MANAGERIAL OPPORTUNISM IN ACCOUNTING CHOICE: EVIDENCE FROM DIRECTORS' AND OFFICERS' LIABILITY INSURANCE PURCHASES

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ABSTRACT

We examine the relation between the managerial opportunism embedded in earnings management, and D&O insurance. We investigate (a) whether managers are more willing to engage in opportunistic behavior by adopting an aggressive earnings management strategy when they are covered by a relatively higher D&O insurance limit; (b) whether managers purchase D&O insurance coverage in anticipation of opportunistic accounting choice; and (c) whether insurers can distinguish abnormally large insurance purchases driven by opportunism in accounting choice from those driven by abnormal risk aversion. Our evidence strongly supports the managerial opportunism hypothesis in managing earnings. In particular, we find that managers purchase insurance coverage in anticipation of opportunistic earnings management around equity issuing events. We also find that the best insured managers are those who manipulate the most the earnings. Interestingly, we find that the insurers are not myopic to the harms of opportunistic managerial behavior. They are able to detect and charge higher insurance premiums to managers with a hidden opportunistic agenda. Overall, these results suggest that the D&O insurance market enhances opportunistic managerial behavior. We do not find any support for the prediction that lower D&O insurance premiums are associated with good corporate governance quality.

Earnings management is widely known as a misleading activity that occurs for purposes of hiding deteriorating performance. Healy and Wahlen (1999, p. 65) state that "Earnings management occurs when managers use judgment in financial reporting in structuring transactions to alter financial reports, to either mislead some stakeholders about the underlying economic performance of the economy, or to influence contractual outcomes that depends on reported accounting numbers." Schipper (1989) defines that managing earnings is a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain. We refer to managers' manipulation of earnings to serve private benefits as managerial opportunism. The managerial opportunism hypothesis around equity issues states that managers opportunistically manipulate earnings upward before stock issues to raise stock prices.

We test the managerial opportunism hypothesis in the context of D&O insurance. The recent accounting scandals—mainly triggered by earnings management issues—that struck such reputable firms as Enron, Health South, Tyco, World COM in the U.S. and Nortel in Canada not only changed the dynamics in the financial markets, but have certainly eroded the confidence of investors. In the wake of these scandals, many of the above mentioned companies experienced a sharp decrease in their equity value and a downgrade of their credit ratings, often to a junk-bond status; several of them were even led to file for chapter 11-bankruptcy protection from creditors. These scandals have reinforced the general perception that firms' managers use earnings management primarily to serve their own private benefits.

Earnings management can be very costly to the management, owing to the higher litigation risk associated with it. According to the Tillinghast-Towers Perrin's (2002) survey, inadequate or inaccurate disclosure is responsible for 46.4 percent of claims filed against U.S participants in 2002, compared to only 19.9 percent in 1990. Furthermore, the same survey shows that the litigations triggered by inaccurate or inadequate disclosure are more costly than those triggered by any other reason. Therefore, it is evident that managers have strong incentives to protect themselves against costly litigation associated with inadequate or inaccurate disclosure. We investigate whether D&O

insurance is related to earnings management practices undertaken by managers around SEO announcement dates. If managers are behaving opportunistically and manipulate earnings upward around offer dates, they will be more vulnerable to litigation risk, which can be triggered by unsatisfied shareholders when the aftermarket price declines below the offering price.[1] Since D&O insurance protects each individual officer or director against the risk of shareholder litigation, it is plausible to expect that managers will be more willing to engage in opportunistic earnings management strategy when they are covered by relatively higher D&O insurance limits. More specifically, we test such managerial opportunism by examining whether the purchase of D&O insurance coverage is associated with more aggressive earnings manipulations. Moreover, we investigate to what degree insurers are able to price the risk of opportunistic earnings management in the premiums they charge. D&O insurance operates as a contractual mechanism that spreads the litigation risk from managers to insurers. Because they are the ultimate losers when shareholders sue, the insurers will have strong incentives to accurately assess the risk of shareholder litigation. In such case, insurance premiums should be higher for managers that opportunistically manipulate earnings.

The relation between D&O insurance coverage and earnings management is endogenous, because D&O insurance coverage can be purchased in anticipation of opportunistic behavior. Consequently, ignoring this endogenous relation can lead to a spurious relation between coverage limits and earnings management. Kim (2005) hypothesizes that insurance coverage is not purchased in anticipation of opportunistic behavior because coverage limits do not change much from year to year, and policies may cover several years. However, even if Kim's hypothesis is generally true, endogeneity is likely to be substantial when firms are about to issue their seasoned equity offerings (SEOs)—the particular focus of this study—because, as we find in this study, D&O insurance coverage limits change significantly around SEO announcement dates. We use a three-stage least square (3SLS) to test our hypotheses while accounting for endogeneity. Consistent with our

[1] Earnings management temporarily inflates the stock prices that ultimately fall as less favourable earnings information arrives after the offer (Teoh, Welch, and Wong (1998a, b)).

prediction, the empirical evidence shows a reliably positive association between the D&O insurance limit and earnings management practices. Our results also show that D&O insurers are able to distinguish between firms that purchase abnormal excess coverage for opportunistic earnings manipulation goals, and firms that purchase extra coverage for some other reason other than managerial opportunism, such as abnormal higher risk aversion by directors and officers.

Furthermore, our sample period happens to cover a period over which the Securities Commissions of several Canadian provinces have increased enforcement activity in order to improve the quality and the timeliness of disclosures.[2] These provincial Securities Commissions have increased the budget and staff to launch the Continuous Disclosure Review Program (CDRP) at different dates in the beginning of years 2000. We investigate the impact of the inclusion of provincial CDRP on the opportunistic earnings management and on D&O insurance premiums. We find that the provincial CDRP adoption is ineffective in alleviating opportunistic earnings management, but is translated into D&O premium reduction since insurers think that this rule will dissuade managers from following aggressive earnings management strategy.

In addition, we address another hypothesis regarding D&O insurance not tackled in the existing literature. There is no suitable answer to the issue of the impact of the D&O insurance market cycles on the managerial. The empirical evidence shows that neither the managerial opportunism in accounting choice, nor the pricing of D&O premiums is affected by the D&O insurance market cycles.

This study contributes to the literature on D&O insurance and earnings management on several grounds. First, using an original database, this study is the first to bridge opportunistic earnings management and D&O insurance. This will shed some light on the mounting and ongoing debate over the role of D&O insurance in the traditional conflict of interest between shareholders and

[2] Several provinces namely Alberta, British Columbia, Quebec, and Ontario have set up a program of continuous disclosure review in order to encourage high-quality financial reporting in the beginning of years 2000. In 2004, harmonized continuous disclosure program, which is intended to enhance the consistency in the scope and level of reviews carried out by Commission staff across Canada, came into force. This program is being adopted at this time by the staff of the following jurisdictions: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Québec and Nova Scotia.

managers. Second, we extend the literature on earnings management by giving further evidence on whether and when earnings management takes place. Indeed, McNichols (2000) concludes that there is need for further research on the factors that motivate managers to manipulate earnings, and for this understanding to be better reflected in the empirical methods. Beneish (2001) also stresses the need for further research on managers' incentives to manipulate earnings. Third, we provide a different test of managerial opportunism than the evidence in Teoh, Welch, and Wong (1998b). While these authors investigate managerial opportunism through the relation between earnings management and long-term performance around seasoned equity offerings, we focus on the opportunism that arises from the purchase of liability insurance. Whether the average post-offering stock price performance is abnormal or not, does not affect our hypothesis stating simply that abnormal accruals are predicted by managers' decision on the coverage and cost of D&O insurance. This is important because there is evidence in the literature showing that the post-offering underperformance is explained by a failure of the matched-firm technique to provide a proper control for risk.[3] Moreover, testing managerial opportunism using the D&O insurance details (limits, premiums, and deductibles) instead of stock price performance is more appropriate since it is free from the potential bias resulting from the collusion risk between managers and directors.[4]Finally, we extend the legal literature by investigating the effect of CDRP adoption on the Canadian litigation environment.

The remainder of this study proceeds as follows. Section I describes the basic features of D&O insurance.. Section II reviews the literature on both D&O insurance and earnings management and develops the main hypotheses of our study. Section III describes the research design. Section IV discusses the empirical results, while Section V concludes.

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[3] See Lyon, Barber, and Tsai (1999).

[4] Indeed, Ronen and Tzur (2006) find that directors allow managers to manipulate earnings in order to engage in profitable insider trading. Therefore, owing to this potential collusion between the directors and the managers, stock price might be a biased estimate of the firm's true value. However, D&O insurance details are not potentially biased, since D&O insurers have no interest to collude with managers as they risk their own capital.

I. Directors' and Officers' Liability Insurance in Canada

In recent years, D&O insurance has grown to become a core component of corporate insurance. This growth has been stimulated by the fact that it has become routine that disgruntled investors accuse corporations and their D&O with securities fraud whenever a firm's stock price declines dramatically and unexpectedly. In this section, we describe and discuss the D&O insurance and the difference between Canada and the U.S.

A typical D&O insurance policy, which is a group policy purchased by the corporation, includes three basic types of coverage: First, a personal coverage protects each individual officer or director against the risk of shareholder litigation. Under this coverage, the insurer will pay covered losses on behalf of managers when the corporation is not able or unwilling to indemnify its managers by reason of law or because of financial distress. Second, a corporate coverage protects the corporation itself against losses incurred from its indemnification commitment to individual D&O. Third, an entity coverage protects the corporation itself when this latter is a defendant in a shareholder claim.

D&O insurance policies cover losses including damages, judgments, awards, settlements amounts and defense fees incurred in a shareholder claim. Moreover, the insurer covers directors and officers for a claim alleging wrongdoing[5] in their capacity as D&O, provided they acted honestly and in good faith[6] and with a view to the best interests of the corporation. Actions qualified as fraudulent, illegal or involving evident conflicts of interest are typically excluded from D&O insurance coverage.[7] In general, D&O insurance coverage is stated on an annual basis for all covered losses during the policy year. The personal and corporate coverage are usually the same.

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[5] A simple definition of a wrongful act given by most professionals would be any error, misstatement, act, omission, neglect, or breach of duty committed, attempted, or allegedly committed or attempted, by an insured, individually or otherwise, in their insured capacity.

