

# FIRM CHARACTERISTICS AND CEO RESTRICTED STOCK SENSITIVITY: EVIDENCE FROM SEOs

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## ABSTRACT

*Using a sample of 223 seasoned equity offering (SEO) firms, we investigate the relation between firm characteristics and the sensitivity of CEO restricted stock compensation to firm equity value. We conduct our analysis using a linear regression model, and we find that firm size is positively associated with CEO restricted stock sensitivity. Given that a higher sensitivity of restricted stock compensation to firm equity value could engender opportunistic managerial behavior, our finding suggests that relative to smaller firms, larger firms that award restricted stock to their CEOs may be exposed to greater financial misreporting risk.*

**Keywords:** Restricted Stock Sensitivity, Equity-based Compensation, Agency Costs, Seasoned Equity Offering.

## INTRODUCTION

In this study, we investigate the relation between firm characteristics and the sensitivity of CEO restricted stock compensation to firm equity value using a sample of 223 seasoned equity offering (SEO) firms. Restricted stocks currently constitute a significant portion of CEO pay. The use of restricted stocks to align the interest of managers to those of investors gained prominence after the scandal and bad press associated with the granting of stock options to CEOs (Wu, 2011). The proportion of restricted stocks as a percentage of CEO equity compensation grew from 15% in 2000 to about 51% in 2011 (Huddart & Yavas, 2017). Bettis et al. (2010) document that restricted stock is now the dominant form of equity compensation. The literature, however, suggests that restricted stock has the propensity to exacerbate agency costs (Amoah, 2012; Kadan & Yang, 2006). Amoah (2012) finds that the larger the restricted stock awards to the CEO, the higher the propensity for litigation. Kadan & Yang (2006) report that relative to stock options, restricted stock triggers more earnings management practices. Considering that CEOs have the propensity to behave opportunistically when their wealth is tied to stock and options-based compensation (Bergstresser & Philippon, 2006), we examine the relation between firm characteristics and the sensitivity of CEO restricted stock compensation to firm equity value.

We use seasoned equity offering (SEO) firms for this study because managers of SEO firms tend to mislead investors by misstating financial statements to enhance share issuance proceeds and to increase their wealth around SEOs (Amoah, 2012; Cohen & Zarowin, 2010). Amoah (2012) finds that the granting of substantial amounts of restricted stock to CEOs enhances the likelihood of securities litigation. Cohen & Zarowin (2010) find that SEO firms engage in both accrual and real earnings manipulation around SEOs. Prior studies such as Botta & Colombo (2019), and Datta, (2005) document that SEO announcements trigger a significantly

negative stock price reaction. Moreover, Datta et al. (2005) report a negative correlation between the stock market response to SEO announcement and executive equity compensation. Given that managers receiving higher equity compensation benefit more from issuing over-valued equity, the results from prior literature suggest that the market perceives more opportunistic behavior related to SEOs when SEO firms award higher executive equity compensation.

We find that firm size is positively associated with CEO restricted stock sensitivity, which is consistent with the use of higher levels of equity-based compensation by large firms to mitigate agency costs given the difficulty of monitoring the behavior of their CEOs (Bryan, Hwang & Lien, 2000; Core & Guay, 2001; Jensen & Meckling, 1976; Ryan & Wiggins, 2001; Yermack 1995). As CEOs may behave opportunistically when their wealth is tied to changes in stock price, our finding suggests that larger firms need to be circumspect when infusing restricted stocks into compensation contracts.

The remainder of this study is organized as follows. Section 2 provides the literature review. Section 3 describes the research design. Section 4 presents the empirical results, and Section 5 presents the summary and conclusion.

## LITERATURE REVIEW

### The use of Equity Incentives in Executive Compensation

The merits of stock and option-based compensation as a means of enhancing the corporate governance mechanisms of a firm by aligning the interests of the managers with those of shareholders remains a controversial subject (Amoah, 2012; Adam & Schwartz, 2009; Bergstresser & Philippon, 2006; Coffee, 2005; Fama, 1980; Core, Guay & Larcker, 2003; Peng & Roell, 2008). While Fama (1980) documents that CEO equity incentives do not engender opportunistic managerial behaviors because of the disciplinary effect of the market, Coffee (2005) finds that CEOs behave opportunistically by manipulating earnings when they receive equity incentives. Peng & Roell (2008) find that equity incentives enhance the propensity for lawsuits. Harris & Bromiley (2007) find a positive relation between CEO equity compensation and the propensity to engage in accounting irregularity. Arthur Levitt, a former chairman of the Securities and Exchange Commission (SEC), noted that equity-based compensation incentivizes managers to distort financial statements in order to enhance the stock price and the wealth of managers, to the detriment of shareholders (Levitt, 1998).

