Does Sound Corporate Governance Curb Managers' Opportunistic Behavior of Exploiting Inside Information for Early Exercise of Executive Stock Options?

Chin-Chen Chien
Department of Accounting
National Cheng Kung University
Mail Address: 1, University Road, Tainan City, Taiwan 701 -1
Phone：+886-06-2757575 #35400

Cheng-Few Lee
Rutgers University, U.S.A
Mail Address: Room 141 - School of Business Janice H. Levin Building Rockafeller Road Piscataway, New Jersey 08854-8054, USA
Phone：(732) 445-3907

She-Chih Chiu**
Department of Accounting
National Cheng Kung University
Mail Address: 1, University Road, Tainan City, Taiwan 701 -1
Phone：+886-0918277717
Email Address: skygreen2007@hotmail.com

****Contact Author**

Does Sound Corporate Governance Curb Managers' Opportunistic Behavior of Exploiting Inside Information for Early Exercise of Executive Stock Options?

1. Introduction

This study readdresses the issue raised by Bartov and Mohanram (2004) who claim that managers have exploited inside information about the reversal of discretionary accruals for early exercise of employees' stock options (ESOs). They further maintain that managers could mislead the market by earnings management on account of asymmetric information. We revisit and further extend this issue by subsuming firms' dividend policy and the components of discretionary accruals for several reasons. First of all, cash dividends are one of the crucial factors that influence managers' decision of early exercising ESOs. The value of an option contains intrinsic value and time value. Managers who engage in early exercise may deem it wise to trade the time value for the intrinsic value. Nevertheless, the adjustment of spot price not only consists of earnings but also dividends. In his seminal paper, Merton (1973) suggests that American call options should never be exercised prior to maturity unless the benefit of dividend yield received exceeds the cost of remaining time value forgone. This proposition has been substantiated by Whaley (1982), Harvey and Whaley (1992), and Diz and Finucane (1993). Yet there was few studies aiming to explore the effect of dividend on the exercise of executive stock options until Bettis et al. (2005) who find that options are exercised earlier in firms with higher dividend yields. Therefore, the issue whether or not large dividends induce abnormally large exercise of ESOs is still left open.

In addition, we consider managers' earnings management as an unceasing pattern. Bartov and Mohanram (2004) argue that managers attempt to inflate earnings by manipulating discretionary accruals prior to exercise for boosting the firms' stock prices and exploit the inside information about the reversal of discretionary accruals to satisfy their personal benefit. In line with their argument, managers' ESOs plan is assumed to be highly connected with the performance of reported earnings. To be awarded with wads of money and more stock options, managers have incentives to persistently engage in earnings management, or the reversal of discretionary accruals may lead to counter-effect on earnings, and in turn, ruin their bonus. In addition, since accruals are likely to be mispriced by the capital market (Xie 2001; Beneish and Vargus 2002; Fairfield et al. 2003 Cheng and Thomas 2006), agency problems and market inefficiency together make earnings management additive in the course of pursuing personal interest and stock performance, and hence it is implausible that managers would cease earnings management after exercise of ESOs. To decipher our conjecture, we decompose discretionary accruals into incremental discretionary accruals in the current year and the reversal of prior

discretionary accruals in a manner similar to Baber et al. (2011) and Balvers et al. (2000). We believe such decomposition provides some insight for this unceasing pattern.

Furthermore, extant studies have evidenced the relation between corporate governance and firms' dividend policy, but few studies link this relation with executives' early exercise decision. Therefore, it is our interest to explore the association among corporate governance, dividend policy, and abnormal earnings management when senior managers consider abnormally largely exercising their executive stock options granted.

This study contributes literatures in several ways. First, we resort to the textbook rule of option pricing and bring firms' dividend policy into managers' early stock option decision. More specifically, we propose a counter argument that cash dividends, not inside information about the reversal of discretionary accruals, drive manager to early exercise their stock options. In addition, we argue that once wallowing in discretionary accrual manipulation, managers have no incentive to leave the reversal of discretionary accruals unattended. If they know the existence of discretionary accruals reversal, they will gauge the extent of reversal and contrive an increment to reach the targeted earnings level. Abnormal reversal also occurs when the incumbent managers are replaced or there is a chance for "taking a big bath". The former sustains because the new broom has no scruple in cleaning the house by writing off bad accounts, writing down over-valued assets, etc. Certainly they are more than happy to let discretionary accrual reverse so that, like their predecessors, they can have more rooms to manipulate earnings in the future. The latter occurs when managers select income-decreasing discretionary accruals for maximizing their expected future bonus award during the financial crunch (Healy 1985). In a chaos they seize the chance and dump the wastes as irate men and blame that it is not them but the market that plummets the profit or drive the firm into red. Once the economy recovers, they will be refreshed and newly dressed like bridegrooms waiting for their brides. However, the claim that managers will allow the reversal of discretionary accruals in the normal business course is out of touch. Moreover, decomposition of discretionary accruals into new discretionary accruals initiated and reversal of previous discretionary accruals as suggested by Baber et al. (2011) provides more insight into managers' opportunistic behaviors. Failure to identify the components of discretionary may lead to an inability of exploring the issue that whether managers exploit the inside information of the reversal of discretionary accruals or deliberately subdue incremental discretionary accruals to tailor earnings numbers after exercise. Discretionary accruals reversal is beyond managers' control in the double-booking entry system while new discretionary accruals initiated are within their discretion. Therefore, we believe this decomposition helps future studies to explore managers' opportunistic behavior.

The findings provide some evidence of the role of mean-reverting nature of discretionary accruals on earnings management, and show a connection between firms' dividend policy and managers' large ESOs exercise. We find no evidence on managers' successful timing discretionary accruals for large ESOs exercises, but managers may maintain relatively higher level of discretionary accruals prior to exercise, and such a higher level of discretionary accruals in the pre-exercise years is mainly sustained by positive new discretionary accruals initiated. We also find that managers try to depress earnings by negative new discretionary accruals initiated in the post-exercise years. In addition, we observe that executives seek to influence the firm's stock

performance by dividend policy. Firms with good corporate governance have significantly higher level of dividends prior to exercise. Furthermore, firms with abnormally large ESOs exercises have significantly higher amount of cash dividends in the post-exercise years, and this finding is not affected by firms' corporate governance quality.

The next section provides hypotheses development. Section 3 discusses our empirical design and data. Section 4 provides the empirical results. Section 5 provides the conclusion.

2. Hypotheses Development

2.1 Reversal of Discretionary Accruals

The first conjecture of this study is that discretionary accruals reversal and incremental discretionary accruals initiated are crucial factors in managers' decision of ESOs exercise. Option value is composed of intrinsic value and time value. Intrinsic value is the difference between stock price and strike price of stock option. Generally, intrinsic value would not be less than zero because it is unlikely that the option holder would exercise a call with a strike price of $40 if the same stock is trading in the market at $15. Managers who want to maximize the intrinsic value of their stock options would make efforts on pushing the firm's financial performance and stock prices at least prior to the expiry of their ESOs. Scilicet, assuming there is no dividend issued by the company, the bottom line for the managers is ensuring the expected intrinsic value to be higher than the call premium paid; otherwise they may not exercise their options. Therefore, the exercise decision is correlated with both the stock price level and the time remaining until the options expire. Huddart et al. (2003) find that exercise is strongly associated with recent stock price movements, market-to-strike ratio, proximity to vesting dates and remaining time to maturity, volatility, and the employee's level within the company. One way for management to influence the firm's share price is by utilizing discretionary accruals. Subramanyam (1996) employs abnormal discretionary accruals as proxy for earnings management, and evidences that discretionary accruals predict future profitability and dividend changes. Some studies claim that the reversal nature of discretionary accruals may affect managers' ability of opportunistic behavior (Bartov and Mohanram 2004; Baber et al., 2011).