[6] Effort made, information given, or transaction done, honestly and without a deliberate intention to defraud the other party. However, good-faith does not necessarily mean absence of negligence.

[7] See Baker and Griffith (2007) for a detailed discussion on the principal D&O insurance exclusions.

The lawsuit risk is the greatest risk facing directors and officers, and has become more acute after the recent corporate scandals, which involved quite reputable firms such as Enron, Health South, Tyco, and World Com in U.S. and Nortel in Canada. For public firms, the dominant source of D&O risk is shareholder litigation. According to Tillinghast-Towers Perrin's (2003) Directors and Officers Liability Survey, about one-half of D&O insurance claims are brought by shareholders in both Canada and the U.S. (the remainder claims are triggered by employees, customers, competitors, regulators, and other third-parties). Several events may trigger lawsuits filing: Illegal acts, violations of security laws, self-dealing, control of the firm, unfair transactions, imprudent or negligent management, bankruptcy, executive compensation, earnings restatement announcement, and improper decision-making process and other self-interested transactions. There is a little cost to filing, and several plaintiffs' attorneys may file a suit. The filing includes an estimate of damages, which is often based on the drop in market price prior to filing.

Our interest in the Canadian data stems for several reasons: First, unlike their counterparts in the U.S., Canadian securities regulators do require disclosure of basic information concerning their D&O insurance policies, including coverage limits and premiums in their proxy filings and registration statements. Therefore, Canada provides us with a natural laboratory to examine issues related to D&O insurance as D&O insurance purchases must be publicly disclosed and are thus supposed to be less contaminated by opportunistic behavior of directors and officers. Second, a major difference between the U.S. and Canada pertains to the legal system: Litigation in the U.S. is considered as a normal business expense by some firms (Kaltchev (2004)) contrary to the Canadian market where litigation is less common. Core (2000) finds that the Canadian legal system is less conducive to nuisance suits over stock price declines, probably because it is a considerably less favorable environment for entrepreneurial plaintiffs' lawyers (Baker and Griffith (2007)).

II. Literature Review and Hypothesis Development

A D&O insurance policy can be seen as a group policy purchased by the corporation that includes three types of coverage: A personal coverage that protects each individual officer or director against the risk of shareholder litigation; a corporate coverage that protects the corporation against losses incurred from its indemnification commitment to individual D&O; and an entity coverage that protects the corporation from a shareholder claim. This section first reviews the literature and then develops the study's hypotheses.

A. Literature Review

Our study bridges the gap between D&O insurance and opportunistic earnings management practices in the secondary market. Both topics have been separately studied in the existing literature. While the literature on managerial opportunism in the equity offering context is large, that of D&O insurance liability is quite limited.[8]

So far, the existing D&O insurance studies focus on different aspects of the insurance with a particular attention addressed to the demand of insurance. Core (1997) pioneered the study of the determinants of D&O insurance in Canada by showing that litigation and distress risks are the major determinants of D&O insurance purchases in Canada. O'Sullivan (2002) investigates the determinants of U.K firms' demand for D&O insurance and finds that insured companies are larger, are more exposed to US litigation, experience greater share price risk, exhibit lower levels of managerial ownership, and possess greater non-executive representation on their boards than uninsured companies. Boyer (2003) shows that lagged insurance purchases is the only significant determinant of the insurance decision in Canada, suggesting that habit is the main driver of D&O insurance demand. More recently, Kaltchev (2004) finds that market capitalization is the main

[8] The only study that examines the relationship between D&O insurance purchase and accounting choice is Kim (2005). However, Kim does not investigate earnings management.

predictor for the D&O insurance coverage purchased by U.S firms. From a corporate governance perspective, Holderness (1990) shows that directors' and officers' (D&O) insurance can play an important governance role in publicly owned companies. Using a sample of U.K firms, O'Sullivan (1997) tests Holderness's monitoring hypothesis by examining the association between board composition, managerial ownership, external shareholder control, and the purchase of D&O. His results generally support the monitoring hypothesis. Few studies focused on explaining the D&O insurance premiums, and the relation between insurance purchases and firm value. Core (2000) examines whether D&O insurance premium is commensurate with the firms' corporate governance practices and finds that it does. On the other hand, Bhagat, Brickley, and Coles (1987) examine the performance of U.S. stock returns around the announcement of the purchase of D&O insurance, and find no evidence that D&O insurance purchase adversely affects shareholders' wealth. Boyer (2005) find evidence that D&O insurance protects shareholders' wealth rather than the directors' welfare. Chalmers, Dann, and Harford, (2002) examine the decision of managers to purchase D&O insurance around the time when a firm is preparing to sell its IPO. They find a significant negative relation between D&O insurance purchase and long-run future performance, suggesting the presence of managerial opportunism. The authors also examine the relation between insurance premiums and future performance and find that insurers do not (or are unable to) differentiate between purchasers with depressing private information about the firm prospects and those that purchase extra coverage for other reasons.

The literature on opportunistic earnings management is extensive. Several potential motivations for opportunistic earnings management have been examined in the literature. We first discuss the literature in the context of the capital market, and then summarize the allied works in other contexts such as contracts design and government regulation. The importance of accounting information for valuing stocks can create an incentive for managers (especially those that derive private benefits from high prices) to manipulate earnings in an attempt to influence capital market expectations, and hence the short-term behavior of stock prices. DeAngelo (1988) reports that earnings information is

important for valuations in management buyouts and hypothesizes that buyout firms have an incentive to understate earnings. Perry and William (1994) provide evidence that managers manipulate earnings downward in the year preceding the public announcement of management-buyout intentions. Additionally, Easterwood (1998) and Erikson and Wang (1999) find evidence of earnings management in both hostile takeovers and in stock for stock mergers, respectively. Other studies have examined whether managers overstate earnings in periods surrounding equity offerings in an attempt to mislead various capital market participants about future performance. They generally report that firms manage upward their earnings prior to initial or seasoned equity offerings (see, among others, Teoh, Welch and Rao (1998), Teoh, Welch and Wong (1998b), and Rangan (1998)). Earnings management can also be triggered by private objectives, such as the need to magnify the benefits of insider trading. Researchers such as Beneish and Vargus (2002) and Park and Park (2004) show indeed that managers of insider sales firms adjust their earnings when they intend to buy or sell their shares in the short-run.

Other potential motivations for opportunistic earnings management have also been examined in the literature. A number of studies examined whether firms close lending covenants manage earnings. For instance, DeFond and Jiambalvo (1994) find that firms accelerate earnings management one year prior to the covenant violation. Contractual compensation design can also stimulate earnings management. For example, Dechow and Sloan (1991), Holthausen, Larker, and Sloan (1995), and Guidry, Leone, and Rock (1998) show that managers can manipulate earnings to increase earnings-based bonus. Regulation can be another motivation for opportunistic earnings management. For example, there is evidence that banks that are close to minimum capital requirements tend to overstate loan loss-provisions, understate loan write-offs, and recognize abnormal realized gains on securities portfolios (Collins, Shackelford, and Wahlen (1995)). Other studies find that managers manipulate earnings to reduce the risk of investigation by anti-trust regulators (see Watts and Zimmerman (1978), Cahan (1992), DeFond and Jiambalvo (1994)).

B. Hypotheses Development

Schipper (1989) sustains that managing earnings is a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain. The recent accounting scandals have generated a public perception that earnings management is a misleading activity that occurs to artificially increase performance. However deceiving investors has its perils. Inadequate or inaccurate disclosure was responsible for the majority of claims filed against firms in the recent period.[9] Given these facts, it is evident that opportunistic managers will have strong incentives and benefits to protect themselves against litigation risk. Therefore, we expect that managers that are better covered by D&O insurance to be more likely to engage in opportunistic behavior by adopting an aggressive earnings management strategy. We also hypothesize that the reverse is true: D&O insurance coverage is likely to be purchased in anticipation of opportunistic behavior.

In addition, we examine to what degree insurers are able to price the risk of opportunistic earnings management around the offering date in the premiums they charge to firms issuing equity offerings. D&O insurance operates as a contractual mechanism to spread the risk of shareholder litigation from individual directors and officers to the corporation they manage, and then to a third-party insurer. Since the insurers work for profit, the will charge the insured a litigation risk premium (that is function of the probability of loss) on top of a loading fee that rewards the insurer for its efforts. However, the insurer will suffer a significant loss if the litigation risk premium is incorrectly estimated. Thus, D&O insurance companies will have strong incentives to accurately assess the risk of shareholder litigation, in order to out-select competitors and avoid costly losses. Based on these arguments, we expect D&O insurance premiums to be higher when the managers are purchasing abnormally high coverage and manipulating earnings, if the insurers are able to identify opportunistic managers.

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[9] According to Tillinghast-Towers Perrin survey, inadequate or inaccurate disclosure including financial reporting was responsible for 46.4 percent of claims filed against U.S. participants in 2002 versus 19.9 percent in 1990.

Moreover, we investigate the effect of the Continuous Disclosure Review Program (CDRP) launched by several Canadian provinces at the beginning of the years 2000. Most of the provincial securities commissions have increased enforcement activity by increasing their budget and staff in order to improve the quality and the timeliness of disclosures. We hypothesize that the inclusion of CDRP will alleviate the opportunistic earnings management and will be associated with a decline in the D&O insurance. To the extent that the CDRP is effective in achieving its goals, firms issuing SEOs after the adoption of CDRP will pay a smaller premium for their D&O insurance policy.

We focus also on the incremental effect of the D&O insurance market cycle on the managerial opportunism. Insurance markets follow a boom and bust pattern that is similar to, but not closely correlated with, other business cycles. During a "hard market" cycle, insurers become more selective, less willing to offer high limits, more interested in higher attachment points, less willing to negotiate contract terms, and able to command dramatically higher prices for what amounts to less coverage. However, "soft market" is characterized by decreasing premiums, increasing policy limits and deductibles/retentions, and a rise of insurance capacity. All aspects of underwriting are affected by the cycle. Therefore, it is plausible to assume that the monitoring role of insurers is more reinforced during hard markets compared to soft markets.[10] We hypothesize that, during a soft D&O insurance market (a) managers are more likely to engage in opportunistic behavior by adopting aggressive earnings management strategy during, and (b) the insurance premium charged to our sample firms should be lower.

