

**The Information Conveyed in Hiring Announcements of
Senior Executives Overseeing Enterprise-Wide Risk Management Processes**

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ABSTRACT

Enterprise risk management (ERM) requires managers to analyze the portfolio of all risks facing the enterprise to ensure those risks are within stakeholders' appetite for risk. While ERM adoption is on the rise, little academic research exists about ERM, and in particular about the costs and benefits of ERM. While ERM is designed to enhance stakeholder welfare, basic portfolio theory suggests that costly ERM implementation would be unwelcome by shareholders who can use diversification to eliminate idiosyncratic risk. This study examines equity market reactions to announcements of appointments of senior executive officers overseeing the enterprise's risk management processes. Based on a sample of 126 announcements from 1992-2003, we find that the univariate average two-day market response is not significant, suggesting that a broad definitive statement about the benefit or cost of implementing ERM is not reasonable. However, our multivariate analysis provides some initial empirical evidence showing that market responses to such appointments are significantly positively associated with a firm's size and prior earnings volatility, while negatively associated with the amount of slack and leverage on the balance sheet. While these results are strong for non-financial firms, there is no significant association with market returns for financial institutions, likely due to regulator demands placed on financial institutions for greater use of ERM. These results suggest that the benefits of ERM are determined on a firm-specific basis.

Subject Areas: Enterprise risk management, chief risk officers (CROs), value creation

1. INTRODUCTION

Recent corporate financial reporting scandals and evolving corporate governance requirements are increasing expectations that boards of directors and senior executives effectively manage the risks facing their companies (Kleffner et. al., 2003; Walker et. al., 2003). To meet these growing expectations for more effective risk management, a growing number of enterprises are embracing an enterprise-wide risk management approach, often referred to as enterprise risk management or “ERM.”

ERM differs from traditional risk management, where organizations manage individual risks on an isolated or “silo” basis and where individual risk interactions often are not considered at an enterprise level (Aabo et. al., 2005). ERM requires an enterprise-wide, top-down approach of managing risks holistically across the enterprise (Kleffner et. al., 2003). ERM is designed to increase the board’s and senior management’s ability to oversee the portfolio of risks facing an enterprise to ensure that the entity’s risk profile is within stakeholder tolerances for risk (Beasley et. al., 2005). The overall purpose of ERM is to protect and enhance stakeholder value (COSO, 2004).

Many organizations are appointing a member of the senior executive team, often referred to as the chief risk officer or CRO, to oversee the enterprise’s risk management process (Liebenberg and Hoyt, 2003). The rate of CRO appointments increased throughout the 1990s, across a wide range of industries (Lam, 2001). Because firms do not publicly announce the formation or existence of an ERM committee, prior research uses CRO announcements as a signal of ERM implementation (Liebenberg and Hoyt, 2003).

While there has been significant growth in the number of ERM programs, little empirical research has been conducted on the value of such programs (Tufano, 1996; Liebenberg and Hoyt, 2003; Beasley et. al., 2005). To date there have been few challenges to the view argued by some professionals that ERM provides a significant opportunity for competitive advantage (Stoh, 2005) and that ERM is designed to protect and enhance shareholder value (COSO, 2004). However, basic portfolio theory suggests that an ERM approach to risk management could be value destroying, as shareholders, through portfolio diversification, can eliminate idiosyncratic risk at little or no cost. Thus the pure portfolio theory view is that any firm expenditure on ERM must result in a reduction in shareholder wealth. However, there are circumstances, driven by market imperfections and agency issues, under which risk management may be a positive net present value project (Stulz, 1996, 2003). Based on the above, the true effect of ERM on corporate value is uncertain.

This study provides empirical evidence on the value of corporate actions related to enterprise-wide risk management. Specifically, we examine the equity market responses to the firm's announcement of the appointment of a senior executive overseeing risk management for the enterprise. Our focus on hiring announcements of senior risk officers attempts to measure the valuation impact of the firm's enterprise or top-down approach to the risk management process.

Using a sample of 126 firms announcing the appointment of a senior executive overseeing the enterprise's risk management processes from 1992-2003, we find that the univariate average two-day market response is not significant, suggesting that a broad definitive statement about the benefit or cost of implementing ERM is not reasonable. However, our

multivariate analysis finds that there are significant relations between the magnitude of equity market returns and certain firm specific characteristics examined on a multivariate basis. For our sample of non-financial firms, announcement period returns are positively associated with firm size and the volatility of prior periods' reported EPS and negatively associated with slack and leverage. While these associations are significant for non-financial firms, there is no statistical association for financial institutions, likely due to regulatory demands for ERM (Basel II, 2003). These results suggest that the benefits of ERM are not consistent across firms, but are dependent on certain firm-specific characteristics.

