

Directors' and Officers' Insurance and Opportunism in Accounting Choice

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A B S T R A C T

In this paper, the focus is on how excessive Directors' and Officers' Liability (D&O) insurance coverage is associated with risk-taking behavior in financial reporting. In the case of over-insurance, I hypothesize that the covered executive is overly buffered with regard to securities litigation recourse, which leads to aggressive accounting practices. Aggressive accounting is measured by the need to restate earnings. The findings show that unexpected D&O coverage results in aggressive financial reporting, which is more likely to lead to a restatement of earnings. In sum, this paper contributes to the existing literature on D&O insurance, and illustrates that, despite the fact that D&O coverage levels are unobservable to investors, the amount of D&O coverage underlies managerial decision-making.

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1. Introduction

I investigate how Directors' and Officers' (D&O) liability insurance influences financial reporting decisions. This study shows how D&O insurance can induce opportunistic financial reporting decisions by managers in financial reporting, which may eventually lead to an earnings restatement. I examine whether excess D&O coverage is associated with more aggressive financial reporting decisions; excess coverage is coverage above the amount expected by the determinants of the firm's litigation risk.¹ Officers and directors require D&O insurance coverage to minimize personal liability. I predict that the D&O coverage in excess of this minimum coverage provides incentives for managers to engage in opportunistic behavior.

My specific focus is on whether the excess D&O insurance predicts earnings restatements. I expected that managers are more willing to adopt aggressive accounting methods (which are more likely to lead to restatements) when they are covered by relatively more D&O insurance. Earnings restatements are an admission that the information in financial statements was incorrect ex post. Although not all earnings restatements are the product of earnings management activities, they are suggestive of managing earnings.

D&O insurance covers managers, directors, and in some cases entire firms.² It is intended to deter overly risk averse managerial decision-making by protecting managers against litigation, such as employment discrimination and securities litigation. D&O coverage limits are not disclosed in the United States. According to the Tillinghast–Towers Perrin *2001 Directors and Officers Liability Survey*, D&O coverage is virtually universal among survey participants, at

¹ Coverage limits do not change much from year to year, and policies may cover more than one year. For these reasons, it is not expected that coverage is purchased in anticipation of opportunistic behavior.

² A recent development in D&O insurance coverage is firm coverage. Firms can purchase coverage to include the firm, along with its executives.

97%. Firms purchase an average of \$20.1 million in D&O coverage, which typically covers their directors and officers against liability arising from the course of their employment.

The extant empirical literature on D&O insurance is sparse, presumably because data generally are not available for U.S. firms. Chalmers, Dann, and Harford (2002) use D&O insurance and post-offering returns to identify opportunism in U.S. IPO firms. A negative correlation between the amount of coverage carried and returns suggests that firms ex ante purchase a high amount of insurance in anticipation of negative performance. Core (1997) studies the demand for insurance relative to litigation risk, and Core (2000) models premiums as a function of business risk and governance quality. Both use a Canadian sample, where disclosure of D&O insurance is mandatory. It is reasonable to expect that the choice to purchase D&O insurance is different in countries where disclosure is mandatory.³ The undisclosed D&O information makes monitoring more difficult, and does not alleviate the moral hazard problem or the agency conflict.

I predict earnings restatements using an ex ante variable (the unexpected level of D&O coverage), whereas other studies use ex post variables to predict earnings restatements (for example, Richardson, Tuna, and Wu 2002). Therefore, mine is truly a predictive model of restatements. The first step in my methodology is to model the expected D&O coverage limit. I find that the key predictor of coverage limits is a governance construct derived using factor analysis. In the second step, I calculate the amount of excess coverage and then examine why it explains the likelihood of a restatement. The findings show that higher than expected levels of

³ In a comparison of Core (1997) and (2000) Canadian D&O coverage limit means and medians to the U.S. D&O sample means and medians reveals that U.S. firms carry larger coverage limits, and are more skewed (mean of \$37 million, standard deviation of 48) than Canadian firms (mean of US\$ 20.5, standard deviation of 19.9 for Core (1997)). The medians of the two samples, however, are the same at \$16 million. U.S. coverage limits could be larger than Canadian limits for two reasons. First, the U.S. is more litigious so a higher coverage limit is required. Second, disclosure is not mandatory in the U.S., so firms can carry larger limits without disclosure. In contrast, proxy statement disclosure of coverage is mandatory in Canada. Thus, the Canadian and U.S. D&O purchase choices are quite different.

coverage are positively associated with the likelihood of an earnings restatement. These results suggest that high levels of D&O insurance buffer against litigation recourse, and have adverse financial reporting consequences.

The remainder of this paper proceeds as follows. In section 2, I provide institutional background on D&O insurance. Section 3 provides hypothesis development. Section 4 provides the sample selection procedure and descriptive statistics. In Section 5, I discuss the research design and empirical results; section 6 concludes.

2. Institutional Background on Directors' and Officers' Liability Insurance

D&O insurance serves several purposes for the firm, its shareholders, managers, and directors. Prior literature has found that D&O insurance: (1) reduces the agency conflict between shareholders and managers by adding convexity to a risk averse manager's utility function (Bhagat, Brickley, and Coles 1987) and (2) represents a substitute monitoring device for other governance mechanisms that are costly for the firm (Holderness 1990, O'Sullivan 1997). As a recruitment tool, a covered officer is part of the D&O purchase decision because he is exposed to financial and reputational loss. The board of directors also approves the purchase decision because an "excessive" amount of insurance detracts from the benefits of insurance (O'Sullivan 1997).

Litigation reduces agency costs, because it is an ex post monitoring device available to investors. D&O insurance potentially counteracts the benefits of the litigation threat, and thus inhibits the reduction of agency costs. It buffers the executive from being responsible for his actions, and effectively reduces the ex post settling up role of litigation. Even though insurance introduces convexity into the manager's utility function, an excessive amount of insurance may give the manager an incentive for opportunistic behavior that is undisclosed to investors.

Insurance permits the manager to take more risks and liberties with financial representations at little personal cost. Aside from reputational loss, class action securities litigation rarely results in defendant monetary liability, because settlement amounts are funded by D&O insurance coverage (Kim, 2005). This supports the idea that insurance buffers the executive from investor recourse and responsibility from value-destroying actions.

