dual class equity: the mechanisms and agency costs of separating control from cash-flow rights. In: *Concentrated corporate ownership*, University of Chicago Press, Chicago, IL.

Bushman, R. M., Chen, Q., Engel, E., Smith, A., 2004a. Financial accounting information, organizational complexity and corporate governance systems. Journal of Accounting & Economics 37, 167–201.

Bushman, R. M., Piotroski, J. D., Smith, A. J., 2004b. What determines corporate transparency? Journal of Accounting Research 42, 207–252.

Callen, J. L., Fang, X., 2013. Institutional investor stability and crash risk: Monitoring versus short-termism? Journal of Banking & Finance 37, 3047–3063.

Carter, M. E., Soo, B. S., 1999. The Relevance of Form 8-K Reports. Journal of Accounting Research 37, 119–132.

Chan, K., Hameed, A., 2006. Stock price synchronicity and analyst coverage in emerging markets. Journal of Financial Economics 80, 115–147.

Chen, C., Huang, A. G., Jha, R., 2012. Idiosyncratic return volatility and the information quality underlying managerial discretion. Journal of Financial & Quantitative Analysis 47, 873–899.

Chen, J., Hong, H., Stein, J. C., 2001. Forecasting crashes: trading volume, past returns, and conditional skewness in stock prices. Journal of Financial Economics 61, 345–381.

Chen, Q., Goldstein, I., Jiang, W., 2007. Price informativeness and investment sensitivity to stock price. Review of Financial Studies 20, 619–650.

Chordia, T., Roll, R., Subrahmanyam, A., 2008. Liquidity and market efficiency. Journal of Financial Economics 87, 249–268.

Coles, J. L., Daniel, N. D., Naveen, L., 2008. Boards: Does one size fit all? Journal of Financial Economics 87, 329–356.

Coles, J. L., Daniel, N. D., Naveen, L., 2014. Co-opted boards. Review of Financial Studies 27, 1751–1796.

Coles, J. L., Lemmon, M. L., Meschke, J. F., 2012. Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance. Journal of Financial Economics 103, 149–168.

Core, J. E., Holthausen, R. W., Larcker, D. F., 1999. Corporate governance, chief executive officer compensation, and firm performance. Journal of Financial Economics 51, 371–406.

Dasgupta, S., Gan, J., Gao, N., 2010. Transparency, Price Informativeness, and Stock Return Synchronicity: Theory and Evidence. Journal of Financial & Quantitative Analysis 45, 1189–1220.

Debreceny, R., Rahman, A., 2005. Firm-specific determinants of continuous corporate disclosures. International Journal of Accounting 40, 249–278.

Dechow, P. M., Dichev, I. D., 2002. The quality of accruals and earnings: The role of accrual estimation errors. Accounting Review 77, 35–59.

Dechow, P. M., Sloan, R. G., Sweeney, A. P., 1995. Detecting earnings management. Accounting Review 70, 193–225.

Dechow, P. M., Sloan, R. G., Sweeney, A. P., 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. Contemporary Accounting Research 13, 1–36.

Derrien, F., Kecskés, A., 2013. The real effects of financial shocks: Evidence from exogenous changes in analyst coverage. Journal of Finance 68, 1407–1440.

Dimson, E., 1979. Risk measurement when shares are subject to infrequent trading. Journal of Financial Economics 7, 197–226.

Dow, J., Gorton, G., 1997. Stock Market Efficiency and Economic Efficiency: Is There a Connection? Journal of Finance 52, 1087–1129.

Durnev, A., Morck, R., Yeung, B., 2004. Value-enhancing capital budgeting and firm-specific stock return variation. Journal of Finance 59, 65–105.

Fama, E. F., 1980. Agency problems and the theory of the firm. Journal of Political Economy 88, 288–307.

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

Fama, E. F., Jensen, M. C., 1983. Separation of ownership and control. Journal of Law & Economics 26, 301–325.

Fernandes, N., Ferreira, M. A., 2008. Does international cross-listing improve the information environment. Journal of Financial Economics 88, 216–244.

Fernandes, N., Ferreira, M. A., 2009. Insider trading laws and stock price informativeness. Review of Financial Studies 22, 1845–1887.

Ferreira, D., Ferreira, M. A., Raposo, C. C., 2011. Board structure and price informativeness. Journal of Financial Economics 99, 523–545.

Ferreira, M. A., Laux, P. A., 2007. Corporate governance, idiosyncratic risk, and information flow. Journal of Finance 62, 951–989.

Field, L., Lowry, M., Mkrtchyan, A., 2013. Are busy boards detrimental? Journal of Financial Economics 109, 63–82.