This study contributes to the emerging stream of research related to enterprise risk management by providing empirical evidence about factors affecting shareholder reaction to announcements of CRO appointments. This study demonstrates that the value of ERM leadership may not be equal across enterprises. Rather, the value of ERM is dependent on specific firm characteristics that portfolio theory suggests are related to the need for risk management activities. ERM implementation is not a one plan fits all solution. Some firms may benefit from ERM, while others do not.

The paper proceeds as follows: section 2 provides background about the growing embrace of ERM and develops the hypotheses, section 3 describes the data and methodology, section 4 presents the results, and section 5 concludes.

2. BACKGROUND AND HYPOTHESES DEVELOPMENT

Enterprise risk management (ERM) is rapidly emerging as the new paradigm for managing the complex portfolio of risks facing an enterprise (Tufano, 1996; Liebenberg and Hoyt, 2003; Beasley et. al. 2005; Slywotzky and Dzik, 2005). Recent corporate financial

reporting scandals and evolving corporate governance requirements are increasing expectations that boards of directors and senior executives are effectively managing risks (Kleffner et. al., 2003; Walker et. al., 2002). For example, the New York Stock Exchange's final corporate governance rules now require audit committees to "discuss guidelines and policies to govern the process by which risk assessment and management is undertaken" (NYSE, 2004). Section 409 of the Sarbanes Oxley Act of 2002 requires public companies to disclose to the public "on a rapid and current basis such additional information concerning material changes in the financial condition or operations of the issuer, in plain English, which may include trend and qualitative information" (SOX, 2002). In addition, emerging regulatory requirements for financial institutions are increasing management's responsibility for effective risk oversight by expanding analysis for credit and market risks to also include operational risks threatening financial institutions (Basel II, 2006). Rating agencies, such as Standard and Poors and Moody's, also are examining how managers are controlling and tracking the risks facing their enterprises (Samanta, 2005).

To meet these growing expectations for more effective risk management procedures, a growing number of companies are embracing an enterprise-wide risk management approach, often referred to as "ERM." While ERM implementation is on the rise, little empirical research exists on the topic (Colquitt et. al., 1999; Beasley et. al., 2005). One of the challenges associated with ERM implementation is determining the appropriate leadership structure to manage the identification, assessment, measurement, and response to all types of risks arising across an enterprise.

To respond to this challenge, many organizations are appointing a member of the senior executive team, often referred to as the chief risk officer or CRO, to oversee the enterprise's risk management process (The Economist Intelligence Unit, 2005). There is a prevailing view that an ERM initiative cannot succeed, because of its scope and impact, without strong support in the organization at the senior management level with direct reporting to the chief executive officer or chief financial officer (Walker, et. al. 2002). CROs often serve as the leader of the ERM program, providing direction and leadership about how the enterprise approaches risk management. Recent empirical research documents that the presence of a CRO is associated with a greater stage of ERM deployment within an enterprise, suggesting that the appointment of senior executive leadership affects the extent to which ERM is embraced within an enterprise (Beasley et. al., 2005).

Some argue that the appointment of a chief risk officer is being used to signal both internally and externally that senior management and the board is serious about integrating all of its risk management activities under a more powerful senior-level executive (Lam, 2001). Despite the growth in the appointment of senior risk executives, little is known about factors that affect an organization's decision to appoint a CRO or equivalent, and whether these appointments create value.

Evidence from previous research examining a small sample ($n = 26$) of firms appointing chief risk officers and a matched control sample finds that firms with greater financial leverage are more likely to appoint a CRO (Liebenberg and Hoyt, 2003). This finding is argued to be consistent with the hypothesis that firms appoint CROs to reduce information asymmetry

regarding the firm's current and expected risk profile, thus suggesting shareholders should value CRO appointments.

This study extends the work of Liebenberg and Hoyt (2003) by examining the equity market response to the firm's announcement of the hiring of a senior executive overseeing risk management. To our knowledge, previous research has not investigated explanations for the observed differences in the magnitude of security price response to the CRO hiring announcement. Because corporations disclose only minimal details of their risk management programs (Tufano, 1996), our focus on hiring announcements of senior risk officers attempts to measure the valuation impact of the firm's signaling of an enterprise risk management process.

Stulz (1996, 2003) presents arguments that not all risk management activities would be value increasing for shareholders across multiple entities, given that some companies have a comparative advantage in bearing certain financial risks while others do not. The motivation behind Stulz's work is to reconcile the apparent conflict between current wide-spread corporate embrace of risk management practices and portfolio theory. Portfolio theory suggests little value in ERM given investor ability to diversify away idiosyncratic risk, which would make any non-zero cost incurred to manage risks for the firm value destroying.

