The use of restricted stock in CEO compensation and its impact in the pre- and post-SOX era

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ABSTRACT

The use of restricted stocks as a part of CEO compensation has increased. The value of the accumulated restricted stocks that a CEO holds is about three or four times larger than his/her base salary. We study the impact of these accumulated restricted stocks on firms before and after the Sarbanes-Oxley Act (SOX). We find that in the post-SOX era accumulated restricted stocks are negatively associated with firms' R&D expenditure, positively associated with firm's net income and market adjusted stock returns.

Keywords: Sarbanes-Oxley Act, restricted stock, R&D, operating income, stock return

INTRODUCTION

The CEO Annual compensation mainly includes cash payment (salary and bonus) and equity-based pay (stock and option). The annual stock or option granting in recent years often comes with restricted provisions. That is, the CEO has to meet some conditions before he/she actually owns the stocks or options. These conditions can be time-based, or performance-based, or a combination of both (Bettis, Bizjak, Coles, and Kalpathy, 2010). Due to the change of accounting treatments of options used for executive compensation under the Financial Accounting Standards 148 (SFAS 148) and FAS 123 (R), which requires public firms to expense stock options by the fair value instead of intrinsic value method, the use of restricted stocks has increased dramatically, while the use of options has dramatically decreased (Carter et al., 2007; Lord and Saito, 2010).

The large amount of accumulated restricted stock begs inquiry on its incentives, in particular, its impact on the firms in the post-SOX era. In this study, we use data over many years including year 2002 to examine this issue. In year 2002, Congress passed the Sarbanes-Oxley Act (SOX) with the intention of improving corporate governance (Romano, 2005). SOX brings far-reaching reforms in corporate governance.

In this study, we examine how the accumulated amount of restricted stocks is associated with firms' R&D expenditure, net income, and market adjusted stock returns in the pre- and post-SOX era. By doing so, we intend to achieve two goals: to shed a light on the impact of restricted stocks and examine the impact of SOX.

This study is meaningful in three specific aspects. First, it extends the literature on restricted stocks. Many studies focus on option-based compensation (Core and Guay, 2001); Ryan and Wiggins, 2002; Yermack, 1995; Smith and Watts, 1992). We need more studies on restricted stocks. Second, we examine the impact of the accumulated stocks on firms in the new corporate governance regime due to SOX. Prior studies more focus on annual stock or option granting, or on firms' first performance-vesting granting (Ryan and Wiggins, 2002; Bettis, Bizjak, Coles, and Kalpathy, 2010). But as the accumulated stocks become larger than the annual granting, their incentives deserve more research attention. Lastly, we find that the accumulated restricted stocks for the CEO are associated with a firm's R&D expenditure, accounting performance, and market adjusted stock returns. The relation is different in the pre- and post-SOX era. The results can help understand the effectiveness of SOX, and are meaningful for the regulators and business persons alike.

The remainder of the paper is organized as follows. Section 2 develops the hypotheses for the study. Section 3 presents the data. Section 4 reports the empirical results, and Section 5 concludes the main findings.

LITERATURE REVIEW AND HYPOTHESES

Components of CEO pay

The annual CEO pay is mainly a portfolio of cash pay including salary and bonus, and equity-based pay including stocks and options. These stocks and options often have vesting conditions. The equity based compensation (EBC) is designed to align the interests of managers with those of shareholders. Firms may award their CEO options and stocks every year, in some case, many times per year. If the CEO does not resell these awards, or the stocks/options are not vested, they will be accumulated, and these accumulated stocks/options form the stake that the CEO has in the firm. At the end of each year, the CEO may hold a portfolio from compensation, which may include cash from salary, bonus, exercising option, and/or selling stocks, vested stock holding, accumulated unvested stock holding, accumulated vested stock options, and accumulated unvested options. Each component may have different incentives on CEOs' behaviors, subsequently on their firms' policy.

Stocks versus options, restricted versus un-restricted provisions

After year 2002, the regulation requires firms to expense their option granting. For a same dollar value of granting, the number of options is usually much higher than the number of stocks, since the value of one single option is very small on the granting date. It is usually at-the- money granting with the strike price equal to stock price. When the CEO exercises the options, her/his firms need to issue a higher number of shares of stocks than when a firm simply grants its CEO a same value of stocks. The magnifying effect of options gives CEO a greater potential to obtain a large amount of wealth from the options than from the stocks. As a result, the option granting encourages CEOs to take on more risk because of options' large up-side potential.

