Antecedents and Consequences of Disclosures Containing Strategic Content

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Abstract
Extant research on disclosures has evolved around the questions of whether or not it is advantageous for the firm to make voluntary disclosures and when to make disclosures, rather than the role of top managers in making voluntary disclosures. However, this is a major research gap, because managers have been identified as playing a major role in setting the tone for the disclosures that firms do. In this paper, utilizing a sample of 59 firm years with a total of 612 individual disclosures, we find that greater outsider ratios are associated with a greater number of disclosures with strategic content. We find that this relationship is moderated by the percent of total CEO compensation that is equity based contingent compensation. Finally, we find that the number of disclosures containing strategic content is positively associated with both financial and market-based performance.

Key Words
Strategic Disclosure, Governance, Firm Performance

INTRODUCTION
“Market reactions thus should perhaps be viewed more in terms of ‘soft’ numbers that reflect the subjective perceptions of a heterogeneous audience, neatly quantified and aggregated (Beatty and Zajac, 1987), reacting to changes in formal policy that may be independent of substantive practices,” Westphal and Zajac (1998 p. 130–131)

Although extant research has supported a strong empirical link between disclosures to investors about the firm and market performance (e.g. Botosan, 1997; Sengupta, 1998; Belkaoui, 1976), research pertaining to disclosures has largely remained the domain of information economics (e.g. Milgrom and Roberts, 1986) and accounting (e.g. Verrecchia, 1983, 1990, 2001). As such, research on disclosures has evolved around the questions of whether or not it is advantageous for the firm to make voluntary disclosures (e.g. Milgrom, 1981; Verrecchia, 2001) and when to make disclosures (e.g. Lev, 1992), rather than the role of top managers in making voluntary disclosures. This is an important research gap because the top management team directly influences the content of disclosures (Bamber, Jiang & Wang, 2010). They decide what strategic information to reveal in disclosures, for example, outlining specific partnership or acquisition strategies, the time frames of new product releases and the importance of certain events. Under SEC rule 10b-5 (known as regulation fair disclosure), when a firm chooses to disclose information it must do so equally and to anyone who might be affected by the information. Thus, voluntary disclosure reveals information not only to investors interested in the firm, but also competitors and other stakeholder groups.
Hence, managers must balance the need to inform stockholders about the current state of the firm and the need to prevent competitors from obtaining strategic information.

Building on prior literature (e.g. Chen & Jaggi, 2000; Eng & Mak, 2003), we argue that organizational orientation towards revealing strategic information in disclosures is influenced by governance structure. Most previous research examining how governance structure influences firm disclosure has focused on voluntary content within mandatory disclosures, most frequently the annual report content (e.g. Chen & Jaggi, 2000; Eng & Mak, 2003). Although the annual report is an important disclosure by firms each year, almost all publicly traded firms communicate with the market more frequently. For instance, GE made 329 disclosures in the form of press releases alone from January 2011 through May 2011, in addition to the filing of a quarterly report. This is an indication that managers frequently opt to reveal information to the benefit of shareholders, even when not mandated to do so. In this research, we address will address this gap by examining a broad range of disclosures.

Previous research has linked board composition to disclosing strategic information about important firm decisions or actions (Westphal & Zajac, 2001), which we refer to as ‘strategic disclosures.’ Agency theory generally holds that the higher the ratio of outsiders to insiders on a board, the more the board will monitor top management (Fama, 1980). Disclosure theory thus holds that pressure from the board influences top managers to make strategic disclosures for the benefit of the owners of the firm (e.g. Verrecchia, 1983). Yet, it may not be in the firm’s best strategic interest to reveal sensitive information. If a strategic disclosure released to shareholders is also useful to competitors, it could adversely affect the performance of the firm (Verrecchia, 1983). However, it has long been observed that market-based performance and financial performance are not necessarily correlated (Ball & Brown, 1968); hence, it is possible to have strong performance of one type and weak of the other. Therefore, it is important to examine whether strategic disclosures adversely impact both financial and market-based performance.

Furthermore, based on other literature, we expect that CEO compensation structure will influence the firm’s decision to make strategic disclosures because the CEO sets broad strategies around disclosure and content (e.g. Bamber, Jiang & Wang, 2010). CEO compensation structure has a more direct influence on CEO behavior than board composition (Hermalin & Weisbach, 1991). Compensation structure signals how the CEO should prioritize goals. When CEO compensation has a large equity-based component—i.e., it improves with market performance—the CEO will be more likely to prioritize market-based performance over financial performance, in order to increase their compensation (Jensen & Murphy, 1990). Conversely, if CEO compensation has little or no equity-based component, CEOs will have less incentive to prioritize market-based performance over financial performance. Hence, if the CEO feels revealing strategic information will jeopardize financial performance, they will resist pressure to make the strategic disclosure. Therefore, even when outsiders on the board want CEOs to disclose strategic information, the action the firm takes may ultimately depends on whether the board designed a compensation structure where the CEO benefits from making the announcement.

