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Transmission Mechanisms of Executive Compensation to Cost of Equity Capital

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ABSTRACT

Purpose: The nature of each component of executive compensation varies, resulting in variances in executive incentives and investor pricing. To examine whether there is a differential relation between executive compensation components and cost of equity capital, this study decomposes the effects of executive compensation components on the cost of equity capital into wealth alignment, contribution, time horizon, and equity incentive effects.

Design/methodology/approach: The hypotheses on the impact of each transmission mechanism of executive compensation component are separately developed in this study. The regression analyses are based on a sample of 11,649 firm-year observations of the U.S. listed companies during 1998-2014.

Findings: The findings support all hypotheses by showing a significant reduction in cost of equity capital for bonus plans, long-term performance plans, and shareholdings, but a significant increase in cost of equity capital for salary and stock option.

Research limitations/implications: The conclusions of this study are based on an examination of publicly listed companies in the United States; the hypotheses can be tested in other countries with various business environments and cultures.

Originality/value: This study is a first attempt to explain the transmission mechanisms of executive compensation components and cost of equity capital by presenting evidence in support of wealth alignment effect, contribution effect, time horizon effect, and equity incentive effect.

Keywords: Executive compensation, Cost of equity, Incentives

I. Introduction

The management team plays an important role in making the business to be a profitable investment. Since these executives can have a huge influence on an organization's prosperity, it is critical to highlight that executive compensation is costly to

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shareholders. By what means would investors be able to ensure that executives act in the shareholders' best interests? How can investors figure out whether executive compensation will support or thwart a company's success? This is why it matters to analyse executive compensation design. As such, this study examines the different transmission mechanisms for the relationship between executive compensation and cost of equity capital, being the wealth alignment effect, contribution effect, time horizon effect and equity incentive effect.

This paper contributes to the literature in the

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following ways. Chen et al. (2015) examine how [] the CEO's attributes of stock and option compensation, i.e., sensitivity of CEO equity wealth to stock prices (A (delta) and the sensitivity of CEO equity wealth to stock return volatility (Vega), impact the cost of equity. However, they only focus on those two all attributes of CEO stock and option incentives. This study differs from and is broader in scope than Chen T et al. (2015), by examining four additional types of executive compensation (i.e., salary, bonus, R long-term performance plan and stockholdings) and providing evidence of an explanation for the effects of executive compensation on the cost of equity m

capital. This study hypothesizes that the effects are different for each component of executive compensation, due to different transmission mechanisms, being the wealth alignment effect, contribution effect, time horizon effect and equity incentive effect.

The analyses are based on a sample of 11,649 firm-year observations of U.S. listed companies during 1998-2014. Consistent with prior research (Botosan et al., 2011), This study measures the cost of equity capital by using average value of nine alternative methods introduced by prior literature (Botosan & Plumlee, 2002; Claus & Thomas, 2001; Dhaliwal et al., 2007; Easton, 2004; Gebhardt et al., 2001; Gode & Mohanram, 2003; Hail & Leuz, 2006; Joseph & Gordon, 1997; Ohlson & Juettner-Nauroth, 2005). This study finds evidence in support of the wealth alignment effect, contribution effect, time horizon effect and equity incentive effect.

The rest of this paper is organized as follows. The literature reviews and the development of hypotheses regarding the potential different transmission mechanisms for the relationship between executive compensation and cost of equity capital are discussed in section II. The research methods are presented in section III. The sample and data are described in section IV. The results and discussions are shown in section V. The conclusions are offered in section VI.

II. Literature Reviews

A. Wealth alignment effect

There has been much research on how best to align the interests of management executives to that of the shareholders of the firm, derived from Agency Theory (Jensen & Meckling, 1976) and Behavioural Agency Theory (Wiseman & Gomez-Mejia, 1998). Referring to agency theory, incentive alignment between managements and shareholders can be achieved by considering the allocation of compensation between managerial fixed pay and variable pay (Harris & Raviv, 1979; Wiseman & Gomez-Mejia, 1998). Nyberg et al. (2010) document a positive relationship between financial alignment and subsequent shareholder returns. Coombs and Gilley (2005) suggest that researchers should separately measure salary and contingent compensation because they find different results with fixed versus contingent compensation on firm performance. Hence, this study expects to detect a negative association between the cost of equity capital and executive compensation components that support the alignment of executives' and shareholders' interests. On the contrary, this study expects a positive association between the cost of equity capital and executive compensation components that give management disincentives to engage in shareholder interests. To examine the effect of wealth alignment between shareholders and executives on the cost of equity capital, this study develops the first hypothesis for the fixed executive compensation, which is salary, versus the performance-based compensations.