While there are many stated motivations for ERM, at the most basic level, the goal of most ERM programs is to reduce variability in earnings. Stulz (1996, 2003) modifies this goal further and argues that any potential value creation role for risk management is in the reduction or elimination of "costly lower-tail outcomes." Lower tail outcomes are those events in which a decline in earnings or a large loss would result in severe negative consequences for the firm. At the extreme, severe negative consequences might include financial distress and even bankruptcy.

Other non-distress events related to lower tail outcomes might also include the inability to pursue profitable projects, higher required rates of return by shareholders, higher expected tax payments and agency costs associated with managers not being able to diversify away their idiosyncratic risk (Smith and Stulz, 1985; Tufano, 1996).

When faced with the likelihood of lower tail outcomes, engaging in risk management that reduces the likelihood of real costs associated with such outcomes could represent a positive net present value project. Thus, only firms facing increasing likelihood of these actual negative consequences associated with lower tail events will benefit from risk management, while other firms not facing such events will see no benefit at all (Stulz, 1996, 2003).

Costs associated with lower tail events can be significant, calling for greater risk management activities as the likelihood of such occurrences increases. Events such as bankruptcy and financial distress involve direct cost outlays such as payments to lawyers and courts. These events involve indirect costs as well, such as an inability to pursue strategic projects, loss of customer confidence, and inability to realize the full value of intangible assets. Costs to shareholders can also include a decline in debt rating and consequently higher borrowing costs. Additionally, managers and key employees of public firms may have an undiversifiable stake in the firm, and will bear a greater proportion of the cost of a lower tail event. Assuming an efficient labor market, employees will demand higher compensation for their risk bearing. Other stakeholders may be adversely affected by financial distress – for example, suppliers may be reluctant to enter into long term contracts with the firm if the potential for future payment is uncertain. All these potential consequences increase the

incentives for effective enterprise risk management processes as their likelihood of occurrence increases.

Our study of equity market responses to announcements of appointments of senior executives overseeing risk management processes builds upon Stulz (1996, 2003) to examine firm-specific variables that reflect the firm's likelihood of experiencing a lower-tailed event. These variables reflect firm-specific factors that finance theory suggests should explain the value of corporate risk management activities.

We explore the association between the market reaction to earnings announcements of appointments of senior executives to oversee risk management processes for the firm and certain firm-specific characteristics likely to be associated with the demand for greater risk management oversight. We merely assume that the hiring of a risk officer implies that the firm will expend some effort, and more importantly, corporate resources, on methods of reducing variability in the corporate earnings. As described more fully below, we focus on the firm's growth options, slack, intangible assets, earnings volatility, leverage, and firm size.

Growth Options. Firms with extensive growth options often require consistent capital investment and often face greater asymmetric information regarding their future growth options (Myers, 1984; Myers and Majluf, 1984). When in financial distress, growth options are likely to be undervalued and that distress may lead to underinvestment in profitable growth opportunities. When growth firms have limited access to financial markets, they may face higher costs in raising external capital, perhaps due to the asymmetric information surrounding these growth options, in a period of time when steadier streams of cash flows are desired (see Froot, Scharfstein, and Stein, 1993; Gay and Nam, 1998). We hypothesize that the firms with greater

growth options will have a positive abnormal return around hiring announcements of senior executive officers overseeing risk management processes.

***Hypothesis 1:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be positively associated with the firm's growth options.*

Slack. We conjecture that firms with greater slack, a common measure of liquidity, are less likely to benefit from a risk management program, as these firms can effectively insure themselves against lower tail outcomes with surplus cash. Froot, Scharfstein and Stein (1993) show that a firm's hedging activity can be value creating if it ensures that the firm has sufficient cash flow to invest in positive NPV projects. However, Tufano (1996) argues that cash flow hedging can create agency conflicts if managers are able to pursue projects without the discipline of external capital markets. In addition, less financial slack can increase the likelihood of financial distress for levered firms (Smith and Stulz, 1985). We hypothesize that the firms with greater financial slack will have a negative abnormal return around announcements of appointments of senior executive officers overseeing risk management processes.

***Hypothesis 2:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be negatively associated with the firm's financial slack.*

Intangible Assets. Firms that have more opaque assets, such as goodwill, are more likely to benefit from the risk management program because these assets are likely to be undervalued in financial distress (Smith and Stulz, 1985). Nance, Smith and Smithson (1993), Geczy, Monton and Schrand (1995) and Dolde (1995) find that firms with high levels of research and development expense (often correlated with creation of intangible assets) are more likely to use derivatives to hedge risk. Conversely, Mian (1996) finds no relation between market-to-book (a

common proxy for intangibles) and derivative use. We hypothesize that the firms with a large amount of intangible assets will have a positive abnormal return around hiring announcements of senior executives overseeing risk management processes:

***Hypothesis 3:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be positively associated with the firm's extent of intangible assets.*