Extant research on disclosures has become bifurcated between research on the antecedents of disclosure and the consequences of disclosure; as such, research seldom examines both antecedents and consequences in the same study. This is an important research gap because governance
structure impacts how CEOs balance market-based and financial performance, thus both antecedents and consequences of strategic disclosures are important. Therefore, the purpose of this research is to, (1) explore how governance factors influence the number of disclosures containing strategic information released by a firm, and then (2) examine the impact of said number of disclosures on market-based and financial performance. The remainder of the manuscript is laid out as follows: first we review the broader disclosure literature and then the role that agency theory plays in explaining tendencies in disclosure. Following that, we develop hypotheses for antecedents and consequences of the number of disclosures containing strategic content. Next, we explain our sample and methods and report the results, and we finish by discussing our results and their implication for future research.

**LITERATURE REVIEW**

As mentioned previously, literature on disclosures is divided largely based upon antecedents and consequences. Briefly we will examine major theoretical and empirical literature pertaining to relevant governance antecedents and performance-based consequences.

**Governance as an Antecedent of Disclosure**

Much of the work on governance and voluntary disclosures has focused on when governance structures induce disclosure instead of the content of those disclosures. Going as far back as (Cerf, 1961), the disclosure literature has identified a role for governance in affecting disclosure. From work on CEO duality (e.g. Gul & Leung, 2004) to compensation schemes (e.g. Laksmana, 2008) to the characteristics of board members (e.g. Cheng & Courtenay, 2006), much has been done to look at the effects of governance on the incidence of voluntary disclosure. Relatively little, however, has been done to look at the role of governance on disclosure content.

Forker (1992) is one of the first to have investigated the relationship between board structure and disclosure content. He found that the quality of information disclosed by a firm decreased when the CEO was both head of the company and head of the board. In a different vein, Chen & Jaggi (2000), doing some of the earliest work looking to connect governance to disclosure content, found that the ratio of independent non-executive directors to total directors on the board, the outsider ratio, was positively associated with the comprehensiveness of mandatory disclosures. Eng & Mak (2003) built on their work and found that low managerial ownership and high government ownership was associated with higher quality disclosures while outsider ratio on the board of directors was associated with reduced quality of disclosure. More recently, Clarkson, Van Bueren & Walker (2006) found that the number of independent (outside) board members was positively associated with high quality disclosure. Ultimately, the existing empirical results endeavoring to link governance to disclosure content have produced equivocal results. Also, to the best of our knowledge, no research has been done into the effects of CEO compensation on disclosure content.

While the existing research has made an important step in beginning to examine the effects of governance on disclosure content, the existing literature has only focused on a small subset of disclosures. Each of the above articles has gathered its data from one type of disclosure.
For instance, Eng & Mak (2003), which is probably closest in intent to this manuscript, gathered all their data from the management discussion and analysis section of the annual report while Clarkson et al. (2006) draw their information from the mandatory disclosures on CEO pay. There is no doubt that it is important to understand the content of one type of disclosure, but looking at a multiplicity of disclosure types may provide additional insight into the impact of governance on disclosure content throughout the year.

Consequences of Disclosure

Extant research on the consequences of disclosure has concentrated on market-based performance, such as cost of debt and stock price (e.g. Diamond & Verrecchia, 1991; Botosan, 1997; Clinch & Magliolo, 1992; Easley & O’Hara, 2004). Extant research on how disclosures impact stock price has focused on the positive and negative nature of the disclosures (Lang & Lundholm, 1993), the amount of information that is contained in the disclosure and the nature of the disclosure (Tang, 2005). Tang (2005) found that voluntary disclosures have more of a stock price effect than mandatory disclosures, all other thing being equal. Unfortunately, most of the literature linking voluntary disclosure to performance does so without considering disclosure quality (e.g. Kasznik, 1999). Probably the best empirical work linking disclosure quality and firm performance comes from looking at the control variables of those efforts to link governance and disclosure quality. For instance, according to Eng & Mak (2003) gives control for return on equity as well as market-to-book and change in stock price in looking at the relationships between governance and disclosure quality. Likewise, Cho, Roberts & Patten (2010) control for return on assets in their efforts to understand the association between the language in disclosures and environmental performance.