Hypothesis 1: There is an association between the wealth alignment effect of executive compensation and the cost of equity capital.

B. Contribution effect

Performance-based compensation encourages executives to contribute to the performance of the firm. Executives try to reduce stock price uncertainty when their compensation is linked to the firm performance (Sloan, 1993). To test the contribution effect on the cost of equity capital, this study holds constant the time horizon and equity incentives by focusing on the shortterm components of executive pay. Changes in executive wealth and shareholder wealth are likely to be more aligned if the measurement components are appropriately matched. In line with the agency theory, financial alignment between executives and shareholders is expected because of a positive effect on earnings. To test this, the second hypothesis is developed.

Hypothesis 2: There is an association between the contribution effect of executive compensation and the cost of equity capital.

C. Time horizon effect

Referring to agency theory, long-term forms of compensation increase the alignment of executives' and shareholders' interests (Jensen & Murphy, 1990). Long-term pay structures reward executives when they can meet future firm performance criteria (Carpenter & Sanders, 2002). To test the time horizon effect of executive compensation on the cost of equity capital, this study holds constant the fixed portion of executive compensation and equity incentives by focusing on the short-term versus long-term non-equity performance-based compensation. This leads to the third hypothesis.

Hypothesis 3: There is an association between the time horizon effect of executive compensation and the cost of equity capital.

D. Equity incentive effect

Barkema and Gomez-Mejia (1998) highlight the importance of the design of variable pay forms of executive compensation. Equity incentives ties executives' wealth to share price (Kim et al., 2011). Hence, executives should have incentives to maintain stock price and adjust their risk-taking behaviour (Armstrong & Vashishtha, 2012; Low, 2009; Williams & Rao, 2006). To test the equity incentive effect on the cost of equity capital, this study holds constant the fixed form of executive pays and time horizon by focusing on the long-term performance-based compensations. Therefore, this study develops the fourth hypothesis.

Hypothesis 4: There is an association between the equity incentive effect of executive compensation and the cost of equity capital.

III. Methods

This study uses the following model to test the hypotheses regarding the cost of equity capital. To address fixed effects, dummy variables for firm and year are incorporated in all regression models.

COE = f (POSTSOX, LEVERAGE, BP, SIZE, ROA, EQ, GFC, Variables of interest)

Following previous research (i.e., Boone et al., 2011: Dhaliwal et al., 2006; Hail & Leuz, 2006), to mitigate the effects of specific assumptions that underlie each method on the results, the dependent variable is a measure of the average expected cost of equity capital from different alternative approaches. Boone et al. (2011) and Hail and Leuz (2006) use the average of the four approaches such as r_{GLS}, r_{CT}, r_{OJN}, and r_{MPEG}, and Dhaliwal et al. (2006) uses the average of three approaches such as r_{CT}, r_{GLS}, and rGM. Nevertheless, this study measures the average value of the expected cost of equity capital by using nine unique ex-ante estimates identified in Botosan et al. (2011) and used in prior literature (Botosan & Plumlee, 2002; Claus & Thomas, 2001; Dhaliwal et al., 2007; Easton, 2004; Gebhardt et al., 2001; Gode & Mohanram, 2003; Hail & Leuz, 2006; Joseph & Gordon, 1997; Ohlson & Juettner-Nauroth, 2005). These are rPEG, rPEGST, rMPEG, rOJN, rGM, rBP, rGG, rCT, and r_{GLS}. The variables of interest involve four effects of executive compensation. Following prior research (e.g., Meek et al., 2007; Mehran, 1995; Vafeas & Waegelein, 2007), each component of the executive compensation is scaled by the total compensation, except for executive shareholdings, which is scaled by total outstanding shares.