Restricted stock is not fully transferable until certain conditions have been met. These conditions can be time-based (stated period from the granting date), or performance-based, or the mix of both. For performance-based granting, the company needs to reach earnings per share goals or other financial targets before CEO can own the granting (Bettis, Bizjak, Coles, and Kalpathy, 2010).

New corporate governance regime in the post SOX era

Sarbanes-Oxley Act of 2002 (SOX) is viewed as the most far-reaching reform in corporate governance since the initial federal securities laws in 1933 and 1934 (Donaldson, 2003). SOX imposes substantial new requirements on corporate governance, financial disclosure, and the practice of public accounting to improve the accountability of managers and enhance the independence of the board of director (Romano, 2005). Pursuant to SOX, the SEC directed the NYSE and the NASDAQ to adopt implementation rules for almost all provisions of SOX. The major rules related to corporate governance include: 1) if a firm is listed on NYSE or NASDAQ, then independent directors should make up the majority of its board of directors. 2) the director should be "independent" in a stricter sense, which according to the Act, means that the independent director should not be an "affiliated person" of the corporation or any subsidiary and may receive no more than a director's fee for services. 3) the compensation and nominating/governance committees must be entirely composed by independent directors. 4) the minimum size of the audit committee is three members and all of them must be independent directors. In addition, the audit committee must consist entirely of financially literate individuals. One member of the audit committee must be a financial expert. Otherwise, the company must disclose whether it has such an expert, and if not, the reasons. Those corporate governance regime changes indicate that executives are under intense scrutiny after SOX. The strong monitoring from the independent board, auditors, and stock exchanges may push executives to be less risk taking, constraining their self-interested behaviors. For the pay they receive, CEOs may have to deliver solid performance.

Restricted stocks, R&D, firm performance post SOX

The literature has well documented the connections between options and firms risk-taking activities. Gormley, Matsa, and Milbourn (2013) find that less convexity from reduced options-based pay leads to greater risk-reducing activities, and managers with less convex incentives tend to cut leverage and R&D, stockpile cash, and engage in more diversifying acquisitions. Cohen, Dey, and Lys (2007) examine the effects of SOX on compensation contracts of CEOs and their effect on risk taking subsequent to SOX. They find that option compensation and the sensitivity of CEO's wealth to changes in shareholder wealthy decrease after SOX, and so do the investments in research and development and capital expenditures. These studies provide excellent insights in option compensation. Due to the regulatory changes, the portion of option in executive pays has been greatly reduced, while the potion of restricted stocks has significantly increased (Carter et al., 2007; Lord and Saito, 2010).Given this trend, we need some research work on restricted stocks to develop the hypotheses.

There are several studies directly examining the incentive impact of the annually granted restricted stocks. Ryan and Wiggins (2002) examine pre-SOX era data, specifically year 1997 and year 1996, and find that the stock options in executive compensation are

positively associated with firms' R&D, while the restricted stocks have a negative influence. Bettis, Bizjak, Coles, and Kalpathy (2010) give excellent, detailed description of these performance-vesting granting. They find that the firms with performance-vesting granting have significantly better subsequent operating performance than control firms, and this good performance is not due to earnings management or discernible differences in financial or investment policy.

To extend these great papers, we here focus on the accumulated restricted stocks and examine how the accumulated amount affects firms' R&D expenditure, accounting and stock market performance in pre- and post- SOX era.

Since the restricted stock is a stock reward, its value is linearly related to stock price if the restricted feature is ignored. So with restricted stock, the CEO should have incentives to act in the interest of shareholders. However, restricted stock is different from direct stock rewards. It is restricted. It is not fully transferable until certain conditions have been met. These conditions can be time-based (stated period from the granting date) or performance-based, the company reaching earnings per share goals or other financial targets. (see Bettis, Bizjak, Coles, and Kalpathy (2010) for give excellent, detailed description.)

The restricted feature of the stocks breaks CEO's decision horizon into two stages. At the first stage, the CEO is more concerned with obtaining the ownership of stocks, removing the restrictions. At the second stage, CEO is more concerned with increasing the stock price or maintaining it at a high level, so that he/she can cash out with more cash. During the first stage, if the CEO loses her/his position or the firm's performance does not reach the goal, he/she will lose the restricted stock. In this case, the linear relation between the value of restricted stocks and the stock price completely break down. The usually used delta and vega lose a lot of meanings. Thus, to obtain the restricted stock, the CEO first has to work to keep his position or meet some performance goals. To maintain her/his position, the CEO has incentives to avoid taking risk. To meet the performance goal, she/he has incentive to cut expense and increase performance.