Two questions emerged from these studies are that "can managers successfully dominate the firm's stock performance with discretionary accruals?" and that "what are the roles of discretionary accruals reversal and incremental discretionary accruals initiated in the earnings management? For receiving more stock option grants, self-interest managers would continually manipulate firms' financial performance in an unceasing pattern. Therefore, we conjecture that managers in this vicious cycle would consider discretionary accruals reversal and tune up incremental discretionary accruals initiated in their abnormal earnings management for ESOs exercise. If abnormal earnings management is a factor of opportunistic ESOs exercise, we expect the new discretionary accruals initiated to be positively associated with managers' abnormally large ESOs exercise prior to exercise.

2.2 Dividends, Corporate Governance, and Management Compensation Packages

It is widely recognized in financial theory and research that dividends play an important role in option valuation and are the incentive for early exercise (Diz and Finucane, 1993). Merton (1973) suggests that American call options on a non-dividend-paying stock should never be exercised prior to maturity, and if the stock pays sufficient numbers of dividends, then early exercise can be justified, which means that rational early exercise can only occur for call options on dividend-paying stocks if the benefit of dividend yield received exceeds the cost of remaining time value forgone. Time value is the value in excess of the stock price minus the exercise price, and it will be abandoned when option holders sell options to other investors before maturity. The dividend can be obtained by exercising and holding the acquired stocks prior to the ex-dividend date.

Subsequent studies provide similar findings with respect to the role of dividends on ESOs. Whaley (1982) suggests that the magnitude of the early exercise premium is influenced by the amount of the dividend payment. Harvey and Whaley (1992) provides additional evidence and concludes that from a practical standpoint of pricing S&P 100 index options, knowing the amount and timing of S&P 100 index cash dividends appears to be critical. Executive stock options are subject to American call options, and many characteristics of traded call options are applicable to executive stock options. The primary aim for the exercise of a traded call option is to capture the dividend payment from the underlying stocks. As with traded call options, a possible reason for managers to make early exercise decision on executive stock options is to receive dividends that are large enough to discarding the option's remaining time value. Likewise, it is profitable for managers to exercise stock options prior to maturity when the benefit of receiving dividend payments exceeds the remaining time value foregone. Recent empirical study supports the important role of dividend in managers' exercise decision as well (Bettis et al. 2005; Aboody et al. 2008). For example, Bettis et al. (2005) investigate the characteristics of exercise behavior and find that options are exercised earlier in firms with higher dividend yields.

Managers may exercise their options for receiving dividends. Lambert et al. (1989) suggests that the addition of a stock option to a manager's compensation package provides incentives for executives to reduce corporate dividends because executive stock options are generally not dividend-protected. The payment of a dividend, ceteris paribus, reduces the value of the option. This suggests that managers have incentives to reduce dividends in order to increase the expected value of their stock options. Are dividends always pernicious to managers' stock options awards? Empirical studies nowadays report mixed findings of the interrelationship among corporate dividend policy, taxes, and the value of the firm (Miller and Scholes 1978 and 1982; Litzenberger and Ramaswamy 1982; Jakob and Ma. 2007; Blouin et al. 2011). Some studies examine the clientele effect of firm's dividend policy and provide that clientele adjustments occur when firms change their dividend policy, which means that a company's stock price increases or decreases according to changes in the company's dividend policies (Richardson, et al. 1986; Graham and Kumar. 2006). Other studies provide evidence that firms

use dividend policy to signal outsiders regarding the stability, cash flow, and growth prospects of the firm (Miller and Rock 1985; Collins et al. 1996). As a result, self-interest executives may also consider the dividend clientele effect on potential individual and institutional investors and utilize dividend policies to raise the stock performance prior to the exercises, which is beneficial even if the stock performance is beneath their expectation because they can also receive cash dividends proportional to the shares granted. Hence, cash dividends provide inducement that triggers managers' decisions of early exercise of stock options particularly in the case of a hefty one-time dividend paid by the company.

Nevertheless, corporate governance mechanism can be a crucial factor in managers' early exercise decision. Weaker corporate governance mechanism provides chances for managers to opportunistically exploit inside information for personal interests. By contrast, sound corporate governance mechanism provides better shareholder protection and can effectively curb insiders' ability to acquire private control benefits, which reduces their incentives to mask firm performance (Leuz et al. 2003). In addition, functional corporate governance can effectively inhibit earnings management (Klein 2002; Xie et al.2003) and lead to managers' more rational behavior of ESOs exercises. It is also suggested that more dividend payments would be guaranteed under stronger corporate governance because stronger investor protection helps minority shareholders force managers to disgorge excess cash through dividend payouts (La Porta et al. 2000; Mitton 2004). As a result, managers of firms with better corporate governance mechanism are less likely to behave opportunistically for personal interests. Instead, what they early exercise for is cash dividends. Accordingly, we conjecture that managers of firms with weak corporate governance mechanism tend to opportunistically exploit inside information for personal interests. Alternatively, we conjecture that managers of firms with sound corporate governance mechanism exercise their stock options for receiving dividends.

3. Methodology and Data

3.1. Research Design

We begin with a set of sample firms with abnormally large option exercises similar to Bartov et al. (2004)[1]. The size of option exercises is measured as the proportion of compensation from stock-option exercise, averaged across the five most highly compensated executives. Abnormally large option exercises are identified by examining the ratio of this proportion with the average from the past up to three years depending on data availability. Firms for which this ratio increases by more than fifty percent are classified as having abnormally large exercises. For each firm with abnormally large ESOs exercise, we only identify the year corresponding to the highest record with respect to its own historical exercise patterns as the exercise year (year 0).

[1] We follow their work for two reasons. First of all, abnormally large exercises represent managers' greatest incentive to opportunistically time exercises driven by private information. Prior studies use all option exercises to implement their tests ignoring the possible effect of magnitude of exercises on their results, which may be the cause for conflicting results in the literature associated with executive stock option exercise. Secondly, as the proposition in traded option theory, managers have incentive to exercise stock options before maturity to capture large dividend payment, especially more large exercises more likely to optimize their expected utility.

We then match a firm-year with abnormally high exercise with a firm that in the exercise year (year 0) has normal exercises based on the same industry (on the basis of two-digit SIC code), belonging to the same stock-return quintile in year – 1, closest market capitalization, and is not in the test sample in the current or prior years. All firms in the test and control sample are required to have complete information from years -2 to +1. Because stock-option-exercise data provided by S&P *Execucomp* database is only on an annual basis, we can not precisely pinpoint the option exercise during year 0.