As with the antecedents of disclosure, work on the consequences has been driven by the timing and frequency of disclosure, with some recent work on the impact of good and bad news (e.g. Kothari, Shu & Wysocki, 2009). The content of disclosures has been almost completely ignored as a predictor variable. For instance, Eng & Mak (2003) and Chen & Jaggi, (2000) used disclosure content as their dependent variable, controlling for performance, but not looking to see if performance was affected by disclosure content. By looking at the content of disclosures as a predictor variable, we can develop a better understanding of how the market reacts to what firms say in multiple types of disclosure.

As most research on disclosure has been generated in information economics and accounting, financial performance has received far less attention than market-based performance. The goal of the accounting literature is focused on other measures of performance than that of the strategy literature, and so there is a need for strategy scholars to fill in this gap and understand how what companies say affects financial and market-based performance.

HYPOTHESES

Strategic Disclosures

While there are a number of governance variables that could be considered as we look at how governance affects what firms say, we have chosen to focus on two: outsider ratio and contingent compensation. Outsider ratio, a measure of the proportion of outside members on the board,
is the only monitoring characteristic to receive any study in the extant literature. Additionally, we consider equity-based compensation, looked at as the percent of total compensation that is contingent on market-based performance, given that it has been well documented to affect the timing of disclosures (e.g. Noe, 1999; Cheng & Lo, 2006) and the release of good or bad news (e.g. Aboody & Kasznik, 2000; Brockman, Martin & Puckett, 2010). We begin by looking at the direct effect of outsider ratio on disclosure content.

Starting with Fama (1980), agency theorists have argued that the board of directors is the internal control mechanism for monitoring top management. Specifically, agency theory argues that more outside directors will lead to better monitoring because those outside, and independent, members are better able to exercise independent judgment about the firm without being co-opted by top management (e.g. Baysinger & Butler, 1985; Lorsch & MacIver, 1989; Zahra & Pearce, 1989). As disclosure scholars have argued, more and ostensibly better monitoring of top management should lead to an increase in strategic disclosures because outsiders will demand higher quality disclosures to fulfill their duty to the shareholders of the firm (Monks & Minnow, 1995). The empirical results linking board structure with disclosure content, however, provide mixed results. Chen & Jaggi (2000) find that the quality of mandatory disclosures increases as the number of independent non-executive directors increases, while Eng & Mak (2003) found that an increase in the outsider ratio on the board of directors negatively affected the quality of disclosure.

Without any monitoring or shareholder pressure, theory holds that insiders would not be inclined to disclose any news except that which was unequivocally good (e.g. Milgrom, 1981). This is argued to be the case because the there is a competitive cost to releasing information to the market (e.g. Verrecchia, 1990) and because top management prefers more information asymmetry with shareholders so they can control what is known about the firm (e.g. Grossman, 1981; Jovanovic, 1982). Some recent related work on disclosure content argues that insiders do not want to reveal negative information because they do not want to be sued, even though being sued for withholding information does not improve disclosure (Rogers & Van Buskirk, 2009). Building on the above arguments, we believe that the greater the ratio of outsiders, the more strategic disclosures managers will make. Thus formally:

H1: There is a positive relationship between the outsider ratio and number of strategic disclosures.

While the existing literature has considered the role of board structure on disclosure content, the effects of other governance mechanisms has been largely ignored. Of particular interest to us is the effect of CEO compensation. The argument for developing the appropriate mix of compensation within agency theory is that compensation can work to aligning the interests of top management and shareholders such that top management acts in the best interests of shareholders (e.g. Eisenhardt, 1989). The goal is to create a compensation system that perfectly aligns the interests of managers with shareholder making monitoring unnecessary (Jensen & Murphy, 1990). Agency theory suggests that there is a relationship between board composition and CEO pay such that more insiders on the board will lead to less contingent pay (Zajac & Westphal, 1994). Empirically, results have found support for this argument (Beatty & Zajac, 1994) leading to the contention that
a higher insider ratio likely leads to a lower percent of equity-based compensation because CEOs are risk averse and prefer salary (e.g. Bebchuk & Fried, 2004).