Foucault, T., Gehrig, T., 2008. Stock price informativeness, cross-listings, and investment decisions. Journal of Financial Economics 88, 146–168.

Fox, M. B., Morck, R., Yeung, B., Durnev, A., 2003. Law, share price accuracy, and economic performance: the new evidence. Michigan Law Review 102, 331–386.

Fresard, L., 2012. Cash Savings and Stock Price Informativeness. Review of Finance 16, 985–1012.

Fu, F., 2009. Idiosyncratic risk and the cross-section of expected stock returns. Journal of Financial Economics 91, 24–37.

Gassen, J., LaFond, R., Skaife, H. A., Veenman, D., 2015. Illiquidity and R^2. Unpublished Working Paper.

Gelb, D. S., Zarowin, P., 2002. Corporate Disclosure Policy and the Informativeness of Stock Prices. Review of Accounting Studies 7, 33–52.

Graham, J. R., Harvey, C. R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. Journal of Accounting & Economics 40, 3–73.

Grossman, S. J., Stiglitz, J. E., 1980. On the Impossibility of Informationally Efficient Markets. American Economic Review 70, 393–408.

Gul, F. A., Leung, S., 2004. Board leadership, outside directors' expertise and voluntary corporate disclosures. Journal of Accounting & Public Policy 23, 351–379.

Gul, F. A., Srinidhi, B., Ng, A. C., 2011. Does board gender diversity improve the informativeness of stock prices? Journal of Accounting & Economics 51, 314–338.

Hutton, A. P., Marcus, A. J., Tehranian, H., 2009. Opaque financial reports, R^2, and crash risk. Journal of Financial Economics 94, 67–86.

Jensen, M. C., 1993. The modern industrial revolution, exit, and the failure of internal control systems. Journal of Finance 48, 831–880.

Jiang, G. J., Xu, D., Yao, T., 2009. The information content of idiosyncratic volatility. Journal of Financial & Quantitative Analysis 44, 1–28.

Jin, L., Myers, S. C., 2006. R^2 around the world: New theory and new tests. Journal of Financial Economics 79, 257–292.

Jones, J. J., 1991. Earnings management during import relief investigations. Journal of Accounting Research 29, 193.

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

Kim, J.-B., Li, Y., Zhang, L., 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. Journal of Financial Economics 100, 639–662.

Knyazeva, A., Knyazeva, D., Raheja, C., 2009. Benefits of focus vs. heterogeneity: An analysis of corporate boards. Unpublished Working Paper.

Kothari, S. P., Shu, S., Wysocki, P. D., 2009. Do Managers Withhold Bad News? Journal of Accounting Research 47, 241–276.

Kyle, A. S., 1985. Continuous Auctions and Insider Trading. Econometrica 53, 1315–1335.

Larcker, D. F., Richardson, S. A., Tuna, I., 2007. Corporate governance, accounting outcomes, and organizational performance. Accounting Review 82, 963–1008.

Lehn, K., Patro, S., Zhao, M., 2009. Determinants of the Size and Composition of US Corporate Boards: 1935-2000. Financial Management 38, 747–780.

Li, K., Morck, R., Yang, F., Yeung, B., 2004. Firm-specific variation and openness in emerging markets. Review of Economics & Statistics 86, 658–669.

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

Masulis, R. W., Mobbs, S. H., 2014. Independent director incentives: Where do talented directors spend their limited time and energy? Journal of Financial Economics 111, 406–429.

Masulis, R. W., Mobbs, S. H., 2015. Independent director reputation incentives: Major board decisions and corporate outcomes. Unpublished Working Paper.

McNichols, M. F., 2002. Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. Accounting Review 77, 61–69.

Morck, R., Yeung, B., Yu, W., 2000. The information content of stock markets: why do emerging markets have synchronous stock price movements? Journal of Financial Economics 58, 215–260.

Panousi, V., Papanikolaou, D., 2012. Investment, idiosyncratic risk, and ownership. Journal of Finance 67, 1113–1148.

Pastena, V., 1979. Some Evidence on the SEC's System of Continuous Disclosure. Accounting Review 54, 776–783.

Piotroski, J. D., Roulstone, D. T., 2004. The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices. Accounting Review 79, 1119–1151.

Rajgopal, S., Venkatachalam, M., 2011. Financial reporting quality and idiosyncratic return volatility. Journal of Accounting & Economics 51, 1–20.

Roll, R., 1988. R^2. Journal of Finance 43, 541–566.

Ryan, H. E., Wiggins, R. A., 2004. Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. Journal of Financial Economics 73, 497–524.

Shivdasani, A., 1993. Board composition, ownership structure, and hostile takeovers. Journal of Accounting & Economics 16, 167–198.

Subrahmanyam, A., Titman, S., 1999. The Going-Public Decision and the Development of Financial Markets. Journal of Finance 54, 1045–1082.