Earnings Volatility. Firms with greater earnings volatility are more likely to benefit from the appointment of a risk manager, as these firms have greater likelihood of seeing a lower tail earnings outcome and of missing earnings forecasts. Additionally, the convexity of the tax code means that tax rate on taxable income is usually higher rate than the tax rate applied to losses. Therefore a strategy of reducing earnings variability may reduce a company's overall tax burden and be wealth creating (Smith and Stulz, 1985). We hypothesize that the firms with a high variance of earnings per share (EPS) will have a positive abnormal return around hiring announcements of senior executives overseeing risk management processes:

***Hypothesis 4:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be positively associated with the firm's variance in earnings per share (EPS).*

Leverage. Increases in financial leverage raise the likelihood of financial distress. As firms approach greater levels of financial distress, they are likely to face reductions in debt ratings and consequently higher borrowing costs. Furthermore, many of the rating agencies, such as Moody's and Standard & Poor's, incorporate ERM into their rating methodology (Aabo et. al., 2005; Standard & Poor's, 2005). We hypothesize that the firms with a high leverage will have a positive abnormal return around hiring announcements of senior executives overseeing risk management processes:

***Hypothesis 5:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be positively associated with extent of the firm's leverage.*

Size. Research examining the use of financial derivatives finds that large companies make greater use of derivatives than smaller companies. Such findings confirm the experience of risk management practitioners that the corporate use of derivatives requires considerable upfront investment in personnel, training, and computer hardware and software, which might discourage smaller firms from engaging in their use (Stulz, 2003). Although Stulz (2003) focuses much of his attention on risk management with derivatives, we make no distinction about the nature of the risk management activities. We hypothesize that larger firms will have a positive abnormal return around hiring announcements of senior executives overseeing risk management processes:

***Hypothesis 6:** Ceteris paribus, the market reaction to firm announcements of appointments of senior executive officers overseeing risk management activities will be positively associated with firm size.*

4. DATA AND METHOD

Our study method examines the impact of firm-specific characteristics on the equity market response to announcements of appointments of senior executives overseeing risk management processes within the enterprise. To obtain a sample of such appointments, we conducted a search of hiring announcements of senior risk management executives made during the period 1992-2003. Announcements were obtained by searching the business library of LEXIS-NEXIS for announcements containing the words “announced”, “named”, or “appointed”, in conjunction with position descriptions of “chief risk officer” or “risk management” (consistent

with the approach used by Liebenberg and Hoyt (2003)). We searched the period of 1992 through 2003 and identified 348 observations.

From this list of 348 observations, we excluded 100 announcements made by private corporations, given the lack of observable financial and operational data needed to test our hypotheses. We excluded an additional 36 announcements made by foreign companies and 46 firms that did not have the required security market data necessary for our analysis. Finally, 40 observations of public companies were dropped for not having the required financial statement data needed for analysis. The final sample includes 126 observations.

Table 1 provides information about our final sample of 126 observations. The data in Table 1 document the increase in CRO announcements over time. In addition, the sample is concentrated in three industries, financial services (38.9%), insurance (13.3%) and energy services (19.8%), often cited as being in the forefront of implementation of enterprise risk management (this is consistent with Beasley et. al., 2005 that found ERM was further advanced in financial services and insurance industries). This industry distribution is consistent with other survey data finding that highly regulated industries, such as financial services, have the best-developed basic processes for enterprise risk management, while manufacturing companies consistently lag more regulated industry sectors (PwC, 2004).

[Insert Table 1 About Here]

Table 2 provides descriptive statistics for the sample. The mean (median) market value of equity, assets and sales, in millions of dollars, are \$7,878.3 (\$2,137.6), \$37,398.7 (\$6,537.0) and \$8,540.3 (\$2,833.4), respectively. Given the paucity of research in the area of enterprise risk management, it is difficult to interpret the mean and median values. However, the mean and

median values do demonstrate that our sample contains a large amount of variance in these size metrics and is influenced by a number of large firms. Each of these variables is measured as of the end of the most recent fiscal year prior to the hiring announcement.

[Insert Table 2 About Here]

Table 2 also contains information about the cumulative abnormal return (CAR) for the event period. We measure the announcement period as the day of the hiring announcement plus the following day. The announcement period return for the entire sample of announcements is -0.001 and is not statistically different from zero. The average CAR indicates that we cannot make a broad definitive statement about the benefit (or cost) of implementing ERM, as on average there is no value effect. However our study focuses on the cross-sectional firm characteristics that we hypothesize may determine the value of effects of risk management.

We proxy for the hypotheses of interest using the following independent variables:

GROWTH = the product of the market value of the firm divided by its book value, with both variables measured at the end of the fiscal year prior to the announcement.

SLACK = the amount of cash as reported at the end of the fiscal year-end prior to the announcement divided by total assets measured at the end of the fiscal year prior to the announcement.

INTANGIBLES= book value of intangible assets divided by total assets measured at the end of the fiscal year prior to the announcement.