However, CEOs work within the system to maximize their outcomes, even if the system is not the one they would optimally design for themselves. For instance, Nagar, Nanda & Wysocki (2003) found that there is a positive relationship between the percent of total pay that is dependent on stock price and both the frequency and quality of disclosures. Similarly, Aboody & Kasznik (2000) find that CEO incentive plan has a direct impact on decisions related to disclosure. Therefore, we argue that the relationship between outsider ratio and the number of strategic disclosures will be mediated by the CEO’s percent of equity-based compensation. Hence, rather than directly increasing strategic disclosures, outsiders influence the compensation of CEOs such that CEOs are motivated to make strategic disclosures. Thus formally:

H2: Percentage of equity-based compensation will positively mediate the relationship between outsider ratio and number of strategic disclosures.

It is not enough to endeavor to understand some of the antecedents of strategic disclosure, however. Given the importance of performance to strategic management as a field (e.g. Rumelt, Schendel & Teece, 1991), we must consider the consequences of strategic disclosure as well.

**Consequence of Disclosure Content on Performance**

The effect of the number of disclosures that contain strategic content on performance is conceptualized in two ways: financial performance and market-based performance. When performance is viewed through the financial performance lens, the proprietary cost of releasing information is very important. Proprietary cost is hypothesized to reduce the financial performance of firms that disclose because the firm is giving away unique information (e.g. Verrecchia, 1990; Darrough & Stoughton, 1990). This perspective is consistent with Barney’s (1986) argument that one of the only ways firms can achieve a competitive advantage, and subsequently improve financial performance, is through superior information. Disclosures that are higher in quality almost necessarily contain more information and more context, thereby increasing proprietary cost. Given that that is the case, we argue that the greater the number of strategic disclosures, the lower the financial performance of the firm. Thus formally:

H3: There will be a negative relationship between number of strategic disclosures and financial performance.

According to the efficient market hypothesis in finance, markets adjust stock prices to reflect information (e.g. Basu, 1977). Using the efficient market hypothesis in its most commonly accepted semi-strong form, investors are argued to take into account any publicly available information and price it into the stock quite quickly (e.g. Ederington & Lee, 1993). Regardless of how fast markets react to new information, the semi-strong form hypothesis argues that markets will coalesce on the value of a firm given publicly available information over time.

Building on this argument, we believe that there is a relationship between the number of strategic disclosures by firms and their stock price. Theoretically and empirically, this relationship has been established for the timing and number of total disclosures (e.g. Belkaouë, 1972; Healy,
Hutton & Palepu, 1999). When considering the quality of disclosures, this relationship has only been explored in a few articles within the context of environmental disclosure. Ullmann (1985) reviewed the literature on social disclosure and market performance and found inconsistent results. Similarly, Cormier, Magnan & Van Velthoven (2005) find no relationship between voluntary environmental disclosure quality and market return. The results of these few studies may well be attributed to the fact that they consider only a very small portion of the total disclosures made by firm.

Despite the lack of results in previous studies, we expect that there is a relationship between market performance and the number of disclosures containing strategic content. Consistent with the extant literature, we believe that stock market performance will be positively impacted by a greater number of disclosures containing strategic content (e.g. Cormier, Magnan & Van Velthoven, 2005). This is the case because investors prefer more information to less (e.g. Basu, 1977). While it is certainly possible that more information could lead to a lower valuation for some firms, as the existing disclosure literature argues, we believe that firms which disclose more, higher quality content are rewarded by investors with better stock market performance over time because investors are not having to discount the value of the firm based on perceived information asymmetry (e.g. Cormier, Magnan & Van Velthoven, 2005). Thus formally:

H4: There will be a positive relationship between the number of strategic disclosures and market performance.

**METHODOLOGY**

**Sampling Frame**

We drew our sample from the biotechnology industry utilizing only those firms which are classified as a dedicated biotechnology firm (DBF) (e.g. Powell, Koput & Smith-Doerr, 1996). DBFs are herein defined as independent, publicly traded, for-profit firms whose primary business is related to human therapeutics and diagnostics (i.e. biological therapy, biopharmaceuticals, drug discovery and development, proteomics, genomics, etc.) as of January 1, 2007. Disclosures related to four event types were collected across 20 randomly selected firms for the three-year period from the beginning of fiscal year 2004 to the end of fiscal year 2006. The sample of 20 firms was drawn from the largest 100 publicly traded biotech firms by revenue. The four event types, new product development, mergers and acquisitions, partnerships including joint ventures and licensing, and management changes, were selected by virtue of the recommendations of the analysis of critical issues to the industry according to Reuters (www.reuters.com 8/15/07). The population of firms included the top 100 DBF that were publically traded in the United States for the fiscal years 2004–2007. The sampling from one industry was done in order to control for industry differences which significantly affect governance characteristics (e.g. Hillman, Cannella & Paetzold, 2000), disclosure practices (e.g. Clinch & Verrecchia, 1997), and market performance (e.g. Mazzucato & Semmler, 1999).