In today's insurance market, the amount of insurance purchased is driven in part by how much a company is willing to spend on insurance. Insurers also price protect, and will only make available and charge the premiums that approximates the risk of the insured (Core 2000). Applying the economic consequence theory discussed in Holthausen and Leftwich (1983), insurers face both contracting and monitoring costs. "Contracting costs encompass the costs of evaluating, negotiating, writing, and renegotiating the terms of the contracts. Monitoring costs are the costs of becoming informed about performance under contracts, and evaluating compliance with the terms of the contract" (Holthausen and Leftwich 1983). D&O firms must evaluate the risks associated with insuring the firm, its industry, and the individual managers. Monitoring costs come into play when a manager makes a misrepresentation, and the insurers have to determine whether the information used to establish the contract was incorrect. These contracting and monitoring costs are built into the premium charged, the deductible charged, and the coverage limit made available to the insured.

The insurer's risk level is increasing in litigation settlements and coverage offered per firm. For this reason, multiple carriers may together insure a firm, thereby spreading the risk among insurance companies. D&O insurance premiums have increased dramatically in the past few years due to the dramatic increase in securities litigation (Woodruff-Sawyer & Co).⁴ The

⁴ The total number of lawsuits filed has steadily increased since 1996: 147 in 1996, 178 in 1997, 258 in 1998, 207 in 1999, 201 in 2000, and 483 in 2001 (Pricewaterhouse Coopers LLP 2002 Securities Litigation Study).

coverage limits made available by insurers have also reduced significantly. The insurer(s) underwriting the D&O contract may seek rescission if it is discovered that the information used to prepare the contract was misleading. Conversely, the policy cannot be rescinded in most cases resolved via settlement, because there is no admission of wrongdoing. Thus, the plaintiff and defendant both have strong incentives to settle so that D&O resources can be used to fund the settlement (Romano 1991).

3. Hypothesis Development

This section is divided into three parts. The first part summarizes the firm's demand for corporate insurance to identify the effects of insuring an executive beyond the optimal level. A consequence of buffering through D&O over-insurance is liberties with financial reporting, which may eventually lead to restatements. Thus, the second subsection discusses the existing literature on earnings restatements. The third subsection provides the theory and hypotheses.

3.1 Risk Aversion and Corporate Insurance

To provide some background for the study of D&O insurance, I begin by examining the firm's demand for corporate insurance. An insurance contract is established whereby risk is implicitly or explicitly transferred from one agent (or group of agents) to another agent (or group) (Loubergé 1991, 6). An insurance contract is purchased "so as to alter [the] pattern of income across states of nature" (Rothschild and Stiglitz 1976). Risk aversion is the common explanation for the individual consumer's demand for insurance; however, the explanation is not so simple for corporations, since their risk is diversifiable. (Dionne and Harrington 1992, 190). Under the standard Modigliani and Miller assumptions of no contracting costs or taxes, there is no role for insurance. It must be that the demand for insurance comes about because the Modigliani–Miller assumptions do not hold, i.e. non–zero contracting costs, taxes, or "an impact

of financing policy in investment decisions” (Mayers and Smith 1982).⁵ An insurance firm has a “comparative advantage in risk bearing,” because the purchase of insurance allows for an efficient allocation of risk for the firms’ other claimholders (Dionne and Harrington 1992, 192 and 193)

When it comes to insurance and other investments, the Friedman–Savage utility function supplements the von–Neuman Morgenstern utility function in the presence of both insurance and risky investment decisions. The Friedman-Savage utility function tells us that insurance consumers appear to be concurrently risk–averse and risk–loving, by investing in risky assets and insurance. For investments like insurance, the firm chooses “certainty in preference to uncertainty” (Friedman and Savage 1948). The firm is willing to sacrifice a small payment in the form of an insurance premium to secure certainty. The payment and probability of loss are small, and the potential loss is high. In contrast, the firm is willing to undertake risky investments, where it chooses “uncertainty in preference to certainty” (Friedman and Savage 1976). Thus, even though the expected payoff of investing and not investing is essentially the same, investment (risky option) will result, and reverses the implications of the insurance decision.

The threat of litigation by shareholders reduces the agency conflict between managers and investors. With regard to D&O insurance, it is expected that the risk averse insured manager is overly buffered from recourse via litigation when insurance coverage levels are set too high, thereby removing the benefit of the litigation threat for agency costs. I examine the over-insurance case, and its consequences for financial reporting and litigation.

⁵ There are several tax provisions that favor the purchase of corporate insurance. For example, insurance premiums are deductible. Like-kind exchanges allow the firm to avoid recognizing a gain. “A casualty loss (e.g., the loss of a building or machine in a fire) is a deductible business expense” (Mayer and Smith 1982).

3.2 Earnings Restatements

Rather than employ a discretionary accruals measure with questionable estimation, earnings restatements are used to detect aggressive financial reporting. Restatements may result from: (i) accounting irregularities, including aggressive accounting practices, (ii) intentional and (iii) unintentional misuses of facts applied to financial statements, (iv) oversight or misrepresentation of accounting rules, or (v) fraud (GAO 2003). Richardson et al. (2002) study the probability of a restatement occurrence, and they predict restatements in the context of incentives to manage earnings. Their reason for studying why earnings restatement firms manage earnings is to motivate the usefulness of accounting information. They find that restatement firms manage earnings to attract external financing at a lower cost, and also to maintain consecutive periods of positive earnings growth and earnings surprises.

3.3 Theory and Hypothesis Development

My study predicts that excessive coverage D&O helps explain aggressive accounting choices, which are identified using earnings restatements. Because earnings restatements often represent extreme accounting outcomes, using restatements to capture aggressive accounting increases the power of my tests to detect the existence of a D&O effect.⁶ As additional confirmation that restatements are bad accounting outcomes, many D&O underwriters have recently introduced a restatement clause in policies, which permits contract rescission by the insurer if the firm restates its earnings, regardless of the reason for restatement. Therefore, even if some restatements are a result of unintentional motives, from a D&O perspective, they are all negative.

⁶ A bias against finding results exists to the extent that restatements are a conservative sample of aggressive accounting firms.

A manager is overly buffered from investor recourse when coverage is unusually high, i.e. when it considerably exceeds the firm's litigation risk. The total D&O insurance purchased by a firm also covers board members from liability, which implies that high coverage limits are in the board's best interest as well. Moreover, D&O coverage is unobservable to investors. Therefore, I expect that an unusually high level of D&O coverage leads to riskier accounting choices since it lowers the cost to the manager of these choices. This opportunism in accounting choice may eventually lead to an earnings restatement.⁷

A minimum D&O coverage amount is necessary to recruit and retain a manager (O'Sullivan 1997). The actual coverage limit is not informative of over-insurance. For this reason, the excess, or unexpected, amount of D&O coverage is used to predict earnings restatements, because the unexpected amount is what produces opportunism. In my model for the probability of an earnings restatement, I control for other incentives to manage earnings. A manager uses earnings management activities if the costs to manage are outweighed by capital market motives, financing incentives, or bonus plan incentives. An earnings restatement is an admission that the financial statement information is incorrect, so restatements are not all the product of earnings management, although they are suggestive of earnings management activities.⁸ A bias against finding results exists to the extent that not all earnings management activities are detected ex post.