The popularity of stock options as a means of motivating CEOs to make decisions that enhance shareholder wealth is gradually waning following the negative press reports and accounting scandals such as WorldCom and Enron (Cassidy, 2002; Madrick, 2003; Huddart & Yavas, 2017). Denis et al. (2006) find a positive relation between stock option grants and the propensity for lawsuits.

There is a growing shift from options to restricted stock to curtail managerial opportunism. In 2003, The Altria Group, Inc., noted in their annual report that they opted for restricted stock rather than stock options. Other firms such as Dell, Cendant, and Daimler Chrysler also reported a shift to the use of restricted stock. The contention is that as options only become valuable to recipients when the option is in-the-money (i.e., the stock price exceeds the exercise price), managers are thus incentivized to engage in self-serving actions to inflate the stock price to the detriment of shareholders. Restricted stock appears to be attractive because it

has zero exercise price and is thus in-the-money even when the stock price declines (Hall & Murphy, 2003).

The literature raises questions about the effectiveness of restrictive stock in aligning the interest of managers with the interest of the shareholders (Johnson et al., 2009). Amoah (2012) and Johnson et al., (2009) find that restricted stock increases the likelihood of fraudulent financial reporting. Burns & Kedia (2006) find that CEOs are more likely to engage in opportunistic behaviors to enhance their wealth when their compensation is tied to changes in stock price. Using a sample of firms that restated their financial statements due to accounting irregularities, Harris & Bromiley (2007) document a positive relation between CEO equity compensation and fraudulent financial reporting. There is thus the likelihood that the granting of restricted stocks to CEOs to motivate them to make decisions that maximize shareholder wealth could backfire and instead engender managerial actions that are inimical to shareholder wealth.

Prior studies document that managers engage in fraudulent financial reporting aimed at enhancing their wealth and the proceeds to the firm when shares are issued (Rangan, 1998; Simmons & Ryan, 2009). Simmons & Ryan (2009) also document an increase in the likelihood of a lawsuit when firms issue SEOs.

### **Firm Characteristics and CEO Restricted Stock Sensitivity**

CEOs have incentives to engage in acts that increase the volatility of the firm when the wealth of the CEO is sensitive to the volatility of the stock price (Cohen et al., 2000). Prendergast (2002) and Jayaraman & Milbourn (2009) document that firms award more equity-based incentives to managers when the stock returns volatility is high. We thus expect a positive relation between CEO restricted stock sensitivity (Resstksen) and stock return volatility (Stkretvol).

Sales growth is considered an essential dimension of managerial performance as it enables managers to achieve their financial benchmarks, enhances the value of the firm, stabilizes the employment of the managers and enhances their wealth (Hubbard & Bromiley, 1994; Jensen, 1993; Kaplan & Norton, 1992, 1993, 1996). We thus expect a positive relation between CEO restricted stock sensitivity (Resstksen) and sales growth (Sales\_growth).

The literature on agency theory suggests that executive pay is driven by firm performance (Jensen & Meckling, 1976; Matolcsy et al., 2012). Given that poor firm performance adversely impacts CEO wealth, we expect a positive relation between CEO restricted stock sensitivity (Resstksen) and return on assets (ROA).

Extant literature documents that firms with growth opportunities have high information asymmetry (Smith & Watts, 1992; Core & Guay, 1999). To mitigate agency costs, firms award equity-based compensation to managers. The granting of equity-based compensation ties the wealth of CEOs to changes in the stock price of the firm. We thus expect a positive relation between CEOs' restricted stock sensitivity (Resstksen) and growth (Growth).

Burns & Kedia (2006) examine the relation between firm characteristics and the propensity to misreport using firms that restated their financial statements. They find a positive association between leverage and misreporting. Financial distress associated with high leverage can also induce fraudulent financial reporting (Burns & Kedia, 2006). Given that higher restricted stock sensitivity may be associated with a higher likelihood of financial misreporting, we expect a positive relation between CEO restricted stock sensitivity (Resstksen) and leverage (Levrge).