**Data Collection**

*Strategic Disclosures.* All of the disclosures released by the firms between the beginning of fiscal year 2004 and the end of fiscal year 2006 were collected from multiple sources. Each was
evaluated for the type of event the disclosure was about and it was kept if the disclosure related to
the above identified four types, otherwise it was discarded from coding. Because of a lack of any
disclosure in the four event types for one company during 2005, one firm was measured for two
years instead of three. Hence, disclosures were evaluated for 19 firms for three years and 1 firm for
2 years, totaling 59 firm years. Initially, Factiva was checked for each company to pull down all
releases listed for the firm as part of PRNewswire or Business Wire. This information was aggre-
gated, and cross-referenced with information coming from the SEC’s website on the filings done
during the 3-year time period. Finally, the company’s website was used to cross check both of these
sources to ensure all disclosures done by the firm during the time period of interest was collected.
A total of 612 disclosures fit the criteria for evaluation and subsequent coding. This method of data
collection is similar to that done in the disclosure literature in gathering information from multiple
sources (e.g. Skinner, 1994) and in other studies of DBFs (e.g. Powell et al., 1996). After the disclo-
sures were collected, each was evaluated based on whether or not it contained strategic content. The
content of the disclosures needed to be evaluated for each disclosure individually in order to truly
understand what was actually disclosed. Following in the tradition of Eng & Teo (1999), Eng &
Mak (2003), Bamber, Jiang & Wang (2010), Cho, Roberts & Patten (2010) and others, the content
of each disclosure was analyzed and categorized as either strategic or non-strategic.

In order to be able to evaluate whether the content was strategic, three components of
each disclosure were evaluated: certainty (made up of specificity, realism, ability to be evaluated,
breadth and depth of the disclosures content), time frame of impact and indicated importance to
the firm. These components represent the aspects of disclosure content necessary to assess whether
any given disclosure contained strategic content (e.g. Eng & Mak, 2003; Cho, Roberts & Patten,
2010). Within each of these components a score of 0 was possible, indicating that the threshold for
a strategic content in a disclosure was not met. If at any point the content of a disclosure is given
a 0, that disclosure was labeled as non-strategic. Modifying the coding scheme of Eng & Mak
(2003), we developed ours so that it applied broadly to any of a variety of disclosures a firm might
make. Two expert raters coded the content of all selected disclosures independently. Raters were
two individuals independent of the project who knew nothing of the hypotheses. They were trained
in coding the content of disclosures and given a coding guide to reference to answer questions
they may have had. Once each disclosure was independently classified, the results were compared
using Gwet’s (2001) AC1 statistic to check for inter-rater reliability, and all results met the gener-
ally accepted guideline of 0.7 for interrater reliability (Royce, 2008; Marson, Wei, & Wasserman,
2009). Any disclosures garnering different classifications from the two raters were discussed and
resolved resulting in a final inter-rater agreement of 100%.

Governance Characteristics and Performance. Governance characteristics were collected for
each firm on an annual basis using COMPUSTAT and annual proxy statements. Performance data
was collected in the same way.

Measures

Number of Disclosures Containing Strategic Content (StratDiscl) was utilized as both
a dependent and independent variable. This is an annual measure, wherein each disclosure was
classified as strategic or non-strategic, and the number of disclosures containing strategic content was summed for each year.

**Dependent Variables**

**Financial Performance (Changerevenue)** was measured as the absolute change in the revenue of the firm from the current year of disclosures to the next year. This measure was particularly appropriate for our sample of firms because so many of them reported a net loss in at least one of the years. Given the long time horizons of product development for biotech firms, revenue is preferable to net income in measuring performance (e.g. Baum & Silverman, 2004). In order to consider the impact of disclosure content, absolute change in revenue from this year to next was used as our measure of financial performance.

**Market Performance (PEchange)** was measured using the change in P/E ratio from the current year of disclosure to the next year. P/E ratio has been identified as an accepted measure of the strategic performance of a firm (e.g. Chakravarthy, 1986). P/E ratios indicate the market price of one share of the firm relative to the earnings of that share over some period of time, typically quarterly or annually. A high P/E ratio generally means that investors are expecting higher earnings grow than a firm in the same industry with a low P/E ratio (e.g. Basu, 1977).