We employ discretionary accruals estimated by performance-matched Jones model developed by Kothari et al. (2005) as the proxy for abnormal earnings management. To further probe the first hypothesis, we develop a model that decomposes discretionary accruals into reversion of discretionary accruals and new discretionary accruals initiated at the current year. This decomposition helps us to further comprehend the real nature of abnormal earnings management. We then perform descriptive statistics, analysis of variance, and regression analysis to examine the hypotheses. Finally, we conduct several additional checks for the robustness of our study.

3.2. Variable Measurement

We measure cumulative abnormal returns with four-factor model, presented as equation (1), developed by Carhart (1997). All components of the four-factor model including firm's monthly returns are compounded starting from the beginning of the third month after the end of the prior fiscal year to ensure that the financial information has been released.

$$R_i - R_f = \alpha_0 + \alpha_1 (R_m - R_f) + \alpha_2 SMB + \alpha_3 HML + \alpha_4 UMD + \varepsilon \quad (1)$$

where:

$R_i - R_f$ = Annualized return for the *i*th firm in excess of the annualized monthly T-bill return.

R_m = Value weighted annualized monthly return on the market portfolio that consists of all NYSE, AMEX, and NASDAQ firms.

SMB = Small Minus Big. Annualized monthly returns on value-weighted and zero investment factor mimicking portfolios for firm-size.

HML = High Minus Low. Annualized monthly returns on value-weighted and zero investment factor mimicking portfolios for book-to-market equity.

UMD = Up Minus Down. Annualized monthly returns on value-weighted and zero investment factor mimicking portfolios for one-year momentum in stock returns, respectively.

We evaluate abnormal earnings management by performing performance-matched modified Jones Model developed by Kothari et al. (2005)[2]. This model is expressed as equation (2). The prediction error from Equation (2) in year t serves as the proxy for discretionary accruals in year t. Nondiscretionary accruals are the difference between total accruals and discretionary accruals.

$$\frac{TACC_{t,ij}}{A_{t-1,ij}} = \alpha_1 \frac{1}{A_{t-1,ij}} + \alpha_2 \frac{PPE_{t,ij}}{A_{t-1,ij}} + \alpha_3 \frac{\Delta REV_{t,ij}}{A_{t-1,ij}} + \alpha_4 ROA_t + \varepsilon \quad (2)$$

Where:

TA_{tij} = Total accruals in year *t* of the *i*th firm in the *j*th industry, measured as the difference between income before extraordinary items and cash flow from operations in year *t*

$A_{t-1,ij}$ = Total assets at the beginning of year *t* of the *i*th firm in the *j*th industry

PPE_{tij} = Gross property, plant, and equipment at the end of the year *t* of the *j*th firm in the *j*th industry

ΔREV_{tij} = Revenues in year *t* less revenues in year *t-1* of the *i*th firm in the *j*th industry

$ROA_{t,ij}$ = Return on assets at year *t* for of the *i*th firm in the *j*th industry.

We further decompose discretionary accruals into reversion of discretionary accruals and new discretionary accruals initiated at the current year. The following derivation shows our idea of discretionary accruals reversal. In contrast with the random walk process where changes were independent through time, a mean reverting process is characterized by discretionary accruals that have some degree of memory about previous discretionary accruals changes. From the balance sheet viewpoint in Barber et al. (2011), also shown as Equation (3), the balance of cumulative discretionary accruals at the end of year t contains the balance of discretionary accruals at the end of the year t-1, reversion of discretionary accruals at year t, and new discretionary accruals initiated at year t. By relocating Equation (3) we obtain Equation (4) which represents that the incremental discretionary accruals (DA_t-DA_{t-1}) consist of new discretionary accruals initiated at year t and reversion of discretionary accruals at year t. We let DA_t-DA_{t-1} equals CDA_t. Substituting CDA_t into Equation (4) yields Equation (5) which represents that the new discretionary accruals initiated at year t equal to the sum of incremental discretionary accruals at year t and the reversion of discretionary accruals at year t.

[2] In contrast to Bartov et al. (2004), ROA in Kothari et al. (2005) is not scaled by total assets at the beginning of year t. We use return on assets (ROA) not deflated by total assets in performing performance-matched modified Jones model proposed by Kothari et al. (2003), because deflating ROA, a ratio, by total assets may yield unwarranted results.

$$DA_t = DA_{t-1} + NewDA_t - RDA_t \quad (3)$$

$$DA_t - DA_{t-1} = NewDA_t - RDA_t \quad (4)$$

Let $CDA_t = DA_t - DA_{t-1}$

Then $NewDA_t = CDA_t + RDA_t$ (5)

Where DA_t refers to discretionary accruals at year *t*. It is estimated by the performance-matched modified Jones model as specified in Equation (2). $NewDA_t$ refers to the new discretionary accruals at year *t*. RDA_t refers to the reversion of discretionary accruals at year t.

The RDA_t in Equation (5) comes from the reversal of most of the CDA_{t-1} at a reversal speed rate, said φ, and this relation is expressed as Equation (6):

$$RDA_t = \varphi * CDA_{t-1} \quad (6)$$

Where RDA_t refers to the reversion of discretionary accruals at year t. φ refers to reversal speed measure at year t. By substituting Equation (6) into Equation (5) yields Equation (7). Equation (7) is then rearranged as equation (8) for performing regression analysis. The reversion of discretionary accruals and the new discretionary accruals can be captured by regressing CDA_t on CDA_t of equation (8) without intercept term.

$$NewDA_t = CDA_t + \varphi * CDA_{t-1} \quad (7)$$

$$CDA_t = (-\varphi) * CDA_{t-1} + NewDA_t \quad (8)$$

Where φ refers to reversion speed measure at year t and ranges from seventy to eighty (Baber et al. 2011). If the coefficient φ is positive, there is downward mean reversion. Alternatively, if the slope coefficient φ is negative, there is upward mean reversion. Scilicet, positive (negative) coefficient of $(-\varphi) * CDA_{t-1}$ in Equation (8) refers to income-increasing (income-decreasing) *RDAt*. *CDAt* and CDA_{t-1} refer to the change of abnormal discretionary accruals at year t and t-1, respectively. *NewDAt*, captured by the residual term of the regression, refers to the incremental discretionary accruals at year *t*. For simplicity, we use a reversal speed rate of eighty percent in determining *RDAt*.