Consistent with prior research, commonly used control variables are included to capture the effects of other factors that impact cost of equity capital. Chang et al. (2009) suggest the cost of equity capital is lower in the post-SOX period, compared to the pre-SOX period. Therefore, POSTSOX is included in the model. Prior research (e.g., Fama & French, 1992; Gebhardt et al., 2001) find a positive relation between the perceived risk associated with leverage (LEVERAGE) and the cost of equity capital. Previous studies (e.g., Boone et al., 2008; Fama & French, 1992, 1997; Khurana & Raman, 2004) indicate that bookto-price ratios (BP) is positively associated with the cost of equity capital. As in prior research (e.g., Boone et al., 2008; Botosan & Plumlee, 2005; Brennan & Subrahmanyam, 1996; Fama & French, 1997; Gebhardt et al., 2001; Khurana & Raman, 2004), firm size (SIZE), as measured by market capitalization, is included in the model. Return on assets (ROA) has implications for the financial health of the firm and reported earnings directly affect the cost of capital through investors' expectations of returns (Gebhardt et al., 2001; Gode & Mohanram, 2003). Francis et al. (2005) report that firms with higher earnings quality (EQ) have a lower cost of capital. This study follows Francis et al. (2005) and uses accrual quality as the earnings quality proxy, which is the standard deviation of the residual from the Dechow and Dichev (2002)'s model. GFC is included in the model to control for the global financial crisis period that would influence results.

The definition and measurement of executive compensation components and control variables are reported in Table 1.

Variables	Definitions and measurements
Executive compensat	tion components
BONUS	Percentage of compensation in the form of a bonus earned by the executives during the current financial year
LTPP	Percentage of compensation in the form of the amount paid to the executives during the current financial year under the company's long-term incentive plan
SALARY	Percentage of compensation in the form of a salary earned by the executives during the current financial year
SHAREHOLDINGS	Percentage of total shares outstanding held by the executives at the balance sheet date, excluding options
STOCKOPTION	Percentage of compensation in the form of value of stock options to the executives during the current financial year
Control variables	
BP	Ratio of book value of equity to market value of equity at the end of the fiscal year.
EQ	Earnings quality measured as the standard deviation of the residual using the Dechow and Dichev (2002)'s approach.
GFC	1 if the year is 2007-2008, and 0 otherwise.
LEVERAGE	Financial leverage measured by the ratio of total debt to total assets at the end of the fiscal year.
POSTSOX	1 if the year is 2002-2014, and 0 otherwise.
ROA	Return on assets calculated as the ratio of earnings before interest and tax divided by total assets.
SIZE	Size measured by the natural logarithm of the market value of common equity at the end of the fiscal year.

IV. Data and Descriptive Statistics

The sample is comprised of U.S. listed companies during the period from 1998 to 2014. The data for executive compensation is collected from the ExecuComp database. The analysts' earnings forecasts are obtained from I/B/E/S. Stock price and financial data are collected from CRSP Daily Prices and CRSP Compustat Merged Annual data. A firm-year observation is only included if all data items are available. Consistent with prior research and to eliminate confounding industry effects, observations in the banking and financial sector (SIC code 6000-6999) are excluded from this study. Furthermore, all continuous variables are winsorized at the 1st and 99th percentiles to alleviate the impact of outliers. The final sample for the tests consists of 11,649 observations.

Descriptive statistics are reported for the full sample in Table 2. The mean, the standard deviation, the minimum, the 25 percentiles, the median, the 75 percentiles, and the maximum values of the variables are reported. The mean and median values of COE are 0.10 and 0.09 respectively. With a standard deviation of 0.04, the values ranged from 0.02 in the lowest quartile to 0.26 in the highest quartile.

Table 3 presents the Pearson correlation matrix of variables. Regarding the variables of interest, the correlation between COE and SALARY is positive and significant. Moreover, COE is negatively and significantly correlated with BONUS, LTPP, and STOCKOPTION. However, COE is not significantly correlated with SHAREHOLDINGS. Regarding the control variables, COE has a significant positive correlation with BP, EQ, and GFC but has a significant negative correlation with POSTSOX, SIZE, and ROA. The correlation between COE and LEVERAGE is not significant. There are no multicollinearity issues because all absolute correlation coefficients between the variables are less than 0.7 and all VIFs are less than threshold value of 10.