Veldkamp, L. L., 2006. Information markets and the comovement of asset prices. Review of Economic Studies 73, 823–845.

Yu, F. F., 2008. Analyst coverage and earnings management. Journal of Financial Economics 88, 245–271.

Table 1: Summary Statistics

The full sample comprises 18,538 S&P 1500 firms from 1996-2012. R^2 and the measure of stock price informativeness are computed using daily stock price data from the Center of Research in Security Prices. NYSE/Amex/NASDAQ value-weighted market index (inclusive of dividends) is the proxy for stock market portfolio. Director data and E-Index are obtained from the RiskMetrics database. Firm characteristics are obtained from S&P Capital IQ Compustat database. Analyst coverage data is obtained from the I/B/E/S database. Variable definitions are provided in Table A1.

Variable	#Obs.	Mean	S.D.	p25	p50	p75
Panel A: Stock Price Informativeness						
R^2	18,538	0.24	0.17	0.10	0.21	0.35
Price Informativeness	18,538	1.53	1.43	0.60	1.30	2.18
Panel B: Board Characteristics						
Board Size	18,538	9.02	2.38	7.00	9.00	10.00
Board Independence	18,538	0.69	0.17	0.57	0.71	0.83
Independent Director Majority	18,538	0.82	0.38	1.00	1.00	1.00
Sole Director Majority	18,538	0.63	0.48	0.00	1.00	1.00
Busy Board	18,538	0.01	0.08	0.00	0.00	0.00
% Independent Directors – Highest	18,538	0.10	0.14	0.00	0.00	0.15
% Independent Directors – Lowest	18,538	0.13	0.14	0.00	0.10	0.20
% Independent Directors – High	18,538	0.11	0.15	0.00	0.00	0.18
% Independent Directors – Low	18,538	0.15	0.15	0.00	0.13	0.25
Panel C: Firm Characteristics						
Return on Equity	18,538	0.06	6.57	0.05	0.12	0.19
Variance(ROE)	18,538	0.36	6.35	0.02	0.05	0.11
Leverage	18,538	0.19	0.17	0.02	0.17	0.29
Market-to-Book	18,538	3.56	44.55	1.47	2.28	3.65
Firm Size	18,538	7.44	1.60	6.35	7.29	8.42
Firm Age	18,538	3.08	0.68	2.56	3.09	3.69
Dividends	18,538	0.52	0.50	0.00	1.00	1.00
Diversification	18,538	0.61	0.49	0.00	1.00	1.00
Panel D: External monitoring measures						
E-Index	12,900	2.14	1.35	1.00	2.00	3.00
Analyst Coverage	12,242	10.85	7.79	5.00	9.00	15.00
Panel E: Earnings quality measures						
Jones (1991)	18,442	0.12	0.16	0.03	0.08	0.14
Modified-Jones (Dechow et al., 1996)	18,442	0.12	0.16	0.03	0.07	0.14
Dechow and Dichev (2002)	7,138	0.13	0.30	0.02	0.05	0.12
McNichols (2002)	7,138	0.18	0.68	0.02	0.05	0.14

Table 2: Price Informativeness on Reputation Incentives Measures

This table presents coefficient estimates and cluster-robust standard errors from multivariate OLS regression analysis of stock price informativeness on director reputation incentives. The dependent variable is the logistic transformation of $1 - R^2$ from market model regression. % Independent Directors – Highest (Lowest) is the proportion of directors who are independent and for whom this directorship the largest (smallest) directorship. % Independent Directors – High (Low) is the proportion of directors who are independent and for whom this directorship is at least 10% larger (smaller) than their smallest (largest) directorship. Other control variables are defined in Table A1. Industry and fiscal year dummy variables are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

