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The Impact of SFAS 123R on CEO Equity Compensation

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Abstract

In December of 2004, FASB released SFAS 123R, mandating the expensing of executive stock options. This paper studies the changes that occurred in CEO equity compensation in the period of 2000 to 2006. Complementary, I analyze the relevance of performance conditions in this form of compensation. There are two main findings: (i) in the post-SFAS 123R period executive stock options determinants become different (ii) the use of performance equity grants contributes to the decrease of traditional stock options, since the use of these type of grants has a statistically impact in the decrease of traditional stock options grants between 2006 and 2003. There are also two side-results: (i) before SFAS 123R stock options drivers were explaining CEO total compensation, in the post-rule period total compensation drivers became less similar to stock options ones (ii) there is a significant difference between stock options and restricted stock drivers, that persist even after SFAS 123R be introduced.

Keywords: SFAS 123R, Executive Stock Options, Restricted Stock, CEO Total Compensation.

1. Introduction

In the 1990s there was an explosion of executive stock options grants as compensation and incentive tools. Over this decade, the value of options granted increased from an average of $22 million per company to $238 million per company by 2000. This increase has occurred across a wide range of industries but especially in HiTech and Telecommunication firms (Hall and Murphy [2003]). Through this financial instrument it was possible to align shareholders and managers interests without the need to record the compensation expense on the firms' financial statements. The combination of a stock market in overdrive and favorable accounting treatment made stock options the "crack cocaine of incentives" (Lavelle [2005]) and the lack of stock option expensing created an uneven playing field for virtually all other forms of executive compensation that required expensing (Murphy [2002]). Meanwhile, the financial press started to question whether stock options rewarded executives for their own merit or for the market success (Johnson and Tian [2000]). Consequently, firms initiated efforts to tie compensation to performance more closely, using other forms of compensation, like restricted stock grants and performance options.

The current accounting standard for stock options, which requires options expensing, is SFAS 123R (Statement of Financial Accounting Standards No.123, Revised). The main idea behind SFAS 123R is that expensing stock options enhances the transparency of option-based compensation, making it harder for managers to use them to hide their excessive pay (Core et al. [2003]). However, firms were not interested in taking a hit to their earnings numbers and several firms have accelerating the vesting periods of their outstanding options before the issuance of SFAS 123R looking to reduce the recognized expense in the future (Choudhary et al. [2006]). This

adds controversy to the long time debate on whether CEO compensation is the result of inefficient pay without performance (Bebchuck and Fried [2004] and Core et al. [2004]).

Empirical evidence suggests that in practice restricted stock has been rarely used due to the previous stock options accounting advantages (Brow and Lee [2007] and Carter et al. [2007]). The past infrequent use of restricted stock, even though various models predict the preference for restricted stock over stock options (Lambert and Larcker [2004]), calls for research in what concerns the impacts of SFAS 123R in the choice between stock options and restricted stock, hence after this rule stock options no longer have favorable accounting treatment.

The main objective of this paper is to investigate the change in factors associated with firms' decisions to grant stock options after the introduction of SFAS 123R. One of the factors considered is the existence of performance conditions in new grants. Concurrently, this study examines if these factors are also driving the decisions on restricted stock grants and on CEO total compensation.

In my study I develop two main hypotheses. Hypothesis 1 states that the determinants of stock options grants have changed after SFAS 123R, given that other studies report a significant decrease in the use of stock options in anticipation of SFAS 123R (Brow and Lee [2007] and Carter et al. [2007]). In line with critics of traditional options over the use of performance-based equity compensation, hypothesis 2 predicts an increase in performance equity grants, associated with the decrease of traditional stock options. I also test two side-results: (i) assuming that the overcompensation problem in the U.S. was caused by the excess use of stock options, I assess whether stock options drivers can explain CEO total compensation levels, before and after SFAS

123R (ii) I investigate in what terms stock options and restricted stock drivers are different, since there has been an abusive use of stock options and an infrequent use of restricted stock.

I use a sample of 385 firms from the S&P 500 from 2000 to 2006, with necessary data for Execucomp and Compustat variables and for Bebchuck Entrenchment Index (Bebchuck et al. [2004]). Additionally, in order to analyze the impact of performance equity grants, I use the Statement of Changes of Beneficial Ownership of Securities (Form 4) that contains information about the type of options and stock grants given to the companies' CEOs[1].

Empirical findings do not reject hypothesis 1 and reveal that the explanatory variables for stock options use change after SFAS 123R. Results suggest that the increase in option performance grants have a significant impact in the decrease of traditional stock options which is consistent with hypothesis 2. As for the side-results, I find evidence that stock options drivers do not explain the use of restricted stock; even after SFAS 123R was introduced. Regarding CEO total compensation, hypothesized stock options drivers were in fact explaining CEO total compensation, however after SFAS 123R introduction CEO total compensation determinants became less similar to stock options ones. Consistent with Carter et al. (2007) I find no evidence of an impact of SFAS 123R on the level of CEO total compensation, only in the composition of total compensation. In fact the composition of CEO compensation bears dramatic changes upon mandatory expensing of executive stock options. In line with Brow and Lee (2007) I find that after SFAS 123R there is a significant decrease in the use of stock options as part of total compensation (- 21.0%), while CEO total compensation levels

1 Performance data was collected by Professors Ana Marques, Ana Albuquerque and Ivy Zhang and begins in 2003.

remains the same and the other types of compensation, namely restricted stock, increase their prevalence as part of CEO compensation (8.0%). These results are evidence for the new rule potential to alter the effective design of CEO compensation that finally demands more thought than simply awarding "plain vanilla" options.

This paper contributes to the existent literature by using 2 years of post-SFAS 123R data, by assessing changes in factors affecting stock options grants after the issuance of SFAS 123R and analyzing the relevance of these factors on restricted stock and total compensation. Furthermore, the paper also investigates the impact of performance equity grants, which are seen as a more effective way to provide incentives to executives, in the decrease of traditional stock options. This paper is close in spirit to Carter et al. (2007) who study the role of accounting in the design of CEO equity compensation by assessing the relevance of financial reporting concerns on stock options, restricted stock and total compensation; and also examine the change in CEO compensation levels upon voluntary decision to expense stock options. My paper extends the past literature since I am able to ascertain the changes in CEO compensation after SFAS 123R effective date of implementation for all companies, not only for voluntary adopters, and also to investigate how stock options drivers (both types - real economic drivers of stock options and the determinants associated to the past accounting advantages) change after the new rule implementation and how they are determining decisions on restricted stock and CEO total compensation. Complementary, I analyze the impact of performance equity grants on the use of traditional stock options, adding empirical evidence on the use of performance based pay in U.S. that is limited contrary to the research on traditional stock options and restricted stock. Also, following Brow and Lee (2007), who investigate the impact of SFAS 123R through a

change model that identifies factors driving stock options cut back upon mandatory expensing, I aim at study the impact of SFAS 123R on equity-based compensation by assessing the impacts of this rule in CEO equity compensation using different models to assess the effect of changes in stock options determinants after SFAS 123R effective date on stock options, restricted stock and total compensation.

This paper is organized as follows. Section 2 discusses relevant background regarding SFAS 123R and previous literature. Section 3 presents the sample selection and descriptive statistics. Sections 4 and 5 develop my two hypotheses, their variables definitions, research designs and results. Section 6 shows complementary analysis and section 7 concludes.

2. Background

2.1. SFAS 123R

Before the issuance of SFAS 123R, accounting for executive stock options was ruled by Accounting Principles Board (APB) Opinion 25 and by SFAS 123. APB Opinion 25 was first released in 1972, before the publication of the Black-Scholes model and it motivated the use of the intrinsic value method to value executive stock options on the option grant date. At the time, most of the firms were granting at-the-money options since for such options the intrinsic value was zero and so there was no compensation cost reported in firms' income statements. This omission in financial statements distorted financial conditions and operations of firms issuing executive stock options (Choudhary [2006]). In 1995 FASB (Financial Accounting Standards Board) issued SFAS 123. This accounting rule motivated the expensing of executive stock options using the fair value method, but allowed the recognition of the intrinsic value, as long as firms disclosed the fair value numbers on a pro forma basis in the footnotes to

their financial statements. FASB originally intended to require the fair value method, but the opposition to this method was heavily intense and instead of following the established standard companies continued to use the intrinsic value method presented in APB Opinion 25. Finally, in December 2004, within the environment of financial, accounting and backdating scandals, FASB approved SFAS 123R, which revised SFAS 123 and suppressed APB Opinion 25. Under SFAS 123R, firms are required to select a valuation model to determine the fair value of executive stock options on the grant day and to recognize this compensation expense in their income statements during the vesting period of the options. The SFAS 123R effective date of implementation for public entities that do not file as small business issuers was the beginning of the first interim or annual reporting period that begins after June 2005[2].

There were four main reasons for SFAS 123R issuance: (1) FASB had to do something in order to restore investors' confidence in the transparency and in the high quality of financial reporting; (2) in February 2004, International Accounting Standards Board (IASB) issued a new standard that obligates the expensing of stock options by the firms that use IAS (IFRS 2 – Share-based Payment), thus there was an urgent need to improve the convergence and comparability of international accounting and financial reporting; (3) simplifying the accounting principles by requiring a single method for expensing executive stock options, so that all entities follow the same accounting standard and (4) enabling the comparability of reported financial information by eliminating the alternative accounting methods (SFAS 123R [2004]).

Opponents to the fair value method argued several reasons to avoid reporting compensation expenses associated to stock options. First, that it may represent a hit to

2 For public entities that file as small business issuers and for nonpublic entities the effective date was as of the beginning of the first interim or annual report period that begins after December 2005.

the companies' earnings, especially to high technology firms[3]. A research report by Credit Suisse First Boston in 2006 estimated that expensing of options compensation cost would reduce the S&P 500 EPS estimate by approximately 3% and that sectors like technology would be even more affected. Second, opponents defend that stock options expensing would imply a decrease in stock options grants, for firms this means lower capacity to attract, retain and motivate employees (CCG Investors Relations [2006]). Finally, there is the inappropriate use of option pricing models for options that are not marketable and are held by undiversified and risk-averse executives, as managers need to estimate volatility as an input to the option pricing models.