Tal	ble	2.	Descriptive	Statistics	of	Variables	(n =	11,649)
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	Mean	SD	Min	25%	Median	75%	Max
Dependent variable							
COE	0.10	0.04	0.02	0.08	0.09	0.12	0.26
Executive compensation components							
SALARY	0.34	0.17	0.08	0.21	0.30	0.43	0.86
BONUS	0.10	0.13	0.00	0.00	0.04	0.18	0.53
LTPP	0.12	0.13	0.00	0.00	0.07	0.21	0.53
STOCKOPTION	0.21	0.19	0.00	0.03	0.18	0.33	0.76
SHAREHOLDINGS	0.62	1.37	0.00	0.00	0.10	0.43	7.90
Control variables							
POSTSOX	0.80	0.40	0.00	1.00	1.00	1.00	1.00
LEVERAGE	0.49	0.20	0.08	0.34	0.50	0.64	0.97
BP	0.46	0.29	0.01	0.26	0.41	0.61	1.53
SIZE	7.60	1.46	4.72	6.55	7.41	8.51	11.69
ROA	0.12	0.07	0.01	0.07	0.10	0.15	0.37
EQ	0.02	0.01	0.00	0.01	0.01	0.02	0.04
GFC	0.12	0.32	0.00	0.00	0.00	0.00	1.00

This table reports the descriptive statistics for variables. All variables are defined in Table 1.

N													
	COE	SALARY	BONUS	LTPP	STOCKOPTION	SHAREHOLDINGS	POSTSOX	LEVERAGE	BP	SIZE	ROA	EQ	GFC
COE	1.000												
SALARY	0.110^{***}	1.000											
BONUS	-0.083***	0.112^{***}	1.000										
LTPP	-0.087***	-0.284***	-0.507***	1.000									
STOCKOPTION	-0.024***	-0.300***	-0.012	-0.318***	1.000								
SHAREHOLDINGS	-00.00	0.267***	0.073***	-0.076***	-0.076***	1.000							
POSTSOX	-0.055***	-0.147***	-0.306***	0.360***	-0.279***	-0.037***	1.000						
LEVERAGE	0.014	-0.189***	0.032***	0.130^{***}	-0.105***	-0.160***	-0.048***	1.000					
BP	0.367***	0.207***	0.004	-0.035***	-0.177***	0.016^{*}	-0.013	-0.049***	1.000				
SIZE	-0.233***	-0.562***	-0.090***	0.192^{***}	0.102^{***}	-0.214***	0.136^{***}	0.247***	-0.361***	1.000			
ROA	-0.224***	-0.077***	0.061^{***}	0.024^{***}	0.089***	0.044^{***}	-0.050***	-0.173***	-0.496***	0.144^{***}	1.000		
EQ	0.104^{***}	0.101^{***}	0.168^{***}	-0.252***	0.247***	0.065^{***}	-0.386***	-0.208***	-0.012	-0.144***	0.085***	1.000	
GFC	0.092***	-0.005	-0.172***	0.135***	-0.048***	0.024^{***}	0.183***	-0.021**	0.083***	-0.033***	0.012	0.069***	1.000
This table reports the c	correlations an	nong variables	s. *. **. and	*** refer to	significance at 10 ner	cent. 5 nercent. and 1	nercent levels.	resnectivelv. A	Il variables a	rre defined in	Table 1.		

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V. Results and Discussions

A. Wealth alignment effect

To examine the effect of wealth alignment between shareholders and executives on the cost of equity capital, this study tests the fixed executive compensation, which is salary, versus the performance-based compensations. Specifically, this study measures the proportion of SALARY divided by the sum of SALARY, BONUS, LTPP, and STOCKOPTION as the variable of interest. Table 4 reports regression analysis of wealth alignment. The model shows a good fit with the Adjusted R-squared equals to 0.515. The coefficient on SALARY/(SALARY+BONUS+ LTPP+STOCKOPTION) is significantly positive at the 0.01 level. Thus, compensation in the form of fixed salary earned by the executives during the current financial year leads to higher cost of equity capital compared with the performance-based compensations, showing that performance-based compensation provides better wealth alignment than fixed salary. The results support H1.

B. Contribution effect

To test the contribution effect, this study measures the proportion of BONUS divided by the sum of SALARY and BONUS as the variable of interest. Table 4 reports regression results of the contribution effect. The model shows a good fit with the Adjusted R-squared equals to 0.518. The coefficient on BONUS/(SALARY+BONUS) is significantly negative at the 0.01 level. In short, this study finds that fixed component of executive compensation result in higher cost of equity capital and thus poorer contribution effects, but short-term variable component of executive compensation result in lower cost of equity capital and thus better contribution effects. The results support H2.