**Independent Variables**

**Outsider Ratio (OutRatio)** is one way of viewing board structure which is traditionally evaluated by considering the status of board members in relation to those running the company (Hermalin & Weisbach, 1991). We followed Baysinger & Butler’s (1985) classification scheme for individual board members and then divided the number of outsiders by the total number of board members to get an outsider ratio which was used as the independent variable for hypothesis 1. Board members were gathered from annual reports, 10Ks, proxy statements, and Dun and Bradstreet’s Reference Book of Corporate Management.

**CEO Equity-based Contingent Compensation (EquityComp)** is a measure of the total amount of stock options and stock grants given to the CEO as a percent of their total compensation (Bebchuk & Fried, 2004). This measure was calculated as a proportion of total pay and served as the independent variable for hypothesis 2 and was gathered from the annual reports, proxy statements and COMPUSTAT. The valuation of the options paid to CEO’s was conducted following the procedure laid out by Larraza-Kintana, Wiseman, Goemz-Mejia & Welbourne (2007) which they identified as comparable to Black & Scholes (1973).

**Control Variables**

In order to control for alternative explanations, five variables were included where appropriate based on prior literature. Prior year return on sales (**PriorROS**) was controlled for all three dependent variables because firms that are performing better may have a tendency to do more

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1 Firm year and event type were included as a control variables in both sets of equations as well but since they do not materially change the results we have elected to leave it out of the analysis to retain degrees of freedom.
disclosure of one type or the other (Miller, 2002) and prior year performance has been linked with performance this year (e.g. Yermack, 1996). Log of total assets ($\log_{10}$TA) was used a control for firm size in all three models because large firms are likely to have a greater number of disclosures than smaller firms (e.g. Chow & Wong-Boren, 1987) and because larger firms have greater revenue growth (Bracker, Keats & Pearson, 1988) and price to earnings ratios (Roll, 1981). The number of shares outstanding (Numberofshares) was controlled in all three models because greater number of shares outstanding has been shown to be an to affect the frequency of disclosure (e.g. Botosan & Harris, 2000) as well as to be an indicator of market liquidity and an indicator of firm performance (e.g. O’Brien & Bhushan, 1990). Following the tradition of Eng & Mak (2003) and others looking at disclosure content, we controlled for total liabilities (Liab) when predicting the number of strategic content disclosures because firms with more liabilities will have restrictive debt covenants as well as less free cashflow, both of which are argued to be negatively linked to disclosure (e.g. Jensen, 1986). Finally, we controlled for the total number of disclosures (TotalDiscl) done by a firm over the course of the year to make sure that performance affected by the number of disclosures containing strategic content and not the sheer number of all disclosures. When predicting performance it is critical to control for the number of disclosures firms release, as the number of disclosures has been shown to affect both financial and market performance (e.g. Healy, Hutton & Palepu, 1999).

RESULTS

All hypotheses were tested using OLS regression. Table 1 presents the descriptive statistics for all of the variables used in the various regressions, and Table 2 presents the inter-item correlations for the included variables.

H1 is that outsider ratio is negatively associated with strategic disclosures. The overall model is statistically significant ($F = 7.568, p < 0.01$) and the coefficient for outsider ratio is

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<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
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Table 1

Descriptive Statistics

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significant and positive (Std. beta = 0.248, p < 0.05)(see Table 3 below). Therefore, the more outsiders on the board relative to the total size of the board, the more likely managers will make disclosures with strategic content. H2 is that the relationship between outsider ratio and the number of disclosures containing strategic content was mediated by the percent of the CEO’s pay that was contingent. This was tested using the Baron & Kenny (1986) method. First, as supported in H1, outsider ratio is significantly related to strategic disclosures. Second, outsider ratio is significantly correlated with percentage of CEO equity compensation (R = 0.408, P > 0.01). The model including both outsider ratio and percentage of equity compensation remains significant (F = 7.697, p < 0.01). The coefficient for percentage of equity compensation is significant and positive (Std. beta = 0.270, p < 0.05) while the relationship between outsider ratio strategic disclosures becomes non-significant. This indicates that percentage of equity compensation fully mediates the relationship between outsider ratio and strategic disclosures; hence, H2 is supported.

H3 states that there will be a negative relationship between number of strategic disclosures and financial performance. The overall model was significant (F = 48.159, P < 0.01) but the number of disclosures containing strategic content as a predictor of change in revenue was positive and significant (Std. beta = 0.306, p < 0.05), which is opposite of H3 (see Table 4). Hence, there is a positive rather than negative relationship between strategic disclosures and financial performance. Finally, H4 is that strategic disclosures was positively related to market-based performance. The overall model was significant (F = 3.222, P < 0.05) and the coefficient for the number of strategic disclosures was significant and positive (Std. beta = 0.841, p < 0.05), supporting H4. Thus, we found that there is a positive relationship between the number of disclosures containing strategic content and the change in price-to-earnings ratio.