Firms' reactions to the discussion on the need to expense stock options were diverse. Many firms voluntary expensed stock options before SFAS 123R was approved. Coca-Cola, Ford, General Electric, McDonald's, Microsoft and PepsiCo are among the companies that have expensed stock options early, aiming to appear "socially responsible at a time when corporate credibility was being widely questioned" (The 2006 TOP 250: "Long term incentives and grant practices for executives")[4]. Others have accelerated the vesting of their options in order to avoid recognizing fair value expense in the future financial statements[5]. Choudhary (2006) finds that accelerating vesting initiatives were especially prevailing and had a negative stock price reaction in companies with bad corporate governance, since investors perceived such transactions as managerial intent to deceive shareholders for managers' private benefit. Furthermore,

3 "Many Silicon Valey companies still see stock options as a vital part of the entrepreneurial culture they seek to foster." (Said [2006]).

4 General Electric, for example, has trimmed its equity grants from 47 million shares in 2002 to 38 million in 2003 by replacing 60% of its options grants with restricted stock, since stock is more valuable than options, thus firms can grant fewer shares, reducing the dilution cost to shareholders (Lavelle [2005]).

5 In March 2003, FASB announced the intention to readdress the issue of accounting for stock options and that would possible release an exposure draft before the end of the year (Brown and Lee [2007]).

accelerating vesting was less predominant in firms that voluntary recognized options expense earlier. The expensing anticipation and the accelerating vesting movements occurred mainly during 2003 and 2004, which are considered the SFAS 123R transaction years (Carter et al. [2007] and Brown and Lee [2007]).

2.2. Literature Review

Empirical evidence suggests that the accounting advantage of executive stock options has led firms to use them instead of other forms of compensation, seeking the reduction of compensation expense to boost reported earnings and not to take advantage from the real economic benefits of options such as motivation and retention of employees. Brown and Lee (2007) show a reduction in abnormal compensation and an improvement in operating performance after stock options cutbacks. The motivation for the past behaviors were the pre-SFAS 123R equity incentives that tempted managers to increase stock prices in the short run hunting for higher earnings, changing financial reporting statements that modified real economic transactions and led to the loss of real economic value (Choudhary [2006]). To meet earnings benchmarks, managers altered the proportion of compensation from options under the so famous "accounting subsidy to stock options" and generated an excess use of stock options (Bodie et al. [2003]). There are those who defend the disposal of stock-based compensation and the existence of compensation on the basis of real and long term earnings growth as if firms were not publicity traded (Martin [2003]).

Empirical evidence also suggests that in practice restricted stock was rarely used due to mangers obsession for stock options' favorable accounting treatment. Carter et al (2007) find results confirming that financial reporting costs played a significant role determining CEO compensation, suggesting that pre-SFAS 123R favorable accounting

treatment for stock options led to a preference use of options and to a lower use of restricted stock. Hall and Murphy (2002) also suggest that an important missing factor in existing models of the choice between stock options and restricted stock was the favorable accounting treatment for stock options.

One can think that, while the abusive use of stock options means lower reported expenses it was also costly, because, due to risk aversion managers demand a higher risk premium for receiving stock options, valuing stock options below their true economic cost for the firm (Hall and Murphy [2002]). On the contrary, Hodge et al. (2006) prove that on average managers overvalue stock options relative to the Black-Scholes value and to the fair value equivalent restricted stock grant.

After the issuance of SFAS 123R, there is no longer an uneven playing field for stock options and firms are shifting away from stock options towards restricted stock and performance awards. Brown and Lee (2007) show that, on average, firms cut back stock options for their top five executives by 30% in 2005 and that companies are more likely to replace stock options with restricted stock in the post-expensing period. These results suggest that firms took advantage of stock options preferential accounting treatment to window dress financial statements in the pre-expensing period. Nonetheless, other authors (Yermack [1995] and Bryan et al. [2000]) detect no evidence of a relation between financial reporting costs and the use of stock options. Also, while the financial press claimed that firms, in response to SFAS 123R, replaced executive stock options by restricted stock or cash (Said [2006]), some financial economists questioned whether stock options new accounting treatment affects options-based compensation, since before the issuance of SFAS 123R investors and analysts already had this information in the pro forma disclosures (Oyer and Schafer [2005]).

Additionally, investors, academics and boards members have manifested their apprehension regarding the insufficient incentives around stock options and restricted stock awards with simple time vesting provisions[6]. This has led critics of traditional stock options and activist stakeholders to suggest that both option and stock awards should contain performance-based vesting conditions, based on managers' capacity to reach certain targets as stock market, accounting, or other performance targets, (an index or a comparison group, in the case of relative performance measures). Several studies have proved that on theory performance options are better in incentives, management retention and gauging managerial talent, since only high talent managers will be willing to take this kind of risk (Johnson and Tian [2000], Arya and Mittendorf [2005] and Bettis et al. [2008]). However, empirical evidence in this field is inconclusive. Gerakos et al. (2005) shows that performance options are used by firms with weak corporate governance to minimize the criticism around the issuance of large grants of stock options to deceive stakeholders rather than to improve managerial incentives, through the use of easily achievable performance targets. Contrary, the results of Bettis et al. (2008) tend to reject this "stakeholder-placation" theory in favor of incentive, retention and gauging managerial talent theories.

3. Sample and Descriptive Statistics[7]

Panel A of Table 1 shows how the final sample was reached. I start with 3,189 observations from Execucomp, which correspond to the period of 2000 until 2006 for the S&P 500 firms. I next exclude 221 observations because of missing data from

6 See Bebchuck and Fried (2004) for a critique of simple time vested equity awards. Furthermore, Warren Buffet postulated on the state of affairs in his 1998 letter to shareholders: "Though options, if properly structured, can be an appropriate, and even ideal, way to compensate and motivate top managers, they are more often wildly capricious in their distribution of rewards, inefficient as motivators and inordinately expensive for shareholders." Finally, CalPERS (2003) states that it will not support any executive compensation plan that does include a significant part of performance or indexed options.

7 All the subsequent variables definitions and data sources are presented in Appendix A.

Compustat and 273 observations because of missing corporate governance data (Bebchuck Entrenchment Index). The sample consists of 2,695 observations, which comprise data for 385 firms. For each of these 385 firms on each year the compensation data is referent to the firms' CEOs. The industry classification is displayed in Panel B of Table 1 where I segregate the sample firms according to Execucomp industry variable SPINDEX, which is the four-digit code that identifies the companies' industry sector. The sample firms comprehend 24 different industries. Capital Goods (8.3%), Utilities (7.8%) and Energy (7.3%) are the industries with higher weight on the sample, Automobiles & Components (0.5%) and Real State (0.8%) are the least prevalent industries. Columns 5, 6 and 7 exhibit the mean industry changes on stock options, restricted stock and total compensation between the pre and post-SFAS 123R periods. As pre-SFAS 123R period I consider the mean values from 2000, 2001 and 2002 and for the period post-SFAS 123R I count with the mean values from 2005 and 2006. This way I take out the anticipation and accelerating vesting effects occurred in 2003 and 2004[8]. Columns 8 and 9 present the change on the ratio of stock options over total compensation and on the ratio of restricted stock over total compensation. Telecommunication Services (-83.5%), Technology Hardware & Equipment (-83.0%) and Media (-74.6%) are the industries with larger decreases in the value of stock options grants. These results were expected since "Silicon Valey" firms were the ones using stock options in excess (Said [2006]). The average industry change in stock options for the sample is -35.0%, which is evidence for the expected decrease in stock options

8 The SFAS 123R effective date of implementation for big companies is June 2005. Given that almost all of the sample firms (89%) have report periods after June 2005, I considered both 2005 and 2006 as the periods after SFAS 123R. Another important note is that the Execucomp report format for the variable used for total compensation (TDC1) has changed in 2006 and in the new format the value of restricted stock grants appears included in the stock awards fair value. Thus, the segregated value of restricted stock grants in 2006 is missing and in the post-SFAS 123R period the variable restricted stock comprehends only values for 2005.

grants after SFAS 123R. Regarding the change in restricted stock grants, there is a wide variation across the industries, since the majority of sample firms increase significantly the restricted stock grants and even initiate this types of grants only after SFAS 123R. The sample average of changes in restricted stock grants is 402.0%. This number is strongly influenced by the change in the Semiconductors & Semiconductor Equipment industry, which was of 5,642.5%. The sample mean industry changes in total compensation is 13%, which represents an increase in total compensation after the implementation of SFAS 123R. Concerning the last two columns, the average industry percentage change of stock options as part of total compensation declines 21.0% and the average industry percentage change on the ratio of restricted stock over total compensation increases 8.0%, thus after SFAS 123R the distribution of CEO total compensation components changes.

Table 2 presents descriptive statistics on the sample. Panel A shows the means for stock options, restricted stock and total compensation for the pre and post-SFAS 123R periods and also the mean for the percentage of stock options and restricted stock over total compensation[9]. The differences in stock options and restricted stock means are statistically significant, and in line with Brown and Lee (2007) findings, reveal a decrease in the use of stock options and an increase in the use of restricted stock, after SFAS 123R. Consistent with Carter et al. (2007) the difference in the mean of total compensation is not significant, indicating that the passage of SFAS 123R is not associated with a change in total compensation levels. The mean change in the percentage of stock options as part of total compensation from 53.7% to 28.6% in the post-SFAS 123R period is significant and the increase in the weight of restricted stock

9 The pre-SFAS 123R period corresponds to the average of 2000, 2001 and 2002 values. The post-SFAS 123R period stands for the average values of 2005 and 2006.

on total compensation from 7.9% to 15.4% is also significant, which is evidence for the change in CEO total compensation distribution after SFAS 123R.

Panel B of Table 2 illustrates the evolution of CEO total compensation from 2000 to 2006, segregating the percentages of total compensation in stock options, restricted stock, bonus, salary and the remaining components of total compensation grouped and named as other[10]. In 2000 CEO total compensation was mainly made of stock options (67.0%), while bonus (11.0%), salary (7.0%), restricted stock (7.0%) and other components (8.0%) constituted small percentages of total compensation. During 2001 and 2002 the distribution of total compensation bear small alterations, but from 2003 on, the constitution of total compensation is considerably different. Throughout the sample years, stock options lose weight on total compensation and the other components of total compensation increase their prevalence, specially restricted stock. In 2006 stock options represents only 16.0% of total compensation, while stock awards counts for 52.0%.

Panel C of Table 2 exhibits descriptive statistics for the variables used in the empirical models, for the entire sample period. These statistics indicate a diversified sample, where for instance the mean (median) for T_ Assets is $35,800,000 thousand ($9,402,160 thousand) and the correspondent standard deviation is $109,000,000 thousand. The mean (median) for stock options grants is $5,080 thousand ($2,480 thousand) and the mean (median) for restricted stock grants is $1,153 thousand ($0

10 In Panel B of Table 2, Total Compensation (Execucomp variable TDC1) from 2000 to 2005 comprises the following: Total Value of Stock Options Granted using the Black-Scholes Value (Options BLS), Total Value of Restricted Stock Granted (RS), Salary, Bonus and Other.
In 2006 TDC1 comprises: Grant Date Fair Value of Options Awards (Options Awards FV), Salary, Bonus, Grant Date Fair Value of Stock Awards (Stock Awards FV) and Other.

thousand) since the prevalence of restricted stock is fairly small in the first sample years.