Bryan, Hwang, and Lilien (2000) find that the restricted stock is relatively inefficient in inducing risk-averse CEOs to accept risky value-increasing investment projects due to its linear payoffs. Ryan and Wiggins (2002) find that stock options positively affect R&D while restricted stocks have a negative influence. Nastasescu (2009) finds that awarding the CEOs preponderantly with stock options positively affects the firm's level of R&D investment. Conversely, a higher proportion of restricted stock in the CEO's compensation is related to lower investment in (risky) R&D.

R&D is an aspect that involves both risk-taking and expenses cutting. It is highly risky in nature and undertaking R&D is an effective mean for CEOs to increase firm risk (Coles et al., 2006). It is tangible in cost but intangible in benefits (Shen and Zhang, 2013). It may link to firm's future performance but increase the expenses for the current accounting period. The large amount of the accumulated restricted stock, indicating a large CEO's stake in the firm, may make CEO less risk averse in the post SOX era, and make it more important for CEOs to secure the job or meet financial goals. Moreover, due to the strong monitoring under SOX, the restricted feature of restricted stocks becomes strict; CEO may cut R&D expenses to meet performance benchmark.

Hypothesis 1: A large amount of restricted stocks decreases firm's R&D expenditure in the post SOX era.

From year 1995 to 2001, firms had increased the use of performance vesting options dramatically (Bettis, Bizjak, Coles, and Kalpathy, 2010). After year 2002, firms have increased the use of restricted stock dramatically and reduced the use of options. The restricted stock can be performance-vesting ones, just like performance vesting options. A large amount of accumulated restricted stock may give CEOs incentives to achieve high operating performance, if the restricted stock is operating performance benchmarked, or to raise stock price, if they are stock price benchmarked. In both cases, a CEO would like to achieve high operating performance, since the low operating performance is usually associated a decrease in the stock price. On the other hand, when the CEO obtains the ownership of the stock, if the stock price is low, the value of the CEO compensation drops too due to the linear relation. The restriction can be strictly implemented in the post SOX era due to the strong monitoring. For instance, if the

CEO fails to meet the benchmark, either accounting performance or stock price, no vesting can occur due to strong monitoring from the independent board, auditors, or/and regulators in the post SOX era. Thus, we have the following hypotheses.

Hypothesis 2a: A large amount of restricted stocks increase firm's operating performance in the post SOX era.

Hypothesis 2b: A large amount of restricted stocks increases firm's stock returns in the post SOX era.

DATA

Compensation data are from ExecuComp aggregated to the firm level. We compress the ExecuComp data from the option granting level to the individual executive level and then to the firm level. Many firms make multiple option grants to their executives during a year. Data for the Entrenchment Index (*Eindex)* and director are obtained from Investor Responsibility Research Center (IRRC) and RiskMetrics. We aggregate the director data to the firm level. Annual stock returns and accounting information are taken from Compustat. Our sample period is from year 1996 to 2008.

RESULTS

Table 1 reports the summary descriptive statistics of the sample. The average accumulated restricted stock has average value of 2441.230 thousand dollars (it is more than 3 times CEO annual salary of 734.552 thousand dollars). The accumulated restricted option is the accumulated unexercised un-exercisable options the CEO holds at the end of each year. It has an average value of 4769.907 thousand dollars. The accumulated unrestricted option is the accumulated unexercised exercisable options the CEO holds at the end of each year. It has an average value of 12126.150 thousand dollars. Finance Leverage is the total firm asset divided by total equity. Other variables are self-explanatory.

Table 2 reports the regression results. In model (1), the log of firm's R&D expenditure is the dependent variable. The SOX variable carries a negative coefficient of -0.079, significant at 5% level, indicating that after SOX, firms reduce their dollar expenditure on R&D. The Log (Accumulated Restricted Stock) at the end of previous year has coefficient of 0.004, significant at 10% level. This result indicates that the high amount of accumulated restricted stock is positively associated with a firm's R&D expenditure.

The interaction item between Log (Accumulated Restricted Stock) at the end of previous year and SOX has a coefficient of -0.008, significant at 1% level, indicating that in the post SOX era, a firm with high accumulated restricted stock reduces its R&D expenditure. The total impact of accumulated restricted stock on R&D expenditure, including its main effect and the interacting effect (0.004-0.008), is negative for the post SOX era. It seems that firms become more conservative and risk averse under the new corporate governance regime of SOX. The results of the interaction items support the hypothesis 1.