A governance quality variable is used to predict the expected coverage limit, which implies that governance quality is a determinant of the coverage limit, and coverage limit is a

⁷ A limitation is the endogeneity associated with predicting earnings restatements. When misleading accounting is discovered in future periods, a large D&O coverage limit may encourage truthful reporting in the form of earnings restatements. My prediction is that the likelihood of an earnings restatement is increasing in the amount of unexpected D&O coverage.

⁸ All innocuous and regulation prompted restatements are removed from the analysis as discussed in the sample selection section that follows.

determinant of opportunism in accounting choice. An analogous setup is described in Watts and Zimmerman (1990). In the Miller and Modigliani realm, accounting choice does not affect firm value. Agency, or contracting costs associated with a D&O, or other firm contract, can impact the firm's set of efficient accounting choices. In this way, the D&O policy produces contracting costs, and detracts from the efficient accounting choice. Thus, the prediction is that the D&O contract impacts accounting choice, and fosters an opportunistic accounting policy.

Core (2000), who finds that the premium charged by an insurer is a function of the riskiness of the firm (as proxied for by governance quality) is the basis for including governance quality to predict expected coverage limit. He concludes that a summary measure of insurance premiums is governance quality. Since I do not have large-scale premiums data, I build on Core by using governance quality to proxy for the premiums charged.

A supply-side argument or demand-side argument could prevail in determining the relation between governance quality, or riskiness, and the amount of D&O coverage purchased. A supply-side argument implies that coverage and governance quality (or riskiness) are inversely correlated: high premiums charged to risky firms result in lower coverage purchased. A demand-side argument means that coverage and riskiness are positively correlated: riskier firms have higher demand for insurance, so they purchase more insurance.

I hypothesize that the demand for insurance results in governance quality and other litigation risk factors to be negatively related to the amount of coverage purchased. The anecdotal evidence says that insurers do not undersell D&O insurance; they simply price the D&O insurance appropriately. Since the cost of insurance is essentially borne by the shareholders, the marginal cost for an additional dollar of coverage is low to the covered executives.

H1 Governance quality is inversely related to the amount of coverage purchased, *ceteris paribus*.

I do not expect that coverage limits respond to anticipated financial reporting changes, because coverage limits are sticky and are not renewed each year (i.e. long-term horizon decision). In my sample, over 60% of the one-year change in coverage limit is zero percent, and the average annual change in coverage is 19%. Also, a policy's term is not necessarily just one year. Different layers of a firm's total coverage may have different term lengths. The decision to manage earnings in a quarter or file an earnings restatement is a short-term horizon decision.

H2 An unexpected D&O coverage level increases the likelihood of aggressive accounting choices, *ceteris paribus*.

4. Sample Selection and Description

4.1 Sample Selection

D&O data is gathered from a proprietary industry source that performs consulting services.⁹ Partnerships, international firms, nonprofits, and government organizations are excluded from the D&O sample. The original D&O sample size is 8,721, and after merging with the restatement samples, the remaining number of observations is 93. For a list of restatement firms, I rely on the General Accounting Office's 2002 study on Financial Statement Restatements. I then search Lexis-Nexis for periods restated and restatement causes, after which I gather original and amended financial statement data from Edgar. Table 1 summarizes the progression of observations to the useable restatement sample. To gather the set of restatements

⁹ To assess the external validity of the data, the original D&O sample is compared to the Compustat sample (unreported). . Since a database of the population of firms is not available, a comparison is made to the Compustat sample. The means and medians of my sample are larger than the Compustat sample in total assets, market value of equity, sales, and net income. The Compustat sample has a higher market to book ratio mean and median than the D&O sample. The comparison suggests that the D&O sample represents larger, more stable firms, closer to steady state than the Compustat sample.

which are most likely due to firm errors or irregularities, exclusions from the useable restatement sample fall into three categories: (a) innocuous restatements, e.g. computation errors, (b) regulation prompted restatements, and (c) non-innocuous restatements with missing restatement data. Innocuous restatements are generally those which are due to an external party to the firm, e.g. customer fraud, partnership investment allocation, incorrect acquiree accounting. Also included in category (a) are international firms, partnerships, and trusts.

It could be argued that some regulation-prompted restatements are “prompted by the firm,” since the firm should have been properly reporting the item pre-regulation announcement. For example, SAB 101 is a regulation that prompted some firms to change their revenue recognition policies, and restate previously issued financial statements. It could be perceived that these firms should have been “properly” reporting revenue in accordance with SAB 101 before the release of the regulation, and thus non innocuous. Excluding regulation prompted restatements is a conservative estimate of non-innocuous restatements.¹⁰

I match on year and size in order to compare the characteristics of firms that restate earnings to those that do not. I match on year to control for macroeconomic conditions that affect the probability of a restatement. A match on size criteria controls for inherent differences in size between restatement and non restatement firms, and requires that the matched firm have no greater than twice the total assets of a restatement firm. Matched firms’ financial statement variables are gathered from Compustat. The test and control samples were also merged with the SEO sample and the I/B/E/S sample to control for earnings management incentives, but were not required to have these data to be retained. The data restrictions result in 93 restatement observations, and 2,649 matched non-restatement observations that have D&O data.

¹⁰ Firms often do not disclose the periods affected by a regulation-prompted restatement in press releases announcing earnings restatements, so it is not clear the which periods are restated.

4.2 Descriptive Statistics

4.2.1 D&O Sample Descriptive Statistics

To get an idea of the cost of D&O insurance (effectively borne by shareholders), Table 2 provides a time-series graph of the costliness of D&O coverage. The graph in Table 2 indicates the median premiums scaled by coverage limit has remained fairly steady from 1997–2003 (at about 2.5% of coverage limit). However, the mean of scaled premiums has steadily increased from 2000–2003. This rise in premiums may be in response to a rise in litigation risk, and the increased CEO and CFO responsibility introduced by the Sarbanes Oxley Act.

Table 2 indicates that the average firm has to pay about half a million dollars per contract year for D&O coverage, and premiums per dollar of coverage is about three percent.¹¹ D&O contracts can often be written to span more than one year; the mean number of policy years is 1.2, which confirms that D&O coverage does not necessarily change each year in response to a managerial incentives. Several insurers can share the risk of one insured. For example, one insurance firm can cover up to \$10 million of liability, with another insurer covering from \$10 to \$20 million of coverage. The mean number of layers to a firm's coverage is three layers.