Smith & Watts (1992) find that larger firms require experienced and talented managers who need to be adequately compensated. Larger firms have difficulty monitoring their managers (Jensen & Meckling, 1976). CEOs of large firms are thus issued with substantial amounts of equity-based compensation to motivate them to make decisions that enhance shareholder wealth (Bryan et al., 2000; Ryan & Wiggins, 2001; Yermack, 1995). Collins et al. (2009) find that CEOs are more likely to engage in opportunistic behavior when equity compensation is an important component of their wealth. Defond et al. (2002) and Frankel et al. (2002) document that larger firms have the resources to implement effective internal controls to protect investor capital. Accordingly, we expect a positive relation between CEO restricted stock sensitivity (*Resstksen*) and firm size (*Size*).

Jayaraman & Milbourn (2009) find that firms in highly litigious environments are more likely to grant equity-based compensation to their CEOs as the tendency for managers to indulge in fraudulent financial reporting is mitigated by the exposure to high litigation risk. Skinner (1997) finds that managers in litigious environments take proactive steps to mitigate settlement costs by issuing timely earnings warnings. Ferris & Pritchard (2001) examine the market reaction to the disclosure of potential fraud and the filing of a lawsuit. Ferris & Pritchard (2001) find that the market reacts negatively to both the disclosure of fraud and the filing of a lawsuit. We thus expect a positive relation between CEO restricted stock sensitivity (*Resstksen*) and litigation risk (*Highlit\_risk*).

## RESEARCH DESIGN

We investigate the association between firm characteristics and the sensitivity of CEO restricted stock compensation to firm equity value using a regression of CEO restricted stock sensitivity on firm characteristics and control variables. Our dependent variable in the regression model is CEO restricted stock sensitivity. Firm characteristics in the regression model are stock return volatility, litigation risk, sales growth, return on assets, growth, leverage, and firm size. The regression model is depicted as follows:

$$\text{Resstksen} = f(\text{Stkretvol}, \text{Highlit\_risk}, \text{Sales\_growth}, \text{ROA}, \text{Growth}, \text{Levrge}, \text{Size}, \text{CEO\_Bonus}, \text{CEO\_Optex}, \text{Bdmeet}) \quad (1)$$

Where *Resstksen* denotes CEO restricted stock sensitivity. Consistent with Burns and Kedia (2006), we define CEO restricted stock sensitivity as the change in the value of the CEO's restricted stock (in thousands of dollars) for a 1% change in the stock. We measure the sensitivity of CEO restricted stock as 1% of the stock price multiplied by the number of restricted stocks held. In our calculation, we assume a one to one change in the value of CEO restricted stock for a change in the stock price. *Stkretvol* denotes stock return volatility, and it is the volatility as computed by ExecuComp. *Highlit\_risk* is a binary variable which equals 1 if the sample firm is in a high litigation risk industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374 and 8731-8734), 0, otherwise. *Sales\_growth* denotes sales growth, and it is defined as the year-to-year percentage change in sales. *ROA* denotes return on assets, and it is defined as the net income before extraordinary items and discontinued operations divided by total assets. *Growth* denotes the growth of the firm, and it is defined as the ratio of the book value of common equity to the market value of common equity. *Lev* denotes leverage, and it is defined as the ratio of total liabilities to total assets. *SIZE* denotes firm size, and it is defined as the natural log of total assets.

We include CEO bonus compensation and CEO options exercised as control variables in the regression model as bonus compensation and options exercised could impact restricted stock awards to CEOs, and consequently, the sensitivity of CEO restricted stock to changes in firm equity value. CEO\_Bonus denotes CEO bonus compensation and is defined as the ratio of the bonus to total compensation of the CEO at the beginning of the SEO issue year. CEO\_Optex denotes stock options exercised by the CEO and is defined as the ratio of options exercised by the CEO to the market value of the SEO firm at the beginning of the issue year.