III. Data and Methodology

A. Sample Selection

We focus on Canadian firms because, unlike their U.S. counterparts, they must disclose the basic information regarding their D&O insurance policies, including coverage limits and premiums, in

[10] For a detailed discussion on the monitoring role of D&O insurers, see Baker and Griffith (2007).

their proxy filings and registration statements. We have obtained an initial sample of SEOs from the Securities Data Corporation (SDC) database from January 1997 to December 2003.

We imposed that all issues be Canadian ordinary common stocks; dropped all warrants, unit issues, closed-end funds, right issues, and private placements; excluded financial firms (e.g., Loughran and Ritter (1995));[11] excluded firms that are not covered by the COMPUSTAT database at the time of the offering. We consider only the earliest offering if the sample firm has more than one SEO during the sample period, to avoid statistical problems associated with interdependence of observations. Applying these requirements yields an initial sample of 249 SEOs from 1997 to 2003.

We merged these 249 SEOs with our D&O insurance data, obtained from the SEDAR online database (www.sedar.com). The D&O insurance data include details on D&O insurance amounts, premiums paid, and corporate deductibles. We dropped 91 SEOs because we are unable to access to key information sources such as the proxy statement and/or the prospectus, six SEOs because they do not disclose the details on their insurance policy although they claim a purchase of insurance coverage, and eight SEOs because the details on their insurance premiums are not disclosed although the details on the amount purchased are revealed. One SEO is lost because D&O insurance coverage is given by the firm's parent. Finally, we excluded five SEOs because the firms state their intention to purchase D&O insurance but finally did not carry it or did not disclose any related details. With these filters, we end up with a sample of 138 SEOs, out of which 112 carry D&O insurance (81.2 percent) and 26 SEOs are uninsured.[12]

[11] We removed financial firms because they have different incentives to issue equity than other firms. For example, banks may issue equity to meet regulatory capital requirements. Moreover, following Brav, Geczy, and Gompers (2000) and Eckbo, Masulis, and Norli (2000), we did not exclude firms in the utility industry. However, we can report that excluding utilities does not materially change our results.

[12] We ascertain whether a firm carries a D&O insurance policy by looking at their proxy statements and annual reports. If there is no mention of the existence of D&O insurance policy or no hint that the firm has the intention to purchase such a policy, we consider it as uninsured.

B. Earnings Management Measures

Three proxies of earnings management are used: Jones's (1991) model discretionary accruals, the Jones-model performance-matched discretionary accruals (Kothari, Leone, and Wasley (2005)), and the income-smoothing measure (Leuz, Nanda, and Wysocki (2003)).

Jones Measure of Discretionary Accruals

Jones's (1991) measure of discretionary accrual has been identified as one of the best estimates of earnings management (Dechow, Sloan, and Sweeney (1995)). The main idea of this model is to contrast the firm's level of total accruals with what it should be, given the industry particularity. The firm's total accruals (TA) are defined as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization, scaled by lagged total assets:

$$TA_{it} = \frac{\Delta\left[\begin{array}{l}\textit{Current Assets (4)-}\\ \textit{Cash (1)}\end{array}\right] - \left[\begin{array}{l}\textit{Current Liabilities (5)-}\\ \textit{Debt in Current Liabilities (34)}\end{array}\right] - \left[\begin{array}{l}\textit{Depreciation and}\\ \textit{Amortization (14)}\end{array}\right]}{lag\left[\textit{Total Assets (6)}\right]} \qquad (1)$$

where the number between two brackets designate the COMPUSTAT item number. The firm's discretionary accrual is estimated by running the following cross-sectional regression using all firms in the same two-digit SIC code except the issuer:

$$TA_{jt} = \beta_0 + \beta_1(1/Assets_{it-1}) + \beta_2 \Delta Sales_{jt} + \beta_3 PPE_{jt} + \varepsilon_{j,t} \qquad (2)$$

where $\Delta Sales_{jt}$ is the change in sales scaled by lagged total assets, $Assets_{jt-1}$, and PPE_{jt} is the gross property, plant, and equipment scaled by lagged total assets.[13] We use the parameter estimated from the cross-sectional regression (the $\hat{\beta}$ s) to breakdown the firms total accruals into a nondiscretionary

[13] Note that we follow Kothari, Leone, and Wasley (2005) and include an intercept in equation (2). This, as well as the fact that all our variables are scaled by lagged total assets, helps mitigate the heteroskedasticity usually inherent in cross-sectional industry models (White (1980)).

component (NDTA) and a discretionary component (DTA) that constitutes the estimate of the firm's earnings management:

$$NDTA_{it} = \hat{\beta}_0 + \hat{\beta}_1(1/Assets_{it-1}) + \hat{\beta}_2 \Delta Sales_{jt} + \hat{\beta}_3 PPE_{jt} \quad (3)$$

$$DTA_{it} = TA_{it} - NDTA_{it} \quad (4)$$

Performance Matched Discretionary Accruals Measure

As a second proxy for earnings management, we use Kothari, Leone, and Wasley's (2005) performance matching approach. We first match each firm from our SEO sample with another from the same two-digit SIC code that has the closest return on assets during the same year (return on asset is defined as net income scaled by total assets). Next, we estimate the discretionary total accruals (DTA) of each firm using equation (4), and obtain the performance-matched discretionary accruals by taking the difference DTA between each SEO firm and its matching counterpart.[14]

Income-Smoothing Measure

As a third proxy for earnings management, we use Leuz, Nanda, and Wysocki's (2003) approach to detect smoothing reported operating earnings using accruals. According to Beidleman (1973, p. 653), income smoothing is "*an attempt on the part of the firm's management to reduce abnormal variations in earnings to the extent allowed under sound accounting and management principles.*" We measure smoothing as the ratio of the firm-level standard deviation of operating earnings divided by the firm-level standard deviation of cash flow from operations. This ratio is expected to be low when insiders exercise accounting discretion to smooth reported earnings.

[14] The authors argue that a performance-matched discretionary accrual measure is useful in mitigating errors in cases where the researchers' partitioning variable of interest is correlated with performance. On the other hand, CDH (2002) find a significant negative relation between D&O insurance purchase and long-run future performance. Consequently, the performance-matched discretionary accrual seems appropriate in the study of the relationship between D&O insurance and earnings management.

C. Methodology

We hypothesized in the previous section that higher D&O insurance coverage limit gives managers additional incentives to adopt a more aggressive earnings management strategy, especially around issuing dates. The standard way to test this hypothesis is to regress D&O insurance coverage on earnings management proxies. However, since insurance coverage can be purchased in anticipation of opportunistic accounting choice, such a direct approach is likely to yield misspecified estimates.

One of the advantages of using a SEO sample is that we can track the managerial behavior change with respect to D&O insurance purchase decisions around the event date. Data exploration shows that the post-SEO means of D&O insurance coverage and premium increase significantly relative to the pre-SEO figures (respectively, $13.93 versus $19.08 million and $75,900 versus $109,000). Interestingly, about 52 percent of our sample increases their D&O insurance after the SEO. We also find that 15.3 percent of the sample firms purchase for the first time a D&O insurance policy after the SEO event. These results show—in contrast with Kim's (2005) hypothesis that coverage is not purchased in anticipation of opportunistic behavior because coverage limits do not change much from year to year—that coverage varies around the SEO announcement, which suggests that coverage can be purchased in anticipation of opportunistic accounting choice.

To avoid this simultaneous equation bias, we use a three-stage least squares approach (3SLS). Because it combines the two-stage least squares (2SLS) with an iterative algorithm such as Zelner's SUR method, the 3SLS is more computationally expensive, but provides better parameter consistency and much better large-sample efficiency; according to Belsley (1988), the 3SLS possesses greater small-sample efficiency than 2SLS, which also motivates our choice due to the small size of our sample.

We include the equation that explains the D&O insurance premium in the system of equations that already includes the two equations explaining, respectively, the D&O insurance coverage and earnings management. Indeed, it is plausible to assume that D&O coverage and premium are

dependent rather than independent decisions; these two D&O insurance policy pillars are related not only directly, but also indirectly through their relationship with several control variables.[15] Furthermore, since we examine to what extent insurers are able to detect the opportunistic behavior undertaken by insured managers, the D&O premium is directly related to the earnings management proxies. Accordingly, a careful analysis is required to distinguish among the interdependence of these different components (earnings management, coverage and premium).

We thus estimate the following simultaneous equation system:

$$\begin{aligned} Coverage &= \alpha_0 + \alpha_1 Risk + \alpha_2 Governance + \alpha_3 Characteristics + \alpha_4 EM + e_1 \\ EM &= \lambda_0 + \lambda_1 Risk' + \lambda_2 Governance' + \lambda_3 Industry + \lambda_4 Year + \lambda_5 Coverage + e_2 \\ Premium &= \gamma_0 + \gamma_1 Risk + \gamma_2 Governance + \gamma_3 Characteristics + \gamma_4 e_1 + \gamma_5 (e_1 \times EM) + e_3 \end{aligned} \quad (5)$$

where *Coverage* is the D&O insurance coverage, *EM* stands for the measure of earnings management, *Premium* is the D&O insurance premium, *Risk* and *Risk'* refer to the sets of corporate business risk variables, *Governance* and *Governance'* stand for the vectors of corporate governance variables, *Characteristics* comprises a set of SEO characteristics, *Industry* and *Year* are sets of industry and year dummies.