	Dependent Variable = Price Informativeness			
	(1)	(2)	(3)	(4)
% Independent Directors – Highest	0.573***	0.569***		
	(0.102)	(0.112)		
% Independent Directors – Lowest	−0.181**	−0.182**		
	(0.075)	(0.088)		
% Independent Directors – High			0.605***	0.584***
			(0.098)	(0.105)
% Independent Directors – Low			−0.253***	−0.273***
			(0.068)	(0.078)
Busy Board		−0.156		−0.159
		(0.110)		(0.109)
Sole Director Majority		−0.002		−0.016
		(0.026)		(0.025)
Board Size	0.021***	0.021***	0.022***	0.022***
	(0.006)	(0.006)	(0.006)	(0.006)
Board Independence	−0.068**	−0.068**	−0.065**	−0.063**
	(0.029)	(0.029)	(0.029)	(0.029)
Return on Equity	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
S.D.(ROE)	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	0.216***	0.216***	0.220***	0.220***
	(0.066)	(0.066)	(0.066)	(0.065)
Market-to-Book	−0.003	−0.003	−0.003	−0.003
	(0.003)	(0.003)	(0.003)	(0.003)
Firm Size	−0.322***	−0.321***	−0.328***	−0.328***
	(0.012)	(0.012)	(0.013)	(0.013)
Dividend	−0.023	−0.023	−0.021	−0.021
	(0.026)	(0.026)	(0.026)	(0.026)
Firm Age	−0.053**	−0.053**	−0.054***	−0.054***
	(0.021)	(0.021)	(0.021)	(0.021)
Diversification	−0.065***	−0.064***	−0.065***	−0.064***
	(0.024)	(0.024)	(0.024)	(0.024)
Stock Turnover	−0.017**	−0.017**	−0.016**	−0.016**
	(0.007)	(0.007)	(0.007)	(0.007)
#Obs.	18,538	18,538	18,538	18,538
R^2	0.569	0.569	0.570	0.570

Table 3: Price Informativeness, Reputation Incentives & Monitoring

This table presents coefficient estimates and cluster-robust standard errors from multivariate OLS regression analysis of stock price informativeness on director reputation incentives. Analyst coverage is the number of earnings forecasts made by security analysts. E-Index is the number of governance provisions adopted by firm that reduce shareholder rights and takeover threats as constructed by Bebchuk et al. (2009). Other variables are defined in Table A1. Industry and fiscal year dummy variables are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
% Independent Directors – Highest	0.543***		0.362***		0.359***	
	(0.111)		(0.122)		(0.121)	
% Independent Directors – Lowest	−0.171**		−0.128		−0.125	
	(0.087)		(0.097)		(0.097)	
% Independent Directors – High		0.572***		0.367***		0.367***
		(0.105)		(0.114)		(0.113)
% Independent Directors – Low		−0.247***		−0.194**		−0.184**
		(0.078)		(0.088)		(0.088)
Busy Board	−0.140	−0.146	−0.329***	−0.331***	−0.322***	−0.325***
	(0.109)	(0.108)	(0.114)	(0.110)	(0.112)	(0.109)
Sole Director Majority	−0.002	−0.012	−0.031	−0.042	−0.032	−0.041
	(0.026)	(0.025)	(0.030)	(0.029)	(0.029)	(0.029)
Board Size	0.020***	0.020***	0.018**	0.018***	0.017**	0.017**
	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)
Board Independence	−0.071**	−0.068**	−0.057	−0.054	−0.060	−0.058
	(0.029)	(0.029)	(0.040)	(0.039)	(0.040)	(0.040)
Return on Equity	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
S.D.(ROE)	−0.000	−0.000	0.001	0.001	0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	0.237***	0.240***	0.197**	0.202***	0.209***	0.213***
	(0.065)	(0.065)	(0.078)	(0.078)	(0.078)	(0.077)
Market-to-Book	−0.003	−0.003	−0.002	−0.002	−0.001	−0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)

(Continued on next page...)

(Table 3 Continued)

Firm Size	-0.353^{***}	-0.360^{***}	-0.249^{***}	-0.254^{***}	-0.283^{***}	-0.287^{***}
	(0.014)	(0.014)	(0.014)	(0.015)	(0.017)	(0.017)
Dividend	-0.024	-0.022	-0.029	-0.027	-0.030	-0.029
	(0.026)	(0.025)	(0.027)	(0.027)	(0.027)	(0.027)
Firm Age	-0.049^{**}	-0.050^{**}	-0.067^{***}	-0.067^{***}	-0.058^{**}	-0.059^{***}
	(0.021)	(0.021)	(0.023)	(0.023)	(0.023)	(0.023)
Diversification	-0.056^{**}	-0.056^{**}	-0.114^{***}	-0.114^{***}	-0.104^{***}	-0.104^{***}
	(0.023)	(0.023)	(0.027)	(0.027)	(0.027)	(0.027)
Stock Turnover	-0.020^{***}	-0.019^{***}	0.008	0.008	0.004	0.004
	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)
Analyst Coverage	0.011^{***}	0.011^{***}			0.010^{***}	0.010^{***}
	(0.002)	(0.002)			(0.002)	(0.002)
E-Index			-0.027^{**}	-0.026^{**}	-0.026^{**}	-0.026^{**}
			(0.011)	(0.011)	(0.011)	(0.011)
#Obs.	18,442	18,442	12,813	12,813	12,813	12,813
R^2	0.572	0.572	0.564	0.564	0.565	0.566