EARNINGSVOL= standard deviation of earnings per share for the eight quarters prior to the announcement.

LEVERAGE = total liabilities divided by market value of equity measured at the end of the fiscal year prior to the announcement.

SIZE = the natural logarithm of the firm's market value of equity as measured at the end of the most recent fiscal quarter prior to the announcement.

Due to the large number of financial service firms in our sample we disaggregate our sample into financial service industry firms and non-financial service industry firms. Descriptive information about these two sub-samples is reported in Table 3. The sample of financial service firms is significantly larger in terms of assets and market value of equity and more highly leveraged than the non-financial service firms. Finally, the financial service firms have, on average, reported fewer intangibles as a percentage of total assets and have less variable earnings per share than the sample of non-financial service firms.

[Insert Table 3 About Here]

To examine whether there are cross sectional differences in our hypothesized associations between firm-specific characteristics and the equity market reaction to announcements of appointments of senior executives to oversee risk management processes, we use regression analysis. Specifically, the general form of the model is the following (firm subscripts are omitted):¹

$$\text{CAR}(0,+1) = a_0 + a_1\text{GROWTH} + a_2\text{SLACK} + a_3\text{INTANG} + a_4\text{EPSVOL} + a_5\text{LEVERAGE} + a_6\text{SIZE} + e \quad (1)$$

We expect to observe a positive association between the event period abnormal return and our proxies for growth opportunities, level of opaque assets, earnings volatility, leverage, and firm size. We expect to observe a negative association between the event period abnormal return and our proxy for firms' level of financial slack. The next section presents the results of our multivariate regression analysis as defined by equation (1).

¹ In a supplemental analysis, we later include a proxy for the extent of executive ownership to examine the effects on our findings. However, because inclusion of this variable reduces the overall sample size, we do not include this in tests of the full sample. We discuss these results later in the paper.

4. RESULTS

Table 4 presents the results based on regression analysis where the dependent variable represents the cumulative abnormal return for the announcement period regressed on our six variables of interest for the full sample of 126 observations. The F-Value of model is 2.99, which is significant at the 0.009 level and the R^2 is 0.131.

Consistent with our second hypothesis, we find a significantly negative relationship between the event period cumulative abnormal return and SLACK variables. The primary inference from the regression results is that investors view negatively the implementation of ERM programs for firms with large amounts of cash on hand. This result is consistent with financial theory that suggests firms with large liquid reserves have less volatile cash flows and more access to capital and thus have less need to manage risks related to future financial problems. Thus, our results confirm expectations in Hypothesis 2.

In contrast, we do not observe statistically significant associations between the event period cumulative abnormal return and our measures for GROWTH, INTANGIBLES, EPSVOL and LEVERAGE. This result suggests that the extent of growth opportunities, holdings of intangible assets, recent earnings volatility and capital structure do not impact the information content of senior executive hiring announcements. Thus, Hypotheses 1, 3, 4 and 5 are not supported by our full sample.

We do, however, find a positive association between the event period cumulative abnormal return and the firm's SIZE. This finding is consistent with our expectations as stated in Hypothesis 6 that larger firms are more likely to benefit from risk management activities than firms with less leverage and those that are smaller.

[Insert Table 4 About Here]

As indicated by Table 1, a large portion (38.9%) of our sample firms is in the financial services industries. Due to the nature of risks facing financial services firms, such as credit and market risks, such institutions have incorporated risk management practices as part of their day-to-day management processes. Regulatory expectations that financial services firms effectively manage credit and market risk have been in place for decades. In recent years, there have been greater calls for financial institutions to expand their risk oversight activities to include broader categories of risks threatening operations (Bies, 2004; Samanta et al., 2005). New regulations issued by the Bank of International Settlements, a global association of banking regulators, require that financial services firms adopt broader enterprise wide risk management processes (Basel 2003). Additionally, many of the equity rating agencies, such as Moody's and Standard & Poor's, first launched their programs for incorporating information about ERM practices in their overall rating assessments by first focusing on entities in the financial services industry (Standard & Poors, 2005). As a result, regulatory expectations for ERM in financial services institutions counter the six financial drivers of ERM value described in Hypotheses 1 through 6.

To examine whether the predicted associations described by our hypotheses are supported for firms in the financial services firms, we conducted our same multivariate regression analysis for the sub-set of firms ($n = 49$) that are in the financial services industry. We also conducted the same analysis for the remaining subset of firms not in the financial services industry ($n = 77$). The results of this analysis are reported separately in Table 5.

As shown in Panel A of Table 5, we find that there is no association between our six financial variables of interest and the market reaction to announcements of appointments of

senior executive officers overseeing risk management practices for the financial services firms in our sample, with the overall model not significant (F-Value of .89, $p = 0.508$). This result is consistent with the belief that regulatory pressures and requirements drive financial services institutions to embrace enterprise-wide risk management processes, not other firm specific financial characteristics.