C. Time horizon effect

To investigate the time horizon effect, this study measures the proportion of BONUS divided by the sum of BONUS and LTPP as the variable of interest. Table 4 presents regression results of time horizon effect. The model shows a good fit with the Adjusted R-squared equals to 0.514. The coefficient on BONUS/ (BONUS+LTPP) is significantly positive at the 0.01 level. Thus, the short-term performance-based compensation leads to higher cost of equity capital compare with the long-term performance-based compensation. In short, this study finds that performance-based compensation result in a lower cost of equity capital. Long-term variable component of executive compensation can align the incentives of executives and shareholders better than short-term variable component of executive pay. The results support H3.

D. Equity incentive effect

To examine the equity incentive effect, this study measures the proportion of STOCKOPTION divided by the sum of STOCKOPTION and LTPP as the variable of interest. Table 4 reports regression results of equity incentive effect. The model shows a good fit with the Adjusted R-squared equals to 0.520. The coefficient on STOCKOPTION/(STOCKOPTION+LTPP) is significantly positive at the 0.01 level. Thus, executive stock option leads to higher cost of equity capital compare with the long-term performance plan, which is non-equity compensation. In short, this study finds that equity compensation result in higher cost of equity capital and non-equity component of executive compensation result in lower cost of equity capital, showing that equity compensation leads to better shareholder alignment. The results support H4.

E. All effects

In addition to identifying each effect of wealth alignment, contribution, time horizon, and equity

Variables	Wealth alignment effect	Contribution effect	Time horizon effect	Equity incentive effect	All effects
Variables of interest					
SALARY/(SALARY+ BONUS+LTPP+STOCKOPTION)	0.021***				0.014***
	(8.23)				(4.25)
BONUS/ (SALARY+ BONUS)		-0.028***			-0.035***
		(-11.16)			(-9.50)
BONUS/ (BONUS+LTPP)			0.008***		0.010^{***}
			(5.06)		(3.94)
STOCKOPTION/(STOCKOPTION+LTPP)				0.017***	0.014^{***}
				(11.07)	(7.17)
Control variables					
POSTSOX	0.002	-0.006**	0.010^{***}	0.015***	0.010^{***}
	(0.72)	(-2.21)	(3.62)	(5.42)	(3.26)
LEVERAGE	0.048^{***}	0.050***	0.049***	0.048***	0.051***
	(12.41)	(12.94)	(12.41)	(11.87)	(12.41)
BP	0.066***	0.067***	0.065***	0.066***	0.064^{***}
	(28.46)	(29.04)	(27.47)	(27.10)	(25.99)
SIZE	0.004^{***}	0.004^{***}	0.003***	0.002***	0.004^{***}
	(4.47)	(4.38)	(3.24)	(2.54)	(4.27)
ROA	-0.042***	-0.043 ***	-0.040***	-0.042***	-0.024***
	(-4.88)	(-4.98)	(-4.58)	(-4.73)	(-2.66)
EQ	0.097	0.096	0.098	0.151^{**}	0.122
	(1.14)	(1.13)	(1.13)	(1.69)	(1.37)
GFC	0.015***	0.016^{***}	0.013***	0.011^{***}	0.013^{***}
	(7.15)	(7.41)	(6.21)	(4.92)	(5.88)
Constant	0.009	0.027***	0.016^{**}	0.012*	-0.005
	(1.00)	(3.22)	(1.93)	(1.39)	(-0.51)
Adjusted R ²	0.515	0.518	0.514	0.520	0.529
This table reports the results from regressions of cost of equ coefficient is reported, followed by the t-statistic and p-value	uity capital on the variables o (one-tailed). *, **, and *** o	f interest and control var denote significance at 10	iables, including year and percent, 5 percent, and 1	firm fixed effects. For each v percent levels, respectively. Al	'ariable, the regression I variables are defined

Table 4. Regression Analysis

incentive, this study considers all the effects at once in the regression model to assess the relative significance of each effect on the cost of equity capital. The model shows a good fit with the Adjusted R-squared equals to 0.529. The coefficients on all variables of interest are significant at the 0.01 level. The signs of all variables of interest are consistent with those found in the models that test each effect separately. As a result, even when all the effects are combined, each effect remains significant.