3.3. Empirical Model

To explore whether managers' abnormally large ESOs exercise is related to abnormal earnings management or dividend policy and varies with event windows, we perform equation

(9) for the event year window (-2, -1), (-1, 0), (0, 1), and (1, 2), respectively. Year 0 is the exercise year. We employ abnormal discretionary accrual (*DA*) as the dependent variable to examine the difference in abnormal discretionary accrual between the firms with abnormally large ESOs exercise and the firms with normal ESOs exercise. *DA* in Equation (9) is also replaced by reversal of discretionary accruals (*RDA*) and new discretionary accruals initiated (*NewDA*), respectively, for understanding the difference in discretionary accrual components between these two samples. Additionally, we employ cash dividends (*CashDiv*) and dividend payout ratio (*DP*) to examine the association between cash dividend policy and managers' abnormal ESOs exercise. We expect positive relation between abnormally large exercise and new discretionary accruals initiated (*NewDA*) prior to exercise if abnormal earnings management is a factor of ESOs exercise. Likewise, if dividend policy is a factor of ESOs exercise, we expect positive relation between abnormally large exercise and dividends at the exercise year. To further investigate the role of corporate governance in managers' early exercise decision, we create an indicator variable, named *GI*, that takes value of one if the matched firm is subject to poor corporate governance; 0 otherwise, and develop equation (10). We perform equation (10) for the event year window (-2, -1), (-1, 0), (0, 1), and (1, 2), respectively.

$$DependentVariables = \mu + \alpha_1 EXERCISE_t + \varepsilon \tag{9}$$

$$DependentVariables = \mu + \alpha_1 EXERCISE + \alpha_2 GI + \alpha_3 EXERCISE * GI + \varepsilon \tag{10}$$

where:

Dependent Variables:

DA_{tij}= Discretionary accruals at year t of the *i*th firm in the *j*th industry.

RDA_{tij}= Reversal of discretionary accruals at year t of the *i*th firm in the *j*th industry

$NewDA_{tij}$= Discretionary accruals initiated at year t of the *i*th firm in the *j*th industry

$CashDiv_{ti}$ = Logarithm of cash dividends at year *t* of the *i*th firm.

DP_{ti}= Dividend payout ratio of the *i*th firm at year *t*.

Independent Variable:

Exercise= An indicator variable that takes value of one if the firm's percentage of ESOs exercise is over 50%; 0 otherwise.

GI= An indicator variable that takes value of one if the firm's corporate governance score is above the mean value of total matched sample; 0 otherwise. Higher score means weaker corporate governance.

To comprehend either abnormal earnings management or dividend policy increase the likelihood of large ESOs exercise decision, we focus on the sample with abnormally large ESOs exercise and develop the following logistic regression models. Equation (11) examines whether discretionary accruals trigger managers' abnormal ESOs exercise. Equation (12) subdivides discretionary accruals into reversion of discretionary accruals and new discretionary accruals initiated at the current year. Equation (13) examines whether cash dividend policy is associated

with managers' abnormal ESOs exercise.

$$ExerESO = \alpha_0 + \alpha_1 DA_{tij} + \varepsilon \quad (11)$$

$$ExerESO = \alpha_0 + \alpha_1 RDA_{tij} + \alpha_2 NewDA_{tij} + \varepsilon \quad (12)$$

$$ExerESO = \alpha_0 + \alpha_1 CashDiv_{tij} + \alpha_2 \Delta CashDiv_{tij} + \alpha_3 GI + \alpha_4 \Delta CashDiv_{tij} * GI + \varepsilon \quad (13)$$

where:

ExerESO= An indicator variable an indicator variable that takes value of one if the event year of the test sample is coded 0 (exercise year); 0 otherwise.

DA_{tij}= Discretionary accruals at year t of the *i*th firm in the *j*th industry.

RDA_{tij}= Reversal of discretionary accruals at year t of the *i*th firm in the *j*th industry

$NewDA_{tij}$= Discretionary accruals initiated at year t of the *i*th firm in the *j*th industry

$CashDiv_{ti}$ = Cash dividends at the year *t* of the *i*th firm scaled by the market value of equity at the beginning of year t for firm i.

$\Delta CashDiv_{ti}$= The difference between the cash dividends of firm *i* at year *t* and that of year $t-1$ scaled by the market value of equity at the beginning of year *t* for firm *i*.

GI= An indicator variable that takes value of one if the firm's corporate governance score is above the mean value of total matched sample; 0 otherwise. Higher score means weaker corporate governance.

3.4. Sample Selection

The preliminary sample contains all stock option exercises from *ExecuComp* during the period from 1992 to 2010. We begin with 1992 due to lack of compensation data from *ExecuComp* prior to 1992. We obtain stock prices, stock returns, and financial data from the Center for Research in Security Prices (*CRSP*) and S&P *Compustat* database. Data for performing four-factor model is obtained from the data library provided by Kenneth R. French[3]. We employ the governance index (G_Index) provided by *Institutional Shareholder Services* (ISS), which is based on twenty four governance provisions and is commonly used by prior literatures (Doidge, et al. 2007; Bhagat and Bolton. 2008; Bebchuk, et al. 2009), as proxy for corporate governance ratings. G_Index, developed by Gompers et al. (2003) and proxies for the level of shareholder rights, has a possible range from 1 to 24. Higher G_index means lower shareholders rights and implies poor corporate governance. In contrast, lower G_index means higher shareholders rights and implies better corporate governance. We exclude observations with missing value necessary to construct the regression variables. Firms for which this ratio increases by more than fifty percent are classified as having abnormally large exercises. When

[3] We appreciate Dr. French kindly provided data. The website is listed as follows http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/

the frequency of a firm's exercise of stock options is more than once during the sample period, we only observe the year corresponding to the highest record with respect to its own historical exercise patterns (up to three years if available). We remove annualized raw returns that are higher than one thousand percent or lower than negative one thousand percent, winsorize top and bottom one percentile of stock returns and dividend payout ratios, and remove firms with less than seven firm-years and without consecutive years for ensuring that any evidence supporting our predictions is not driven by outliers and changes to the composition of the sample over time (Pittman et al., 2004).

Table 1 reports the sample selection procedure. There are 26,943 firm-years with valid compensation data during the period from 1992 to 2010 on the *Execucomp* database corresponding to 2,765 distinct firms. There are 108,969 firm-years with valid financial and stock returns data during the period from 1991 to 2010 on the *Compustat* and the *CRSP* database corresponding to 13,694 distinct firms. We merge compensation data with financial, stock returns, and corporate governance data, and obtain 58,469 firm-years corresponding to 9,368 distinct firms available. We then delete observations with missing value, less than seven firm-years, and without consecutive years, which leads to 29,775 firm-years corresponding to 3,342 firms. Firms with exercise below cutoff, belonging to abnormally large ESOs exercise but with missing value in any of the event year (-2, +1), and with no corresponding counterparts are removed from the sample. Collectively, these filters yield a sample of 4,934 observations corresponding to 480 distinct firms.