4.2.2 Restatement and Control Sample Descriptive Statistics

Table 3 provides descriptive statistics, correlation coefficients, and frequencies of count variables for the restatement and control samples. Descriptive statistics show that restatement firms are larger higher growth, and carry larger (unscaled) coverage limits than non restatement firms. The coverage limit difference in means are not statistically different (t-value of -0.76).

¹¹ D&O underwriters price protect using both deductibles and premiums. The correlation coefficients between coverage limit, deductibles, and premiums (untabulated) indicate that insurers price protect using premiums to a larger degree than deductibles, especially in recent years.

Correlation coefficients for the restatement and non restatement sample are in Table 3, Panel B. The Pearson correlation coefficient between LNLIMIT and LNNETLIMIT is 0.999, thus logistic regressions are performed using the LNLIMIT variable. As expected, size and limit are strongly positively correlated, with a Pearson correlation coefficient of 75%.

Securities lawsuit statistics for the restatements sample show that there are 23 non sued SEC-detected restatements and nine sued SEC-detected restatements, possibly because an SEC investigation often takes place after the statute of limitations to file a securities lawsuit expires (Table 3, Panel C).. Consistent with Palmrose and Scholz (2002), restatements involving revenue recognition items are the most frequent, and Restatements involving expense items have the second largest frequency (53 sued, 90 not sued). Securities–related restatements do not have a high litigation rate at 15%.

5. Research Specification and and Empirical Results

This section provides the regression specification for the expected coverage limit model and the restatement prediction model, along with the corresponding empirical findings. It begins by describing the governance construct and governance summary variable factor analysis findings. The section follows with the presentation of the expected D&O coverage limit model specification and its findings. The section concludes with the description of the restatement likelihood regression, and several alternate empirical findings to confirm that an unexpected level of D&O coverage implies a higher likelihood of restatement.

5.1 Governance Construct

To test Hypothesis 1, I use exploratory factor analysis to create a governance quality variable. The variables used to construct the governance factor are: SEP CHAIR, INDPER, NONEMPLPER, GOV COMM, NUM BDMEETINGS, and NUM AUDITMEETINGS. SEP CHAIR takes a

value of one if the firm has a separate CEO and Chairman of the Board. Based on the view that domination by top management on the board of director can result in collusion (Fama 1980), I expect that a distinct CEO-Chairman increases governance quality. INDPER is the proportion of independent board members serving on the board. Beasley (1996) finds a negative association between the proportion of independent board members and the likelihood of financial statement fraud. Fraud firms have boards with 50.2% (50%) of their membership on average (median) composed of outside directors, while no-fraud firms have boards with 64.7% (64.3%) of their members on average (median) composed of outside directors (Beasley 1996).

The proportion of combined independent and affiliated board members may also be associated with governance quality. NONEMPLPER is the proportion of non-employee board members serving on the board, and GOV COMM takes a value of one if the firm has a governance committee. NUM BDMEETINGS is the number of board meetings per year, and NUM AUDITMEETINGS is the number of audit committee meetings held per year. “[B]oard meeting frequency is related to corporate governance and ownership characteristics in a manner that is consistent with contracting and agency theory” (Vafeas 1999).

If each separate governance variable is used in the model of coverage limit, the net impact governance has on coverage limit is unclear. Thus, the benefit of the single variable is that it represents a summary measure of governance quality, yielding a clear indication of the significance and direction of the influence on coverage limit.

Table 4 shows the factor loading and p-values of the factor analysis variables. A summary governance quality variable derived using factor has the benefit of providing a clear

indication of its significance on coverage limit.¹² These results indicate that one governance variable (GOV IND) is strongly associated with the proportion of independent board members and non–employee board members, which displays the importance of independent monitors in watching over managerial financial reporting. The second variable, GOV MEET, has strong factor loadings for the number of board meetings and audit committee meetings. The GOV MEET variable represents the importance of frequently monitoring managers. GOV IND and GOV MEET are the governance proxies used to test Hypothesis 1.

5.2.1 Predicting Expected Coverage Limits

Using variables that approximate the firm specific litigation risk, I model D&O coverage limits to estimate the expected level of insurance. The risk taken on by the covered executive and the firm’s litigation risk should correlate with the amount of coverage offered by the firm. I expect firm size (measured using total assets and market value of equity) to explain much of the variation in the D&O coverage limit, because firm size and D&O insurance are highly correlated (66%). Firm total assets is a concise summary measure of the firm’s ability to pay. The market value of equity measure is an estimate of the market’s perception of the firm, and also approximates the firm’s ability to pay. Plaintiffs’ attorneys use experience and market value of equity to gauge coverage limits (Woodruff Sawyer & Co.). The other component of the coverage limit model is the governance quality variable created using factor analysis. The resulting model of D&O coverage limit is:¹³

$$\text{LNLIMIT} = \beta_0 + \beta_1(\text{LN SIZE}) + \beta_2(\text{LN MVE}) + \beta_3(\text{LEVERAGE}) + \beta_4(\text{DIV PAYOUT}) + \beta_5(\text{GOV FACTOR}) + \beta_6(\text{IND}) + \beta_7(\text{VOLATILITY}) + \mu \quad [1]$$

¹² If each separate governance variable is used in the model of coverage limit, the net impact governance has on coverage limit is unclear.

¹³ Different insurers may underwrite different layers of insurance coverage. For example, one insurance firm could insure liability up to \$1 million. Another insurer could insure liability from \$1 million to \$5 million. The total amount of coverage purchased by a firm is used in the analysis.

where

LNLIMIT is the natural log of the firm's coverage limit for the year;

LN SIZE is the natural log of the year-end firm assets;

LN MVE is the natural log of the year-end market value of equity;

LEVERAGE is the debt to equity ratio;

DIV PAYOUT takes the value of 1 if the firm paid out dividends during the year;

GOV FACTOR is the composite variable created using factor analysis;

IND takes the value of 1 if the firm is in a computer hardware, computer software, or pharmaceutical industry;

VOLATILITY is the standard deviation of monthly stock returns over a two-year period.

I expect a firm's debt to equity ratio to be negatively correlated with coverage limit. In particular, if a firm is highly-levered, it should have lower exposure to shareholder securities litigation. I also include a measure of dividend payout, because dividend-paying firms tend to be low growth, stable firms, with low exposure to litigation risk. I expect DIVPAYOUT to be negatively correlated with coverage limits. The governance quality variable is hypothesized to be negatively related to coverage limit, because weak governance quality demands high coverage. I expect that a high premium charged to riskier firms (low governance quality) does not prevent the firm and executive from choosing a high level of insurance. Similarly, the coefficients on the industry indicator variable and stock return volatility variable should be positive.¹⁴ A firm in one of these industries has higher demand for insurance, but insurance is also costlier for these firms.