The first equation in system (5) aims to capture the effect of opportunistic accounting choice on the D&O insurance limit, after controlling for business risk, corporate governance, and SEO characteristics (see Core (2000) and CDH (2002)). The parameter α_4 should be undistinguishable from zero if earnings management is not related to D&O insurance coverage. The second equation in system (5) aims to capture the effect of insurance coverage on opportunistic accounting choice. In this equation, we first build on Park and shin (2004) to control for a different set of business risk,

[15] Boyer (2003, 2005) evokes the possibility that D&O insurance limit and deductible are chosen simultaneously rather than independently. He argues that a risk averse agent negotiates simultaneously the D&O insurance limit and the deductible at the time of the insurance policy purchase. Following the same line of reasoning, we assume that D&O insurance coverage and premium are determined simultaneously, and therefore affect directly each other.

corporate governance variables, as well as industry and year dummies.[16] We expect the parameter λ_5 to be significantly positive if insurance coverage magnifies managerial earnings manipulation. Finally, we investigate in the third equation of system (5) the ability of D&O insurers to price abnormal D&O insurance coverage and managerial opportunism through earnings management in their premium. If insurers ask for a higher premium in the event of abnormal D&O insurance demand, for whichever reason, then the parameter γ_4 associated with abnormal insurance coverage should be reliably positive.[17] However, if they charge a higher premium when this abnormal D&O insurance demand is driven by opportunistic earnings manipulations, then γ_5 will be significantly positive.

D. Variable Description

As dependent variables, we use D&O insurance coverage purchased (**coverage**) after the SEO announcement and premium paid (**premium**). All variables are defined in Table I. We use three categories of independent variables, namely: Firm characteristics, business risk variables, and corporate governance variables. We control for two issue characteristics: The **offering size** and the **fraction of firm sold**.

[INSERT TABLE I ABOUT HERE]

We follow the literature and rely on five business-risk variable. Because the firm financing policy is likely to affect the demand of corporate insurance, we control for the firm **leverage**. Indeed, since distressed firms tend to exhibit a higher litigation risk and larger bankruptcy costs,

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[16] Park and Shin (2004) investigate the effect of board composition on the practice of earnings management in Canada. In their model, they regress the earnings management proxy on a set of independent variables, namely the proportion of outside directors, the presence of a major shareholder, the financial leverage, the weight of bonus in the executive pay, the firm size, the growth opportunities, and a set of industry, year, and firm specific dummies. We rely on the same set of variables, except that we replace the weight of bonus in the executive pay by the executive cash compensation and delete the set of firm-specific dummy variables.

[17] We estimated abnormal purchase of D&O insurance coverage (e_1) in the right-hand side of the third equation of system (1) by running the first equation without including earnings management.

leverage is a potential determinant for D&O insurance demand. Therefore, we expect that more leveraged firms are more likely to carry higher limits of D&O insurance and pay higher premiums. Mayers and Smith (1982) argue that it would be optimal for firms that are large, healthy, mature, and unregulated to purchase less insurance, mainly because they have more stable and confident relations with different market participants and are less exposed to litigation risk than young firms. Therefore, we hypothesize that **age** will be inversely proportional to D&O insurance coverage limits and premiums. Since the firm's past performance may be a reliable signal of its future performance, we assume that litigation risk is negatively associated to the firm's past **revenues**. Consequently, we expect to find a negative association between coverage and premium on the one hand, and the firm's past revenues on the other. Because risky firms are more exposed to litigation risk, we expect a positive relation between **standard deviation of revenues** and D&O insurance coverage and premium.[18] Since liability risks differ between the U.S. and Canada—because of differences in their respective legal systems—we use information on **U.S. exchange listing** firms to test whether there is a different demand for D&O insurance and premiums in Canada. Canadian firms listed on a U.S. exchange are exposed to a higher litigation risk as shown by Core (1997, 2000), carry higher D&O insurance limits and pay more expensive premiums for insurers. Thus, we expect U.S. exchange listed firms to have a greater demand for D&O insurance and pay higher premiums.

To examine how the governance structure of the firm affects D&O insurance, we rely on four corporate governance variables: (a) Firms with a large **board size** are more likely to purchase higher amounts of D&O insurance and pay higher premiums, as larger boards may increase agency problems (see Yermack (1996)). An alternative hypothesis could be that larger boards may bring together specialists from various functional areas, which will, in turn, increase firm value (Beiner et al. (2006)). Under this alternative hypothesis, firms with large boards will have less need to carry higher D&O insurance coverage limits and to pay higher premiums. The purchase of D&O insurance can improve the monitoring role of public companies' shareholders (e.g. Holderness

[18] We tested our models using average operating income and standard deviation of operating income instead of average revenue and standard deviation of revenue to find similar results.

(1990), Daniel and Hutton (1993), and O'Sullivan (1997)). (b) **Outside directors** can be considered as an alternative monitoring mechanism, we expect the amount of D&O insurance coverage and premium to be negatively related to the number of outside directors. A high **D&O ownership** will work on mitigating the agency problems, and we expect it to alleviate managerial opportunism as well as D&O insurance needs. (c) The percentage of common shares held by **blockholders** can help shareholders to effectively monitor the firm's managers (Schleifer and Vishny (1986)). Hence, we expect firms with blockholders to exhibit less need for D&O insurance. (d) D&O insurance is often considered as part of the D&O compensation package (Core (1997)) and therefore can be seen as a substitute to alternative forms of directors and officers compensation. Thus, we expect to find a negative association between **executive cash compensation** and D&O insurance.

Finally, we investigate the role of **auditors**. Auditors, being the insurers of the firm's financial statements, mitigate the information asymmetry between inside managers and outside shareholders (Klein (2002)). However, we expect managers of firms having one or more reputable auditors to be exposed to higher litigation risk due to the rigorous monitoring generally conducted by these auditors. Thus, firms with reputable auditors are hypothesized to carry higher D&O insurance coverage because of managers' risk aversion. Therefore, the net effect of this variable on D&O insurance is ambiguous.

IV. Empirical Results

A. Descriptive Statistics

Table II, Panel A, shows the distribution of our sample of 112 insured SEOs and 26 uninsured SEOs by year. About 48 percent (54 firms) of our sample of insured SEOs and about 46 percent (12 firms) of our sample of uninsured SEOs occurs in the window 1999-2000. The distribution of the sample by industry is shown in Panel B of Table II. Industries are identified by the Standard Industrial Classification (SIC) codes provided by COMPUSTAT. While our sample is distributed across 11 industries, more than 54 percent (61 firms) of the insured firms sub-sample and more than

65 percent of the uninsured firms sub-sample are concentrated in three sectors (Biotechnology and Pharmaceuticals, Mining and Natural Resources, and Technology). The distribution of our sample across time and industry is consistent with the idea that equity offerings occur in waves (see Lowry (2003), Rajan and Servaes (1997), and Pagano, Panetta, and Zingales (1998)).

[INSERT TABLE II ABOUT HERE]

Table III presents summary descriptive statistics for the variables. Panel A of Table III shows the results for D&O insurance policy characteristics and the earnings management measures. The post-SEO mean D&O insurance coverage and premium are roughly $19 million and $98,000 respectively. The average D&O insurance coverage purchased is not small, and averages to about 87.5 percent of the SEO size. Our results are comparable with those reported in the 2006 CIBC Director and Officer Liability Insurance Survey. According to this survey, more than half of the companies that carry D&O insurance do so for less than $20 million coverage, for less than $150,000 annual premiums, and less than $250.000 deductibles. D&O insurance becomes more costly for firms after SEOs. Specifically, the per dollar average cost of D&O insurance coverage increases from 4.5 cents before SEOs to 5.4 cents after SEOs. The same panel shows the descriptive statistics on the earnings management measures. There does not seem to be a clear pattern in the difference of earnings management between insured and uninsured firms. However, this result may be driven by our very limited sample of uninsured firms. Panels B to D of Table III shows that the statistics for the control variables tend to vary a lot between insured and uninsured companies. While these univariate statistics are important, they only consider one dimension while we are interested in investigating the explanatory power of managerial opportunism in a more restrictive environment, in which it is simultaneously challenged by several control variables.

[INSERT TABLE III ABOUT HERE]

B. Earnings Management and the D&O Liability Insurance Purchase Decision

Does earnings management affect D&O liability insurance purchase decision? Albeit small, our sample can provide a test of the potential relation between the extent of earnings management and the likelihood of carrying a D&O insurance policy. We run a probit model that regresses the dummy variable taking one for the insured firms and zero otherwise, on our set of control variables and the proxies of earning management.

Table IV shows the results. The results largely mirror those obtained in the univariate tests[19]: We find a strong negative and significant (at the 1 percent level) association between age and the likelihood to carry D&O insurance. This result supports the prediction, ceteris paribus, that mature firms exhibit less need to purchase D&O coverage than young firms. Reported results also show that the fraction sold is negatively and significantly related to the probability to purchase D&O insurance. Furthermore, average revenues, and the standard deviation of revenues are statistically significant, but do not have the predicted sign. This result suggests that companies experiencing larger (and more volatile) revenues are more (less) likely to possess insurance. We have no explanation for this puzzle.

Earnings management does not seem to trigger a higher likelihood of D&O insurance purchase. However, this does not necessarily imply that the purchase of D&O insurance is unrelated to opportunistic earnings management. Indeed, since it is normal for firms to insure their managers against litigation risk, the large majority of our sample of SEOs will comprise both opportunistic and un-opportunistic insured firms (81.2 percent of the sample). Therefore, when pooled together in a single group, the effects of the un-opportunistic insured firms will tend to mitigate the effects of opportunistic behavior. This fact, and a limited sample, may contribute to the lack of power in the

[19] Surprisingly, univariate tests show that SEOs do not appear to manage earnings more aggressively than their uninsured counterparts. In our sample, although they have the predicted sign, the mean and median changes of most earnings measures are consistently insignificant.

probit regressions. An empirical strategy that integrates the level of D&O insurance purchase is therefore necessary.

Recall that the D&O purchase decision and opportunism in accounting choice could be endogenous. To control for this eventual endogenous relation, we implement a two-stage estimation method, as described in Maddala (1983), for simultaneous equations models in which one of the endogenous variables is continuous and the other endogenous variable is dichotomous. We keep the same control variables and we rerun the same specifications. In unreported results, our findings remain overall unchanged.