Table 4: Subsample Analysis

This table presents coefficient estimates and cluster-robust standard errors from multivariate OLS regression analysis of stock price informativeness on director reputation incentives. Firms are classified as having a high (low) level of Entrenchment Index when the number of anti-takeover provisions is above (below) the median, which is 2. Firms are classified as having a high (low) lever of analyst coverage when they earnings are forecasted by greater (lower) number of financial analyst than the median value (10.85). Other control variables from Models 5-6 of Table 3 are included. Definitions of variables are provided in Table A1. Dummy variables for industries (as defined by 2-digit SIC codes) and fiscal years are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Panel A: Split by Analyst Coverage				
Analyst Coverage =	Low		High	
	(1)	(2)	(3)	(4)
% Independent Directors – Highest	0.459**		0.101	
	(0.206)		(0.133)	
% Independent Directors – Lowest	−0.109		−0.085	
	(0.147)		(0.119)	
% Independent Directors – High		0.556***		0.127
		(0.204)		(0.120)
% Independent Directors – Low		−0.141		−0.051
		(0.138)		(0.108)
Other Controls	Yes	Yes	Yes	Yes
#Obs.	5,062	5,062	7,751	7,751
R^2	0.520	0.519	0.593	0.594
Panel B: Split by Entrenchment Index (Bebchuk et al., 2009)				
E-Index	Low		High	
	(1)	(2)	(3)	(4)
% Independent Directors – Highest	0.388*		0.329*	
	(0.202)		(0.172)	
% Independent Directors – Lowest	0.057		−0.152	
	(0.196)		(0.137)	
% Independent Directors – High		0.320		0.430***
		(0.196)		(0.153)
% Independent Directors – Low		−0.026		−0.207*
		(0.171)		(0.125)
Other Controls	Yes	Yes	Yes	Yes
#Obs.	4,162	4,162	4,770	4,770
R^2	0.520	0.519	0.593	0.594

Table 5: Controlling for Earnings Quality Measures

This table presents coefficient estimates and cluster-robust standard errors from multivariate OLS regression analysis of stock price informativeness on director reputation incentives. All control variables in model 2 and 4 of Table 2 are included. Four proxies of earnings quality are employed: Jones (1991), Modified-Jones (Dechow et al., 1995), Dechow and Dichev (2002) and McNichols (2002). The construction of these earnings quality measures and other variables are provided in Appendix **??**. Industry and fiscal year dummy variables are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Earnings Quality Model =	Jones (1991)		Modified-Jones	
	(1)	(2)	(3)	(4)
% Independent Directors – Highest	0.565***		0.566***	
	(0.113)		(0.113)	
% Independent Directors – Lowest	−0.179**		−0.178**	
	(0.087)		(0.087)	
% Independent Directors – High		0.588***		0.588***
		(0.106)		(0.106)
% Independent Directors – Low		−0.266***		−0.265***
		(0.078)		(0.078)
Earnings Quality	−0.150**	−0.151**	−0.159**	−0.159**
	(0.063)	(0.062)	(0.062)	(0.062)
Other Controls	Yes	Yes	Yes	Yes
#Obs.	18,442	18,442	18,442	18,442
R^2	0.569	0.570	0.569	0.570
Earnings Quality Model =	Dechow and Dichev (2002)		McNichols (2002)	
	(5)	(6)	(7)	(8)
% Independent Directors – Highest	0.616***		0.614***	
	(0.174)		(0.174)	
% Independent Directors – Lowest	−0.093		−0.093	
	(0.146)		(0.146)	
% Independent Directors – High		0.583***		0.581***
		(0.162)		(0.162)
% Independent Directors – Low		−0.269**		−0.269**
		(0.129)		(0.129)
Earnings Quality	0.012	0.012	−0.027**	−0.026**
	(0.046)	(0.047)	(0.011)	(0.011)
Other Controls	Yes	Yes	Yes	Yes
#Obs.	7,138	7,138	7,138	7,138
R^2	0.588	0.589	0.588	0.589