**Table 2**

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<tr>
<td>2 PEchange</td>
<td></td>
<td>0.250</td>
<td>-0.052</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3 StratDiscl</td>
<td></td>
<td>0.270*</td>
<td>-0.213</td>
<td>0.619**</td>
<td></td>
<td></td>
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<tr>
<td>4 TotalDiscl</td>
<td></td>
<td>0.877**</td>
<td>0.052</td>
<td>0.061</td>
<td>0.117</td>
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<tr>
<td>5 Numberofshares</td>
<td></td>
<td>0.629**</td>
<td>0.150</td>
<td>0.019</td>
<td>0.040</td>
<td>0.774**</td>
<td></td>
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<tr>
<td>6 Liab</td>
<td></td>
<td>0.406**</td>
<td>-0.332*</td>
<td>0.592**</td>
<td>0.704**</td>
<td>0.258</td>
<td>0.028</td>
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<td></td>
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<tr>
<td>7 LogTA</td>
<td></td>
<td>0.106</td>
<td>-0.008</td>
<td>0.034</td>
<td>-0.003</td>
<td>0.036</td>
<td>-0.062</td>
<td>0.089</td>
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<tr>
<td>8 PriorROS</td>
<td></td>
<td>0.105</td>
<td>-0.077</td>
<td>0.412**</td>
<td>-0.346**</td>
<td>-0.090</td>
<td>-0.145</td>
<td>0.332*</td>
<td>-0.172</td>
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<tr>
<td>9 OutRatio</td>
<td></td>
<td>0.363**</td>
<td>-0.091</td>
<td>0.446**</td>
<td>0.391**</td>
<td>0.225</td>
<td>0.066</td>
<td>0.313*</td>
<td>-0.009</td>
<td>0.408**</td>
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</tbody>
</table>

*p < 0.05

**p < 0.01
### Table 3

Regression Evaluating if Equity Compensation Mediates the Relationship Between Insider Ratio and Number of Strategic Disclosures

<table>
<thead>
<tr>
<th>DVs</th>
<th>Number of Strategic Disclosures</th>
<th></th>
<th>Equity Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Controls only</td>
<td>Insider Ratio</td>
<td>Contingent Compensation</td>
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<tr>
<td>Log TA</td>
<td>5.559***</td>
<td>4.562***</td>
<td>4.531***</td>
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<tr>
<td>Number of Shares</td>
<td>NS</td>
<td>NS</td>
<td>−1.957*</td>
</tr>
<tr>
<td>Liabilities</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Prior ROS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Outsider Ratio</td>
<td>---</td>
<td>2.078**</td>
<td>NS</td>
</tr>
<tr>
<td>Equity Comp</td>
<td>---</td>
<td>---</td>
<td>2.268**</td>
</tr>
<tr>
<td>Model R²</td>
<td>0.386</td>
<td>0.436</td>
<td>0.490</td>
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<tr>
<td>Adjusted R²</td>
<td>0.337</td>
<td>0.378</td>
<td>0.427</td>
</tr>
<tr>
<td>Model F</td>
<td>7.859***</td>
<td>7.568***</td>
<td>7.697***</td>
</tr>
</tbody>
</table>

NS = not significant  
* p < 0.1  
** p < 0.05  
*** p < 0.01

### Table 4

Regression Performance Outcomes

<table>
<thead>
<tr>
<th>DVs</th>
<th>Change in Revenue</th>
<th>Change in Price to Earnings Ratio</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Controls only</td>
<td>Number of Strategic Disclosures</td>
</tr>
<tr>
<td>Log TA</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Number of Shares</td>
<td>13.284***</td>
<td>13.783***</td>
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<tr>
<td>Prior ROS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Total Number of Disclosures</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Number of Strategic Disclosures</td>
<td>---</td>
<td>2.027**</td>
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<tr>
<td>Model R²</td>
<td>0.811</td>
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<tr>
<td>Adjusted R²</td>
<td>0.797</td>
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<tr>
<td>Model F</td>
<td>55.831***</td>
<td>48.159***</td>
</tr>
</tbody>
</table>

NS = not significant  
* p < 0.1  
** p < 0.05  
*** p < 0.01
DISCUSSION

In this study, we examine disclosure from the perspective of strategic decision-making. This study takes a holistic look at the antecedents and consequences of disclosures containing strategic content by looking at disclosures surrounding four major decisions/events that affect all firms in the biotechnology industry. Most of the recent studies addressing disclosure content evaluate it based one specific type of disclosure rather than disclosures of all types surrounding organizational important events. Using only one disclosure increases the likelihood of different studies getting different results. By considering disclosures around multiple events, we worked to provide a more robust view of antecedents and consequences of disclosure content. As such, we have made several contributions to disclosure literature.