Panel D of Table 2 presents the Pearson and Spearman correlation matrixes of the stock options models' variables. The correlations reveal that some of these variables have unexpected signs[11]. The Spearman correlations signs of independent variables with stock options that are statistically different from the predict signs hypothesized in Appendix A are 1YrReturn and E_Index. Regarding the Pearson correlation coefficients, E_Index shows a sign correlation with stock options contrary to the predictions. Nevertheless, it is the use of OLS regressions in the subsequent models that establishes the significance of these correlations with stock options.

4. The Change in Factors Explaining the Use of Executive Stock Options

4.1. Hypothesis Development and Variable Definitions

The main objective of this paper is to investigate the change in factors associated with firms' decisions to grant stock options after the introduction of SFAS 123R. For this purpose, I identify different factors which I believe influence firms' decisions to grant executive stock options in the period before SFAS 123R and then assess whether they continue to drive stock options use in the post-SFAS 123R period. These factors can be classified into two groups: (i) justified real economic benefits of stock options, the relevance of which I expect to increase and (ii) factors associated with the excess use of options due to the previous accounting advantages - in this case, I hypothesize these factors will lose importance after the effective date of SFAS 123R. Therefore hypothesis 1 is, in alternative form:

11 The expected signs correlations between the independent variables used latter in the research models and stock options are displayed in Appendix A.

H1: The factors explaining the use of executive stock options change after SFAS 123R is introduced.

I next discuss how I expect the relevance of the factors identified as determinants of compensation via stock options to change from the pre-SFAS 123R period to the period after the new rule. I provide a summary of stock options determinants and their expected associations to stock option grants in Appendix A.

Financial Reporting Concerns - As discussed above, the past accounting advantage of executive stock options led firms to use them instead of other forms of compensation to reduce reported compensation expense and to boost reported earnings. Previous literature as identified the need to access capital markets and the need to meet debt covenant as circumstances under which firms became particularly concerned about earnings reporting (Carter et al. [2007]). Based on this I use as proxy for costs of reporting low earnings the extent to which the firm has access to equity and debt markets (Access_Equity and Access_Debt). I expect firms with higher financial reporting concerns to have an excessively high use of executive stock options to boost earnings in the pre-SFAS 123R period. However, after SFAS 123R I expect financial reporting concerns to became a minor driver of executive stock options.

Financial Constraints - Equity compensation requires no cash outlay, thus firms with lack of liquidity and cash constraints tend to use equity compensation to conserve cash, namely stock options, as instruments to motivate and retain employees (Core and Guay [1999]). Following Core and Guay (1999), I measure cash constraints (Cash_Cons) as common and preferred dividends minus cash flow from investing and operating activities, scaled by total assets. Also, prior studies argue that there are tax costs when firms use executive stock options, since the tax deduction are deferred until

options exercise (Bryan et al. [2006]). So, I expect that firms with higher net loss carry forwards (TLCF) are not likely to use stock options, in order to take immediate tax deduction from cash compensation. I expect these two variables to be relevant for stock options use in both periods but especially in the post-SFAS 123R period.

Agency Costs and Tenure - The higher the CEO stock ownership the lower is the agency cost problem and therefore the lower is the need for additional shareholder-manager alignment. Thus, firms with higher CEO stock ownership (CEO_Ownership) are expected to award fewer equity compensation grants (Choudhary et al. [2006]). Following Bryan et al. (2000) I include the firms' ratio of debt to assets (Debt_Assets) in my equations to mitigate the agency cost of debt. I expect a negative relation between debt to assets and stock options grants, since high leveraged firms have natural incentives and so there is less need for incentive-based compensation. Risk-averse CEOs are expected to prefer cash compensation over equity compensation. The higher the length time the CEO is in the company less risk-averse he tends to be since he feels more stable and secure [Carter et al. (2007)]. To proxy CEO tenure I use the number of years of credited service under the firm pension plan (Service_Years) and CEO age (Age). I expect these four variables to be relevant both in the pre and post-SFAS 123R periods.

Firm Performance - According to Murphy (1985) executive compensation is positively correlated with firm's performance, thus I expect a positive relation between firm performance and stock options. For measure of the firm performance in the capital markets I use the year earnings per share diluted including extraordinary items (EPS) and one year return to shareholders (1YrReturn). Another reason for the use of these variables is that due to the formula of an option, a stock price variation causes a

correspondent reaction in the value of stock options that uses that stock as underlying asset. I expect both variables to be relevant both in the pre and post-SFAS 123R periods.

Governance - Better governed firms are expected to use stock options for their justified real economic benefits and not driven by the accounting advantages of the pre-expensing period that allowed mangers to use stock options to hide their excessive pay (Core et al. [2003]). As a governance measure I use the Bebchuk Entrenchment Index (E_Index), which is a governance measure that identifies six provisions negatively correlated with firm valuation[12]. If the real reason to grant stock options by poorly governed firms is that options represent excess pay that does not depress earnings then, I expect bad governance to be positively associated with stock options grants in the pre-expensing period but after SFAS 123R be introduced I expect this variable loses significance.

Standard Economic Determinants - In larger firms it is difficult to monitor the actions of managers and so it is likely the use of mechanisms to align management and shareholders interests, therefore I expect larger firms to grant more stock options. To control for the firm size I use the total assets of the firm (T_Assets). When firms have higher growth opportunities the use of equity compensation is an important instrument to incentive managers towards the increase in firm value, similar to Carter et al. (2007) I use book to market ratio (BMratio) as a proxy for growth opportunities, the higher the BMratio the lower are the firms' growth opportunities. Thus, I expect a negative relation between this variable and stock options. Following Gerakos et al. (2005) I use the level of investment relative to competitors in the same industry (Rel_Investment) to

12 The six entrenchment provisions are Staggered Board, Limitation on Amending Bylaws, Limitation on Amending the Charter, Supermajority to Approve a Merger, Golden Parachute and Poison Pill.

establish if the use of stock options is higher when firms have investment levels lower than competitors or if firms decrease the use of stock options when firms' investment levels are higher than competitors' levels. So, I expect a negative relation between stock options and this variable.

4.2. Research Design

I test hypothesis 1 by estimating two different models, a Pooled Model and a Pre vs. Post-SFAS 123R Model. Using the Pooled Model, that comprises values from 2000 to 2006, I am able to assess the factors that where determining executive stock options grants in the entire sample period and introduce interaction effects to test the changes that occurred after SFAS 123R be introduced. As this data includes the noise of the accelerating vesting and anticipation period that occurred in 2003 and in 2004, I also estimate the Pooled Model without these two transaction years, and in fact I find differences. Additionally, in order to capture the true effect of the new rule, I apply the Pre vs. Post-SFAS 123R Model, which makes it possible to compare clearly the different executive stock options determinants between the pre and post-SFAS 123R periods without the two transaction years (2003 and 2004).

Pooled Model - Equation 1 shows the regression I estimate with the pooled data, via OLS[13]:

$$\begin{aligned} Ln\ Options = {} & \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4 Ln\ TLCF + \beta_5 Age \\ & + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS \\ & + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio \\ & + \beta_{14} Rel\ Investment + \beta_{15} DV\ Post + \beta_{16} Access\ Equity \times Post \\ & + \beta_{17} Access\ Debt \times Post + \beta_{18} Cash\ Cons \times Post + \beta_{19} Ln\ TLCF \times Post \\ & + \beta_{20} Age \times Post + \beta_{21} Service\ Years \times Post + \beta_{22} Debt\ Assets \times Post \\ & + \beta_{23} CEO\ Ownership \times Post + \beta_{24} EPS \times Post + \beta_{25} 1YrReturn \times Post \\ & + \beta_{26} E\ Index \times Post + \beta_{27} Ln\ T\ Assets \times Post + \beta_{28} BMratio \times Post \\ & + \beta_{29} Rel\ Investment \times Post + \Sigma\ Industries\ Dummies + \varepsilon \quad (1) \end{aligned}$$

13 I estimate equation 1for the total sample years and for the sample years without 2003 and 2004.

Where DV Post is an indicator variable coded as one when the observation is from after June 2005 (the date SFAS 123R became effective), and zero otherwise. All other variables are as calculated and discussed in Appendix A. To control for industry effects I construct 24 industry dummies (as there are 24 different industries in the sample) and include 23 of them in equation 1. Each of these indicator variables is coded as one when the observation is from that industry and zero otherwise. Using this model I am able to assess the factors that where determining executive stock options grants in the period before SFAS 123R (via the estimate coefficients for β_1 to β_{14}) and to evaluate the change of importance of these variables (via the estimated coefficients of the interaction terms) that came to be after the introduction of SFAS 123R.

Pre vs. Post-SFAS 123R Model - Equation 2 shows the regression I estimate for the pre and post-SFAS 123R periods, via OLS:

$$Ln\ Options_{avg(Pre\ vs\ Post\ SFAS\ 123R)} = \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4\ Ln\ TLCF + \beta_5 Age + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio + \beta_{14} Rel\ Investment + \Sigma\ Industries\ Dummies + \varepsilon \quad (2)$$

As in equation 1, I include 23 industry dummies to control for industry effects in this equation. Through this model I compute and compare two OLS regressions. The first OLS regression describes the situation before SFAS 123R and assumes the transaction effects of SFAS 123R occurred in 2003 and in 2004, using only data from 2000 to 2002 for the pre-rule period. The second OLS regression comprehends the period post-SFAS 123R and for this I use the average values between 2005 and 2006. These two OLS regressions make it possible to separately analyze the different executive stock options determinants. This research design is similar to the one of Carter et al. (2007); however my model allows to ascertain the changes in CEO

compensation drivers after SFAS 123R effective and mandatory date of implementation for all companies and also to investigate how stock options drivers (both types - real economic drivers of stock options and the determinants associated to the past accounting advantages) changes are determining decisions on stock options grants after SFAS 123R effective date of implementation.

4.3. Results

Pooled Model - Table 3 presents the results for the pooled OLS regressions with total sample years for stock options (first column), restricted stock (second column) and total compensation (third column). Equation 1 is estimated with these three dependent variables (stock options, restricted stock and total compensation)[14]. All the pooled OLS regressions are estimated using robust clustered errors (by firms) and eliminate outliers using the values of Rstudent[15].