We also include the frequency of board meetings as a control variable in the regression model. Bdmeet denotes the frequency of board meetings, and it is defined as the number of board meetings in the fiscal year. Directors have a fiduciary duty towards shareholders to effectively monitor managers (Brick & Chidambaran, 2010; Bushman et al., 2004; Vafeas, 1999). The literature documents that the frequency of board meetings increases when the share price is declining (Brick & Chidambaran, 2010; Vafeas, 1999). Brick & Chidambaran (2010) find that the frequency of board meetings increases following the restatement of the firms' financial statements. As the frequency of board meetings can be considered as an indication of monitoring effectiveness, we expect that the frequency of board meetings will be associated with restricted stock awards to CEOs, and consequently, the sensitivity of the CEOs restricted stock to changes in firm equity value.

## Sample and Data

Our data covers the period 1996-2005 and is obtained from four sources: Thomson SDC Securities Offerings database, the Compustat database, and the Execucomp database. We obtained a sample of seasoned equity firms from the Thomson SDC Securities Offerings database. For firms that had more than one issue following the secondary offer, we included only the initial offering in the study. We obtained data on restricted stock, bonus, options exercised, and the other compensation variables from the Executive compensation database (Execucomp). We obtained firm characteristics data from the Compustat database. We exclude SEO firms that do not have the required equity compensation and firm characteristics data from our sample. Our final sample consisted of 223 SEO firms.

## EMPIRICAL RESULTS

### Summary Statistics

In Table 1, we present summary statistics for the variables. Table 1 shows that the mean (median) change in the value of the CEO's restricted stock for a 1% change in the stock price (Resstksen) is 4.6461 (0). The mean (median) of the ratio of the CEO's bonus compensation (CEO\_Bonus) to the CEO's total compensation is 0.3678 (0.4198). The mean (median) of the ratio of the options exercised by the CEO (CEO\_Optex) is 1.4576 (0). The mean (median) of the stock return volatility (Stkretvol) is 0.4403 (0.3960). The mean (median) of the meetings held by the board in a fiscal year (Bdmeet) is 7.3722 (7). The mean (median) of the year-to-year percentage change in sales (Sales\_growth) is 26.1616 (11.221) percent. The mean (median) of the return on assets (ROA) is 2.4432 (3.172). The mean (median) of the growth variable (growth) is 0.4428 (0.3871). The mean (median) of the Leverage variable (Levrge) is 0.6193 (0.6398). The mean (median) of the firm size variable (Size) is 7.1781 (7.1124). The mean (median) of the litigation risk variable (Highlit\_risk) is 0.2242 (0).

<b>Dependent and Independent Variables (Sample size, N=223)</b>			
VARIABLE	MEAN	MEDIAN	STD. DEV
CEO_Bonus	0.3678	0.4198	0.2417
Resstksen	4.6461	0	15.4645
CEO_Optex	1.4576	0	12.0806
Stkretvol	0.4403	0.396	0.2579
Bdmeet	7.3722	7	3.0061
Sales_growth	26.1616	11.221	73.4982
ROA	2.4432	3.172	13.3872
Growth	0.4428	0.3871	0.3604
Levrge	0.6193	0.6398	0.25
Size	7.1781	7.1124	1.7442
Highlit_risk	0.2242	0	0.418

Panel A of Table 2 presents the distribution of SEO firm observations by fiscal year. Similar to Amoah (2012), the highest number of SEOs occurred in 1999 (35 offerings), and the second-highest SEOs occurred in the year 2002 (30 offerings). We note that the third highest SEOs occurred in the year 2004 (28 offerings), while the lowest number of SEOs occurred in the year 1996 (11 offerings).

Panel B of Table 2 presents the industry distribution of the SEO firms. Consistent with Amoah (2012), the highest number of SEOs is from the Electric, Gas, and Sanitary Services industry (2-digit SIC code = 49) with 25 SEOs, which constituted 11.21 percent of the total SEOs. Moreover, the industry that had the second-highest SEOs was Electronic and other Electric Equipment (2-digit SIC code =36) with 20 SEOs, which constituted 8.97% of the total SEOs. The industry that had the third-highest SEOs was Chemical and Allied Products (2-digit SIC code = 28) with 19 SEOs, which constituted 8.52% of the total SEOs.