Table 6: Alternative Proxy for Stock Price Informativeness

This table presents coefficient estimates and cluster-robust standard errors from firm-level fixed effects regression analysis of stock price informativeness on director reputation incentives. Other boards and firms characteristics are included in all models. Fiscal year fixed effects are included in all specifications. Definitions of variables are provided in Table A1. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Dependent Variable = Illiquidity Ratio	(1)	(2)	(3)	(4)	(5)	(6)
% Independent Director - Highest	0.013***	0.011***	0.008**	0.014***	0.011***	0.011***
	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
% Independent Director - Lowest	−0.005**	−0.007**	−0.006**	−0.007**	−0.006**	−0.005**
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Busy Board		0.010***	0.012***	0.008**	0.011***	0.011***
		(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Sole Directorship Majority		−0.001	−0.001	−0.001	−0.001	−0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Analyst Coverage			0.000		0.000***	0.000***
			(0.000)		(0.000)	(0.000)
Entrenchment Index				−0.001***	−0.001***	−0.001***
				(0.000)	(0.000)	(0.000)
#Obs.	8,570	8,570	6,870	7,590	6,388	6,351
R^2	0.151	0.151	0.140	0.196	0.212	0.216
Dependent Variable = Illiquidity Ratio	(1)	(2)	(3)	(4)	(5)	(6)
% Independent Director - High	0.016***	0.015***	0.012***	0.018***	0.015***	0.015***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
% Independent Director - Low	−0.005**	−0.006**	−0.005**	−0.006**	−0.005**	−0.005**
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Busy Board		0.008*	0.011**	0.005	0.009**	0.010**
		(0.004)	(0.005)	(0.004)	(0.004)	(0.005)
Sole Directorship Majority		−0.000	−0.000	−0.001	−0.000	−0.000
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Analyst Coverage			0.000		0.000***	0.000***
			(0.000)		(0.000)	(0.000)
Entrenchment Index				−0.001***	−0.001***	−0.001***
				(0.000)	(0.000)	(0.000)
#Obs.	8,570	8,570	6,870	7,590	6,388	6,351
R^2	0.153	0.153	0.141	0.198	0.214	0.218

Table 7: Difference-in-Difference

This table reports parameter estimates and cluster-robust standard errors from difference-in-difference estimations. The dependent variable is stock price informativeness *idiovol*. The treatment firms (indicated by the dummy variable *treat*) are firms that have at least one treatment director. Treatment directors are independent directors who have multiple directorships; at least one of his other directorships is in a firm that decreased in size; and, the decrease in size of this other firm led to an increase in ranking in the current firm. Control firms are those which are in the same industry and are nearest in size (market capitalization) to the treatment firms but have no treatment director. The dummy variable *post* equals zero (one) in the three years before (after) the change in ranking. Dummy variables for industries (as defined by 2-digit SIC codes) and fiscal years are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Dependent Variable = Price Informativeness	(1)	(2)
Ranking Increase × Post Period	0.103**	0.101*
	(0.047)	(0.058)
Ranking Increase	−0.064	−0.061
	(0.045)	(0.057)
Post Period	−0.012	−0.071*
	(0.043)	(0.042)
Board Size		0.024**
		(0.012)
Board Independence		−0.061
		(0.074)
Busy Board		−0.532**
		(0.260)
Sole Director Majority		−0.061
		(0.044)
Return on Equity		−0.006
		(0.008)
S.D.(ROE)		0.011
		(0.011)
Leverage		0.413**
		(0.194)
Market-to-Book		0.012
		(0.010)
Firm Size		−0.201***
		(0.030)
Dividend		0.071
		(0.048)
Firm Age		−0.013
		(0.046)
Diversification		−0.107**
		(0.047)
Stock Turnover		−0.011
		(0.017)
Earnings Quality		−0.263
		(0.166)
Analyst Coverage		0.012**
		(0.005)
E-Index		−0.022
		(0.021)
#Obs.	5,094	3,763
R^2	0.500	0.517

Table 8: Voluntary Disclosures

This table reports parameter estimates and cluster-robust standard errors from difference-in-difference estimations. The dependent variables is logarithm of one plus the number of voluntary disclosures (Item 8) in the firm's 8-K reports within each fiscal year. Treatment firms (indicated by the dummy variable "Ranking Increase") are firms that have at least one treatment director. Treatment directors are independent directors who have multiple directorships; at least one of his other directorships is in a firm that decreased in size; and, the decrease in size of this other firm led to an increase in ranking in the current firm. Control firms are those which are in the same industry and are nearest in size (market capitalization) to the treatment firms but have no treatment director. The dummy variable "Post Period" equals zero (one) in the three years before (after) the change in ranking. Disagreement amongst analysts is measured by the standard deviation of forecasted EPS (Columns 3-4) and the difference between maximum and minimum forecasted EPS (Columns 5-6). The variable "Other Disclosures" is logarithm of one plus the number of other disclosure items in 8-K reports. Other control variables in Columns 2, 4 and 6 are the same as those in Column 2 of Table 7. Dummy variables for industries (as defined by 2-digit SIC codes) and fiscal years are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Dependent Variable = Voluntary Disclosures			Forecasted EPS disagreement			
			Standard Deviation		Range	
	(1)	(2)	(3)	(4)	(5)	(6)
Ranking Increase × Post Period × Disagreement			0.233**	0.209**	0.195**	0.176*
			(0.092)	(0.091)	(0.091)	(0.090)
Ranking Increase × Post Period	−0.023	−0.016	−0.111*	−0.097*	−0.102*	−0.087
	(0.044)	(0.043)	(0.059)	(0.058)	(0.061)	(0.060)
Ranking Increase × Disagreement			−0.126*	−0.118*	−0.133**	−0.147**
			(0.067)	(0.066)	(0.066)	(0.066)
Post Period × Disagreement			−0.071	−0.068	−0.059	−0.063
			(0.065)	(0.064)	(0.064)	(0.063)
Ranking Increase	0.036	−0.012	0.081*	0.039	0.090**	0.057
	(0.032)	(0.032)	(0.042)	(0.042)	(0.044)	(0.044)
Post Period	0.001	−0.014	0.019	0.000	0.017	0.002
	(0.033)	(0.032)	(0.041)	(0.040)	(0.043)	(0.042)
Disagreement			0.116**	0.141***	0.111**	0.131***
			(0.047)	(0.047)	(0.046)	(0.046)
Other Disclosures	0.512***	0.464***	0.517***	0.474***	0.517***	0.474***
	(0.025)	(0.025)	(0.026)	(0.026)	(0.026)	(0.026)
Other Controls	No	Yes	No	Yes	No	Yes
#Obs.	4,018	4,018	3,788	3,788	3,788	3,788
R^2	0.177	0.214	0.191	0.225	0.190	0.223