The variables that are significant for stock options use and present expected signs in the period before SFAS 123R introduction are: Access_Debt that is positively and statistically significant revealing that when accessing debt markets firms tended to use stock options to reduce compensation expense and boost reported earnings; firm leverage (Debt_Assets) is significantly and negatively associated to stock options grants, suggesting lower stock options grants from high leveraged firms; CEO_Ownership, which is negatively and statistically associated with the use of stock options, showing a lower need for additional shareholder-manager alignment when the CEO has a high number of shares outstanding; EPS that is significant and positively associated to stock options, revealing a positive relation between firm performance and

14 In Table 3 for each OLS pooled regression (stock options, restricted stock and total compensation) there are displayed the predicted signs of the coefficients from equation 1 with each of the three dependent variables.

15 For the Rstudent outliers correction I used as elimination criteria the absolute value of 2.

stock options; Ln T_Assets also positively related to stock options confirming that larger firms grant higher levels of stock options and finally BMratio that has a significant negative impact on stock options, indicating that firms with larger growth opportunities tend to increase the use of stock options.

However in the pre-SFAS 123R period, two of the estimated coefficients have signs statistically different from the predictions, 1YrReturn and Age. 1YrReturn has a significantly negative impact on the use of stock options, a possible explanation for this outcome is that poor past performances lead firms to increase the intensity of incentive based compensation using stock options to pursue a pay for performance goal.

Concerning the introduction of the new rule, as predicted in hypothesis 1, it has significant impacts on the relevance and effects of stock options determinants: Access_Debt became negatively related to stock options, indicating that financial reporting concerns of firms accessing debt markets lose relevance determining the use of stock options. Still regarding financial reporting concerns, after SFAS 123R be introduced Access_Equity contributes positively to stock options grants, result that probably has to do with the increase in transparency and quality of financial reporting after the mandatory expensing. For firms accessing equity markets makes sense to use stock options as incentive tool to increase firm equity value and by avoiding options cut backs firms signal that in past they were not granting stock options to benefit from accounting advantages. Financial constraints (Cash_Cons) turn to be statistically positive to determine the use of stock options, indicating that when firms have cash constraints use stock options in order to attract and maintained CEOs, as expected since cash constraints are a justified real economic benefit of stock options. CEO_Ownership became statistically positive, result that reports a higher use of stock options for CEOs

with larger amounts of shares outstanding upon mandatory expensing. Finally concerning the economic determinants of stock options (Ln T_Assets, BMratio and Rel_Investment) all reinforce significance after the rule introduction.

Regarding the results from the Pooled Model without SFAS 123R transaction years (2003 e 2004), they bear small differences, the main one concerns the variable 1YrReturn, in this model 1YrReturn only becomes negatively related with stock options after the rule becomes effective, result suggesting that the negative sign of 1YrReturn in the pooled model using the total sample years is due to the inclusion of 2003 and 2004. Thus, upon imminent mandatory expensing in 2003 and 2004 firms' usage of stock options became dependent from past poor performance in order to incentive and motivate CEOs to improve earnings. This way SFAS 123R contributed to the use of real economic benefit of options, namely the creation of incentives to increase firm value.

In order to visibly capture the true SFAS 123R impacts excluding transaction effects from 2003 and 2004 I next show the Pre vs. Post-SFAS 123R Model' results[16].

Pre vs. Post-SFAS 123R - Table 4 exhibits the OLS regressions for the Pre vs. Post-SFAS 123R Model. Equation 2 is estimated with three different dependent variables. The first concerns stock options, the second is for restricted stock and the final one relates to CEO total compensation. For each one of the dependent variables two OLS regressions are estimated: one before SFAS 123R and another afterwards. All Pre and Post-SFAS 123R regressions include industry dummies as controls, are estimated using robust corrections and eliminate outliers by analyzing Rstudent[17].

Through this model one can clearly see the pre and post-SFAS 123R statistically significant variables for determine stock options use. Consistent with earlier

16 In Pre vs. Post-SFAS 123R Model the pre period counts only with 2000, 2001 and 2002.

17 For the Rstudent outliers correction I used as elimination criteria the absolute value of 2.

expectations and with the Pooled Model, financial reporting concerns associated to debt markets (Access_Debt) are positively associated to stock options grants in the pre-expensing period, showing that in order to guarantee a better access to debt markets the use of stock options to boost reported earnings was likely to happen. After SFAS 123R this variable is statistically negative, showing that firms no longer use options to improve earnings in order to reduce financial reporting costs and to meet debt covenants. Access_Equity as in the Pooled Model has a significant positive impact on stock options after the rule implementation, suggesting that firms facing options expensing when access equity markets use stock options as incentive tool to increase firm equity value even without accounting benefits, which thus not happen when firms access debt markets. Cash constraints are positively associated to stock options use, but only in the post-SFAS 123R. This indicates that firms, without options accounting benefits, started to use options in order to conserve cash allowing the preservation of CEOs motivation. Results indicate that CEO_Ownership has a negative impact on the use of stock option before the rule supporting that CEOs with high number of shares outstanding do not need intensive compensation incentives. Conversely after SFAS 123R be introduced, CEO_Ownership contributes positively to stock options use. Firm leverage (Debt_Assets), as predicted, has a negative impact in stock options usage in both periods indicating that leveraged firms are less likely to use stock options, but this factor loses significance after the rule. As for CEO tenure, in the pre-expensing period Service_Years and Age are positively related to stock options grants but only Service_Years is significant, these coefficients are according to the predictions since stock options are suitable for less risk-averse executives. After the new rule be introduced both variables are significant however the coefficients signs become

negatively related with stock options grants, so after SFAS 123R less risk-averse CEOs are likely to receive lower stock options grants.

Regarding firm performance, as predicted, EPS and 1YrReturn are both positively related to stock options in the pre-SFAS 123R period. Nonetheless, only one year return to shareholders (1YrReturn) is significant. After the rule be introduced 1YrReturn as a negative coefficient, and as in the Pooled Model this is evidence for the use of stock options as a way to increase the intensity of incentive-based compensation upon poor past performance.

Before and after the rule, firm size (Ln_T_Assets) is positively associated with stock options, so as expected larger firms are the ones granting higher levels of stock options, due to the superior need to align shareholders and mangers interests. As regards book to market ratio (BMratio) it is negatively related to stock options grants, independently from mandatory option expensing, however the coefficient impact is higher in the after rule period, telling that the use of stock options as incentive tool to increase firm value when firms have higher growth opportunities is predominant after the implementation of SFAS 123R, which is expected since in the post-rule scenario firms have reasons to use stock options for their real economic benefits.

To conclude on the impact of SFAS 123R on stock options determinants: the relevance of financial reporting concerns bears huge alterations after SFAS 123R, indicating that firms used stock options motivated by accounting benefits; financial constraints gain significance after the rule introduction; the impact of agency cost, tenure and firm performance on stock options suffer dramatic changes after SFAS 123R; firm governance (E_Index) is not explaining the use of stock options either before or after the rule; and firm size and book to market ratio are the most relevant

economic determinants of options. Overall, the findings reveal that stock options drivers have changed after SFAS 123R, which is consistent with hypothesis 1.

5. Performance Equity Grants

5.1. Hypothesis Development and Variable Definitions

As referred to in the literature review, criticism that traditional equity grants provide inadequate incentives to improve shareholders wealth is huge and several studies have proved that on theory performance options are better in incentives (Johnson and Tian [2000], Arya and Mittendorf [2005] and Bettis et al. [2008]). Thus, without accounting barriers to this type of grants I expect an increase in performance equity grants after SFAS 123R. To capture the effect of performance equity grants I use two indicator variables, DV_Opt_Perf (DV_RS_Perf), which are coded as one when the firm issued an option performance grant (restricted stock performance grant) in that year and zero otherwise.

H2: The use of performance equity grants has an impact on the decrease of the traditional stock options use.

5.2. Research Design

In order to test hypothesis 2, I employ an OLS change model between 2006 and 2003, where I am able to investigate if the change in option grants value during this period (which is negative) is correlated to the increase in the use of performance equity grants. Equation 3 shows the regression I estimate via OLS:

$$
\begin{aligned}
Change\ Ln\ Options_{(2006-2003)} &= \beta_0 + \beta_1\ Change\ Access\ Equity + \beta_2\ Change\ Access\ Debt \\
&+ \beta_3 Change\ Cash\ Cons + \beta_4 Change\ Ln\ TLCF + \beta_5 Change\ Age \\
&+ \beta_6 Change\ Service\ Years + \beta_7 Change\ Debt\ Assets \\
&+ \beta_8 Change\ CEO\ Ownership + \beta_9 Change\ EPS + \beta_{10} Change\ 1YrReturn \\
&+ \beta_{11} Change\ E\ Index + \beta_{12} Change\ Ln\ T\ Assets + \beta_{13} Change\ BMratio \\
&+ \beta_{14} Change\ Rel\ Investment + \beta_{15} Change\ DV\ Opt\ Perf \\
&+ \beta_{16} Change\ DV\ RS\ Perf + \Sigma\ Industries\ Dummies + \varepsilon \quad (3)
\end{aligned}
$$

In the OLS change model for performance equity grants I use the difference from 2006 to 2003, since 2006 is the year after SFAS 123R for all companies and 2003 because it is the older available year with performance data. To control for industry effects I include 23 industry dummies in the regressions. The regression also includes Robust and Rstudent corrections[18]. All variables are as defined in Appendix A.

5.3. Results

Table 5 exhibits the results of the estimation of equation 3. The main objective is to investigate whether the change in option grants value during this period (which is negative) is correlated to an increase in the use of performance equity grants, namely performance stock options and performance restricted stock. The estimated coefficient for DV_Opt_Perf is significantly positive. This reveals that the decrease in stock options is associated with an increase in option performance grants, which supports hypothesis 2. Thus, the introduction of SFAS 123R has led to the removal of accounting barriers from performance-based equity compensation that are considered to be better aligning incentives, in management retention and gauging managerial talent.

6. Complementary Analysis

In order to assess how the determinants of stock options are also driving the decisions on restricted stock and CEO total compensation both before and after the rule, I apply equation 1 and equation 2 to restricted stock and to CEO total compensation. The equations for the Pooled Model and for the Pre vs. Post-SFAS 123R Model for restricted stock and total compensation are in Appendix B.

18 For the Rstudent outliers correction I used as elimination criteria the absolute value of 2.

6.1. SFAS 123R Impacts on CEO Total Compensation

Based on the results of Murphy (2002), "(…) the increase in CEO pay in S&P500 industrials over the 1990's primarily reflects a dramatic growth in stock options (…)", stock options are allegedly the cause for the overcompensation problem in U.S., thus I hypothesize that stock options determinants explain CEO total compensation levels in the pre-SFAS 123R period. However, after SFAS 123R introduction, I expect total compensation drivers to become less similar from stock options ones.