VI. Conclusions

Each component of executive compensation differs in its nature, which lead to differences in the executive incentives and investors' pricing. This study examines how different transmission mechanisms of executive compensation components affect the firm's cost of equity capital. The sample consists of 11,649 firm-year observations of U.S. firms over the years 1998 to 2014. The analyses show the significant impacts of executive compensations on the cost of equity capital, including the effects of wealth alignment, contribution effect, time horizon effect, and equity incentive effect. The findings of this study are limited to an analysis of publicly listed companies in the United States. Future research can examine these hypotheses in other countries with different business environments and cultures to determine whether the main results of this study reflect global phenomena. Additionally, private companies can be included in future research because they have some distinct characteristics that may generate different results.

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References

- Armstrong, C. S., & Vashishtha, R. (2012). Executive stock options, differential risk-taking incentives, and firm value. *Journal of Financial Economics*, 104(1), 70-88. doi:10.101 6/j.jfineco.2011.11.005
- Barkema, H. G., & Gomez-Mejia, L. R. (1998). Managerial compensation and firm performance: A general research framework. *Academy of Management Journal*, 41(2), 135-145. doi:10.2307/257098
- Boone, J. P., Khurana, I. K., & Raman, K. K. (2008). Audit firm tenure and the equity risk premium. *Journal of Accounting, Auditing & Finance, 23*(1), 115-140. doi:10.1177/0148558x0802300107
- Boone, J. P., Khurana, I. K., & Raman, K. K. (2011). Investor pricing of CEO equity incentives. *Review of Quantitative Finance and Accounting*, 36(3), 417-435. doi:10.1007/s11 156-010-0183-2
- Botosan, C. A., & Plumlee, M. A. (2002). A re-examination of disclosure level and the expected cost of equity capital. *Journal of Accounting Research*, 40(1), 21-40. doi:10.1111 /1475-679x.00037
- Botosan, C. A., & Plumlee, M. A. (2005). Assessing alternative proxies for the expected risk premium. *The Accounting Review*, 80(1), 21-53. doi:10.2308/accr.2005.80.1.21
- Botosan, C. A., Plumlee, M. A., & Wen, H. (2011). The relation between expected returns, realized returns, and firm risk characteristics. *Contemporary Accounting Research*, 28(4), 1085-1122. doi:10.1111/j.1911-3846.2011.01096.x
- Brennan, M. J., & Subrahmanyam, A. (1996). Market microstructure and asset pricing: On the compensation for illiquidity in stock returns. *Journal of Financial Economics*, 41(3), 441-464. doi:10.2469/dig.v27.n1.24
- Carpenter, M. A., & Sanders, W. G. (2002). Top management team compensation: The missing link between CEO pay and firm performance? *Strategic Management Journal*, 23(4), 367-375. doi:10.1002/smj.228
- Chang, H., Fernando, G. D., & Liao, W. (2009). Sarbanes-Oxley Act, perceived earnings quality and cost of capital. *Review* of Accounting & Finance, 8(3), 216-231. doi:10.1108/1475 7700910980831
- Chen, Y., Truong, C., & Veeraraghavan, M. (2015). CEO risk-taking incentives and the cost of equity capital. *Journal* of Business Finance & Accounting, 42(7-8), 915-946. doi:10.1111/jbfa.12126
- Claus, J., & Thomas, J. (2001). Equity premia as low as three percent? Evidence from analysts' earnings forecasts for domestic and international stock markets. *The Journal* of *Finance*, 56(5), 1629-1666. doi:10.2469/dig.v32.n2.1072