Table 1 Sample Selection

Criterion	**Number of Firm Years**	**Number of Distinct Firms**
Preliminary financial and stock return data available on *Compustat* and *CRSP* merged with Compensation data available on *Execump* and corporate governance data from *ISS* (1992-2010)	58,469	9,368
Less: Observations with missing value, less than seven firm-years, and without consecutive years	28,694	6,026
Data available	29,775	3,342
Less: firms with exercise below cutoff and firms attributing to abnormally large exercise but with missing value in any of the event year (-2, +1).	22,274	2,611
Data with abnormally large exercise	7,501	731
Less: control firms unavailable	3,030	302
Final matched sample of large ESO exercise	4,934	480

Table 2 summarizes industry and time distribution. Panel A of Table 2 reports the distribution of the distinct firm-years across industry. The results in Panel A shows that the sample spans forty nine different two-digit SIC codes and that there is little evidence of industry clustering in the sample. Among the industries that are well represented are Chemicals and Allied Products (SIC 28), Electronic and Other Electric Equipment (SIC 36), and Business Services (SIC 73) with 150 (9.1 percent), 519 (10.5 percent), and 510 (10.3 percent) observations, respectively. Panel B of table 2 outlines the distribution of the abnormally high option exercises over the sample period. It should be noted that the sample period extends from 1992 to 2010, but we only identify the firm's highest record with respect to its own historical exercise patterns. Panel B shows that the highest records of abnormally large ESOs exercises for the matched sample center on the period between 2001 and 2008. There is an increasing trend over time for the sample sub-period from 1999 to 2004, and a decreasing trend thereafter. The increasing trend may be attributed to the increasing coverage of *Execucomp* over the decade and the increasing popularity of executive stock options. The decreasing trend could be attributed to the issuance of Statement of Financial Accounting Standard 123 (R) in 2004 which requires the entity to recognize stock-based compensation in their income statements after June 15, 2005.

Table 2 Industry and Time Sample Distribution

Panel A: Industry Distribution

Two-Digit SIC Code	Firm-years	% of Sample	Two-Digit SIC Code	Firm-years	% of Sample	Two-Digit SIC Code	Firm-years	% of Sample
10	30	0.6	**33**	98	2.0	**56**	88	1.8
12	14	0.3	**34**	77	1.6	**57**	18	0.4
13	176	3.6	**35**	329	6.7	**58**	62	1.3
14	11	0.2	**36**	519	10.5	**59**	63	1.3
15	10	0.2	**37**	131	2.7	**61**	33	0.7
16	11	0.2	**38**	302	6.1	**62**	67	1.4
17	11	0.2	**39**	66	1.3	**63**	105	2.1
20	151	3.1	**40**	32	0.6	**64**	14	0.3
22	22	0.4	**42**	63	1.3	**67**	8	0.2
23	65	1.3	**44**	22	0.4	**70**	18	0.4
24	33	0.7	**45**	22	0.4	**72**	22	0.4
25	33	0.7	**47**	11	0.2	**73**	510	10.3
26	77	1.6	**48**	81	1.6	**75**	9	0.2
27	95	1.9	**49**	300	6.1	**78**	11	0.2
28	450	9.1	**50**	136	2.8	**79**	39	0.8
29	66	1.3	**51**	44	0.9	**80**	66	1.3
30	50	1.0	**53**	44	0.9	**82**	11	0.2

31	30	0.6	**54**	33	0.7	**87**	41	0.8
32	22	0.4	**55**	38	0.8	**99**	44	0.9

Table 2 Industry and Time Sample Distribution (continue)

Panel B: Time Distribution of ESOs Exercise

Year	Number of Firms	% of Sample	Year	Number of Firms	% of Sample
2001	54	11.3	**2005**	77	16.0
2002	43	9.0	**2006**	84	17.5
2003	63	13.1	**2007**	64	13.3
2004	83	17.3	**2008**	12	2.5

4. Empirical Results

4.1 Descriptive Statistics

Table 3 reports descriptive statistics. Panel A of Table 3 compares test sample with control sample in the event year. The mean market value for test sample and for control sample is approximately $8.9 billion and $1.7 billion, respectively, which shows that the difference in market capitalization between the two samples is economically significant. The mean revenue and assets are approximately $6.5 billion and $9.7 billion for test sample, respectively, and $2.3billion and $6.6 billion for control sample, respectively. The difference in assets between test sample and control sample is statistically insignificant, which provides that test and control firms are effectively matched on firm size. The top five executives for test sample gained around $112 million from stock option exercise, which is significantly higher than that for control sample ($11million). Mean percentages of stock-option exercises for test sample and for control sample are 40.7% and 4.1%, respectively. The differences in mean stock-option exercises between test sample and control sample are statistically significant. The results in Panel A grant us confidence in the sample selection and the matching procedure.

Panel B of Table 3 further compares the event year with the non-event years of test sample. The results show that that the mean percentage of exercises in the event year is around 40.7%, which is significantly higher than the mean exercise in the non-event years (21.8%). Overall, both cross-sectional comparison and time-series comparison suggest that the sample selection procedure successfully identifies firm-years belonging to abnormally large ESOs exercise.

Table 3 Descriptive Statistics

Panel A: Comparison of Test Firms and Control Firms in the Event Year

	Mean			Median		
Variable	**Test firm**	**Control Firm**	**Difference (t-stat.)**	**Test firm**	**Control Firm**	**Difference (z-stat.)**
Market Capitalization ($millions)	8,885	1,732	7,153 (5.25)***	1,638	193	1,445 (16.63)***
Revenue ($millions)	6,593	2,288	4,305 (3.84)***	1,517	206	1,311 (14.48)***
Assets ($millions)	9,728	6,579	3,148 (0.72)	1,434	223	1,211 (14.03)***
Amount from ESOs exercise ($millions)	112	11	101 (2.29)**	7	0	7 (25.49)***
% Compensation from ESOs	40.7	4.1	36.6 (27.45)***	37.8	0	37.8 (25.42)***

Panel B: Comparison of Test Firms and Control Firms in Event Year and Event Years

	Mean			Median		
Variable	**Event Year**	**Non-Event Years**	**Difference (t-stat.)**	**Event Year**	**Non-Event Years**	**Difference (z-stat.)**
% Compensation from ESOs	40.7	21.8	18.9 (15.91)***	37.8	12.2	25.6 (16.79)***
Amount from ESOs exercise ($millions)	112	83	29 (0.66)	7	2	5 (10.59)***

Notes:

*refers to at significant 10% levels; ** refers to at significant 5% levels; *** refers to significant at 1% levels, using a two-tailed test. t-statistic/z-statistics for pooled difference of means/Wilcoxon sign-rank test. Market capitalization, Revenue, Assets, and Amount from Stock Exercise are all in $million. Assets refers to total assets as of fiscal-year end (*Compustat* data item # 6), and revenue refers to total net annual sales (*Compustat* data item # 12). The percentage of Compensation from ESOs is determined by dividing Exercise Value Realized (*CRSP* data item OPT_EXER_VAL) by Total Compensation (*CRSP* data item TDC2). Panel A compares 480 event-years with corresponding control years. Panel B compares 480 event-years with 4,454 non-event years in the three years prior to the event year for test firms.

Table 4 reports the results of the size-industry-performance-adjusted stock-return tests for the full sample and for subsamples grouped by firm size. Panel A of Table 4 indicates that the mean of raw returns for test sample in years -3, -2, -1, and 0 (year 0 is the exercise year), are 2.67 %, 3.43 %, 4.46 %, and 1.48 %, respectively, and 1.11%, 5.09%, 4.52%, and 1.47% for control sample, respectively. The raw returns of the test firms are ascending prior to exercise, and are slightly lower but statistically insignificant than that of the control firms. In a comparison of pre-exercise period and post-exercise period, the mean returns for both test and control sample in post-exercise years are slightly lower than that in the pre-exercise years (-0.16 for test sample and -0.50 for control sample, respectively), and there is no significant difference in change between the two samples. The mean excess returns determined by four-factor model for test sample in years -3, -2, -1, and 0, are 0.91 %, 1.60 %, 3.26 %, and 0.86 %, respectively, and 0.02%, 3.06%, 3.17%, and 0.36% for control sample, respectively. Test sample has positive and ascending excess returns prior to exercise, and its excess returns are slightly higher in most of the pre-exercise years and are slightly lower in year 1. In a comparison of pre-exercise period and post-exercise period, we observe that both test and control firms reap higher exercise in the pre-exercise years (-0.77 for test sample and -0.72 for control sample, respectively), but the differences are insignificant statistically.