Table 3 exhibits the results for the estimation of the total compensation pooled model. In this model one can see that before the rule is introduced several independent variables have similar impacts on total compensation and stock options, to be precise firm leverage (Debt_Assets), CEO_Ownership, EPS, Ln T_Assets and BMratio. The rule introduction causes only a common significant change on stock options and total compensation, which is the turn in the coefficient sign of CEO_Ownership that becomes positive, indicating that after SFAS 123R a CEO possessing a large number of shares outstanding is likely to receive higher stock options grants and overall compensation levels. After the rule introduction 1YrReturn gains positive significance explaining total compensation levels, whereas as it was seen in the pooled model for stock options the rule introduction has a negative effect in the relation between 1YrReturn and stock options use. This difference means that upon option expensing the use of total compensation continues to be positively related to firm performance while the use of stock options is dependent from poor past performance.

Through the pooled model is also possible to see that total compensation drivers where much closer to stock options determinants than to restricted stock ones before

SFAS 123R introduction, for instance firm leverage (Debt_Assets) and BMratio are both positively related to restricted stock contrary to what happens with stock options and total compensation, and EPS is not significant to explain the use of restricted stock as it is in the case of total compensation and stock options.

The results for the Pre vs. Post-SFAS 123R Model, in Table 4, reveal quite a few similarities between total compensation drivers and stock options ones and as it was expected these resemblances are predominant in the pre-SFAS 123R period. Agency costs (Debt_Assets and CEO_Ownership), firm performance (1YrReturn) and economic determinants (Ln T_Assets and BMratio) all have the same sign impacts and are significant to explain stock options and CEO total compensation levels before SFAS 123R be introduced. Comparing the determinants of stock options and total compensation, none of them present significant differences in coefficient signs, fact that reveals a great level of similarity between the variables that were explaining total compensation and stock options before options expensing.

After the rule effective implementation, stock options and total compensation determinants became different from each other. In the presence of mandatory options expensing only economic determinants (Ln T_Assets and BMratio) maintain the previous same sign and significance impacts with both stock options and total compensation. CEO tenure (Service_Years) and financial reporting concerns associated to equity markets (Access_Equity) turn to have equal effects on stock options and total compensation. Concerning agency costs, firm leverage (Debt_Assets) and CEO_Ownership lose significance explaining total compensation levels, one possible justification for this outcome is that after SFAS 123R total compensation is not mainly made of stock options, so it is likely that total compensation drivers that were similar to

the ones of stock option before the rule become different in the post-expensing period. Upon option expensing CEO total compensation and stock options drivers present few significant differences especially concerning financial constraints (Cash_Cons), which makes sense since after SFAS 123R firms facing cash constraints no longer do an abusive use of stock options to increase compensation levels and so firms with lack of liquidity tend to decrease overall compensation levels, and also involving firm performance (1YrReturn) evident and explained earlier from the comparison of the pooled models for total compensation and stock options.

Consistent with my expectations, in what concerns the impact of stock options drivers on CEO total compensation, most of them have the same sign correlations and significances with total compensation than they have with stock options, but they tend to become different after SFAS 123R, period when total compensation is no longer mainly made of stock options.

6.2. SFAS 123R Impacts on Restricted Stock

According to past authors restricted stock has been rarely used and stock options have been used in excess, thus core drivers for stock options are unlikely to explain the use of restricted stock (Carter et al. [2007] and Brown and Lee [2007]), as so I expect that stock options and restricted stock grants determinants to be different.

Results from estimation of the pooled restricted stock model (in Table 3) are quite different; confirming that drivers for restricted stock are different from stock options ones, supporting my expectations. Before the rule impact, from the variables that are significant for restricted stock only firm size (Ln T_Assets), CEO_Ownership and CEO Age present equal significant estimation signs with stock options. At the same time Service_Years (the other proxy for CEO tenure) has a different impact on these

two types of equity-based compensation, leaving the equal effect of CEO Age between the two compromised[19]. The impact of SFAS 123R introduction on restricted stock reveals a significant negative relation between bad governance (E_Index) and restricted stock use, while the governance measure even though presents the expected sign is not significant explaining stock options use either in pre or in post-period. Another significant difference after the rule is the negative impact of Rel_Investment on restricted stock and its positive effect on stock options, this means that when firms have investment levels superior to their competitors their use of restricted stock decreases while they continue to grant stock options. Subsequent to SFAS 123R, financial constraints (Ln TLCF and Cash_Cons) have equal coefficient signs correlations with restricted stock and stock options which is an important change since without accounting barriers firms facing financial constrains begins to use restricted stock as an alternative to stock options, but still the positive impact of SFAS 123R in Cash_Cons is not sufficient to change the significance of this variable.

Referring now to Table 4, in the Pre vs. Post-SFAS 123R Model for restricted stock, it is possible to see that stock options determinants are different from restricted stock ones, however after the rule be introduced there are a number of changes in restricted stock determinants and some resemblances between the factors explaining stock options and restricted stock come out. Before the rule come to be effective CEO_Ownership and firm size (Ln T_Assets) were the only variables equally affecting restricted stock and stock options. Despite the same pre-SFAS 123R impact of CEO_Ownership, after the rule this variable continues to be negatively related to

19 The negative coefficient of Service_Years with restricted stock is within the spirit of Lambert and Larcker (2004), that points restricted stock has a better choice for risk-averse employees. Higher Service_Years corresponds to the case of senior CEOs that tend to be less risk averse, explaining the negative relation between Service_Years and restricted stock.

restricted stock while it turns to be positively related with both stock options and total compensation levels. Another significant difference between restricted stock explanatory factors and the ones from stock options and total compensation is the positive relation between restricted stock use and firm leverage (Debt_Assets) that even increases significance after the rule implementation. In the pre-SFAS 123R period CEO tenure (Age and Service_Years) signs impact on restricted stock were significantly different from what happens with stock options, however after the effective implementation of the rule CEO tenure as equal significant effects on restricted stock and stock options. Regardless of the visible differences in most of restricted stock independent variables, upon options expensing several factors explaining restricted stock bear important alterations and turn out to have the same coefficient signs as they have with stock options. Namely, financial constrains (Cash_Cons and Ln TLCF), firm performance (1YrReturn) and BMratio, although from these factors only Ln TLCF became significant immediately after the rule implementation.

Overall results reveal that restricted stock determinants are quite different from stock option ones, supporting my expectations. An interesting result is that even after the rule (when stock options no longer benefit from accounting advantages) the drivers for these two types of equity compensation remain significantly different, even though there is a visible approximation in coefficient signs.

7. Conclusions

The main objective of this paper is to investigate the change in factors associated with firms' decisions to grant stock options after the introduction of SFAS 123R. One of the factors considered is the existence of performance conditions in new grants. Concurrently, this study examines if these factors are also driving the decisions on

restricted stock grants and on CEO total compensation. In my study I use a sample of 385 firms from the S&P 500 from 2000 to 2006 and compensation data for the firms' CEOs.

Consistent with past literature (Brown and Lee [2007] and Carter et al. [2007]) I find statistically evidence for the decrease in stock options use and for the increase in restricted stock grants associated to SFAS 123R. I have also find that stock options grants still bear a huge decrease after SFAS 123R effective date of implementation for all companies, so after December 2005.

Empirical findings proved significance of hypothesis 1, that assumes a change in stock options drivers after SFAS 123R. Results from the Pre vs. Post-SFAS 123R Model, that excludes the anticipation and accelerating vesting effects (2003 and 2004), show that financial reporting concerns associated to debt markets were determining the use of stock options in the pre-SFAS 123R period but after SFAS 123R this factor as a negative significance explaining stock options. This result proves that pre-SFAS 123R factors behind the choice of stock options were associated to the previous accounting advantages but after mandatory expensing the impact of these factors change. Also as a result from this model I find that financial constraints (Cash_Cons), agency costs (Debt_Assets and CEO_Ownership), firm performance (1YrReturn) and economic determinants (firm size and BMratio) are important to determine stock options either before and after the rule, establishing that these are the justified real economic drivers for stock options use. In line with nowadays critics of traditional stock options that suggest an increase in the use of performance-based equity compensation, the third model, the Change Model for Performance Grants, finds evidence consistent with hypothesis 2, confirming that the increase in option performance grants had a significant

impact in the decrease of traditional stock options. From this result I can conclude that SFAS 123R has the potential to alter the effective design of CEO compensation that finally demands a lot more thought than simply awarding “plain-vanilla” options and means the removal of accounting barriers from more efficient equity-based compensation as it is the case of performance equity grants. As for complementary analysis, I find evidence, in the Pooled and in Pre vs. Post-SFAS 123R Models, that stock options drivers are quite different from restricted stock ones, both in the pre and post-SFAS 123R periods. In pre-SFAS 123R period restricted stock was being rarely used due to the favorable accounting treatment of stock options, thus stock options drivers were expected to be completely different from the ones explaining restricted stock use. However, after SFAS 123R, stock options do not benefit from accounting advantages and still the determinates for these two types of equity compensation remains different, even though there is a visible approximation tendency. This leave for future research the discover of the true restricted stock drivers. In what concerns the impact of SFAS 123R on CEO total compensation, consistent with Carter et al. (2007) I find no evidence of an impact of SFAS 123R in the level of CEO total compensation, just in the composition of this variable. I also find that total compensation drivers were similar to stock options ones, however SFAS 123R introduction differentiates CEO total compensation determinants from the variables that are explaining stock options use upon mandatory expensing. Future research could collect a broader set of data, gathering more than 2 years of observations after the rule. This way it would be possible to analyze the medium run impacts of SFAS 123R on the choice between stock options and restricted stock and on CEO total compensation levels.