In contrast, the results shown in Panel B of Table 5 for the sub-sample of firms in industries other than financial services indicate that, in the absence of similar regulatory expectations, several of the firm's financial characteristics may explain the firm's value enhancement due to ERM adoption. Our overall model is significant ($p = 0.001$), with an F-Value of 4.19 and R^2 of 0.264. For our non-financial firms ($n = 77$), we find that announcement period market returns are positively associated with the firm's prior earnings volatility and size, while negatively associated with the extent of slack and leverage. There is no statistical association between the announcement period returns and the firm's GROWTH or INTANGIBLES (note - the positive coefficient for INTANGIBLES is marginally significant on a one-tailed basis consistent with our hypothesis). While the results for earnings volatility, size and slack are consistent with our expectations, the findings for leverage are opposite of our expectations. One explanation for this result is that shareholders of highly leveraged firms do not want risk reduction as it reduces the value of the option written to them by debtholders. In this case, the option value outweighs the dead weight costs of bankruptcy that are increased with high leverage.

The results for our two sub samples suggest that results for the full sample of announcement firms examined in Table 4 are driven mostly by the non-financial services firms,

suggesting that key financial characteristics drive ERM related processes for firms outside financial services, while regulatory or other demands for risk management affect those processes in the financial services sector.

Supplemental Analysis

As a supplemental analysis, we examine whether the extent of executive ownership in the firm impacts the results of our tests of the hypothesis. We are uncertain how the extent of executive ownership in the firm might affect stockholder reactions to announcements of senior executives overseeing the enterprise's risk management processes.

If a manager has a large stock holding in their company, the manager holds a portfolio that is undiversified and heavily exposed to idiosyncratic risk. On the one hand, greater managerial ownership aligns manager's incentives with those of shareholders thereby reducing agency costs, which creates perceived value for ERM. However, on the other hand, these managers may rationally demand either higher compensation for bearing personal idiosyncratic risk or will embrace ERM to hedge or reduce lower-tail outcomes. Thus, an ERM program may reduce labor costs and help retain higher quality management (Tufano, 1996; Stulz, 1996, 2003), which may be viewed positively by stockholders. Despite these incentives, there is a balance in ERM investment, as too much expenditure on ERM will outweigh the benefit of reducing managerial risk exposure. As a result, the impact of executive stock ownership on the results is uncertain.

Whereas managerial stock ownership should lead to a desire among managers to reduce risk, managerial option ownership may have the opposite effect, as a risk management program will effectively negate the value of option grants by reducing the volatility of the firm's stock

(Tufano, 1996). However, the relation between the decision to commence an ERM program and option ownership is unclear. Managers who own large amounts of options have an incentive to increase the volatility of the company's operations in order to obtain, larger option payouts. This risk shifting may be undertaken even though the projects taken have negative net present values. Thus an ERM program that curtails this activity could be value creating. Alternatively, by implementing an ERM program, a company is essentially destroying the option value of the employee's option grants. This may lead to employee turnover and the loss of key personnel.

Because of these off-setting theoretical explanations for the impact of executive ownership on the stockholder reactions to CRO announcements, we make no directional prediction between the extent of executive ownership and the cumulative abnormal return. Rather, we merely include a proxy for executive ownership as an additional variable (for a subset of firms with an available measure) to our main regression model. Our additional variable, EXECSHARE, represents the total number of executive shares held divided by the shares outstanding of the firm.

We measure the percentage of personal share holdings using data on stock ownerships obtained from the EXECUCOMP database. The EXECUCOMP database provides the number of shares owned by each of the top five executives of a company; we scale this total by the number of shares outstanding at the end of the fiscal year prior to the ERM announcement to obtain our measure ExecShare. We were able to obtain this measure for 92 of our original 126 sample firms. The results of this supplemental analysis are presented in Table 6.

[Insert Table 6 about here]

We find for our reduced sample of firms a significant negative relationship between event period abnormal returns and our measure of executive share ownership. This negative relation between ownership and announcement returns suggests that stockholders generally view the announcement of an appointment of a senior executive overseeing the enterprise's risk management negatively as the extent of executive ownership in the firm increases.

Our results suggest that stockholders do not value the embrace of ERM activities when executive ownership is increasing (i.e., agency costs are decreasing). This finding may be due to stockholders concluding that executives with greater extent of stock ownership are engaging in risk management to protect their own wealth at the expense of stockholder wealth. For these firms a more effective solution maybe for the managers to divest some of their stock holdings in the firm, rather than increase risk management activities within that firm.

The addition of the executive shareholding variable has a rather surprising consequence in that only the Growth variable remains significant. We suspect that this is largely due to the reduced sample size, which has weakened the power of our tests, although we cannot rule out that the other variables may have been proxying for executive ownership, although this seems unlikely.