¹⁴ Industry SIC codes are from Johnson, Kasznik, and Nelson (2001). Firms with an SIC Code in the range 3570 – 3577 (computer hardware), 7371 – 7379 (computer software), or 2833 – 2836 (pharmaceutical) are coded as one for the industry variable.

5.2.2 Expected Coverage Limit Regression Model Results

Hypothesis 2 predicts that an unexpected coverage limit increases the likelihood of aggressive accounting. The test of Hypothesis 2 begins by first computing the expected coverage limit for the restatement and control non restatement samples (Table 5, Panel A). The unexpected amount of coverage acts as a determinant for the prediction of earnings restatements (Table 5, Panel B).

My model of coverage limit has explanatory power of about 46% (Table 5, Panel A). Total assets has stronger explanatory power (coefficient of 0.3) than market value of equity (coefficient of 0.2), but they two size proxies are both statistically significant. As expected, highly-levered firms do not carry large coverage limits, because litigation risk of firms with a lot of debt is lower than firms with a lot of stock. Dividend payout is not statistically significant in explaining coverage limit.

The coefficients on the governance variables are positive and statistically significant, which is consistent with the supply-side argument. Hypothesis 1 predicts that the demand for insurance will control the amount of insurance purchased, which implies a negative expected coefficient on the governance and other risk variables. However, the coefficients on all risk variables (governance quality, industry, and volatility) are consistent with a supply-side argument. Premiums charged to risky firms are prohibitive enough to outweigh the demand for insurance. The distributions of the residuals (excessive amounts of coverage) are also provided in Table 5, Panel A to confirm that the residuals are mean zero.

5.3.1 Proxies for Incentives to Manage Earnings

The logistic regression to predict restatements controls for incentives to manage earnings attributable to growth, equity offerings, and a desire to meet analysts' forecasts. High growth

firms (proxied by market to book ratio) want to maintain their high market valuations. Thus, growth firms are more likely to manage earnings and eventually may need to restate these earnings.

The second incentive is seasoned equity offerings (SEO). Firms manage earnings prior to an SEO to boost stock price and SEO proceeds (Teoh, Welch, and Wong 1998). SEO is an indicator variable, and takes a value of one if the SEO takes place up to nine months after the restatement period. Furthermore, a manager has incentives to meet analyst forecasts, and therefore undergoes earnings management activities to meet analysts' forecasts for both bonus plan hypothesis and stock ownership reasons (Degeorge, Patel, and Zeckhauser 1999). I include an indicator variable for firms that meet or just beat analysts' forecasts during the restatement period.

5.3.2 Logistic Regression Analysis to Model Restatement Occurrence

The residual from equation [1] proxies for the unexpected (or excess) D&O coverage limit. I predict that the residual is positively related to the likelihood of an earnings restatement.

The logistic regression to test Hypothesis 2 is:

$$\text{REST} = \beta_0 + \beta_1(\text{MB}) + \beta_2(\hat{\mu}_1) + \beta_3(\text{SEO}) + \beta_4(\text{JUSTMEET}) + \beta_5(\text{ALTMANZ}) + \varepsilon \quad [2]$$

where

REST takes a value of 1 if the firm filed amended financial statements, and 0 otherwise;

$\hat{\mu}$ is the residual from equation [1], which is the unexpected D&O coverage limit;

SEO takes a value of 1 if the firm issues a seasoned equity offering during the relevant period, and 0 otherwise;

JUSTMEET takes a value of 1 if the firm had a forecast error of 0, +1, or +2 cents during the restatement period (for the test sample) or for the matched quarter, and 0 otherwise.

ALTMANZ is the Z-score from Altman (1968). I use the updated coefficients from Hillegeist, Keating, Cram, and Lundstedt (2004).

The relevant period for the restatement sample starts with the end of the first quarter restated and ends nine months after the end of the last quarter restated. The relevant period used for the matched sample begins with the quarter-end and ends nine months after the quarter-end. I expect that growth, excess coverage, an imminent SEO, and meeting or slightly beating the forecast error are all positively associated with the likelihood of an earnings restatement. Thus, all coefficients should be positive.

I also control for a composite financial performance variable in predicting earnings restatements. The ALTMANZ variable is a bankruptcy prediction score created in Altman (1968), and updated using the coefficients provides in Hillegeist et al. (2004). I predict that firms with higher values of ALTMANZ, i.e. financially distressed firms, are more likely to manage earnings and restate earnings.

5.3.3 Predicting Earnings Restatement Regression Results

Table 5, Panel B models the likelihood of aggressive accounting (detected using earnings restatements). For both specifications of the governance variable, the excessive amount of coverage increases the likelihood of an earnings restatement (positive coefficient, statistically significant at the 5% level based on a two-tailed test).

I do not make any predictions on low levels, or negative unexpected coverage amounts. Therefore, I confirm that the positive unexpected coverage is driving the result shown in Table 5, Panel B. Table 6 shows that positive unexpected coverage is predictive of an earnings restatement (two-tailed p-value of 5.5%), whereas the coefficient on negative unexpected

coverage is not statistically significant. Thus, lower than expected levels of D&O coverage have no relation to earnings restatement occurrences. The implication of these results is that managers opportunistically rely on excessive coverage for financial reporting decision-making, because higher than expected D&O coverage predicts earnings restatements. These results reject the null of Hypothesis 2.

Firms with an impending SEO have a higher probability of restating financial statements (p-value of 6%). Hence, firms with an incentive to manage, in this case firms about to offer equity, have a higher chance of restating earnings. To my knowledge, no other study has documented that firms about to issue equity in an SEO have a higher probability of eventually filing an earnings restatement. The coefficient on the MB variable is not statistically significant, nor is the coefficient on JUSTMEET. Earnings management activities of firms that with a zero or small positive forecast error are not detectable using a restatement sample. Therefore, the result for the excessive D&O and SEO variables are consistent with Hypothesis 2. Furthermore, the financial performance variables, Altman Z and its components, are for the most part not significant in explaining restatement occurrence. The exception is earnings before interest and taxes; EBIT is positively associated with a restatement occurrence (p-value of 6%).

Table 7 merges the two regressions of Table 5, Panels A and B, into a single step. Table 7 uses the key variable, coverage limit, to predict earnings restatements, controlling for the coverage limit model's explanatory variables. I do not make any predictions on the significance of the control variables, since these are not hypothesized to predict earnings restatements. The coefficient on LNCOVLIMIT when controlling for the coverage limit explanatory variables (market to book, governance, industry, and volatility) is positive with a p-value of less than two percent, which confirms the findings discussed above.