Panel B of Table 4 further categorizes the firms into small, medium, and large size based on their market capitalization quintiles for investigating possible size effect driven by small firms (Carpenter et al., 2001; Bartov et al., 2004). Small firms are those in the first and the second quintile. Median firms are those in the third and fourth quintile. Large firms are those in the fifth quintile. The evidence in Panel B suggests that small firms have tiny effect on the findings.

Table 4: Stock Returns around Abnormally Large Option Exercises

Panel A: Annual Returns

		Mean Raw Returns				Abnormal Returns			
Year	n	Test Firms	Control Firms	(T)-(C)	T-Stat.	Test Firms	Control Firms	(T)-(C)	T-Stat.
-3	415	2.67%	1.11%	1.56%	1.12	0.91%	0.02%	0.89%	0.7
-2	480	3.43	5.09	-1.66	-1.23	1.60	3.06	-1.46	-1.12
-1	480	4.46	4.52	-0.06	-0.31	3.26	3.17	0.10	0.10
0	480	1.48	1.47	0.01	1.32	0.86	0.36	0.50	0.49
1	480	2.09	2.80	-0.71	-0.51	1.20	1.65	-0.45	-0.34
2	446	3.59	2.16	1.42	1.08	1.39	0.37	1.02	0.86
(-1,0)	960	2.97	2.99	-0.03		2.06	1.76	0.30	
(1, 2)	926	2.81	2.50	0.31		1.29	1.04	0.25	
Change		-0.16	-0.50	0.34		-0.77	-0.72	-0.05	
(T stat.)		(-0.22)	(-0.52)	(0.20)		(-1.12)	(-0.78)	(-0.21)	

Panel B: Annual Returns Partitioned by Market Capitalization

	Small Firms			Medium Firms			Large Firms		
Year	n	(T)-(C)	T -Stat.	n	(T)-(C)	T -Stat.	n	(T)-(C)	T -Stat.
-3	151	-0.75%	-0.34	123	0.83%	0.25	141	2.51	0.92
-2	162	-1.36	-0.62	149	-5.80	-2.19**	169	-0.81	-0.34
-1	136	-0.19	-0.10	154	-1.54	-0.71	190	1.90	0.98
0	118	-1.52	-0.74	153	-3.55	-1.15	209	1.13	0.67
1	127	0.36	0.13	147	6.50	1.24	206	-1.46	-0.56
2	109	4.02	1.63	141	-1.38	-0.58	196	-1.97	-0.91

Note;

*, **, *** Significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. (T)-(C) refers to the difference between the test firms and the control firms. Annual returns are constructed from monthly returns compounded starting from the beginning of the fifth month after the end of the prior fiscal year. Abnormal returns are determined by four-factor model. N is the number of test firms. In Panel B, firms are classified as small, medium, or large on the basis of their *CRSP* capitalization quintiles. Small, median, and large firms are those in the first two quintiles, the third and fourth quintile, and the fifth quintile, respectively.

Table 5 displays managerial behavior measured by abnormal discretionary accruals (DA) and cash dividends around the event years. The results of panel A in Table 5 show that the test firms' discretionary accruals are negative and are significantly lower than their counterparts in the event years, which indicates that the test firms on average use income decreasing adjustments. The test firms' and the control firms' mean discretionary accruals in the pre-exercise period (-1, 0) are -1.9 percent and 2.1 percent, respectively, and are -2.5 percent and -1.1 percent in the post-exercise period (1, 2), respectively. Comparing the discretionary accruals in the pre-exercise with that in the post-exercise years, we observe that the discretionary accruals in both samples are significantly higher prior to exercise. These findings suggest that there is weak evidence of managers' successfully timing discretionary accruals for their large ESOs exercise, but they may keep relatively high level of discretionary accruals prior to exercise. The test firms' non-discretionary accruals are negative and are significantly higher than their counterparts, which indicate that the earnings pattern observed may be affected by the bear market in the 2000s and the changes in real economic activity,

Panel B of Table 5 displays the impact of discretionary accruals on earnings. Specifically, we shed light on the change of earnings including discretionary accruals and the change of earnings excluding discretionary accruals. The difference between test and control sample in terms of income changes including discretionary accruals is negative in year -2 (-0.5 percent), and it turns into positive difference thereafter with the highest difference but statistically insignificant in year 0 (0.4 percent). The highest difference is located at year -1 (3.1 percent) once the discretionary accruals are excluded from the earnings change. These results provide some tincture for the economic meaning of discretionary accruals, and evidence managers' attempt on timing discretionary accruals for ESOs exercises.

Table 5: Discretionary Accruals and Earnings around Event Years

Panel A: Discretionary Accruals and Non-Discretionary Accruals across Event Years

		Mean Discretionary Accruals				Mean Non-Discretionary Accruals			
		Test	Control			Test	Control		
Year	n	Firms	Firms	(T)-(C)	T-stat.	Firms	Firms	(T)-(C)	T-stat.
-3	415	-2.1%	-0.9%	-1.2%	-1.80*	-4.7%	-6.6%	2.0%	2.97***
-2	480	-2.7	-1.5	-1.2	-1.82*	-4.2	-5.5	1.3	2.15**
-1	480	-1.7	1.1	-2.7	-3.67***	-3.8	-6.9	3.1	4.81***
0	480	-2.0	-0.6	-1.4	-2.46**	-3.7	-6.4	2.7	5.54***
1	480	-2.5	-1.5	-1.0	-1.00	-4.0	-7.7	3.7	3.04***
2	446	-2.5	-0.7	-1.8	-2.12**	-3.8	-6.3	2.5	3.09***
(-1, 0)	960	-1.9	2.1	-2.1		-3.7	-6.6	2.9	
(1, 2)	926	-2.5	-1.1	-1.4		-3.9	-7.1	3.1	
Change		-0.7	-1.3	0.7		-0.2	-0.4	0.2	
(T-stat.)		(-1.74)*	(-1.86)*	(1.88)*		(-0.66)	(-0.54)	(0.32)	

Panel B: Impact of Discretionary Accruals on Earnings

Year	n	Mean Change in Income before Extraordinary Items (Test minus Control)	T-stat	Mean Change in Income before Extraordinary Items Excluding Discretionary Accruals (Test minus Control)	T-stat.
-3	415	4.6%	0.34	1.7%	1.15
-2	480	-0.5	-0.50	0.7	0.69
-1	480	0.3	0.35	3.1	2.92***
0	480	0.4	0.42	1.8	1.72
1	480	0.2	0.08	1.2	0.87
2	446	0.3	0.29	2.1	1.72*

Note;

*, **, *** Significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. (T)-(C) refers to the difference between the test firms and the control firms. N is the number of test firms (and correspondingly, control firms). Discretionary Accruals are determined by the residual of cross-sectional performance-adjusted modified Jones model (Kothari et al. 2003). The changes in Income before Extraordinary Items is scaled by beginning total assets. All firm-years have complete information from years -2 to +1. Some firm-years do not have information for year -3 or +2.