- Coombs, J. E., & Gilley, K. M. (2005). Stakeholder management as a predictor of CEO compensation: Main effects and interactions with financial performance. *Strategic Management Journal*, 26(9), 827-840. doi:10.1002/smj.476
- Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77(s-1), 35-59. doi:10.2308/accr.2002.77.s-1.35
- Dhaliwal, D., Krull, L., & Li, O. Z. (2007). Did the 2003 Tax Act reduce the cost of equity capital? *Journal of Accounting and Economics*, 43(1), 121-150. doi:10.1016/j. jacceco.2006.07.001
- Dhaliwal, D. A. N., Heitzman, S., & Zhen Li, O. (2006). Taxes, leverage, and the cost of equity capital. *Journal* of Accounting Research, 44(4), 691-723. doi:10.1111/j.147 5-679X.2006.00214.x
- Easton, P. D. (2004). PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. *The Accounting Review*, 79(1), 73-95. doi:10.2308/accr.2004.7 9.1.73
- Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47(2), 427-465. doi:10.1111/j.1540-6261.1992.tb04398.x
- Fama, E. F., & French, K. R. (1997). Industry costs of equity. *Journal of Financial Economics*, 43(2), 153-193. doi:10.10 16/s0304-405x(96)00896-3
- Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting* and Economics, 39(2), 295-327. doi:10.1016/j.jacceco.200 4.06.003
- Gebhardt, W. R., Lee, C. M., & Swaminathan, B. (2001). Toward an implied cost of capital. *Journal of Accounting Research*, 39(1), 135-176. doi:10.1111/1475-679X.00007
- Gode, D., & Mohanram, P. (2003). Inferring the cost of capital using the Ohlson-Juettner model. *Review of Account* ing Studies, 8(4), 399-431. doi:10.1023/a:1027378728141
- Hail, L., & Leuz, C. (2006). International differences in the cost of equity capital: Do legal institutions and securities regulation matter? *Journal of Accounting Research*, 44(3), 485-531. doi:10.1111/j.1475-679X.2006.00209.x
- Harris, M., & Raviv, A. (1979). Optimal incentive contracts with imperfect information. *Journal of Economic Theory*, 20(2), 231-259. doi:10.1016/0022-0531(79)90073-5
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. doi:10.1016/0304-405x(76)90026-x

Jensen, M. C., & Murphy, K. J. (1990). Performance pay

and top-management incentives. *The Journal of Political Economy*, 98(2), 225-264. doi:10.1086/261677

- Joseph, R. G., & Gordon, M. J. (1997). The finite horizon expected return model. *Financial Analysts Journal*, 53(3), 52-61. doi:10.2469/faj.v53.n3.2084
- Khurana, I. K., & Raman, K. (2004). Litigation risk and the financial reporting credibility of Big 4 versus non-Big 4 audits: Evidence from Anglo-American countries. *The Accounting Review*, 79(2), 473-495. doi:10.2308/accr.200 4.79.2.473
- Kim, J.-B., Li, Y., & Zhang, L. (2011). CFOs versus CEOs: Equity incentives and crashes. *Journal of Financial Economics*, 101(3), 713-730. doi:10.1016/j.jfineco.2011.03.013
- Low, A. (2009). Managerial risk-taking behavior and equitybased compensation. *Journal of Financial Economics*, 92(3), 470-490. doi:10.1016/j.jfineco.2008.05.004
- Meek, G. K., Rao, R. P., & Skousen, C. J. (2007). Evidence on factors affecting the relationship between CEO stock option compensation and earnings management. *Review* of Accounting and Finance, 6(3), 304-323. doi:10.1108/14 757700710778036
- Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, 38(2), 163-184. doi:10.1016/0304-405x(94)00809-f
- Nyberg, A. J., Fulmer, I. S., Gerhart, B., & Carpenter, M. A. (2010). Agency theory revisited: CEO return and shareholder interest alignment. *Academy of Management Journal*, 53(5), 1029-1049. doi:10.5465/amj.2010.54533188
- Ohlson, J. A., & Juettner-Nauroth, B. E. (2005). Expected EPS and EPS growth as determinants of value. *Review* of Accounting Studies, 10(2), 349-365. doi:10.1007/s1114 2-005-1535-3
- Sloan, R. G. (1993). Accounting earnings and top executive compensation. *Journal of Accounting and Economics*, 16(1-3), 55-100. doi:10.1016/0165-4101(93)90005-z
- Vafeas, N., & Waegelein, J. (2007). The association between audit committees, compensation incentives, and corporate audit fees. *Review of Quantitative Finance and Accounting*, 28(3), 241-255. doi:10.1007/s11156-006-0012-9
- Williams, M. A., & Rao, R. P. (2006). CEO stock options and equity risk incentives. *Journal of Business Finance & Accounting*, 33(1-2), 26-44. doi:10.1111/j.1468-5957.2 006.01357.x
- Wiseman, R. M., & Gomez-Mejia, L. R. (1998). A behavioral agency model of managerial risk taking. *The Academy* of *Management Review*, 23(1), 133-153. doi:10.5465/amr. 1998.192967