<b>Panel A: Distribution of SEOs by fiscal year (N=223)</b>											
Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Seasoned Equity Offerings (SEOs)	11	21	16	35	21	27	30	22	28	12	223
<b>Panel B: Industry Classification of SEOs (N=223)</b>											
Industry	Two-Digit SIC Code		Number of Firms		Percentage						
Metal Mining	10		3		1.35						
Oil and Gas Extraction	13		16		7.17						
Food Products	20		4		1.79						
Textile Mill Products	22		1		0.45						
Lumber and Wood Pds, Ex Furn	24		1		0.45						
Paper Mills	26		2		0.9						
Printing, Publishing Allied	27		1		0.45						
Chemical and Allied Products	28		19		8.52						
Petroleum and Coal Products	29		2		0.9						
Footwear except Rubber	31		1		0.45						
Stone, Clay, and Glass Products	32		2		0.9						
Primary Metal	33		11		4.93						

Fabricated Metal Products, Machinery, and Equipment	34	6	2.69
Industrial, Communication, Machinery and Computer Equipment	35	14	6.28
Electronic and Other Electric Equipment	36	20	8.97
Transportation Equipment	37	8	3.59
Instruments and Related Products	38	12	5.38
Miscellaneous Manufacturing	39	1	0.45
Railroad Transportation	40	1	0.45
Trucking Freight and Warehousing	42	1	0.45
Transportation by Air	45	1	0.45
Transportation Services	47	1	0.45
Communications	48	2	0.9
Electric, Gas and Sanitary Services	49	25	11.21
Wholesale – Durable Goods	50	4	1.79
Wholesale – Nondurable Goods	51	3	1.35
General Merchandise Stores	53	3	1.35
Auto Dealers and Gas Stations	55	2	0.9
Apparel and Accessory Stores	56	3	1.35
Miscellaneous Retail	59	5	2.24
Commercial Banks	60	11	4.93
Nondepository Credit Institution	61	4	1.79
Insurance Carriers	63	9	4.04
Insurance Agents, Brokers, and Service	64	1	0.45
Holding, Other Invest Offices	67	2	0.9
Business Services	73	13	5.83
Amusement and Recreation Services	79	2	0.9
Health Services	80	3	1.35
Engineering, Accounting, Audit, Management, Related Services	87	3	1.35
Total		223	100

**Panel A** presents the distribution of the lawsuit firms across the sample period (1996-2005). The distribution of lawsuit firms across the sample period is not significantly different from the distribution of SEC 10b-5 lawsuits reported in the Stanford Securities Class Action database over the same period. **Panel B** presents the industry distribution of the litigation sample and shows a fair distribution of sample firms across all industries.

### Litigation Regression Results

Table 3 presents the results of the regression of CEO restricted stock sensitivity on the firm characteristics and control variables. We find that the coefficient of firm size is positive, and it is significant at the 1 percent level (2.6374,  $p < 0.01$ ).

VARIABLE	COEFFICIENT (p-value)
Intercept	-13.4502 <sup>b</sup> -0.0382
CEO_Bonus	5.991 -0.1888
CEO_optex	-0.0022 -0.9787

Highlit_risk	1.582
	-0.5816
Stkretvol	-2.99
	-0.506
BdMeet	0.0145
	-0.9672
Sales_Growth	-0.0035
	-0.806
ROA	0.012
	-0.8838
Lev (TL/TA)	-3.5635
	-0.4849
Size (LnA)	2.6374 <sup>a</sup>
	-0.0007
Growth (B/M)	0.3605
	-0.9089
Sample size (N)	223
Adj. R <sup>2</sup>	0.0582
F-Value	2.36 <sup>b</sup>
(P-Value)	-0.0116

Table 3 presents the regression of CEO restricted stock sensitivity on firm characteristics and control variables. The sample comprises of 223 SEO firms. The dependent variable is CEO restricted stock sensitivity (Resstksen), defined as the change in the value of the CEO's restricted stock for a 1% change in the stock price reported in thousands of dollars. P-values are in parentheses below the coefficient estimates for each variable. Statistical significance at the 1 and 5% levels is denoted by (respectively) <sup>a</sup> and <sup>b</sup>.