Panel A of Table 6 further decomposes discretionary accruals into reversion of discretionary accruals and new discretionary accruals initiated. Both test and control sample have income-increasing reversion of discretionary accruals in most of the event years expect year -2 and year 0. The difference in reversion of discretionary accruals is generally insignificant in the pre-exercise years, but it increases dramatically to 1.3 percent, and turns significant in year 0. The right hand side of Panel A shows the comparison of new discretionary accruals between matched samples. The results show that the test firms generally generate positive new discretionary accruals prior to exercise, and begin to generate negative new discretionary accruals in year -1(-0.7 percent). The difference between test and control sample in terms of new discretionary accruals is significantly negative in year -1 (-1.4 percent), and it turns into positive but insignificant difference thereafter. A comparison of new discretionary accruals in the pre-exercise years with the post-exercise years shows that the test firms keep higher level of new discretionary accruals prior to exercise (-0.9 percent) at significance level of five percent, and the magnitude of difference for the test firms are higher than that for the control firms at significance level of ten percent. These findings suggest that the higher level of discretionary accruals in pre-exercise years reported in Table 5 is mainly sustained by positive new discretionary accruals initiated, and that the firms with abnormally large ESOs exercise do not generate significantly higher new discretionary accruals than the firms with normal ESOs exercise around the exercise year, but they keep generating high level of new discretionary accruals prior to exercise.

Panel B of Table 6 displays the comparison of total amount of cash dividends and dividend payout between test sample and control sample across event years. There is ascending trend of total amount of the cash dividends for test sample during the event period, and the cash dividends for the test firms are higher significantly than that for the control firms, and such difference becomes widen dramatically in year 0 (117). In addition, the results of dividend payouts show that the test firms generally have significantly higher dividend payout ratios than the control firms during the pre-exercise period, and the gap widen dramatically in year -1 (5.7). These findings are consistent with our conjecture that, prior to exercise, top-level managers also inflate dividend payout ratios to increase the cash payout from exercise.

Table 6: Discretionary Accruals Components and Cash Dividends around Event Years

Panel A: Comparison of Reversal of Discretionary and New Discretionary Accruals Initiated

		Reversal of Discretionary Accruals				New Discretionary Accruals Initiated			
		Test	Control		T -stat.	Test	Control		T -stat.
Year	n	Firms	Firms	(T)-(C)		Firms	Firms	(T)-(C)	
-3	415	0.7%	4.9%	-4.2%	-1.26	0.4%	-1.0%	1.4%	1.48
-2	480	-1.3	-0.7	-0.6	1.31	-0.4	-0.5	0.1	0.33
-1	480	0.6	0.5	0.1	0.14	0.6	1.9	-1.4	-1.73*
0	480	-0.8	-2.1	1.3	1.73*	0.2	-0.2	0.4	0.58
1	480	0.3	1.4	-1.1	-1.56	-0.7	-2.1	1.4	1.3
2	446	0.7	1.0	-0.3	-0.31	-0.3	0.3	-0.6	-0.61
(-1,0)	960	-0.1	-0.8	0.7		0.4	0.9	-0.5	
(1, 2)	926	0.5	1.2	-0.7		-0.5	-1.0	0.5	
Change		0.6	2.0	-1.4		-0.9	-1.8	1.0	
(T-stat.)		(1.43)	(2.96)***	(-1.51)		(-2.10)**	(-2.38)**	(1.72)*	

Panel B: Comparison of Cash Dividends and Dividend Payout across Event Years

		Cash Dividends (in million)				Dividend Payout (%)			
		Test	Control			Test	Control		
Year	n	Firms	Firms	(T)-(C)	T -stat.	Firms	Firms	(T)-(C)	T -stat.
-3	415	136	29	107	3.70***	19.1	12.8	6.3	2.14**
-2	480	128	28	100	3.75***	20.2	17.1	3.0	0.89
-1	480	137	37	100	3.36***	18.3	12.6	5.7	2.14**
0	480	153	36	117	3.59***	17.7	14.0	3.8	1.48
1	480	183	44	139	3.50***	19.8	15.3	4.5	1.56
2	446	231	55	176	3.36***	20.4	14.8	5.6	1.96*
(-1,0)	960	145	37	108		18.0	13.3	4.7	
(1, 2)	926	206	49	157		20.1	15.1	5.0	
Change		61	13	49		2.1	1.8	0.3	
(T-stat.)		(1.64)	(1.01)	(1.24)		(1.07)	(0.95)	(0.23)	

Note;

*, **, *** Significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. (T)-(C) refers to the difference between the test firms and the control firms. N is the number of test firms (and correspondingly, control firms). Reversion of discretionary accruals, new discretionary accruals initiated at year t, and mean reversion point are determined by Equation (5). All firm-years have complete information from years -2 to +1. Some firm-years do not have information for year -3 or +2.

To further gain insight into the association between managers' abnormally large ESOs exercise and abnormal earnings management and dividend, we perform equation (9) based on event window (-2, -1), (-1, 0), (0, 1), and (1, 2), respectively. As shown in Table 7, the null hypothesis of equal means can be reasonably rejected (at 0.10 level of significance) for discretionary accruals, cash dividends, and dividend payout ratios in most of the event years. The results for dividend payout ratios (*DP*) reveals that average dividend payout ratios are significantly higher for the firms with abnormally large ESOs exercises than that with normal ESOs exercises in event window (-2, -1) ($F= 19.6$; $p <0.01$). The results of cash dividends (*CashDiv*) shows that average cash dividends are significantly higher for the firms with abnormally large ESOs exercises than that with normal ESOs exercises in event window (1, 2) ($F= 48.99$; $p <0.01$). These findings support our conjecture that, ceteris paribus, firms' cash policy is positively associated with managers' abnormally large exercise of stock options. However, the insignificant results of new discretionary accruals initiated (*NewDA*) in event window (-1, 0) fails to support our conjecture that new discretionary accruals initiated are positively associated with managers' abnormally large ESOs exercise prior to exercise.