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Appendix A – Hypothesis Development and Variables Definitions

Variables	Determinants of Stock Options	Expected Sign Pre SFAS 123R	Importance After SFAS 123R	Variable Description	Data Source
Access_Equity	Financial Reporting Concerns	+	**No**	Access to Equity Markets	Compustat Variables [(year increase in cstk+ caps+pstk-tstk)/at] (i)
Access_Debt	Financial Reporting Concerns	+	**No**	Access to Debt Markets	Compustat Variables [(year increase in dlc+dltt)/at] (ii)
Cash_Cons	Financial Constrains	+	**Yes**	Cash Constrains	Compustat Variables [(dvc+dvp-ivncf -oancf)/at] (iii)
TLCF	Financial Constrains	-	**Yes**	Net Operating Loss carry-fowards	Compustat Variable tlcf
Age	Tenure	+	**Yes**	CEO Age	Execucomp Variable AGE
Service_Years	Tenure	+	**Yes**	Number of years of credited service under the firm pension plan	Execucomp Variable RET_YRS
Debt_Assets	Agency Costs	-	**No**	Debt to Assets Ratio	Compustat Variables [(dlc+dltt)/at] (iv)
CEO_Ownership	Agency Costs	-	**Yes**	Percentage of total shares outstanding held by the executive	Execucomp Variable SHROWN_TOT_PCT
EPS	Firm Performance	+	**Yes**	Earnings per share diluted including extraordinary items	Compustat Variable epsfi
1YrReturn	Firm Performance	+	**Yes**	1 year total return to shareholders with reinvestement of dividends	Execucomp Variable TRS1YR
E_Index	Governance	+	**?**	Governance measure	Bebchuck Entreachment Index
DV_Opt_Perf	Performance Grants	-	**Yes**	Dummy variable set equal to one if the firm has grant any performance option and zero otherwise	Collected information from Statement of Changes of Beneficial Ownership of Securities (Form4)
DV_RS_Perf	Performance Grants	-	**Yes**	Dummy variable set equal to one if the firm has grant any performance restricted stock and zero otherwise	Collected information from Statement of Changes of Beneficial Ownership of Securities (Form4)
T_Assets	Firm Size Control	+	**Yes**	Total Assets	Compustat Variable at
BMratio	Growth Opportunities	-	**Yes**	Book to market ratio	Compustat Variables [(seq-pstk)/(csho x prccf)] (v)
Rel_Investment	Investment Level	-	**Yes**	Investment level relative to industry competitors	Compustat Variables [(capx + xrd + xad)/at] - industry median (vi)
Options	**Dependent Variable**	.	.	Option Grants	Execucomp Variable OPTION_AWARDS_BLK_VALUE until 2006 and in 2006 Execucomp Variable OPTION_AWARD_FV
RS	**Dependent Variable**	.	.	Restricted Stock Grants	Execucomp Variable RSTKGRNT
T_Compensation	**Dependent Variable**	.	.	Total Compensation	Execucomp Variable TDC1*

* TDC1 calculated under the 1992 reporting format comprises the following: Total Value of Stock Options Granted (using Black-Scholes), Total Value of Restricted Stock Granted, Salary, Bonus, Other Annual, Long-Term Incentive Payouts, and All Other Total. Used in the sample for 2000, 2001, 2002, 2003, 2004 e 2005.

TDC1 calculated under the 2006 reporting format comprises the following: Grant-Date Fair Value of Option Awards, Salary, Bonus, Grant-Date Fair Value of Stock Awards, Non-Equity Incentive Plan Compensation, Deferred Compensation Earnings Reported as Compensation, and Other Compensation. Used in the sample for 2006.

This Table contains the variable descriptions and the expected associations of the dependent and independent variables used in the research models. The sign predictions and the hypothesized associations are referent to stock options grants, although the Table presents also the description of RS and T_Compensation, since these variables are used in the research models for restricted stock and for total compensation.

(i) Where: cstk – common stock, caps – capital surplus, pstk – preferred stock, tstk – treasury stock, at – total assets

(ii) Where: dlc – debt current liabilities, dltt – debt long term liabilities, at – total assets

(iii) Where: dvc – common dividend, dvp – preferred dividend, ivncf – cash flow from investment activities, oancf – cash flow from operating activities, at – total assets

(iv) Where: dlc – debt current liabilities, dltt – debt long term liabilities, at – total assets

(v) Where: seq – shareholders equity, pstk – preferred stock, csho – common shares outstanding, prccf – final price fiscal year

(vi) Where: capx – capital expenditures, xrd – R&D expense, xad – advertising expense, at – total assets

Appendix B – Models for Restricted Stock and Total Compensation [20]

Restricted Stock

Pooled Model [21]

$$\begin{aligned} Ln\ RS = {} & \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4 Ln\ TLCF + \beta_5 Age \\ & + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS \\ & + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio \\ & + \beta_{14} Rel\ Investment + \beta_{15} DV\ Post + \beta_{16} Access\ Equity \times Post \\ & + \beta_{17} Access\ Debt \times Post + \beta_{18} Cash\ Cons \times Post + \beta_{19} Ln\ TLCF \times Post \\ & + \beta_{20} Age \times Post + \beta_{21} Service\ Years \times Post + \beta_{22} Debt\ Assets \times Post \\ & + \beta_{23} CEO\ Ownership \times Post + \beta_{24} EPS \times Post + \beta_{25} 1YrReturn \times Post \\ & + \beta_{26} E\ Index \times Post + \beta_{27} Ln\ T\ Assets \times Post + \beta_{28} BMratio \times Post \\ & + \beta_{29} Rel\ Investment \times Post + \Sigma\ Industries\ Dummies + \varepsilon \quad (4) \end{aligned}$$

Pre vs. Post-SFAS 123R Model

$$\begin{aligned} Ln\ RS_{avg(Pre\ vs\ Post\ SFAS\ 123R)} = {} & \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4 Ln\ TLCF \\ & + \beta_5 Age + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS \\ & + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio \\ & + \beta_{14} Rel\ Investment + \Sigma\ Industries\ Dummies + \varepsilon \quad (5) \end{aligned}$$

Total Compensation

Pooled Model [21]

$$\begin{aligned} Ln\ T\ Compensation = {} & \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4 Ln\ TLCF + \beta_5 Age \\ & + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS \\ & + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio \\ & + \beta_{14} Rel\ Investment + \beta_{15} DV\ Post + \beta_{16} Access\ Equity \times Post \\ & + \beta_{17} Access\ Debt \times Post + \beta_{18} Cash\ Cons \times Post + \beta_{19} Ln\ TLCF \times Post \\ & + \beta_{20} Age \times Post + \beta_{21} Service\ Years \times Post + \beta_{22} Debt\ Assets \times Post \\ & + \beta_{23} CEO\ Ownership \times Post + \beta_{24} EPS \times Post + \beta_{25} 1YrReturn \times Post \\ & + \beta_{26} E\ Index \times Post + \beta_{27} Ln\ T\ Assets \times Post + \beta_{28} BMratio \times Post \\ & + \beta_{29} Rel\ Investment \times Post + \Sigma\ Industries\ Dummies + \varepsilon \quad (6) \end{aligned}$$

Pre vs. Post-SFAS 123R Model

$$\begin{aligned} Ln\ T\ Compensation_{avg(Pre\ vs\ Post\ SFAS\ 123R)} = {} & \beta_0 + \beta_1\ Access\ Equity + \beta_2\ Access\ Debt + \beta_3 Cash\ Cons + \beta_4 Ln\ TLCF \\ & + \beta_5 Age + \beta_6 Service\ Years + \beta_7 Debt\ Assets + \beta_8 CEO\ Ownership + \beta_9 EPS \\ & + \beta_{10} 1YrReturn + \beta_{11} E\ Index + \beta_{12} Ln\ T\ Assets + \beta_{13} BMratio \\ & + \beta_{14} Rel\ Investment + \Sigma\ Industries\ Dummies + \varepsilon \quad (7) \end{aligned}$$

20 All the variables are as defined in Appendix A.

21 Where DV Post is a dummy variable set equal to one if the observation is from after June 2005, the effective date of SFAS 123R, and zero otherwise. The Pooled Model is estimated with the total sample years and without SFAS 123R transaction years (2003 and 2004).

Table 1 – Sample Selection and Industry Classification

Panel A - Sample Selection	
Observations from ExecuComp data basis for 2000 until 2006	3,189
Less: observations missing necessary Compustat data	221
Less: observations missing necessary Corporate Governance data	273
Final number of observations	2,695
Final sample of firms in each year	**385**

Panel B - Industry Classification

SPINDEX	Industry description	Number of firms	% of firms in each industry	Mean industry % change in Options	Mean industry % change in RS	Mean industry % change in Total Compensation	Mean industry % change in Options/Total Compensation	Mean industry % change in RS/Total Compensation
1010	**Energy**	196	7.3%	-12.1%	135.2%	49.2%	-41.1%	5.7%
1510	**Materials**	168	6.2%	-26.5%	230.1%	20.9%	-17.2%	12.1%
2010	**Capital Goods**	224	8.3%	-20.9%	-42.2%	10.1%	-11.4%	-9.9%
2020	**Commercial & Professional Services**	56	2.1%	-35.3%	-3.6%	14.1%	-15.8%	-4.0%
2030	**Transportation**	63	2.3%	-8.0%	11.6%	65.3%	-18.1%	-6.4%
2510	**Automobiles & Components**	14	0.5%	-7.2%	-100.0%	117.4%	-24.0%	-8.7%
2520	**Consumer Durables & Apparel**	140	5.2%	-26.5%	275.8%	31.5%	-22.1%	16.9%
2530	**Consumer Services**	70	2.6%	-54.8%	243.9%	30.4%	-40.7%	6.5%
2540	**Media**	77	2.9%	-74.6%	440.8%	-35.3%	-32.8%	17.8%
2550	**Retailing**	140	5.2%	-25.1%	94.5%	32.0%	-20.9%	5.2%
3010	**Food & Staples Retailing**	49	1.8%	-30.3%	434.5%	23.6%	-19.9%	27.4%
3020	**Food, Beverage & Tobacco**	140	5.2%	-46.1%	-6.9%	-8.7%	-18.7%	0.3%
3030	**Household & Personal Products**	35	1.3%	-56.4%	59.1%	-23.2%	-17.5%	18.5%
3510	**Health Care Equipment & Services**	154	5.7%	-24.1%	28.8%	10.1%	-18.1%	1.7%
3520	**Pharmaceuticals, Biotechnology & Life Sciences**	147	5.5%	-40.3%	45.0%	-11.3%	-19.4%	3.9%
4010	**Banks**	133	4.9%	-9.7%	193.2%	49.0%	-20.3%	6.5%
4020	**Diversified Financials**	119	4.4%	-17.4%	226.0%	23.2%	-14.8%	20.5%
4030	**Insurance**	119	4.4%	-39.0%	377.4%	15.8%	-21.2%	12.8%
4040	**Real Estate**	21	0.8%	-20.6%	-5.0%	8.2%	-9.2%	-3.2%
4510	**Software & Services**	140	5.2%	-23.0%	31.1%	-15.5%	-6.2%	3.4%
4520	**Technology Hardware & Equipment**	140	5.2%	-83.0%	221.6%	-71.5%	-25.0%	16.4%
4530	**Semiconductors & Semiconductor Equipment**	105	3.9%	-44.5%	5642.5%	-18.8%	-22.0%	21.2%
5010	**Telecommunication Services**	35	1.3%	-83.5%	1101.7%	-33.3%	-36.9%	31.5%
5510	**Utilities**	210	7.8%	-30.8%	11.8%	17.8%	-13.3%	-0.6%
Total		**2695**	**100%**	**-35%**	**402%**	**13%**	**-21%**	**8%**

The changes in Panel B are between the period after SFAS 123R (mean of 2005 and 2006) and the period before the rule and transaction period (mean of 2000, 2001 and 2002). Thus negative changes indicate decreases in the variables.