C. Earnings Management, D&O Insurance Limits, and Insurance Premiums

Since D&O insurance protects each individual officer or director against the risk of shareholder litigation, it is plausible to expect that managers will be more likely to adopt an opportunistic earnings management strategy when they are better covered by D&O insurance. Panel A of Table V tests this hypothesis using the 3SLS approach described above, and shows support for this conjecture. No matter what the measure of earnings management used, and independently of the control variables, insurance coverage is always significantly (at the 1 percent level) associated with earnings management. This significant relation goes from a higher insurance coverage to a higher risk of accounting manipulation. This result is all the more important as none of the control variables, save *Executive cash compensation*, consistently explains earnings management across the three proxies. Our results suggest that a higher level of *Executive cash compensation* tends to lower the extent of earnings manipulation. This is not surprising given that incentive-based pay is likely to help to align the management and shareholder interests (e.g., Bryan, Hwang, and Lilien (2000)).

[INSERT TABLE V ABOUT HERE]

Is D&O insurance purchased in anticipation of opportunistic behavior? The results obtained in Panel B of Table V suggest so. For example, the coefficient associated with the Jones's (1991) proxy

of earnings management is 21.00, which is highly statistically significant (p-value < 0.001). The magnitude of the estimated coefficient is also economically significant because a one standard deviation in earnings management (0.227) will lead to about $5.818 million change in the amount of insurance coverage purchased to protect the D&O against litigation risk. A similar inference is obtained for the other proxies of earnings management.

Beside earnings management, three control variables consistently surface at the 5% level (*Executive cash compensation*, *SEO size*, and *Fraction sold*). We find a positive relation between executive cash compensation and D&O insurance coverage, which seems to contrast with Parry and Parry's (1991) efficient contracting models.[20] Furthermore, both SEO characteristics, namely offering size and fraction of the firm sold, are consistently significant at the 5 percent level with the expected signs, suggesting that these characteristics variables are important determinants of D&O insurance coverage.

Panel C of Table V shows the results of the determinant of D&O insurance premium. Because they will be the ultimate losers when the shareholders sue, the insurers will have strong incentives to correctly assess the litigation risk. In such case, the insurance premiums should be commensurate with the level of earnings management. Independently of the control variables and the proxies for earnings management used, the results show that insurers price abnormal D&O insurance coverage in their premium. The coefficient associated with abnormal insurance coverage is always of positive sign and statistically significant in two out of three models estimated. An interesting result is obtained when we look at the effect of the interaction-term between abnormal insurance coverage and the proxies of earnings management. Our evidence shows that insurers ask a reliably higher premium when the abnormal D&O insurance demand is driven by opportunistic earnings manipulations. Excepted average revenues, none of the control variables reliably (at the 5% level) explain the level of insurance premium across all specifications. This comforts us with the idea that

[20] The result is consistent with the assumption that various compensation forms complement each other. Core (1997, p.81) argues that this puzzling result is obtained because the compensation components "*are bundled together by an insider who does not internalize their cost, or because little attention is given to designing director compensation plans*". In other words, managerial entrenchment may prevent efficient contracting with outside directors.

the D&O insurance premium is primarily driven by the adverse selection risk inherent in dealing with managers with a hidden opportunistic agenda.

The main results of this section can be summarized in two major points. *First*, the evidence presented above support strongly the managerial opportunism hypothesis. The expected significant association between the amount of D&O insurance purchased and different proxies of earnings management in Panels A and B, are consistent with the joint hypothesis that (a) managers are more likely to engage in opportunistic behaviour by adopting aggressive earnings management strategy when they are covered by a relatively higher D&O insurance limit, and (b) D&O insurance is purchased in anticipation of opportunistic earnings manipulation. *Second*, the result obtained in Panel C suggests that insurers are able to charge more expensive premiums to opportunistic managers issuing Canadian SEOs. This result supports the hypothesis that D&O insurers do not only pool all types of excess coverage purchasers together, but they are also able to distinguish between firms that purchase abnormal excess coverage for opportunistic earnings manipulation goals, and firms that purchase extra coverage for some other reason, such as abnormal higher risk aversion by directors and officers.

As robustness checks, we rerun our tests using alternative earnings management measures. These measures include the modified-Jones model discretionary accruals and the performance-matched modified-Jones model discretionary accrual.[21] In unreported results, the evidence obtained using Jones model discretionary accruals is in general consistent with our main hypotheses; however, the evidence obtained using the performance-matched modified-Jones model discretionary accruals fails to confirm our predictions. Following Kothari et al. (2005), we also re-estimate our 3SLS using discretionary accruals proxies obtained by adding $ROA_{i,t}$ to the Jones and modified-Jones models as an additional regressor to control for firm performance. We use also both

[21] The main difference between Jones and modified Jones models is that the modified-Jones model attributes the entire change in receivables to earnings management by using sales changes net of the change in accounts receivables instead sales changes simply (see for example Dechow, Sloan, and Sweeney (1995) and Teoh, Welch, and Wong (1998a, b). Performance-matched modified-Jones model discretionary accrual is defined analogously to performance-matched Jones model discretionary accrual (Kothari et al. (2005)).

the magnitude of accruals and the correlation between accounting accruals and operating cash flows, as they were defined by Leuz, Nanda, and Wysocki (2003).[22] Overall, unreported results obtained with these earnings management measures are consistent with those reported earlier in this section.

D. The Effect of CDRP Adoption

In this section, we investigate the impact of the inclusion of the Continuous Disclosure Review Program (CDRP) on the opportunistic earnings management and on D&O insurance premiums.[23] A significant reduction in D&O insurance premium is expected if the CDRP program is effective in alleviating opportunistic earnings management.

We re-estimate the system of simultaneous equations while altering two of the three equations. Firstly, to investigate the role of CDRP adoption on the earnings management incentives triggered by insurance coverage, we introduce the interaction between insurance coverage and a CDRP dummy variable, which takes the value of one if the issuing date is after the CDRP adoption and zero otherwise. Secondly, we investigate the effectiveness of these provincial programs in alleviating managerial opportunism by testing whether insurers reduce their premiums after the CDRP adoption dates. In that regard, we introduce, in the third equation of system (5), the interaction between the CDRP dummy and the cross-term between the abnormal insurance coverage and the proxy for earnings management. We expect the coefficient associated with the interaction variables to run against the opportunistic earnings management hypothesis, if the CDRP program is effective.

Panel A of Table VI shows that the adoption of CDRP program is ineffective in alleviating opportunistic earnings management, mainly because insurance coverage is no less significant a determinant of earnings management after the adoption of the CDRP program. However, the

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[22] Leuz, Nanda, and Wysocki (2003) define the first proxy as the absolute value of the firm's reporting earnings scaled by the absolute value of firm's cash flow from operations, while they define the second proxy as the correlation between changes in accounting accruals and changes in operating cash flows.

[23] The CDRP is a program launched by the Securities Commissions of several Canadian provinces after the turn of the millennium, with the aim to improve the quality and timeliness of disclosures.

adoption of the CDRP program impacts significantly the insurance premiums related to earnings management. Panel C of Table VI shows that the interaction terms between unexplained coverage, earnings management proxies, and CDRP dummy is statistically significant and have the predicted sign in all specifications. The result suggests that insurers perceive this program as being effective in dissuading managers from following aggressive earnings management strategies, and as a consequence, contributes to lower the litigation risk.

[INSERT TABLE VI ABOUT HERE]

E. The Effect of D&O Insurance Market Cycles

We investigate the effect of the insurance market cycle on both earnings management practices and D&O insurance premiums. Similar to the approach used to examine the effect of CDRP adoption, we modify the first and third equations of system (5) by introducing the interactions with the market cycle dummy, which takes the value one if the market is on the soft state and zero otherwise. Since the competition constraint is less severe in the hard market, the monitoring role of insurers is more likely to be reinforced during a hard compared to a soft market. Therefore, in a soft insurance market, managers will be more likely to adopt an aggressive earnings management strategy, and D&O insurers would be constrained to charge lower premiums.

Panel A of Table VII shows that, for most specifications, coverage purchased during soft markets has no incremental positive effect on earnings management. Our evidence fails therefore to support our prediction that the market cycle drives the behavior of managers vis-à-vis their earnings management strategy. Similarly, the results obtained in Panel C of Table VII shows no definitive impact of the insurance market cycle on the insurance premiums driven by opportunistic earnings manipulations.

[INSERT TABLE VII ABOUT HERE]

F. Additional Robustness Checks

In this section, we perform a number of additional robustness checks. First, we investigate managerial opportunism in accounting choice for multiple issuing firms. Following the usual approach, we modify the first and third equations of system (5) by introducing the interactions with the multiple SEO dummy, which takes the value one if the firm issues more than one SEO during the sample period, and zero otherwise. We expect multiple SEOs issuing firms to exhibit more severe managerial opportunism and higher insurance premiums. Our results do not, however, support these hypotheses; Managers of multiple SEO firms do not pursue more aggressive earnings management than the rest of the sample, and are not paying lower D&O insurance premiums (See Panels A and C of Table VIII). Second, we rerun our 3SLS without interacting the earnings management measures with unexplained coverage for any of the tests examined previously. Overall, the results remain unchanged. Finally, we test the sensitivity of our results to an alternative estimation method namely, the Zellner's estimation technique that fits seemingly unrelated regression models (Zellner (1962)). Our results remain insensitive to the choice of the estimation method.

[INSERT TABLE VIII ABOUT HERE]

V. Conclusion

This study is the first to examine the relation between the managerial opportunism embedded in earnings management, and D&O insurance. We investigate (a) whether managers are more willing to engage in opportunistic behavior by adopting an aggressive earnings management strategy when they are covered by a relatively higher D&O insurance limit; (b) whether managers purchase D&O insurance coverage in anticipation of opportunistic accounting choice; and (c) whether insurers can distinguish abnormally large insurance purchases driven by opportunism in accounting choice from those driven by abnormal risk aversion. Our evidence strongly supports the managerial opportunism

hypothesis in managing earnings. In particular, we find that managers purchase insurance coverage in anticipation of opportunistic earnings management around equity issuing events. We also find that the best insured managers are those who manipulate the most the earnings. Interestingly, we find that the insurers are not myopic to the harms of opportunistic managerial behavior. They are able to detect and charge higher insurance premiums to managers with a hidden opportunistic agenda. Overall, these results suggest that the D&O insurance market enhances opportunistic managerial behavior. We investigate also the impact of the inclusion of provincial CDRP on the opportunistic earnings management and on D&O insurance premiums. The empirical evidence shows that the provincial CDRP adoption is ineffective in reducing opportunistic earnings management, but remarkably leads to D&O premium reduction. Again, we do not find any support for the prediction that lower D&O insurance premiums are associated with good corporate governance quality.