In model (1), the interaction between Log (Accumulated Unrestricted Option) at the end of previous year) and SOX has a coefficient of 0.013, significant at 5% level. This result indicates that a high value of unrestricted options the CEO holds is associated with a high amount of R&D expenditure in the post SOX era.

The firm's net income is the dependent variable for model (2). The SOX variable carries coefficient of 368.861, significant at 1% level, indicating an improvement in firms' accounting income in the post SOX era. The Log (Accumulated Restricted Stock) at the end of previous year has coefficient of -14.820, significant at 5% level. The interaction item between Log (Accumulated Restricted Stock) at the end of previous year and SOX has a coefficient of 38.185, significant at 1% level, indicating that post SOX firms with high accumulated restricted stock have high net income. The total impact of accumulated restricted stock on net income, including its main effect and the interacting effect (38.185-14.820), is positive post SOX. This result shows that firms have improved net income, and high amount of accumulated restricted stock are associated high net income in the post SOX era. The results of the interaction items

support the hypothesis 2a. Model (3) used EPS as the dependent variable, and the results are similar to model (2).

The market adjusted total annual stock returns are dependent variables for Models (4) in Table 3. In model (4), the SOX has positive and significant coefficient 0.086, indicating that SOX is associated with high adjusted stock returns. The interaction item between Log (Accumulated Restricted Stock) at the end of previous year and SOX has a coefficient of 0.005, significant at 10% level, indicating that post SOX firms with high accumulated restricted stock have high market adjusted annual stock return. The results of the interaction items support the hypothesis 2b.

Table 2 also shows that Log (Accumulated Unrestricted Option) at the end of previous year) are associated with net income in the post SOX era. Both Log (Accumulated Restricted Option) at the end of previous year and Log (Accumulated Unrestricted Option) at the end of previous year are negatively associated with market adjusted stock annual return. This result indicates that when CEO holds too accumulated options, the stock performance may be poor. The low stock price can be the reason the CEO did not exercise these options, and as a result, these options are accumulated to a large amount.

We also include the value of annual granting of restricted stock and options, their interaction items with SOX in all models. They do not have insignificant coefficients when the accumulated amount of stocks or options is present in the models. This confirms our position that the accumulated stocks or options have a larger amount than the annual granted amount and their incentive surpasses those of annually granted stocks or options.

CONCLUSIONS AND FUTURE RESEARCH

We break down the CEO's pay into its pieces, and examine the different incentives of their accumulated values. We find that accumulated restricted stock has an impact on firm's R&D expenditure, net income, and market adjusted stock returns in the post SOX era. Our results show that post SOX, CEOs may become more risk averse. They cut R&D dollar expenditure and increase net income in association with restricted stock. After SOX, the R&D expenses drop when firms have a high amount of restricted stock but increase when CEOs hold a large amount of accumulated unrestricted options. For those CEOs who hold large amount of restricted stocks, it can be the case that they become more cautious, and selective about risky investment. They may spend the R&D dollars only on the projects that can add value for the shareholders. This indicates the positive impact of SOX.

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APPENDIX

Table 1: Summary Descriptive Statistics

The accumulated restricted stock is the accumulated value of stock in thousand dollars at the end of each year. The accumulated restricted option is the accumulated unexercised un-exercisable options the CEO holds in thousand dollars at the end of each year. The accumulated unrestricted option is the accumulated unexercised exercisable options the CEO holds at the end of each year in thousand dollars. Financial Leverage is the total firm asset divided by total equity. CEO duality is a dummy variable having value of 1 if CEO is also the chairman of the board, and 0 otherwise. Enindex is the Entrench Index, compiled by Bebchuk, Cohen, and Ferrell (2009). SOX is a dummy variable taking a value of 1 if the fiscal year is after year 2002, and 0 otherwise. Other variables are self-explanatory.