5. CONCLUSION AND LIMITATIONS

This study provides initial empirical evidence about how the perceived value of enterprise risk management processes varies across companies. While ERM practices are being widely embraced within the corporate sector, not all organizations are embracing those practices and little academic research exists about ERM. Overall, we find no aggregate significant market reaction to the hiring of CROs for neither the financial services nor non-financial services firms.

This suggests that we cannot make any broad claims about ERM benefits or costs across a wide range of firms.

The absence of an overall average market reaction does not mean that the market is not reacting. In the cross section, we find that firms' shareholders respond largely in accordance with our expectations and value ERM where the program can enhance value by overcoming market distortions or agency costs. Specifically, we find that large firms that have little financial slack benefit from ERM. Furthermore, large non-financial firms, with volatile earnings and low leverage also benefit from ERM. These findings are consistent with the idea that a well implemented ERM program can create value when it restricts the likelihood of costly lower tail outcomes such as financial distress. We find that ERM implementation for firms that have greater executive share ownership is generally greeted negatively by the market. This finding is consistent with an agency problem in which managers are protecting their own undiversified shareholdings at the expense of stockholders as a whole.

Despite providing some important academic insights about ERM, there are limitations to this existing study. First, while we are able to observe announcements of appointments of senior executives overseeing risk management practices, we are unable to observe the extent to which the related firms embrace an enterprise-wide approach to risk management. Instead, we are only able to assume that the appointments are an indication of an enterprise-wide approach to risk management. Further study of more specific announcements about ERM specific activities is warranted. Second, we are only able to measure short-term reactions to these announcements that extend across two days. We do not provide useful insights about the sustainability of ERM's value from a stockholder perspective. Third, we only measure equity market reactions to

these hiring announcements. As a result, we do not provide any evidence of ERM's value to other stakeholders, such as creditors, employees, supplies, among others.

There is a tremendous need for further academic study about ERM practices. More insights are needed to better understand the decision made by some firms to embrace ERM as compared to the decision by others to not embrace ERM.

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Table 1. Sample Statistics for Industry and Year

Year of Announcement	Financial Industry	Insurance Industry	Energy Industry	Miscellaneous	Totals
1992	5	0	0	3	8
1993	2	1	1	4	8
1994	1	1	1	3	6
1995	3	1	2	4	10
1996	5	3	3	2	13
1997	3	0	2	0	5
1998	3	1	1	3	8
1999	3	2	1	3	9
2000	2	2	2	5	11
2001	11	1	5	3	20
2002	3	3	3	3	12
2003	8	2	4	2	16
TOTALS	49	17	25	35	126

Table 2 - Descriptive Statistics – Full Sample

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum
Size Metrics:						
Assets	126	37,566.8	6,850.9	80,917.0	18.2	616,064.1
Liabilities	126	34,033.6	5,190.0	77,065.0	0.2	594,494.6
MVE	126	7,912.7	2,359.7	14,332.0	8.0	93,259.6
Book Value	126	3,533.2	1730.9	5,287.0	7.6	33,705.1
Sales	126	8,353.3	2,844.6	19,330.0	19.3	162,558.0
Independent Variable:						
CAR	126	-.001	-.001	0.0325	-.100	0.111
Hypothesized Variables of Interest:						
Growth	126	2.255	1.821	2.949	0.256	27.540
Slack	126	0.082	.0514	0.104	0.000	0.694
Intangibles	126	0.060	.014	0.109	0.000	0.564
EPS Vol	126	0.789	.321	1.654	0.014	15.963
Size	126	8.728	8.831	2.200	2.901	13.331
Leverage	126	6.083	2.197	10.465	0.002	74.867

Where; Assets = the amount of total assets as reported at the end of the fiscal year-end prior to the announcement, in million of dollars. Liabilities = the amount of total liabilities as reported at the end of the fiscal year-end prior to the announcement, in million of dollars. MVE = the market value of equity at the end of the most recent fiscal quarter prior to the announcement, in million of dollars. Book Value = the book value of the firm at the end of the fiscal year-end prior to the announcement, in million of dollars. Sales = the amount of sales in the year prior to the announcement, in millions of dollars. CAR = the cumulative abnormal return for the event period, the announcement day plus the following day. Growth = the market value of the firm divided by its book value reported at the end of the fiscal year-end prior to the announcement. Size = the natural logarithm of MVE at the end of the fiscal year-end prior to the announcement. Slack = the amount of cash as reported at the end of the fiscal year-end prior to the announcement divided by total assets. Leverage = total liabilities divided by market value of equity reported at the end of the fiscal year-end prior to the announcement. Intangibles = book value of intangible assets divided by total assets reported at the end of the fiscal year-end prior to the announcement. EPSVol = the standard deviation of earnings per share for the eight quarters prior to the announcement.