Our findings have significant implications for investors, and regulators. Investors are invited to learn through firm's D&O insurance details especially in periods where firms are ready to issue equity. Disclosed D&O insurance information can convey an important and normally costless signal on the quality of the issuers, and their intentions in their tentative to raise capital. For regulators, our evidence suggests that D&O insurance coverage contributes to the ineffectiveness of CDRP in alleviating managerial opportunism. One obvious implication of this result is that regulators are invited to regulate the D&O insurance industry before adopting any enforcement laws to foster high-quality financial reporting. We think that imposing more restrictions on the D&O insurance demand with regarding to corporate governance quality is highly recommended.

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Table I
Variable Description

This table describes the variables used. Panel A shows the dependent variables; Panel B shows the SEO Characteristic variables; Panel C describes the firm's business risk variables; and Panel D shows the corporate governance variables. Panel E presents the earnings management measures. For each variable, we define its measurement proxy, and we give the predicted sign of its effect on both D&O insurance limit and premium paid as well as its source of data. All figures are in Canadian dollar.

Variable Name	Definition	Predicted sign/Cov	Predicted sign/EM	Predicted sign/Prem	Source of data
	Panel A. Dependent Variables				
D&O coverage	Total coverage limits purchased at the end of the SEO fiscal year ($ millions)		+	+	SEDAR
Premium	Annual premiums paid by SEO firm to purchase its D&O liability insurance policy ($ millions)				SEDAR
Jones model accruals	ones-model discretionary accrual in year t	+		+	COMPUSTAT
Jones performance-matched	Jones-model discretionary accrual in year t minus the matched firm's Jones-model discretionary accrual for year t	+		+	COMPUSTAT
Smoothing	The ratio of the firm-level standard deviation of operating earnings divided by the firm-level standard deviation of cash flow from operations	-		-	COMPUSTAT
	Panel B. SEO Characteristics				
SEO offering size	Value of SEO ($ millions)	?		?	SEDAR
Fraction of firm sold	Ratio of SEO shares offered to total outstanding shares after offer	?		?	SEDAR
	Panel C. Firm's Business Risk Variables				
Leverage	Total debt divided by the market value of equity plus book value of preferred plus book value of debt	+	?	+	COMPUSTAT
Age	Number of years of operating history provided in the prospectus	-		-	SEDAR

Table I - *Continued*

Variable Name	Definition	Predicted sign/Cov	Predicted sign/EM	Predicted sign/Prem	Source of data
	Panel C. Firm's Business Risk Variables (continued)				
Revenues	Average reported revenues over three years preceding the SEO announcement date ($ millions). Partial years are converted to full years by taking the ratio of partial year revenues to prior year partial year revenues and multiplying by the prior full year revenue figure	-		-	SEDAR
SD adjusted revenue	Standard deviation of revenues ($ millions) over three years preceding the SEO announcement date	+		+	SEDAR
U.S. exchange listing	A dummy variable taking 1 if the firm is listed on the U.S. stock market (NYSE, NASDAQ, AMEX) and 0 otherwise	+		+	SEDAR
Firm size	The logarithm of the net sales	?	-	?	COMPUSTAT
Market-to-book ratio	The market-to-book ratio of assets	?	-	?	COMPUSTAT
	Panel D. Corporate Governance Variables				
Board size	Number of members on the board of directors	?		?	SEDAR
Pct. outside directors	Percent of the total number of directors on the board that are outside directors	?	-	?	SEDAR
Block holder	The cumulative percentage of outstanding shares held by outside holders who own at least 10% of firm shares and who are neither officers nor directors	-	-	-	SEDAR
Executive cash compensation	The sum of fixed compensation, annual bonuses and ordinary shareholdings for executives	-	-	-	SEDAR
D&O ownership (%)	Percent of total shares outstanding owned by the directors and officers of the firm	?		?	SEDAR
Big 4 auditor	A dummy variable taking 1 if the firm is audited by a big 4 auditor and 0 otherwise	?		?	SEDAR

Table II

Frequency Distribution of Seasoned Equity Issues by Year and Industry

This table presents the distribution of our sample of 112 insured SEOs and 26 uninsured SEOs by fiscal year and industrial sector for the period from 1997 to 2003. Financial institutions are excluded form the sample. Other notable exclusions include IPOs, issues by non-Canadian firms, private placements, rights issues, and unit offerings.

Panel A. Distribution by year

	Insured Firms		Uninsured Firms	
Year	Number of firms	% of sample	Number of firms	% of sample
1997	17	15.18	5	19.23
1998	14	12.50	4	15.38
1999	27	24.11	9	34.62
2000	27	24.11	3	11.54
2001	11	9.82	1	3.85
2002	8	7.14	3	11.54
2003	8	7.14	1	3.85
Total	112	100	26	100

Panel B. Distribution by Industry

	Insured Firms		Uninsured Firms	
Industry	Number of firms	% of sample	Number of firms	% of sample
Agricultural industries	1	0.89	0	0.00
Biotechnology/pharmaceuticals	15	13.39	1	3.85
Communications and media	5	4.46	1	3.85
Construction	5	4.46	0	0.00
Consumer products	14	12.50	0	0.00
Industrial products	10	8.93	6	23.08
Merchandising	4	3.57	2	7.69
Mining and Natural Resources	20	17.86	12	46.15
Technology	26	23.21	4	15.38
Utility	3	2.68	0	0.00
Others	9	8.04	0	0.00
Total	112	100	26	100

Table III

Descriptive Statistics

This table presents the descriptive statistics of the sample of Canadian 112 insured SEOs and 26 uninsured SEOs for the period 1997-2003. Panel A reports the results for dependant variables, Panel B for the SEO characteristic variables, Panel C for the firm's business risk variables, Panel D for the corporate governance variables, and Panel E for the earnings management measures. For each variable, we show the number of observation, the mean, the standard deviation, the median, the mean change, the median change, the t-statistic, and the Z-statistic.

Variable	Insured Firms (N=112)				Uninsured Firms (N=26)			
	N	Mean	St. Dev.	Median	N	Mean	St. Dev.	Median
Panel A. Dependant Variables								
Coverage ($millions)	112	18.506	13.804	15.000	26			
Premium ($millions)	112	0.089	0.097	0.000	26			
Coverage/SEO size	112	0.887	2.168	0.447	26			
Premium/Coverage	112	0.005	0.005	0.004	26			
Jones model accruals	112	0.021	0.267	0.004	26	0.055	0.251	-0.019
Jones performance-matched	112	0.056	0.480	0.024	26	0.098	0.209	0.031
Smoothing	112	8.592	13.894	5.169	26	0.991	0.025	1.000
Panel B. SEO Characteristics								
SEO size ($millions)	112	52.313	51.165	33.442	26	63.147	151.149	24.700
Fraction sold percent	111	13.120	7.721	11.000	26	18.429	8.510	18.891
Panel C. Firm's Business Risk Variables								
Leverage	107	0.601	1.105	0.243	26	0.680	0.591	0.616
Age	112	15.717	15.126	11.000	26	27.100	62.397	13.250
Revenue ($millions)	112	372.831	1087.051	70.444	26	501.059	1365.791	17.967
SD adjusted revenue ($millions)	112	269.208	1772.923	34.343	26	0.423	0.504	23.665
U.S. exchange listing dummy	112	0.045	0.207	0.000	26	0.077	0.272	0.000
Firm size	112	4.691	1.996	4.784	24	4.446	2.467	4.006
Market-to-book	112	2.533	2.644	1.692	24	3.727	8.563	1.258

Table III - *Continued*

Variable	Insured Firms (N=112)				Uninsured Firms (N=26)			
	N	Mean	St. Dev.	Median	N	Mean	St. Dev.	Median
Panel D. Corporate Governance Variables								
Board size	112	8.518	2.442	8.000	25	7.760	2.570	7.000
Pct. of outside directors	112	67.630	20.129	70.700	26	63.416	15.931	66.372
Blockholder	111	27.362	26.593	19.000	26	30.739	18.338	28.750
Executive cash comp ($millions)	112	1.814	1.614	1.363	26	1.389	1.468	1.008
D&O ownership (%)	112	13.516	16.693	6.495	26	14.499	18.543	10.592
Big 4 auditor	111	0.865	0.343	1.000	26	0.962	0.196	1.000

Table IV

Predicting the D&O Insurance Purchase Decision

This table presents the results of a probit model designed to estimate the likelihood that an SEO purchase a D&O insurance policy. The explanatory variables are regressed on the dependent variable taking the value of 1 for firms with D&O insurance and 0 otherwise. The variables are defined in Table I. Coefficient estimates are presented with p-value in brackets below. Robust variance estimates are used. Significance at the 10 percent, 5 percent, and 1 percent level is noted by *, **, and ***, respectively.