First, we found that the relationship between outsider ratio on the board and number of strategic disclosures is fully mediated by the CEO’s compensation structure. Hence, we show that the board does not have a direct influence on CEO propensity to make strategic disclosures. This is important because the predominant perspective in the disclosure literature is that adding outsiders to the board of directors should impact disclosure (e.g. Chen & Jaggi, 2000; Eng & Mak, 2003); however, our findings suggest more outsiders will not directly increase transparency for shareholders. In order for outsiders to increase the number of strategic disclosures, outsiders must collaborate with insiders to redesign the CEO compensation system so that it encourages strategic disclosures. These findings fit well with existing predictions from agency theory (e.g. Jensen & Meckling, 1976) and help to explain the conflicting results within the existing disclosure literature about the impact of board structure on disclosure content (e.g. Chen & Jaggi, 2000; Eng & Mak, 2003).

Further, we found that the number of disclosures containing strategic content had a positive relationship with both financial and market-based performance. While the positive link between the number of strategic disclosures and market-based performance is consistent with our hypothesis, the positive relationship between the number of disclosures containing strategic content and financial performance is opposite of our hypothesis. In other words, despite the fears that announcing strategic information compromises financial performance because competitors get access to that information at the same time as the market, we have not found this to be the case.

This finding is at odds with extant disclosure literature which argues that proprietary costs drive down financial performance for firms engaging in more strategic disclosure (e.g. Verrecchia, 1983). One possible explanation for the difference between existing disclosure theory and our results is that existing disclosure theory has focused just on the competitive cost of releasing information whereas stakeholder theory would argue that that same information is going out to a much broader audience including customers, potential partners, and employees (e.g. Donaldson & Preston, 1995). This could positively impact firm performance as these stakeholders know better what is going on in the firm and so they can work to help management achieve superior performance. This means that the benefits of strategic disclosure to market-based and financial performance outweigh the costs of such disclosures.
LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The biggest limitation faced in this research was our relatively small sample size (19 firms for 3 years, one firm for 2 years and a total of 612 disclosures). However, we do not expect that the sample size adversely impacted our results as we still had enough power to detect significance in all four hypotheses. Additionally, ours is the first study in strategic management, to our knowledge, to examine disclosures. As such, we focused on a broad measure of strategic disclosures, without differentiating between specific types of strategic information or whether it is positive or negative. Future research should examine whether all types of strategic information work in the same way. Also, in this study we have shown that outside ratio is mediated by compensation structure. However, we did not distinguish between different types of outsiders that previous literature has identified, such as experts versus influentials (e.g. Hillman, Cannella, & Paetzold, 2000). Some outsiders may have more or less influence on strategic disclosures and ability to work with insiders to redesign CEO compensation packages.

Furthermore, CEO compensation is unlikely to be the only mediating/moderating relationship that plays a role in improving our understanding of the effects of governance on disclosure content. Of particular interest would be research that focused on the link between the board of directors and all of the facets of CEO compensation. Agency theory argues that the board structure and properly designed compensation systems are two of the methods for reducing agency costs and we know they interact (e.g. Beatty & Zajac, 1994). Further research into the ways into how both mechanisms work to affect disclosure content are needed.

Finally, consistent with the existing disclosure literature, our research has focused on one country alone. In addition to there being differences in the governance required of publicly traded firms by country, there are cultural differences that may well play a role in the frequency and specificity of disclosures by firms. While the existing literature has drawn from multiple country settings (e.g. Singapore and the US), it is not enough to have considered those environments in isolation, future research needs to evaluate the antecedents and consequences of disclosure across countries. This is especially important given the significant impact that our findings and the existing literature have identified as consequences of disclosure (e.g. Core, 2001; Healy & Palepu, 2001).

CONCLUSION

There is a long tradition in the accounting and finance fields for studying the when and why firms disclose information, but strategy scholars have largely ignored this phenomenon, in spite of its strategic importance. In the current study, we found that there was a positive relationship between outsider ratio on the board of directors and the number of strategic disclosures, and this relationship is fully mediated by equity-based CEO compensation. Further, we found that there is a positive relationship between the number of strategic disclosures and both financial and market-based performance. Together, these findings suggest that disclosures are an important domain for strategy researchers to study.
BIBLIOGRAPHY