The Execucomp report format for the variable used for total compensation (TDC1) has changed in 2006 and in the new format the value of restricted stock grants appears included in the stock awards fair value. Thus, the segregated value of restricted stock grants in 2006 is missing and in the post-SFAS 123R period the variable restricted stock comprehends only values for 2005.

Table 2 – Descriptive Statistics

Panel A - Mean of CEO compensation in Pre and Post SFAS 123R			
Variables	Pre SFAS 123R (2000-2002) Mean	Post SFAS 123R (2005-2006) Mean	Two Sample Mean Comparison t test
CEO Stock Options Grants ($ thousands)	7,027	3,344	t = -4.534
CEO Restricted Stock Grants ($ thousands)	938	1,885	t = 3.941
CEO Total Compensation ($ thousands)	11,052	13,655	t = 0.844
CEO Stock Options Grants as % of Total Compensation	53.7%	28.6%	t = -15.632
CEO Restricted Stock Grants as % of Total Compensation	7.9%	15.4%	t = 5.706

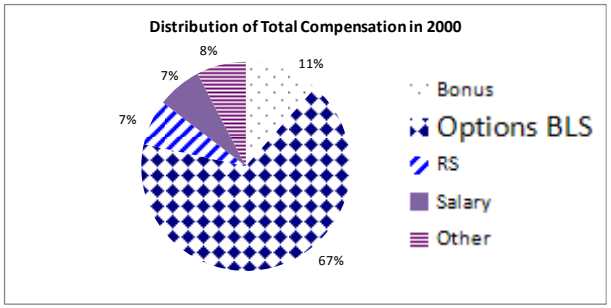
In the particular case of restricted stock the post period only comprises values for 2005, since in the 2006 Execucomp report format restricted stock values are included inside stock grants fair value and as so the segregated values for restricted stock are missing.

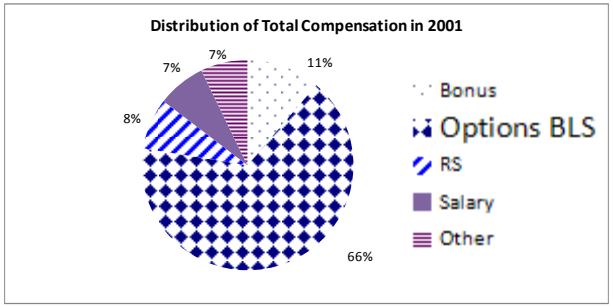
Panel C - Descriptive Statistics on the variables of the models			
Variables	Mean	Median	SD
Options ($thousands)	5,080.947	2,479.843	15,372.330
RS ($thousands)	1,153.486	0.000	3,647.496
T_Compensation ($thousands)	11,274.820	6,875.276	46,455.160
Access_Equity	0.042	0.003	0.317
Access_Debt	0.038	0.000	0.103
Cash_Cons	-0.020	-0.019	0.091
TLCF ($thousands)	249,110.800	0.000	984,380.300
Age	56.000	56.000	6.000
Service_Years	10.369	0.000	13.802
Debt_Assets	0.242	0.229	0.171
CEO_Ownership	0.008	0.000	0.029
EPS	1.959	1.790	2.931
1YrReturn	0.162	0.119	0.429
E_Index	2.584	3.000	1.183
DV_Opt_Perf	0.017	0.000	0.130
DV_RS_Perf	0.031	0.000	0.174
T_Assets ($thousands)	35,800,000.000	9,402,160.000	109,000,000.000
BMratio	0.398	0.353	0.278
Rel_Investment	0.008	0.000	0.054

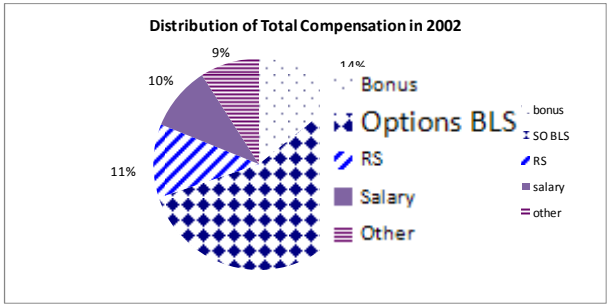
These descriptive statistics comprises the values from 2000 until 2006.

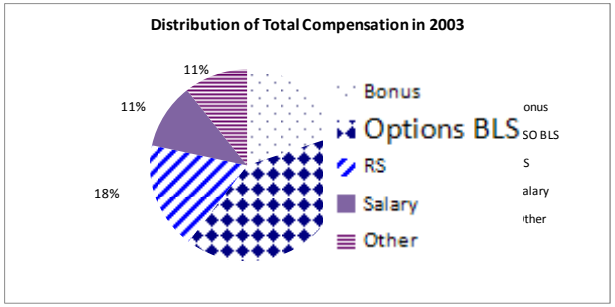
All the variables are as defined in Appendix A.

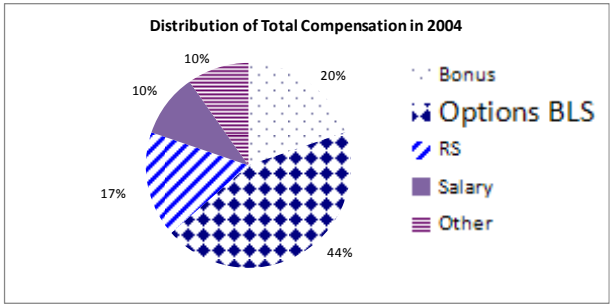
Panel B – Evolution of CEO Total Compensation

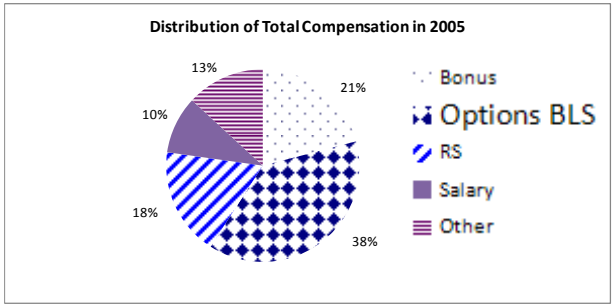


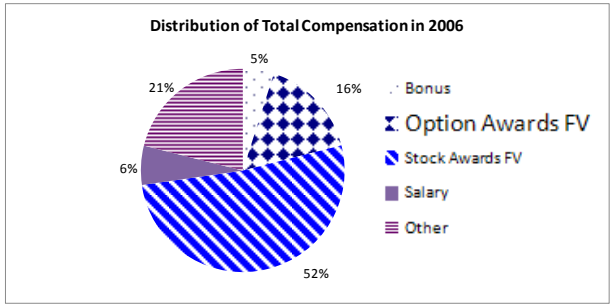












The variables in the pie charts correspond to the components of total compensation according to the definition of the Execucomp variable TDC1. From 2006 on, the Execucomp report format changes and therefore the components of TDC1 bear small alterations as it can be seen in 2006 pie chart. Have in mind that the totals from this new report format are not completely comparable to the previews report format, but they are the only available.

Panel D – Correlation Matrix for the Stock Options Models' Variables

	Options	Access_ Equity	Access_ Debt	Cash_ Cons	TLCF	Age	Service_Years	Debt_ Assets	CEO_ Ownership	EPS	1YrReturn	E_Index	T_Assets	BMratio	Rel_Investment
Options	1	**0.0890**	0.0570	0.0328	0.0263	-0.0234	-0.0494	**-0.0802**	0.0063	-0.0398	-0.0347	**-0.0937**	0.0225	-0.0556	0.0155
Access_Equity	0.0026	1	**0.4598**	0.0108	0.0076	-0.0433	-0.0496	-0.0204	0.0009	-0.0409	**0.0689**	-0.0015	-0.0267	-0.0557	0.0347
Access_Debt	0.0219	0.0281	1	**0.0759**	-0.0275	-0.0121	-0.0022	**0.0861**	-0.0084	0.0603	0.0453	0.0230	0.0159	-0.0416	0.0511
Cash_Cons	0.0086	**0.1474**	**0.1711**	1	-0.0089	0.0327	0.0612	**0.2471**	-0.0059	0.0060	-0.0204	0.0557	**0.1314**	**0.1617**	-0.0036
TLCF	0.0565	0.0165	-0.0210	**-0.0718**	1	-0.0362	-0.0387	0.0329	-0.0181	**-0.1006**	-0.0204	**-0.0782**	0.0302	0.0265	0.0034
Age	-0.0435	0.0051	-0.0023	0.0343	-0.0664	1	**0.1400**	0.0236	**0.1594**	0.0030	-0.0099	-0.0447	0.0442	0.0509	0.0030
Service_Years	0.0264	**-0.0998**	0.0129	0.0442	**-0.1008**	**0.1115**	1	**0.1506**	**-0.1161**	**0.0793**	-0.0476	0.0411	0.0175	**0.0713**	0.0130
Debt_Assets	**-0.1113**	-0.0402	**0.1063**	**0.2306**	-0.0152	0.0156	**0.2218**	1	**-0.1312**	0.0135	0.0117	0.0671	**0.1577**	0.0592	**-0.0682**
CEO_Ownership	0.0114	**0.0947**	0.0165	-0.0430	0.0067	**0.1868**	**-0.1810**	**-0.1697**	1	-0.0462	0.0154	**-0.1350**	-0.0500	-0.0542	0.0597
EPS	-0.0319	**-0.1530**	**0.1676**	**0.0612**	**-0.1092**	0.0460	**0.1341**	0.0642	**-0.0737**	1	**0.1645**	0.0676	**0.1677**	-0.0175	-0.0220
1YrReturn	**-0.0978**	0.0539	0.0302	-0.0611	-0.0198	-0.0113	-0.0472	-0.0164	0.0624	**0.2007**	1	0.0422	-0.0276	**-0.1912**	-0.0226
E_Index	**-0.0872**	-0.0067	0.0466	0.0511	-0.0353	-0.0402	**0.0696**	**0.1084**	**-0.0995**	**0.1023**	0.0566	1	**-0.1092**	**0.1144**	-0.0281
T_Assets	**0.1635**	**-0.1513**	**0.0927**	**0.2625**	-0.0406	0.0659	**0.2087**	**0.2003**	**-0.2631**	**0.2775**	-0.0576	-0.0629	1	**0.1151**	-0.0438
BMratio	**-0.1536**	0.0111	0.0024	**0.2532**	-0.0141	0.0628	**0.0719**	**0.1484**	-0.0586	**0.0743**	**-0.1670**	**0.1555**	**0.3552**	1	**-0.1921**
Rel_Investment	0.0445	0.0448	0.0299	0.0190	-0.0150	0.0261	0.0626	-0.0524	0.0106	0.0218	-0.0300	-0.0294	-0.0486	**-0.1945**	1

These correlations comprise data for 2000 until 2006 and correspond to the Spearman correlation coefficients (lower triangle) and Pearson correlation coefficients (upper triangle). The bold text indicates significance at the 0.05 levels or better. All variables are as defined in Appendix A.