Variable	(1)	(2)	(3)	(4)
Intercept	1.637 (0.040)**	1.664 (0.039)**	1.654 (0.039)**	1.488 (0.084)*
Age	-0.013 (0.007)***	-0.012 (0.015)***	-0.012 (0.009)***	-0.016 (0.005)***
Leverage	-0.115 (0.305)	-0.111 (0.328)	-0.078 (0.515)	-0.353 (0.131)
Average revenue	0.001 (0.035)**	0.001 (0.035)**	0.001 (0.040)**	0.002 (0.075)*
Std dev revenue	-0.001 (0.023)**	-0.001 (0.023)**	-0.001 (0.027)**	-0.001 (0.085)*
U.S. exchange listing dummy	-0.157 (0.806)	-0.157 (0.804)	-0.145 (0.820)	-0.265 (0.729)
Board size	0.076 (0.332)	0.078 (0.323)	0.080 (0.304)	-0.002 (0.984)
Pct outside directors	0.002 (0.783)	0.002 (0.855)	0.002 (0.785)	-0.001 (0.934)
Blockholder	-0.005 (0.328)	-0.006 (0.282)	-0.006 (0.250)	-0.005 (0.529)
D&O ownership percent	-0.001 (0.914)	-0.001 (0.887)	-0.001 (0.886)	-0.004 (0.719)
Executive cash compensation	0.093 (0.400)	0.092 (0.403)	0.112 (0.345)	0.165 (0.187)
Big 4 auditor dummy	-0.776 (0.140)	-0.761 (0.155)	-0.815 (0.133)	-0.321 (0.491)
SEO Size	-0.003 (0.515)	-0.003 (0.513)	-0.002 (0.565)	0.002 (0.741)
Fraction sold	-0.027 (0.100)*	-0.028 (0.099)*	-0.030 (0.072)**	-0.043 (0.024)**
Jones model		-0.321 (0.609)		
Jones performance-matched			-0.355 (0.155)	
Smoothing				0.187 (0.002)***
Number of observations	126	126	126	126
Adjusted R-squared	14.63	14.82	15.28	32.67

Table V

Three-Stage Estimation of the Earnings Management, Coverage, and Premium

This table reports the three-stage regression results of the simultaneous equation system (5) for a sample of 112 Canadian insured SEOs for the period 1997-2003. Panel A examines the impact of the D&O coverage limit on the earnings management practices of SEO firms. Panel B examines the effect of earnings management on the coverage level. Panel C investigates whether the D&O insurers are able to price the earnings management risk in their premium charged to insured firms. Specifications (1), (2), and (3) refers each to the regression where we add respectively Jones model discretionary accruals Jones-model performance-matched discretionary, and the income-smoothing measure. Earnings management (EM) refers to these three proxies of earnings management. The variables are defined in Table I. Coefficient estimates are presented with p-value in parentheses below. Significance at the 10 percent, 5 percent, and 1 percent level is noted by *, **, and ***, respectively.

	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
Variable	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	0.314 (0.035)**	-0.267 (0.295)	14.433 (0.056)**	-4.100 (0.401)	2.520 (0.586)	3.960 (0.415)	0.022 (0.611)	0.069 (0.117)	0.040 (0.376)
Age				0.062 (0.269)	0.065 (0.166)	0.086 (0.091)*	0.000 (0.814)	0.000 (0.376)	0.000 (0.435)
Leverage	-0.027 (0.280)	0.036 (0.434)	6.269 (0.000)***	2.013 (0.013)**	0.247 (0.766)	4.581 (0.000)**	-0.001 (0.911)	-0.010 (0.248)	0.016 (0.087)*
Average revenue				-0.002 (0.327)	-0.001 (0.513)	-0.003 (0.173)	0.000 (0.013)**	0.000 (0.046)**	0.000 (0.003)**
Std dev revenue				0.001 (0.235)	0.001 (0.416)	0.002 (0.125)	0.000 (0.018)**	0.000 (0.069)*	0.000 (0.005)***
U.S. exchange listing dummy				6.687 (0.057)*	5.528 (0.070)*	5.579 (0.092)*	0.053 (0.100)*	0.064 (0.045)**	0.059 (0.077)*
Board size				0.510 (0.206)	0.332 (0.337)	0.880 (0.031)**	0.002 (0.525)	0.002 (0.628)	0.004 (0.330)
Pct outside directors	-0.003 (0.066)*	-0.003 (0.327)	0.030 (0.721)	0.112 (0.021)**	0.046 (0.337)	0.021 (0.675)	0.000 (0.948)	0.000 (0.255)	0.000 (0.305)
Blockholder	0.000 (0.780)	-0.001 (0.690)	0.008 (0.885)	-0.021 (0.575)	-0.002 (0.957)	-0.034 (0.349)	0.000 (0.489)	0.000 (0.463)	0.000 (0.942)
D&O ownership percent				-0.064 (0.233)	-0.045 (0.331)	-0.008 (0.893)	-0.001 (0.188)	-0.001 (0.124)	-0.001 (0.198)

Table V - *Continued*

Variable	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Executive cash compensation	-0.059 (0.022)**	-0.099 (0.022)**	3.169 (0.015)**	3.282 (0.000)***	2.728 (0.000)***	2.832 (0.000)***	0.012 (0.038)**	0.009 (0.099)*	0.010 (0.077)*
Big 4 auditor dummy				4.766 (0.059)*	4.145 (0.057)*	4.119 (0.082)*	-0.006 (0.786)	-0.004 (0.844)	-0.010 (0.683)
SEO Size				0.066 (0.001)***	0.050 (0.003)***	0.046 (0.015)**	0.000 (0.064)*	0.000 (0.036)**	0.000 (0.147)
Fraction sold				-0.280 (0.008)***	-0.175 (0.057)*	-0.254 (0.010)***	-0.002 (0.039)**	-0.002 (0.078)*	-0.001 (0.157)
Ln(sales)	-0.008 (0.630)	-0.021 (0.441)	0.131 (0.879)						
Market-to-book	-0.013 (0.212)	-0.005 (0.775)	0.314 (0.516)						
Coverage	0.017 (0.000***	0.037 (0.000)***	-0.988 (0.000)***						
Earnings management (EM)				21.002 (0.000)***	17.503 (0.000)***	-0.535 (0.000)***			
Unexplained coverage							0.012 (0.084)*	0.007 (0.306)	0.017 (0.032)**
Unexplained coverage* EM							0.036 (0.000)***	0.020 (0.000)***	-0.000 (0.003)***
Number of observations	99	99	98	99	99	98	99	99	98
Adjusted R-squared	9.37	4.22	11.60	58.48	49.44	53.72	36.45	42.64	37.32

Table VI

Three-Stage Estimation of the Effect of the CDRP Adoption on Earnings Management, Coverage, and Premium

This table reports the three-stage regression results of the incremental effect of the CDRP adoption on both earnings management and D&O insurance premium for a sample of 112 Canadian insured SEOs for the period 1997-2003. Panel A examines the impact of the CDRP adoption on the earnings management practices of SEO firms. Panel B examines the effect of earnings management on the coverage level. Panel C investigates the effect of the CDRP adoption on the premium charged by the D&O insurers are to insured firms. Specifications (1), (2), and (3) refers each to the regression where we add respectively Jones model discretionary accruals Jones-model performance-matched discretionary, and the income-smoothing measure. Earnings management (EM) refers to these three proxies of earnings management. The variables are defined in Table I. Coefficient estimates are presented with p-value in parentheses below. Significance at the 10 percent, 5 percent, and 1 percent level is noted by *, **, and ***, respectively.

	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
Variable	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	-0.065	-0.597	16.560	-2.272	0.947	0.124	0.004	0.036	0.030
	(0.594)	(0.028)**	(0.057)*	(0.669)	(0.857)	(0.982)	(0.923)	(0.421)	(0.501)
Age				0.077	0.096	0.098	0.000	0.000	0.000
				(0.245)	(0.118)	(0.128)	(0.666)	(0.837)	(0.888)
Leverage	-0.010	0.054	5.970	1.891	0.671	3.969	0.000	-0.004	0.008
	(0.550)	(0.167)	(0.000)***	(0.024)**	(0.431)	(0.000)***	(0.905)	(0.564)	(0.374)
Average revenue				-0.002	-0.002	-0.003	-0.000	-0.000	-0.000
				(0.311)	(0.367)	(0.144)	(0.004)***	(0.021)**	(0.003)***
Std dev revenue				0.001	0.001	0.002	0.000	0.000	0.000
				(0.211)	(0.278)	(0.095)*	(0.005)***	(0.029)**	(0.005)***
U.S. exchange listing dummy				8.171	7.970	8.073	0.090	0.074	0.067
				(0.030)**	(0.029)**	(0.036)**	(0.007)***	(0.019)**	(0.039)**
Board size				0.601	0.493	0.937	0.002	0.002	0.004
				(0.165)	(0.238)	(0.046)**	(0.579)	(0.595)	(0.219)
Pct outside directors	-0.001	-0.001	-0.055	0.080	0.030	0.034	0.000	-0.000	-0.000
	(0.367)	(0.694)	(0.524)	(0.142)	(0.575)	(0.550)	(0.674)	(0.891)	(0.654)
Blockholder	0.000	-0.000	0.015	-0.030	-0.014	-0.031	0.000	0.000	0.000
	(0.701)	(0.706)	(0.795)	(0.425)	(0.708)	(0.412)	(0.315)	(0.258)	(0.393)
D&O ownership percent				-0.063	-0.060	-0.035	-0.000	-0.000	-0.000
				(0.272)	(0.276)	(0.599)	(0.062)**	(0.091)*	(0.126)
Executive cash compensation	-0.037	-0.056	2.179	3.203	2.690	2.857	0.015	0.011	0.011
	(0.025)**	(0.100)*	(0.051)*	(0.000)***	(0.000)***	(0.000)***	(0.007)***	(0.041)**	(0.042)**

Table VI - *Continued*

Variable	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Big 4 auditor dummy				4.694 (0.081)*	5.565 (0.031)**	5.260 (0.053)*	-0.004 (0.841)	-0.002 (0.902)	-0.006 (0.770)
SEO Size				0.068 (0.001)***	0.066 (0.001)***	0.063 (0.003)***	0.000 (0.049)**	0.000 (0.028)**	0.000 (0.092)*
Fraction sold				-0.276 (0.014)**	-0.228 (0.036)**	-0.309 (0.006)***	-0.002 (0.034)**	-0.002 (0.028)**	-0.002 (0.025)**
Ln(sales)	-0.012 (0.382)	-0.020 (0.476)	-0.393 (0.688)						
Market-to-book	-0.010 (0.179)	-0.003 (0.847)	0.415 (0.428)						
Coverage	0.013 (0.000)***	0.029 (0.000)***	-0.755 (0.000)***						
Coverage x CDRP dummy	-0.002 (0.298)	-0.000 (0.867)	0.012 (0.924)						
Earnings management (EM)				24.236 (0.000)***	14.090 (0.000)***	-0.374 (0.000)***			
Unexplained coverage							0.012 (0.078)*	0.008 (0.319)	0.012 (0.100)*
Unexplained coverage* EM							0.011 (0.475)	0.015 (0.027)**	-0.000 (0.004)***
Unexplained x EM x CDRP dummy							-0.064 (0.071)*	-0.004 (0.643)	0.000 (0.099)*
Number of observations	96	96	95	96	96	95	96	96	95
Adjusted R-squared	7.43	24.74	27.72	61.02	58.65	60.98	41.28	43.19	39.67

Table VII

Three-Stage Estimation of the Effect of the Insurance Market cycle on Earnings Management, Coverage, and Premium

This table reports the three-stage regression results of the incremental effect of the insurance market cycle on both earnings management and D&O insurance premium for a sample of 112 Canadian insured SEOs for the period 1997-2003. Panel A examines the impact of the insurance market cycle on the earnings management practices of SEO firms. Panel B examines the effect of earnings management on the coverage level. Panel C investigates the effect of the insurance market cycle on the premium charged by the D&O insurers are to insured firms. Specifications (1), (2), and (3) refers each to the regression where we add respectively Jones model discretionary accruals Jones-model performance-matched discretionary, and the income-smoothing measure. Earnings management (EM) refers to these three proxies of earnings management. The variables are defined in Table I. Coefficient estimates are presented with p-value in parentheses below. Significance at the 10 percent, 5 percent, and 1 percent level is noted by *, **, and ***, respectively.