6. Conclusion

This study furthers our understanding of the role Directors' and Officers' Liability insurance plays in financial reporting. I provide the first large sample evidence on U.S. D&O insurance. D&O is a choice unobservable to investors, even though it governs some managerial decisions. I find that opportunism in financial reporting can be detected using excess coverage amounts. I test the existence of aggressive accounting using earnings restatements, and find that this opportunism increases the likelihood of an earnings restatement. Moreover, litigation risk, or price protection factors, such as governance quality, high-tech industry, and leverage are negatively correlated with the amount of insurance purchased, driving the coverage down for risky firms.

There are a few limitations to note regarding my study. To the extent that the need for restatement goes undetected in some firms, the matched sample contains firms that should be in the test sample. However, this caveat serves as a bias against finding results. Furthermore, using the excess and fitted value of coverage limit in predicting earnings restatements and lawsuits relies on the fact that the model of coverage is complete. Overall, I find that the agency conflict is aggravated when D&O insurance is too high, and managers take advantage of the protection by applying aggressive financial reporting methods. My study has implications for how D&O insurance has some unexpected impacts on internal decision-making.

Table 1
Restatement Sample Selection Procedures

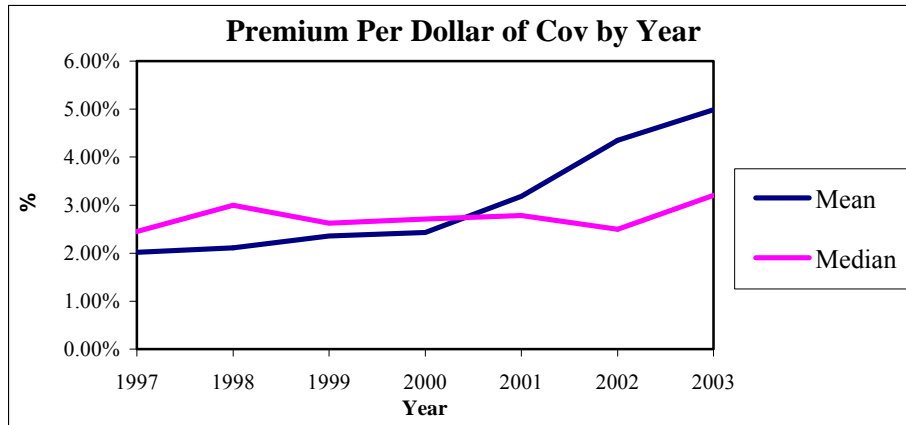
		Sued	Not Sued	All Obs
Total Number of Obs, 1999-2002		211	414	625
Innocuous	Calculation Error	0	16	16
	Due to External Party	2	12	14
Result of New Accounting Pronouncement or Rule				
	Acquisition, IPR&D	27	46	73
	Software Recognition	6	0	6
	Derivative Instruments	0	6	6
	Sales Incentives	1	5	6
	Shipping	0	18	18
	Revenue Recognition	13	67	80
	Miscellaneous	2	10	12
Not Innocuous	No Actual Restatement, Still Open	4	33	37
	Duplicate Restatement Announcement	13	8	21
	International, REIT, Partnership	4	24	28
	No Financial Data Found	22	12	34
	Total Deletions	94	257	351
	Remaining Useable Observations	117	157	274

		Subtotal
Progression of Restatement Sample		
Total Restatements		273
Less: Obs missing D&O information		(180)
		<u>93</u>
Progression of Matched Sample		
Total Quarterly Obs from Compustat		778,209
Less: Obs missing D&O information		(761,415)
Less: Obs that did not match a restatement year		(12,303)
Less: Obs that did not match on size		(1,772)
Less: Obs where match firm is a test firm		(70)
		<u>2,649</u>

The match on size criteria requires that the matched firm have no greater than two times the total assets of a restatement firm. The test and control samples were also merged with an SEO sample and an I/B/E/S sample, but were not required to have this data to be retained in the samples.

Table 2
D&O Premium and Coverage Descriptive Statistics

Limited premium data are available for the starting D&O sample of 8,662. The total number of observations with premium information is 627 observations. The purpose of this table is to offer some descriptive statistics on the premiums, deductibles, and coverage limits. The premiums per dollar of coverage limit is a measure of the costliness of the coverage. Means and medians remain fairly steady until 2000. After 2000, scaled premiums become more skewed. The table also provides the average number of policy years covered by a policy, and the number of insurers covering a firm (# layers).



	Observation Count
1997	28
1998	82
1999	86
2000	100
2001	134
2002	131
2003	67

N=627	Mean	Median
Premiums (\$millions)	\$469.6	\$335.0
Premium/ \$ Coverage	3.2%	2.8%
# Policy Years	1.2	1.0
# Layers	2.9	3.0

Table 3
Characteristics of Restatement and Matched Non-Restatement Samples

Descriptive statistics, frequencies, and correlations are for earnings restatement and non earnings restatement firms. Observations must have available D&O coverage limits. **SIZE** is total assets during the restatement period (for test firms) and at quarter-end (for matched firms). **MB** is the market to book ratio during the restatement period or at quarter-end. **LIMIT** is the firm's total D&O coverage limit in millions prevailing during the restatement period or quarter. **LNNETLIMIT** is the natural log of LNLIMIT less deductible prevailing during the class period.

Panel A: Descriptives

		All Obs	Restatement Obs	Non-Restatement Obs	T-test for Difference in Means
No. of Obs		2,742	93	2,649	
SIZE	Mean	1,424.07	2,030.88	1,402.77	-1.66
	Median	220.33	330.66	218.80	
	Std Dev	3,589.54	5,495.48	3,503.53	
MB	Mean	2.32	3.82	2.27	-0.45
	Median	2.33	2.00	2.33	
	Std Dev	75.13	28.83	76.34	
LIMIT	Mean	29.58	34.02	29.42	-0.76
	Median	15.00	15.00	15.00	
	Std Dev	35.37	58.23	34.30	

Panel B: Correlations

	REST	LNFSIZE	MB	LNLIMIT	LNNETLIMIT
REST		0.037	-0.004	-0.017	-0.014
		[0.054]	[0.849]	[0.366]	[0.461]
		2,742	2,425	2,742	2,636
LNFSIZE	0.035		-0.079	0.758	0.747
	[0.064]		[0.0001]	[<.0001]	[<.0001]
	2,742		2,425	2,742	2,636
MB	0.004	0.022		0.059	0.052
	[0.848]	[0.276]		[0.003]	[0.012]
	2,425	2,425		2,425	2,332
LNLIMIT	-0.005	0.754	0.030		0.996
	[0.807]	[<.0001]	[0.139]		[<.0001]
	2,742	2,742	2,425		2,636
LNNETLIMIT	-0.001	0.749	0.035	0.999	
	[0.969]	[<.001]	[0.087]	[<.0001]	
	2,636	2,636	2,332	2,636	

Table 3
Characteristics of Restatement and Matched Non–Restatement Samples
Predicting Restatements
Panel C: Frequency of Count Variables

Refer to Table 1 for sample selection procedures of restatement observations. When the cause of restatement was only IPR&D, the restatement is omitted from the analysis. A restatement may have multiple causes and multiple triggers.