## SUMMARY AND CONCLUSION

In this study, we investigate firm characteristics that are associated with the sensitivity of CEO restricted stock compensation to firm equity value. We find that firm size is positively associated with CEO restricted stock sensitivity. Our finding is consistent with large firms granting higher proportions of equity-based compensation to their CEOs to mitigate the weakness associated with monitoring their managers. The rationale for awarding a higher proportion of equity-based compensation is to motivate managers to make decisions that enhance the wealth of shareholders. Considering that managers may behave opportunistically when their wealth is tied to changes in stock price, our finding suggests that the award of higher levels of restricted stock to CEOs of larger firms could engender opportunistic behaviors that are detrimental to shareholder wealth. Consistent with Defond et al. 2002 and Frankel et al. 2002, our finding suggests that larger firms may need to strengthen their internal controls to mitigate the unintended consequences of higher restricted stock awards to their CEOs. Our finding should be of interest to regulators, auditors, analysts, investors, and other stakeholders who are interested in curbing financial misreporting and evaluating financial statement fraud risk. A limitation of the present study is that we restrict our sample to the period prior to the financial crisis; thus, our results may not reflect changes in the relation between firm characteristics and restricted stock sensitivity in the post-financial crisis period. Accordingly, we suggest that future studies examine the relation between firm characteristics and restricted stock sensitivity in the post-financial crisis period. Future research could also examine the impact of internal and external corporate governance measures on CEO restricted stock sensitivity.



<b>Appendix A</b>	
<b>VARIABLE DEFINITIONS</b>	
Variable*	Description
CEO_Bonus	The ratio of the bonus to total compensation of the CEO as of the beginning of the SEO issue year.
Resstksen	Change in the value of the CEO's restricted stock for a 1% change in stock price, measured in thousands of dollars.
CEO_Optex	The ratio of options exercised by the CEO to the market value of the firm as of the beginning of the SEO issue year.
Stkretvol	Stock return volatility as computed by ExecuComp
Bdmeet	The number of board meetings in the fiscal year.
Sales_growth	Year-to-year percentage change in Sales.
ROA	Net income before extraordinary items and discontinued operations divided by total assets.
Growth	The ratio of the book value of common equity to the market value of common equity.
Levrge	The ratio of total liabilities to total assets.
Size	Log of total assets.
Highlit_risk	1 if the sample firm is in an industry with high litigation risk (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374 and 8731-8734), 0, otherwise
* Variables are measured as of the beginning of the SEO issue year.	

## REFERENCES

- Adam, A.A., & Schwartz, M.S. (2009). Corporate governance, ethics, and the backdating of stock Options. *Journal of Business Ethics*, 85, 225–237.
- Amoah, N.Y. (2012). Stock options and shareholder litigation over seasoned equity offerings. *Journal of Accounting, Ethics & Public Policy* 13(3), 397–417.
- Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. *Journal of Financial Economics* 80, 511–529.
- Bettis, C., Bizjak, J.C., & Kalpathy, S. (2010). Stock and with performance-based vesting provisions. *Review of Financial Studies*, 23, 3849-3888.
- Botta, M., & Colombo, L. (2019). Seasoned equity offering announcements and the returns on European bank stocks and bonds. *Applied Economics*, 51(13), 1339-1359.
- Brick, I.E., & Chidambaran, N.K. (2010). Board meetings, committee structure, and firm value. *Journal of Corporate Finance*, 16, 533-553.
- Bryan, S., Hwang, L., & Lien, L. (2000). CEO stock-based compensation: An empirical analysis of incentive-intensity, relative mix, and economic determinants. *Journal of Business*, 73, 661–693.
- Bushman, R., Chen, Q., Engel, E., & Smith, A. (2004). Financial accounting information, organizational complexity, and corporate governance systems. *Journal of Accounting and Economics*, 37, 167–201.
- Burns, N., & Kedia, S. (2006). The impact of performance-based compensation on misreporting. *Journal of Financial Economics*, 79, 35-68.
- Cassidy, J. (2002). The Greed Cycle. September 23, *New Yorker*. 64–77.
- Coffee, J.C. (2005). A theory of corporate scandals: The USA and Europe differ. *Oxford Review of Economic Policy*, 21(2), 198–211.
- Cohen, A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics* 50(1), 2–19.
- Cohen, R.B., Hall, B.J., & Viceira, L.M. (2000). Do executive stock options encourage risk taking? Working Paper, Harvard Business School.
- Collins, D.W., Gong, G., & Li, H. (2009). Corporate governance and backdating of executive stock options. *Contemporary Accounting Research*, 26(2), 403-445.
- Core, J.E., & Guay, W. (1999). The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting and Economics*, 28, 151–184.