	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
Variable	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	-0.096 (0.735)	-0.568 (0.266)	19.299 (0.110)	-3.945 (0.433)	-0.199 (0.968)	1.451 (0.777)	0.024 (0.588)	0.061 (0.171)	0.033 (0.444)
Age				0.075 (0.210)	0.090 (0.100)*	0.104 (0.071)*	0.000 (0.648)	0.001 (0.311)	0.000 (0.950)
Leverage	-0.033 (0.294)	0.033 (0.550)	6.061 (0.000)***	2.145 (0.009)***	1.027 (0.216)	4.208 (0.000)***	0.003 (0.681)	-0.006 (0.463)	0.014 (0.100)*
Average revenue				-0.003 (0.194)	-0.002 (0.286)	-0.004 (0.113)	0.000 (0.008)***	0.000 (0.020)**	0.000 (0.010)***
Std dev revenue				0.002 (0.128)	0.002 (0.208)	0.002 (0.072)*	0.000 (0.012)**	0.000 (0.031)**	0.000 (0.010)***
U.S. exchange listing dummy				8.325 (0.025)**	8.078 (0.024)**	7.272 (0.050)**	0.072 (0.029)**	0.070 (0.029)**	0.071 (0.025)**
Board size				0.551 (0.199)	0.507 (0.219)	1.035 (0.023)**	0.003 (0.442)	0.002 (0.523)	0.003 (0.361)
Pct outside directors	-0.005 (0.028)**	-0.003 (0.375)	0.015 (0.874)	0.098 (0.045)**	0.043 (0.363)	0.017 (0.740)	0.000 (0.864)	0.000 (0.258)	0.000 (0.382)
Blockholder	0.000 (0.996)	-0.001 (0.789)	0.015 (0.803)	-0.023 (0.541)	-0.015 (0.683)	-0.040 (0.281)	0.000 (0.472)	0.000 (0.527)	0.000 (0.750)
D&O ownership percent				-0.079 (0.167)	-0.071 (0.195)	-0.016 (0.809)	-0.001 (0.064)*	-0.001 (0.100)*	-0.001 (0.070)*
Executive cash compensation	-0.095 (0.008)***	-0.105 (0.100)*	2.931 (0.059)**	3.315 (0.000)***	2.789 (0.000)***	2.782 (0.000)***	0.013 (0.022)**	0.009 (0.094)*	0.010 (0.076)*

Table VII - *Continued*

Variable	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Big 4 auditor dummy				5.334 (0.044)**	5.865 (0.021)**	5.261 (0.044)**	0.001 (0.949)	0.001 (0.955)	-0.006 (0.778)
SEO Size				0.073 (0.000)***	0.070 (0.000)***	0.058 (0.006)***	0.000 (0.019)**	0.000 (0.018)**	0.000 (0.123)
Fraction sold				-0.307 (0.005)***	-0.258 (0.015)**	-0.308 (0.005)***	-0.003 (0.007)***	-0.002 (0.045)**	-0.002 (0.069)*
Ln(sales)	-0.016 (0.491)	-0.026 (0.515)	-0.065 (0.949)						
Market-to-book	-0.012 (0.389)	-0.007 (0.779)	0.382 (0.495)						
Coverage	0.043 (0.006)***	0.054 (0.059)*	-1.123 (0.100)*						
Coverage x Market Cycle Dummy	-0.025 (0.077)*	-0.020 (0.430)	0.293 (0.635)						
Earnings management (EM)				15.605 (0.000)***	11.532 (0.000)***	-0.430 (0.000)***			
Unexplained coverage							0.011 (0.100)*	0.009 (0.229)	0.016 (0.028)**
Unexplained coverage* EM							0.043 (0.000)***	0.026 (0.001)***	-0.026 (0.010)***
Unexplained x EM x Market Cycle Dummy							-0.051 (0.002)***	-0.001 (0.886)	-0.024 (0.000)***
Number of observations	99	99	98	99	99	98	99	99	98
Adjusted R-squared	12.13	5.55	19.41	62.39	61.93	59.33	41.66	43.41	46.17

Table VIII

Three-Stage Estimation of the Effect of the Multiple Issues on Earnings Management, Coverage, and Premium

This table reports the three-stage regression results of the incremental effect of multiple secondary issues on both earnings management and D&O insurance premium for a sample of 112 Canadian insured SEOs for the period 1997-2003. Panel A examines the impact of multiple issues on the earnings management practices of SEO firms. Panel B examines the effect of earnings management on the coverage level. Panel C investigates the effect of multiple secondary issues on the premium charged by the D&O insurers are to insured firms. Specifications (1), (2), and (3) refers each to the regression where we add respectively Jones model discretionary accruals Jones-model performance-matched discretionary, and the income-smoothing measure. Earnings management (EM) refers to these three proxies of earnings management. The variables are defined in Table I. Coefficient estimates are presented with p-value in parentheses below. Significance at the 10 percent, 5 percent, and 1 percent level is noted by *, **, and ***, respectively.

	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
Variable	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	0.319 (0.035)**	-0.273 (0.297)	15.737 (0.038)**	-3.990 (0.426)	1.701 (0.724)	2.135 (0.675)	0.025 (0.571)	0.067 (0.130)	0.033 (0.456)
Age				0.061 (0.305)	0.074 (0.161)	0.097 (0.088)*	0.000 (0.822)	0.000 (0.396)	0.000 (0.357)
Leverage	-0.028 (0.267)	0.036 (0.416)	6.112 (0.000)***	2.036 (0.013)**	0.420 (0.615)	4.285 (0.000)***	-0.000 (0.963)	-0.008 (0.295)	0.013 (0.140)
Average revenue				-0.002 (0.308)	-0.001 (0.481)	-0.003 (0.145)	-0.000 (0.014)**	-0.000 (0.042)**	-0.000 (0.003)***
Std dev revenue				0.001 (0.225)	0.001 (0.384)	0.002 (0.100)*	0.000 (0.020)**	0.000 (0.061)*	0.000 (0.004)***
U.S. exchange listing dummy				7.307 (0.048)**	6.330 (0.059)*	6.787 (0.065)*	0.054 (0.100)*	0.065 (0.043)**	0.063 (0.062)*
Board size				0.548 (0.196)	0.388 (0.310)	0.997 (0.025)**	0.002 (0.535)	0.001 (0.600)	0.004 (0.274)
Pct outside directors	-0.002 (0.081)*	-0.002 (0.383)	0.008 (0.914)	0.104 (0.033)**	0.042 (0.374)	0.018 (0.725)	-0.000 (0.978)	-0.000 (0.238)	-0.000 (0.283)
Blockholder	-0.000 (0.796)	-0.000 (0.661)	0.015 (0.779)	-0.022 (0.545)	-0.005 (0.880)	-0.039 (0.293)	0.000 (0.487)	0.000 (0.464)	0.000 (0.972)
D&O ownership percent				-0.068 (0.224)	-0.050 (0.320)	-0.014 (0.821)	-0.000 (0.169)	-0.000 (0.116)	-0.000 (0.254)
Executive cash compensation	-0.058 (0.029)**	-0.086 (0.050)**	2.815 (0.028)**	3.241 (0.000)***	2.679 (0.000)***	2.783 (0.000)***	0.011 (0.039)**	0.008 (0.120)	0.010 (0.089)*

Table III. 8 - *Continued*

Variable	Panel A. Explaining the Earnings Management			Panel B. Explaining the Total Amount of Coverage Purchased			Panel C. Explaining the Insurance Premium		
	Jones model	Jones performance-matched	Smoothing	(1)	(2)	(3)	(1)	(2)	(3)
Big 4 auditor dummy				4.997 (0.059)*	4.803 (0.045)**	4.886 (0.060)*	-0.005 (0.825)	-0.003 (0.890)	-0.004 (0.850)
SEO Size				0.071 (0.000)***	0.056 (0.002)***	0.055 (0.007)***	0.000 (0.050)**	0.000 (0.028)**	0.000 (0.100)*
Fraction sold				-0.293 (0.007)***	-0.199 (0.046)**	-0.289 (0.007)***	-0.002 (0.033)**	-0.001 (0.068)*	-0.001 (0.098)*
Ln(sales)	-0.009 (0.594)	-0.020 (0.493)	-0.096 (0.916)						
Market-to-book	-0.012 (0.245)	-0.005 (0.772)	0.334 (0.525)						
Coverage	0.017 (0.000)***	0.035 (0.000)***	-0.895 (0.000)***						
Coverage x Multiple SEO Dummy	-0.001 (0.572)	0.000 (0.972)	0.026 (0.847)						
Earnings management (EM)				18.842 (0.000)***	16.222 (0.000)***	-0.457 (0.000)***			
Unexplained coverage							0.012 (0.094)*	0.007 (0.286)	0.016 (0.043)**
Unexplained coverage* EM							0.035 (0.002)***	0.020 (0.001)***	-0.000 (0.060)*
Unexplained x EM x Multiple SEO Dummy							-0.007 (0.713)	-0.002 (0.748)	0.000 (0.856)
Number of observations	99	99	98	99	99	98	99	99	98
Adjusted R-squared	12.05	9.89	19.95	60.42	53.20	58.04	37.13	42.97	38.22