Table 9: Crash Risk

This table reports parameter estimates and cluster-robust standard errors from difference-in-difference estimations. The dependent variables are crash risk measures (defined in Appendix **??**). The treatment firms (indicated by the dummy variable *treat*) are firms that have at least one treatment director. Treatment directors are independent directors who have multiple directorships; at least one of his other directorships is in a firm that decreased in size; and, the decrease in size of this other firm led to an increase in ranking in the current firm. Control firms are those which are in the same industry and are nearest in size (market capitalization) to the treatment firms but have no treatment director. The dummy variable *post* equals zero (one) in the three years before (after) the change in ranking. Dummy variables for industries (as defined by 2-digit SIC codes) and fiscal years are included in all specifications. *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

	COUNT	CRASH	NCSKEW	DUVOL
	(1)	(2)	(3)	(4)
Ranking Increase × Post Period	−0.240***	−0.020	−0.217***	−0.058***
	(0.071)	(0.013)	(0.072)	(0.016)
Ranking Increase	0.157***	0.019*	0.180***	0.047***
	(0.050)	(0.010)	(0.048)	(0.011)
Post Period	0.043	0.004	−0.012	−0.005
	(0.052)	(0.010)	(0.058)	(0.013)
Other Controls	No	No	No	No
#Obs.	5,094	5,094	5,094	5,094
R^2	0.036	0.039	0.030	0.060
	COUNT	CRASH	NCSKEW	DUVOL
	(5)	(6)	(7)	(8)
Ranking Increase × Post Period	−0.260***	−0.018	−0.278***	−0.072***
	(0.075)	(0.013)	(0.078)	(0.018)
Ranking Increase	0.181***	0.011	0.227***	0.062***
	(0.056)	(0.010)	(0.059)	(0.013)
Post Period	0.011	0.008	−0.002	−0.003
	(0.053)	(0.009)	(0.060)	(0.013)
Other Controls	Yes	Yes	Yes	Yes
#Obs.	4,454	4,454	4,454	4,454
R^2	0.055	0.284	0.065	0.085