Variable	Obs	Mean	Std.	Min	Max
R&D Expenditure (000,$)	4760	224.097	702.418	0.000	12183
Net Income (000,$)	7179	410.750	1577.290	-29580.000	40610.000
Basic EPS ($)	7179	2.008	41.808	-524.999	2622.493
Mkt. Adj. Annual Stock Return (%)	7179	0.078	0.483	-1.070	7.489
CEO Duality	7179	0.645	0.479	0.000	1.000
CEO Tenure	7179	7.797	7.126	1.000	39.000
Size of Board	7179	9.366	2.393	1.000	22.000
% outside Directors	7179	0.692	0.162	0.000	1.000
CEO Shares Held (000)	6812	3202.160	33452.070	0.000	1258341.000
Sales (000,$)	7179	6399.675	18032.230	0.317	375376.000
Total Assets (000,$)	7179	6822.521	25871.950	21.000	795337.000
Financial Leverage	7081	2.904	10.190	1.030	528.288
Relative Price to Book	6962	74.359	750.905	-36108.220	34085.030
Enindex	7179	2.369	1.324	0.000	6.000
SOX	7179	0.467	0.499	0.000	1.000
Salary (000,$)	7179	734.552	347.509	100.000	5500.000
Bonus (000,$)	7179	752.196	1376.091	0.000	31000.000
Total Cash Pay	7179	1486.748	1541.203	100.000	32016.670
Accumulated Restricted Stock (000,$)	7176	2441.230	11436.790	0.000	591084.000
Accumulated Restricted Option (000,$)	7176	4769.907	30018.680	0.000	1473897.000
Accumulated Unrestricted Option (000,$)	7176	12126.150	39817.390	0.000	1959915.000

Table 2: Accumulated Stock, R&D Expenditure, Accounting and Stock Performance

Dependent Variable	Log (R&D Exp.)	Net Income	Basic EPS	Mkt. Adj. Annual Ret.
	(1)	(2)	(3)	(4)
Intercept	-1.391***	-3457.929***	-8.429***	-0.929***
	(-8.370)	(-14.450)	(-2.890)	(-12.640)
CEO Duality	-0.003	64.836*	0.033	-0.013
	(-0.180)	(1.850)	(0.520)	(-0.960)
CEO Tenure	-0.002	-3.805	-0.003	0.000
	(-1.410)	(-1.410)	(-0.640)	(-0.240)
Size of Board	0.008*	-5.205	-0.023	-0.009***
	(1.910)	(-0.540)	(-1.200)	(-2.830)
% Outside Directors	0.066	-50.593	-0.079	-0.045
	(1.230)	(-0.410)	(-0.340)	(-1.070)
Financial Leverage	0.000	-1.635	0.000	0.000
	(0.360)	(-1.270)	(-0.090)	(0.050)
Log (Sales)	0.211***	355.687***	1.467***	-0.012
	(8.500)	(7.680)	(11.930)	(-0.980)
Log (Total Assets)	0.476***	55.680	-0.761***	-0.028**
	(20.050)	(1.200)	(-6.680)	(-2.200)
Relative Price to Book	0.000	-0.003	0.000	0.000*
	(-0.350)	(-0.140)	(-0.340)	(1.680)
Log (Total Cash Pay)	-0.037***	97.428***	0.634***	0.198***
	(-2.920)	(3.100)	(11.240)	(16.550)
CEO Shares Held (at the end of Previous year)	0.000	6.537	0.000	0.001
	(0.010)	(0.630)	(-0.010)	(0.270)
Enindex	-0.018*	-4.717	0.022	-0.004
	(-1.920)	(-0.240)	(0.540)	(-0.570)
Enindex*SOX	0.008	-148.486***	-0.054	0.012
	(0.960)	(-7.260)	(-1.550)	(1.390)
SOX	-0.079**	368.861***	0.465***	0.086**
	(-2.080)	(3.980)	(2.750)	(2.210)
Log (Accumulated Restricted Stock) (at the end of previous year)	0.004*	-14.820**	-0.020*	-0.007***
	(1.680)	(-2.410)	(-1.870)	(-3.050)
Log (Accumulated Restricted Stock) (at the end of previous year)*SOX	-0.008***	38.185***	0.031**	0.005*
	(-3.000)	(5.300)	(2.560)	(1.650)
Log(Accumulated Restricted Option) (at the end of previous year)	-0.001	4.800	0.016	-0.011***
	(-0.260)	(0.740)	(1.490)	(-3.830)
Log (Accumulated Restricted Option) (at the end of previous year)*SOX	0.001	-26.869***	0.026*	0.002
	(0.230)	(-2.930)	(1.710)	(0.450)
Log (Accumulated Unrestricted Option) (at the end of previous year)	-0.004	-14.580**	0.026**	-0.010***
	(-1.390)	(-2.100)	(2.170)	(-3.350)
Log (Accumulated Unrestricted Option) (at the end of previous year)*SOX	0.013***	43.139***	0.008	-0.004
	(3.490)	(4.580)	(0.530)	(-1.050)
Control year and industry	Yes	Yes	Yes	Yes
Obs.	4277	6404	6404	6404
Overall R-square	0.819	0.311	0.025	0.117

Note: all models are random-effect panel regressions. ***, **, and * represents significance level at 1%, 5% and 10% level, respectively.