- Core, J.E., & Guay, W. (2001). Stock option plans for nonexecutive employees. *Journal of Financial Economics* 61, 253–287.
- Core, J.E., Guay, W. & Larcker, D.F. (2003). Executive equity compensation and incentives: A survey. *Economic Policy Review*, 9, 1–25.
- Datta, S., Iskandar-Datta, M., & Raman, K. (2005). Executive compensation structure and corporate equity financing decisions. *The Journal of Business*, 78(5), 1859-1890.
- Defond, M., Raghunandan, K., & Subramanyan, K.R. (2002). Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research*, 40, 1247–1274.
- Denis, D.J., Hanouna, P., & Sarin, A. (2006). Is there a dark side to incentive compensation? *Journal of Corporate Finance*, 12(3), 467-488.
- Fama, E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288–307.
- Ferris, S.P., & Pritchard, A.C. (2001). Stock price reactions to securities fraud class actions under the Private Securities Litigation Reform Act. *John M. Olin Center for Law and Economics Research Paper* 01-009.
- Frankel, R., Johnson, M., & Nelson, K. (2002). The relation between auditors' fees for non-audit services and earnings management. *The Accounting Review*, 77, 71–103.
- Hall, B.J., & Murphy, K.J. (2003). The trouble with stock options. *Journal of Economic Perspectives*, 17(3), 49–70.
- Harris, J., & Bromiley, P. (2007). Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organizational Science*, 18(3), 350-367.
- Hubbard, G., & Bromiley, P. (1994). How do top managers measure and assess firm performance? *Presented at Academy of management meetings*, Dallas TX.
- Huddart, S., & Yavas, A. (2017). The efficiency of stock-based incentives: Experimental evidence. *Journal of Behavioral Finance*, 18(3), 281–303.
- Jaramayan, S., & Milbourn, T. (2009). Does equity-based CEO compensation really increase litigation risk? *Working Paper*. Washington University.
- Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48(3), 831–880.
- Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305–360.
- Johnson, S.A., Ryan, H.E., & Tian, Y.S. (2009). Managerial incentives and corporate fraud: The sources of incentives matter. *Review of Finance*, 13(1), 115-145.
- Kadan, O., & Yang, J. (2006). Executive Stock Options and Earnings Management: A Theoretical and Empirical Analysis. *Working paper*, Washington University and Indiana University.
- Kaplan, R.S., & Norton, D.P. (1992). The balanced scorecard. *Harvard Business Review*, 70(1), 71–79.
- Kaplan, R.S., & Norton, D.P. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 71(5), 134–137.
- Kaplan, R.S., & Norton, D.P. (1996). Using the balanced as a strategic management system. *Harvard Business Review*, 74(1), 75–85.
- Madrick, J. (2003). *A Theory of Corporate Greed*. New York Times, February 20, C2.
- Matolcsy, Z., Yaowen, S., & Seethamraju, V. (2012). The timing of changes in CEO compensation from cash bonus to equity-based compensation: Determinants and performance consequences. *Journal of Contemporary Accounting and Economics*, 8, 78–91.
- Levitt, A. (1998). *The numbers game*. New York: NYU Center for Law and Business.
- Peng, L., & Roell, A. (2008). Executive pay and shareholder litigation. *Review of Finance*, 12, 141 -184.
- Prendergast, C. (2002). The tenuous trade-off between risk and incentives. *Journal of Political Economy*, 110, 1071–1102.
- Rangan, S. (1998). Earnings management and the performance of seasoned equity offerings. *Journal of Financial Economics*, 50, 101-122.
- Ryan, H., & Wiggins, R. (2001). The influence of firm- and manager-specific characteristics on the structure of executive compensation. *Journal of Corporate Finance*, 7, 101–123.
- Simmons, L.E., & Ryan, E.M. (2009). Securities class action settlements: 2008 review and analysis. *Cornerstone Research*.
- Smith, C., & Watts, R. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32, 263–292.

- Skinner, D. (1997). Earnings disclosures and stockholder lawsuits. *Journal of Accounting and Economics*, 23, 249–282.
- Tahir, M., Ibrahim, S., & Nurullah, M. (2019). Getting compensation right: The choice of performance measures in CEO bonus contracts and earnings management. *The British Accounting Review*, 51, 148-169.
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, 53, 113–142.
- Wu, Y.W. (2011). Optimal executive compensation: Stock options or restricted stocks. *International Review of Economics and Finance*, 20, 633–644.
- Yermack, D. (1995). Do corporations award CEO stock options effectively? *Journal of Financial Economics*, 39, 237–269.