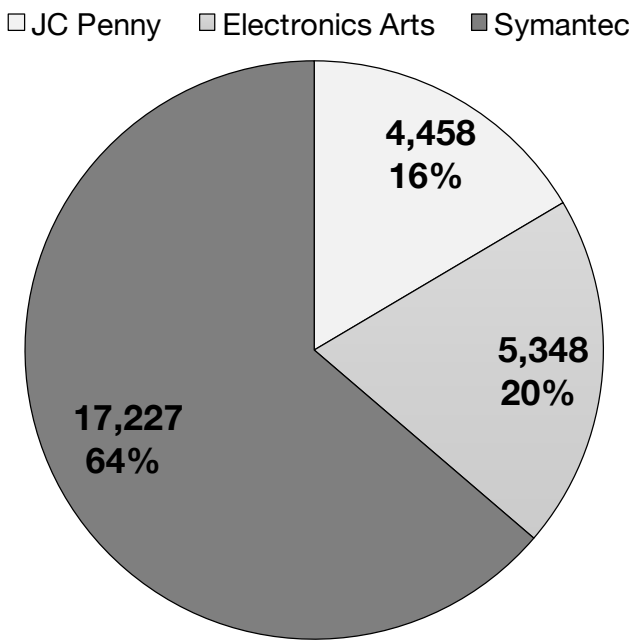

Figure 1. Example of directorship ranking

Table A1: Variable Definitions

Variable	*Definition*
Price Informativeness	Annual logistic transformed relative idiosyncratic volatility estimated from the market model.
% Independent Directors - High	Proportion of board members who are independent outside directors and this directorship is at least 10% larger than their smallest directorship based on the firm market capitalization.
% Independent Directors - Highest	Proportion of board members who are independent outside directors and this directorship is their largest directorship based on the firm market capitalization.
% Independent Directors - Low	Proportion of board members who are independent outside directors and this directorship is at least 10% smaller than their largest directorship based on the firm market capitalization.
% Independent Directors - Lowest	Proportion of board members who are independent outside directors and this directorship is their smallest directorship based on the firm market capitalization.
Busy Directors	An indicator variable that equals one if the majority of the board is populated by directors who hold three or more additional directorship and zero otherwise.
Sole Directors	An indicator variable that equals one if the majority of the board is populated by directors whose directorship is their only directorship and zero otherwise.
Board Size	Number of directors on board.
Board Independence	An indicator variable that equals one if the majority of the board is populated by independent directors. Directors are classified as independent when they are not executives (formerly or presently) and do not have any other affiliation to the company.
Return on Equity	Net income divided by total common equity.
S.D.(ROE)	Standard deviation of the firm's return on equity in the current year and the previous two years.
Leverage	Total long-term debt divided by total assets. Market-to-book ratio, defined as the product of number of common shares outstanding and share price at the end of fiscal year divided by total common equity.
Market-to-Book	Stock price at fiscal year end times the number of common shares outstanding divided by the book value of equity and winsorized at 1%.
Firm Size	Log firm size based on the firms market capitalization.
Dividend	An indicator variable that equals one if the firm pays dividends and zero otherwise.
Firm Age	Logarithm of one plus firm age measured as the number of years since the firms inclusion in the Compustat database.
Diversification	An indicator variable that equals one if the firm operates in more than one business segments and zero otherwise.
Earning Quality	Measures of earning quality, defined as the absolute values of the residuals from cross-section regression ($\|\varepsilon_t\|$) of the following earning quality models: Jones (1991), modified-Jones (Dechow et al., 1996), Dechow and Dichev (2002), and McNichols (2002).
E-Index	The number of governance provisions adopted by firm that reduce shareholder rights and takeover threats (Bebchuk et al., 2009).
Analyst Coverage	The number of forecasts made by stock analysts.

Table A2: Disclosure Items in Form 8-K

Section 1: Registrant's Business and Operations	
Item 1.01	Entry into a Material Definitive Agreement
Item 1.02	Termination of a Material Definitive Agreement
Item 1.03	Bankruptcy or Receivership
Item 1.04	Mine Safety - Reporting of Shutdowns and Patterns of Violations
Section 2: Financial Information	
Item 2.01	Completion of Acquisition or Disposition of Assets
Item 2.02	Results of Operations and Financial Condition
Item 2.03	Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant
Item 2.04	Triggering Events That Accelerate or Increase a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement
Item 2.05	Costs Associated with Exit or Disposal Activities
Item 2.06	Material Impairments
Section 3: Securities and Trading Markets	
Item 3.01	Notice of Delisting or Failure to Satisfy a Continued Listing Rule or Standard; Transfer of Listing
Item 3.02	Unregistered Sales of Equity Securities
Item 3.03	Material Modification to Rights of Security Holders
Section 4: Matters Related to Accountants and Financial Statements	
Item 4.01	Changes in Registrant's Certifying Accountant
Item 4.02	Non-Reliance on Previously Issued Financial Statements or a Related Audit Report or Completed Interim Review
Section 5: Corporate Governance and Management	
Item 5.01	Changes in Control of Registrant
Item 5.02	Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers
Item 5.03	Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year
Item 5.04	Temporary Suspension of Trading Under Registrant's Employee Benefit Plans
Item 5.05	Amendment to Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ethics
Item 5.06	Change in Shell Company Status
Item 5.07	Submission of Matters to a Vote of Security Holders
Item 5.08	Shareholder Director Nominations
Section 6: Asset-Backed Securities	
Item 6.01	ABS Informational and Computational Material
Item 6.02	Change of Servicer or Trustee
Item 6.03	Change in Credit Enhancement or Other External Support
Item 6.04	Failure to Make a Required Distribution
Item 6.05	Securities Act Updating Disclosure
Section 7: Regulation FD	
Item 7.01	Regulation FD Disclosure
Section 8: Other Events	
Item 8.01	Other Events (The registrant can use this Item to report events that are not specifically called for by Form 8-K, that the registrant considers to be of importance to security holders.)
Section 9: Financial Statements and Exhibits	
Item 9.01	Financial Statements and Exhibits