Table 3 – Pooled Models

Variables	Stock Options Dependent variable Ln Options			Restricted Stock Dependent variable Ln RS			Total Compensation Dependent variable Ln T_Compensation		
	Predicted Sign	Coefficient	t-value	Predicted Sign	Coefficient	t-value	Predicted Sign	Coefficient	t-value
Intercept	?	0.255	0.20	?	-3.464 *	-1.70	?	2.179 ***	5.01
Access_Equity	+	-0.001	-0.01	?	-0.384 ***	-2.95	?	0.141 ***	3.23
Access_Debt	+	1.049 **	2.54	?	0.782	0.99	?	0.189	1.05
Cash_Cons	+	0.392	0.65	+	-0.929	-0.94	-	-0.292	-1.35
Ln TLCF	-	0.010	0.80	-	-0.012	-0.61	-	-0.002	-0.56
Age	+	-0.026 **	-2.33	+	-0.048 ***	-3.08	+	0.002	0.66
Service_Years	+	0.005	1.08	+	-0.025 ***	-2.68	+	-0.004 **	-1.96
Debt_Assets	-	-1.675 ***	-3.04	-	1.059	1.24	-	-0.523 ***	-3.07
CEO_Ownership	-	-17.864 ***	-4.82	-	-10.272 ***	-3.76	-	-3.611 ***	-4.69
EPS	+	0.049 **	1.99	+	0.047	1.45	+	0.024 **	2.51
1YrReturn	+	-0.470 ***	-3.17	+	0.393 ***	2.73	+	0.028	0.69
E_Index	+	-0.013	-0.22	-	0.097	0.88	+	0.001	0.06
Ln T_Assets	+	0.505 ***	8.15	+	0.515 ***	4.92	+	0.392 ***	18.28
BMratio	-	-1.343 ***	-4.17	-	0.338	0.87	-	-0.516 ***	-6.32
Rel_Investment	-	1.199	0.95	-	0.783	0.35	-	0.668	1.45
Post	-	-7.984 ***	-3.38	+	3.713	1.08	?	-0.842 **	-2.00
Access_Equity*Post	-	1.505 **	2.17	?	-0.278	-0.23	?	0.064	0.42
Access_Debt*Post	-	-1.385	-0.80	?	0.341	0.15	?	-0.447	-1.19
Cash_Cons*Post	+	4.377 **	2.16	+	0.160	0.06	-	0.492	1.42
Ln TLCF*Post	-	0.041 *	1.67	-	0.066 *	1.91	-	0.009 **	1.97
Age *Post	+	-0.009	-0.33	+	0.006	0.18	+	0.003	0.72
Service_Years*Post	+	-0.013	-1.37	+	-0.019	-1.23	+	-0.003	-1.27
Debt_Assets*Post	-	0.407	0.39	-	0.989	0.74	-	0.518 ***	3.07
CEO_Ownership*Post	-	25.682 ***	4.53	-	-14.759	-1.52	-	4.414 ***	2.76
EPS*Post	+	0.021	0.32	+	-0.101	-1.49	+	-0.004	-0.32
1YrReturn*Post	+	-0.792	-1.41	+	0.107	0.14	+	0.276 ***	2.82
E_Index*Post	?	0.097	0.74	?	-0.357 *	-1.91	+	0.030	1.35
Ln T_Assets*Post	+	0.410 ***	3.60	+	-0.086	-0.48	+	0.025	1.21
BMratio*Post	-	-1.951 **	-2.22	-	-0.648	-0.60	-	-0.079	-0.65
Rel_Investment*Post	-	5.389 *	1.74	-	-10.319 **	-2.09	-	-0.040	-0.08
Industry Dummies		Yes			Yes			Yes	
Robust Cluster for Firms		Yes			Yes			Yes	
Outliers Rstudent Correction		Yes			Yes			Yes	
N		**2356**			**2177**			**2463**	
Adjusted R^2		**0.2911**			**0.1273**			**0.4068**	

*, **, *** significant at the 0.1, 0.05, 0.01 levels (two-tailed).

This model comprises data for the total sample years from 2000 until 2006.

The dependent variables are calculated with the following functional form: Ln (1 + Dependent Variable), due to the observations with zero values.

The variable Post is a dummy variable, set equal to one if the observation is from 2006 or from after June 2005 and zero otherwise.

The interaction variables of the explanatory variables with Post, can evaluate the change in relevance of an explanatory variable after the SFAS 123R effective date of implementation. The significance of this type of variables can be measured by the t-value as a normal independent variable. The coefficient is given by the sum of the explanatory variable coefficient and the interaction variable coefficient.

The Pooled Model without SFAS 123R transaction years (2003 and 2004) are suppressed for expositional convenience.

Table 4 – Pre vs. Post-SFAS 123R Models

Variables	Stock Options Dependent variable Ln Options				Restricted Stock Dependent variable Ln RS				Total Compensation Dependent variable Ln T_Compensation			
	Pre-SFAS 123R		Post-SFAS 123R		Pre-SFAS 123R		Post-SFAS 123R		Pre-SFAS 123R		Post-SFAS 123R	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
Intercept	-1.174	-0.68	-3.297	-1.19	-2.322	-1.01	0.026	0.01	0.991 *	1.71	2.151 ***	4.43
Access_Equity	0.311	1.01	2.013 *	1.85	-0.678	-1.52	-1.153	-0.57	0.335 ***	2.96	0.397 **	2.49
Access_Debt	1.493	0.98	-3.168 *	-1.72	1.380	0.52	0.184	0.06	-0.249	-0.44	0.358	0.94
Cash_Cons	-1.367	-0.75	8.066 ***	3.48	-0.661	-0.30	1.119	0.40	-1.150 *	-1.73	-0.941 ***	-2.62
Ln TLCF	-0.011	-0.60	0.040	1.63	-0.061 **	-2.48	0.039	1.04	0.002	0.36	0.007 *	1.76
Age	0.004	0.26	-0.042 *	-1.71	-0.032 *	-1.78	-0.060 *	-1.75	0.010 *	1.76	0.000	-0.09
Service_Years	0.014 **	2.07	-0.047 ***	-2.89	-0.022 **	-2.12	-0.055 **	-2.08	-0.003	-1.16	-0.012 ***	-4.10
Debt_Assets	-1.562 **	-2.27	-1.792	-1.53	0.167	0.15	3.031 *	1.91	-0.479 *	-1.88	-0.229	-1.15
CEO_Ownership	-17.828 ***	-3.95	11.890 *	1.77	-9.667 ***	-3.32	-28.479 ***	-4.36	-3.018 ***	-3.07	0.788	0.41
EPS	0.041	0.94	0.101	1.38	0.044	0.90	-0.074	-0.82	0.034 **	2.01	0.022 *	1.72
1YrReturn	1.208 ***	3.08	-3.161 ***	-3.12	0.696	1.33	-0.423	-0.36	0.481 ***	3.25	0.312 **	2.10
E_Index	0.045	0.60	0.026	0.20	0.004	0.04	-0.090	-0.47	-0.006	-0.22	0.023	1.04
Ln T_Assets	0.485 ***	5.70	0.716 ***	5.37	0.400 ***	3.46	0.412 **	2.05	0.427 ***	14.35	0.396 ***	15.42
BMratio	-1.305 ***	-2.76	-3.254 ***	-3.39	0.350	0.74	-0.726	-0.60	-0.297 **	-2.23	-0.605 ***	-3.89
Rel_Investment	1.470	0.81	1.199	0.45	1.337	0.57	-5.955	-1.61	1.289 *	1.88	0.663	1.32
Industry Dummies	Yes		Yes		Yes		Yes		Yes		Yes	
Robust	Yes		Yes		Yes		Yes		Yes		Yes	
Outliers Rstudent Correction	Yes		Yes		Yes		Yes		Yes		Yes	
N	**360**		**365**		**365**		**383**		**366**		**372**	
Adjusted R^2	**0.2824**		**0.2427**		**0.1294**		**0.0658**		**0.5075**		**0.5089**	

*, **, *** significant at the 0.1, 0.05, 0.01 levels (two-tailed).

The dependent variables are calculated with the following functional form: Ln (1 + Dependent Variable), due to the observations with zero values.

The Pre-SFAS 123R period is the mean of 2000, 2001 and 2002. The Post-SFAS 123R period comprises 2005 and 2006 mean values.

Table 5 – Change Model for Performance Grants

Variables	Change between 2006 and 2003		
	Coefficient		t-value
Intercept	-3.957	***	-4.78
Access_Equity	0.716		0.50
Access_Debt	-2.392		-0.72
Cash_Cons	4.608	**	2.42
Ln TLCF	0.180	***	3.52
Age	0.038	***	2.88
Service_Years	-0.047	***	-3.11
Debt_Assets	-5.703	***	-3.12
CEO_Ownership	-18.112	**	-2.47
EPS	0.031		0.72
1YrReturn	-1.627	***	-3.70
E_Index	-0.326		-0.95
Ln Opt_Number			
DV_Opt_Perf	2.233	**	2.06
DV_RS_Perf	0.392		0.55
Ln T_Assets	0.126		0.17
BMratio	-2.781		-1.63
Rel_Investment	-9.845	*	-1.87
Industry Dummies	Yes		
Robust	Yes		
Outliers Rstudent Correction	Yes		
N	**367**		
Adjusted R^2	**0.1673**		

*, **, *** significant at the 0.1, 0.05, 0.01 levels (two-tailed).

The dependent variable in this model is the change between 2006 and 2003 of the variable Ln (1 + Options). The independent variables of the model are also the change between 2006 and 2003 and all the variables are defined as in Appendix A.