Trigger Frequencies

Triggers	Sued	Not Sued
Auditor	9	19
Company	79	76
Other External	1	0
SEC	9	23
Total	98	118

Restatement Cause

Restatement Reasons	Sued	Not Sued
Mergers and Acquisitions	6	4
Expense	53	90
IPR&D	4	0
Other	10	14
Related–Party Transactions	4	4
Assets or Inventory	32	34
Revenue Recognition	85	64
Securities Related	4	22
Tax Related	2	7
Loan Loss Reserve	1	3
Total	201	242

Table 3
Characteristics of Restatement and Matched Non-Restatement Samples
Panel C: Correlations

Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. **REST** takes a value of 1 if the firm amended originally-filed financial statements, and is 0 for the matched sample. **LN_{SIZE}** is the natural log of total assets during the restatement period. **MB** is the market to book ratio during the restatement period. **LN_{LIMIT}** is the natural log of the total D&O coverage limit in millions prevailing during the restatement period. **LN_{NETLIMIT}** is the natural log of LN_{LIMIT} less deductible prevailing during the class period.

	REST	LN _{SIZE}	MB	LN _{LIMIT}	LN _{NETLIMIT}
REST		0.037 [0.054] 2,742	-0.004 [0.849] 2,425	-0.017 [0.366] 2,742	-0.014 [0.461] 2,636
LN _{SIZE}	0.035 [0.064] 2,742		-0.079 [0.0001] 2,425	0.758 [<.0001] 2,742	0.747 [<.0001] 2,636
MB	0.004 [0.848] 2,425	0.022 [0.276] 2,425		0.059 [0.003] 2,425	0.052 [0.012] 2,332
LN _{LIMIT}	-0.005 [0.807] 2,742	0.754 [<.0001] 2,742	0.030 [0.139] 2,425		0.996 [<.0001] 2,636
LN _{NETLIMIT}	-0.001 [0.969] 2,636	0.749 [<0.001] 2,636	0.035 [0.087] 2,332	0.999 [<.0001] 2,636	

Table 4
Factor Analysis Correlation Table
Creating Governance Quality Variables
For Restatement and Matched Non–Restatement Samples

INDPER is the proportion of independent, not affiliated directors serving on the board of directors. **EMPLPER** is the proportion of employee directors serving on the board of directors. **GOV COMM** takes a value of 1 if the firm has a governance committee, and 0 otherwise. **NUM BdMEETINGS** is the number of board meetings per year, and **NUM AUDITMEETINGS** is the number of audit committee meetings held per year.

	Gov IND	Gov MEET
SEP CHAIR	–0.248 [<.0001]	0.232 [<.0001]
INDPER	0.870 [<.0001]	0.181 [<.0001]
NONEMPLPER	0.828 [<.0001]	0.253 [<.0001]
GOV COMM	0.599 [<.0001]	0.261 [<.0001]
NUM BdMEETINGS	0.216 [<.0001]	0.789 [<.0001]
NUM AUDIT MEETINGS	0.264 [<.0001]	0.747 [<.0001]

Table 5
H1 Logistic Regression Results Predicting Financial Statement Restatements
Using Restatement and Matched Non-Restatement Samples
Panel A: Model of Coverage Limit

I use a two-stage least squares analysis to predict the occurrence of an earnings restatement. The first stage models the expected amount of D&O coverage purchased by a firm. **LNLIMIT** is the natural log of the firm's coverage limit for the year. **LMVE** is the log of the market value of equity (stock price * number of common shares outstanding) at the end of the coverage year. **LNSIZE** is the log of the firm's total assets at the end of the coverage year. **LEVERAGE** is the debt to equity ratio. **DIVPAYOUT** takes the value of 1 if the firm paid out dividends during the year. **GOV IND** is the composite governance variable created using factor analysis that represents the importance of independent board members in monitoring the managerial financial reporting choices without bias. **GOV MEET** is the composite governance variable created using factor analysis that represents the importance of frequent board meetings. **IND** takes the value of 1 if the firm is in a computer hardware, computer software, or pharmaceutical industry. **VOLATILITY** is the standard deviation of monthly stock returns over a two-year period. Results are not significantly different when limit scaled by total assets is used as the dependent variable, and **LNSIZE** is removed as an explanatory variable.

Table 5
H1 Logistic Regression Results Predicting Financial Statement Restatements
Using Restatement and Matched Non-Restatement Samples

Panel A: Model of Coverage Limit

continued

$$(A) \text{ LNLIMIT} = \beta_0 + \beta_1(\text{LN SIZE}) + \beta_2(\text{LNMVE}) + \beta_3(\text{LEVERAGE}) + \beta_4(\text{DIVPAYOUT}) + \beta_5(\text{GOV IND}) + \beta_6(\text{IND}) + \beta_7(\text{VOLATILITY}) + \mu_1$$

$$(B) \text{ LNLIMIT} = \beta_0 + \beta_1(\text{LN SIZE}) + \beta_2(\text{LNMVE}) + \beta_3(\text{LEVERAGE}) + \beta_4(\text{DIVPAYOUT}) + \beta_5(\text{GOV MEET}) + \beta_6(\text{IND}) + \beta_7(\text{VOLATILITY}) + \mu_2$$

	Expected Sign	A	B
INTERCEPT		0.539 [<.0001]	0.473 [0.0003]
LN SIZE	+	0.252 [<.0001]	0.259 [<.0001]
LNMVE	+	0.162 [<.0001]	0.163 [<.0001]
LEVERAGE		-0.001 [0.041]	-0.002 [0.027]
DIVPAYOUT		0.006 [0.900]	0.046 [0.346]
GOV IND	?	0.114 [<.0001]	
GOV MEET	?		0.087 [<.0001]
IND	?	-0.172 [0.004]	-0.189 [0.002]
VOLATILITY	?	0.944 [0.012]	0.894 [0.018]
ADJ R ²		46.08%	45.43%
# OF OBS		415	415
$\hat{\mu}_i$	Mean	0.000	0.000
	Median	0.029	0.033
	Std Dev	0.619	0.622

Table 5
H1 Logistic Regression Results
Panel B: Prediction of Earnings Restatements
Using Excessive D&O Coverage

In the second stage, the dependent variable is Restatement (1) and No Restatement (0). Logistic regressions of the likelihood of filing an earnings restatement on variables that characterize the firm's incentives and ability to potentially manage earnings. The dataset is a cross-sectional sample for the period 1999 – 2001. I use the excessive amount of D&O coverage limit obtained from the first stage as a predictor of filing an earnings restatement. Furthermore, I use other incentives to manage earnings as predictors of restatements. P-values are reported below the coefficients. Results are not significantly different when **NETLIMIT** is used rather than **LIMIT**. The top and bottom 1% of the **MB** variable are winsorized. **LNSIZE** is the natural log of total assets during the restatement period. **MB** is the market to book ratio during the restatement period. **LNLIMIT** is the natural log of the total D&O coverage limit in millions prevailing during the class period.