Table 3 - Descriptive Statistics - For Two Sub samples

PANEL A: Financial Service Firms

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum
<i>Size Metrics:</i>						
Assets	49	73,497.4	33,457.8	113,680.1	18.2	616,064.1
Liabilities	49	69,173.5	30,074.8	108,948.0	4.7	594,494.6
MVE	49	10,239.4	3,454.4	15,646.5	10.0	72,847.1
Book Value	49	4,223.9	1,948.9	5,292.1	13.5	21,569.5
Sales	49	7,328.5	2,378.3	11,700.8	19.3	66,070.2
<i>Independent Variable:</i>						
CAR	49	0.002	0.001	0.032	-0.064	0.111
<i>Hypothesized Variables of Interest:</i>						
Growth	49	2.031	1.784	1.519	0.333	9.295
Slack	49	0.115	0.087	0.109	0.007	0.467
Intangibles	49	0.024	0.010	0.049	0.000	0.259
EPSVol	49	0.443	0.259	0.479	0.028	2.554
Size	49	9.642	10.418	2.346	2.900	13.331
Leverage	49	11.202	6.793	13.916	0.134	74.867

PANEL B: Non-Financial Service Firms

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum
<i>Size Metrics:</i>						
Assets	77	14,701.9	3,929.7	35,286.0	29.0	276,229.0
Liabilities	77	11,671.9	3,216.9	31,123.0	0.2	248,692.0
MVE	77	6,461.8	1,836.4	13,324.0	8.0	93,259.6
Book Value	77	3,029.9	1,468.1	5,256.0	7.6	33,705.1
Sales	77	9,005.4	2,855.7	22,957.7	22.3	162,558.0
<i>Independent Variable:</i>						
CAR	77	-0.002	-0.003	0.033	-0.100	0.069
<i>Hypothesized Variables of Interest:</i>						
Growth	77	2.398	1.852	3.577	0.256	27.540
Slack	77	0.061	0.033	0.100	0.000	0.694
Intangibles	77	0.083	0.0184	0.129	0.000	0.564
EPSVol	77	1.010	0.422	2.056	0.014	15.963
Size	77	8.146	8.276	1.898	3.367	12.529
Leverage	77	2.825	1.315	5.491	0.002	37.440

See Table 2 for variable definitions.

Table 4 - Regression of Firm Specific Variables on Cumulative Abnormal Returns

Variable	Predicted Sign	Parameter Estimate	t-value	P-value
Intercept		-0.0307	-2.41	0.018**
Growth	+	0.0002	-2.88	0.839
Slack	-	-0.0721	-2.64	0.009***
Intangibles	+	0.0340	1.27	0.208
EPS Vol	+	-0.0010	-0.56	0.579
Leverage	+	0.0001	0.50	0.615
Size	+	0.0038	2.88	0.004***
N		126		
R-Squared		0.131		
F-Value		2.99		
Model Significance		0.0093		

***, **, *, indicates significance at the 1%, 5% and 10% levels

See Table 2 for variable definitions.

Table 5 - Regression Results – Sub-samples of Financial and Non-Financial Firms

Financial Firms sub sample				Non-Financial firms sub sample	
Variable	Predicted Sign	Parameter Estimate	P-value	Parameter Estimate	P-value
Intercept		-0.018	0.443	-0.030	0.050**
Growth	+	0.002	0.552	0.001	0.574
Slack	-	-0.063	0.171	-0.084	0.025**
Intangibles	+	-0.028	0.801	0.044	0.108
EPS Vol	+	-0.001	0.913	0.005	0.054*
Leverage	+	0.001	0.262	-0.003	0.004***
Size	+	0.002	0.385	0.004	0.043**
N		49		77	
R-Squared		0.113		.264	
F-Value		0.89		4.19	
Model Significance		0.508		0.001	

***, **, *, indicates significance at the 1%, 5% and 10% levels

See Table 2 for variable definitions.

Table 6 - Regression of firm specific variables on Cumulative Abnormal Returns

Variable	Predicted Sign	Parameter Estimate	t-value	P-value
Intercept		-0.0088	-0.52	0.602
Growth	-	-0.0001	-0.10	0.924
Slack	-	-0.0091	-0.27	0.788
Intangibles	-	0.0285	0.97	0.335
EPS Vol	+	-0.0011	-0.38	0.703
Leverage	+	-0.0002	-0.72	0.473
Size	+	0.0028	1.54	0.127
ExecShare	-	-0.0367	-1.93	0.053*
N		92		
R-Squared		0.093		
F-Value		1.22		
Model Significance		0.299		

***, **, *, indicates significance at the 1%, 5% and 10% levels

ExecShare is the percentage of total outstanding shares held by the five top executives as reported by EXECUCOMP. See Table 2 for all other variable definitions.