SEO takes a value of 1 if the firm issued a seasoned equity offering during the relevant period, and 0 otherwise. The relevant period used for the restatement sample starts with the end of the first restatement period and ends nine months after the end of the last restatement period. The relevant period used for the matched sample begins with the quarter end and ends nine months after the end of the quarter end. **JUSTMEET** takes a value of 1 if the firm had a forecast error of 0, +1, or +2 cents during the restatement period (for the test sample) or for the matched quarter, and 0 otherwise. μ is the residual from equation [1], which is the excess amount of D&O coverage.

ALTMANZ is the Z-score from Altman (1968). I use the updated coefficients from Hillegeist, Keating, Cram, and Lundstedt (2004). I separately include the individual variables of the AltmanZ. **WC** is working capital scaled by total assets. **RE** is retained earnings scaled by total assets. **EBIT** is earnings before interest and taxes scaled by total assets. **MVEL** is the market value of equity scaled by the book value of total liabilities. **SALES** is total sales scaled by total assets.

Table 5
H1 Logistic Regression Results
Panel B: Prediction of Earnings Restatements Using
Excessive D&O Coverage
continued

$$\text{REST} = \beta_0 + \beta_1(\text{MB}) + \beta_2(\hat{\mu}_i) + \beta_3(\text{SEO}) + \beta_4(\text{JUSTMEET}) + \beta_4(\text{ALTMANZ}) + \varepsilon$$

$$\text{REST} = \beta_0 + \beta_1(\text{MB}) + \beta_2(\hat{\mu}_i) + \beta_3(\text{SEO}) + \beta_4(\text{JUSTMEET}) + \beta_5(\text{WC}) + \beta_6(\text{RE}) + \beta_7(\text{EBIT}) + \beta_8(\text{MVEL}) + \beta_8(\text{SALES}) + \varepsilon$$

	Expected Sign				
INTERCEPT		-2.430 [<.0001]	-2.017 [<.001]	-2.397 [<.001]	-1.967 [<.001]
MB	+	0.064 [0.319]	0.036 [0.610]	0.059 [0.358]	0.031 [0.664]
$\hat{\mu}_1$	+	1.199 [0.008]	1.009 [0.040]		
$\hat{\mu}_2$	+			1.194 [0.008]	0.985 [0.045]
SEO	+	1.564 [0.062]	1.438 [0.088]	1.670 [0.047]	1.499 [0.076]
JUSTMEET	+	-12.998 [0.947]	-12.806 [0.946]	-13.057 [0.947]	-12.853 [0.946]
ALTMANZ		0.331 [0.222]		0.318 [0.239]	
WC			-2.750 [0.141]		-2.630 [0.161]
RE			-2.721 [0.111]		-2.641 [0.119]
EBIT			14.985 [0.063]		14.724 [0.066]
MVEL			-0.021 [0.776]		-0.017 [0.826]
SALES			-0.391 [0.807]		-0.527 [0.743]
LIKELIHOOD RATIO		39.21 [<.0001]	47.85 [<.0001]	39.168 [<.0001]	47.608 [<.0001]
# OF OBS		239	239	239	239

Table 6
Separate Prediction of Earnings Restatements Using
Positive and Negative Unexpected Coverage

The logistic regression presented in Table 7, Panel B are split into positive and negative unexpected coverage for the regressions in this Table. The coefficient on positive unexpected coverage is expected to be positive, suggesting that an excessive amount of insurance is predictive of an earnings restatement occurrence. The coefficient on negative unexpected coverage is expected to be statistically insignificant. Low amounts of insurance are not predictive of an earnings restatement.

	Expected Sign	Positive Unexpected Coverage	Negative Unexpected Coverage
INTERCEPT		-2.77 [<.0001]	-2.27 [0.004]
MB	+	0.006 [0.869]	0.03 [0.790]
$\hat{\mu}_1$ POS	+	1.69 [0.055]	
$\hat{\mu}_1$ NEG	0		0.29 [0.774]
SEO	+	1.80 [0.080]	1.40 [0.275]
JUSTMEET	+	-12.33 [0.945]	-11.45 [0.937]
LIKELIHOOD RATIO		17.43 [0.002]	7.77 [0.10]
# OF OBS		143	103

Table 7
Prediction of Earnings Restatements Using Single-Step Logistic Regression

The logistic regressions in Table 9 combine the two steps of Table 7 into a single step. I include the variables used to predict coverage limit in the regression to predict earnings restatements. I control for the model of coverage limit variables in the regression. The coefficient on coverage limit is the coefficient with respect to all of the other explanatory variables. The significance of the other variables is not important, since they are not expected to predict an earnings restatement.

$$\text{REST} = \beta_0 + \beta_1(\text{MB}) + \beta_2(\text{LN SIZE}) + \beta_3(\text{GOV IND}) + \beta_4(\text{GOV MEET}) + \beta_5(\text{IND}) + \beta_6(\text{VOLATILITY}) + \beta_7(\text{LN COVLIMIT}) + \varepsilon$$

	Expected Sign	Using GOV IND		Using GOV MEET	
INTERCEPT		-6.25 [0.0001]	-6.61 [0.001]	-5.83 [0.0002]	-6.11 [0.001]
MB		-0.006 [0.742]		-0.006 [0.772]	
LN SIZE			0.09 [0.723]		0.07 [0.794]
GOV IND		-0.23 [0.365]	-0.24 [0.353]		
GOV MEET				0.01 [0.980]	-0.01 [0.959]
IND		0.94 [0.143]	0.97 [0.130]	0.95 [0.141]	0.98 [0.130]
VOLATILITY		-2.29 [0.645]	-1.92 [0.703]	-2.09 [0.670]	-1.80 [0.717]
LN COVLIMIT	+	0.86 [0.013]	0.75 [0.083]	0.74 [0.022]	0.66 [0.120]
LIKELIHOOD RATIO		8.90 [0.113]	8.93 [0.110]	8.11 [0.151]	8.10 [0.151]
# OF OBS		415	415	415	415

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