Table 7: Statistical Summary: ESOs Exercise, Earnings Management, and Dividend Policy across Event Windows

Panel A: Event Window (-2,-1)										
Independent Variable	***DAtij***		***RDAtij***		***NewDAtij***		***CashDivti***		***DPti***	
	(T)-(C)	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**
EXERCISE	-1.9%	<0.01***	-0.2%	0.76	-0.4%	0.37	111	<0.01***	5.9	<0.01***
F Value	25.87		0.09		0.82		85.8		19.6	
Panel B: Event Window (-1, 0)										
Independent Variable	***DAtij***		***RDAtij***		***NewDAtij***		***CashDivti***		***DPti***	
	(T)-(C)	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**
EXERCISE	-2.1%	<0.01***	0.7%	0.18	-0.5%	0.36	108	<0.01***	4.8	0.01**
F Value	19.38		1.79		0.85		24.21		6.62	
Panel C: Event Window (0, 1)										
Independent Variable	***DAtij***		***RDAtij***		***NewDAtij***		***CashDivti***		***DPti***	
	(T)-(C)	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**
EXERCISE	-1.2%	0.04**	0.1%	0.87	0.9%	0.15	128	<0.01***	4.1	0.03**
F Value	4.29		0.03		1.98		24.84		4.64	
Panel D: Event Window (1, 2)										
Independent Variable	***DAtij***		***RDAtij***		***NewDAtij***		***CashDivti***		***DPti***	
	(T)-(C)	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**	**(T)-(C)**	**P-Value**
EXERCISE	-1.1%	0.02	-0.1%	0.86	0.7%	0.13	146	<0.01***	6.5	<0.01***
F Value	5.3		0.03		2.30		48.99		19.04	

Notes:
*, **, *** refers to significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. (T)-(C) refers to the difference between the test firms and the control firms. The sample includes 9,868 firm-year observations, spanning between 1992 and 2010. *DAtij* refers to discretionary accruals at year *t* of the *i*th firm in the *j*th industry. *RDAtij* refers to reversal of discretionary accruals at year *t* of the *i*th firm in the *j*th industry. *NewDAtij* refers to new discretionary accruals initiated at year *t* of the *i*th firm in the *j*th industry. *CashDivti* refers to cash dividends at year *t* of the *i*th firm. DP_{ti} refers to dividend payout ratio for firm *i* at year t. *EXERCISE* refers to an indicator variable that takes value of one if the firms with large ESOs exercise; 0 otherwise.

4.2 Corporate Governance and Early Exercise Decision

As described in the previous sections, we posit that firms with abnormally large ESOs exercises and weaker corporate governance have lower level of dividend payout ratios than that with good corporate governance. To test this conjecture, we perform equation (10) based on event window (-2, -1), (-1, 0), (0, 1), and (1, 2), respectively.

The results in Table 8 show that there is no evidence on significant relation between *EXERCISE*GI* and *CashDiv* in all event windows. We therefore cannot conclude that there is an interaction of abnormally large ESOs exercise and corporate governance on the amount of cash dividends. The main effect of *EXERCISE* on *CashDiv* is significant in event window (0, 1) (F=4.39, p=0.04) and (1, 2) (F=8.47, p<0.01). Combining the insignificant main effect of *GI* on *CashDiv*, we find that the dividend payments of the firms with abnormally large ESOs exercise are significantly higher than that with normal ESOs exercise.

The results of dividend payout ratios show that there is a significant interaction of abnormally large ESOs exercise and corporate governance on the dividend payout ratios in event window (-2, -1) (F=5.47, p=0.02) and (1, 2) (F=4.57, p<0.03). The test for the main effect shows a significant corporate governance effect on the firms' dividend payout ratios. We use Scheffé's method of multiple comparisons in the post hoc analysis of dividend payout ratios. The results are reported in Table 9. Consistent with our conjecture, the mean dividend payout ratios for the firms with large ESOs exercise and weak corporate governance are significantly lower than that with large ESOs exercise and good corporate governance in all event windows, which suggests that corporate governance mechanism forces higher dividend policy, and that the finding of higher dividend payout ratios prior to exercise in Table 7 is likely to be subject to the firms with better corporate governance mechanism.

Table 8: Statistical Summary: ESOs Exercise, Corporate Governance, Earnings Management, and Dividend Policy across Event Windows

Panel A: Event Window (-2,-1)

Independent	*DAtij*				*RDAtij*				*NewDAtij*				*CashDivti*				*DPti*			
Variable	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value
EXERCISE	1	0.0%	0.07	0.79	1	0.2%	0.10	0.75	1	0.0%	0.01	0.93	1	3736	14.63	<0.01***	1	1413	0.61	0.43
GI	1	0.2	0.05	0.70	1	0.5	0.26	0.61	1	0.1	0.05	0.82	1	77423	0.30	0.58	1	19009	8.27	<0.01***
EXERCISE*GI	1	0.0	0.03	0.86	1	0.5	0.29	0.59	1	0.4	0.28	0.59	1	79	0.31	0.58	1	12577	5.47	0.02**

Panel B: Event Window (-1, 0)

Independent	*DAtij*				*RDAtij*				*NewDAtij*				*CashDivti*				*DPti*			
Variable	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value
EXERCISE	1	0.4%	0.70	0.40	1	0.4%	0.44	0.51	1	0.0%	0.01	0.92	1	3736	3.69	0.05*	1	702	0.40	0.53
GI	1	0.3	0.42	0.52	1	0.1	0.09	0.77	1	0.7	1.99	0.16	1	0.04	0.00	0.99	1	6336	3.64	0.06*
EXERCISE*GI	1	0.2	0.39	0.53	1	0.4	0.44	0.51	1	0.0	0.02	0.90	1	168	0.47	0.49	1	2520	1.45	0.23

Panel C: Event Window (0, 1)

Independent	*DAtij*				*RDAtij*				*NewDAtij*				*CashDivti*				*DPti*			
Variable	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value
EXERCISE	1	0.1%	0.05	0.81	1	0.0%	0.00	0.97	1	0.5%	0.38	0.54	1	2120	4.39	0.04**	1	5476	2.98	0.08*
GI	1	1.2	1.13	0.29	1	0.9	1.19	0.27	1	0.9	0.72	0.40	1	3689	0.08	0.78	1	8269	4.50	0.03**
EXERCISE*GI	1	0.8	0.75	0.39	1	0.1	0.19	0.67	1	0.6	0.48	0.49	1	697	1.44	0.23	1	1110	0.60	0.44

Panel D: Event Window (1, 2)

Independent	*DAtij*				*RDAtij*				*NewDAtij*				*CashDivti*				*DPti*			
Variable	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value	df	MS	F	P-Value
EXERCISE	1	2.7%	2.43	0.12	1	0.0%	0.03	0.87	1	0.1%	0.07	0.79	1	5337	8.47	<0.01***	1	670	0.31	0.58
GI	1	1.6	1.43	0.23	1	1.8	2.49	0.11	1	0.3	0.31	0.57	1	1879	0.00	0.96	1	26213	12.14	<0.01***
EXERCISE*GI	1	0.6	0.54	0.46	1	1.2	1.69	0.19	1	0.0	0.00	0.96	1	1553	2.47	0.12	1	9874	4.57	0.03**

Notes:

*, **, *** refers to significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. The sample includes 9,868 firm-year observations, spanning between 1992 and 2010. *df* refers to degree of freedom. *MS* refers to mean square. F refers to F value. *DAtij* refers to discretionary accruals at year *t* of the *i*th firm in the *j*th industry. *RDAtij* refers to reversal of discretionary accruals at year *t* of the *i*th firm in the *j*th industry. *NewDAtij* refers to new discretionary accruals initiated at year *t* of the *i*th firm in the *j*th industry. *CashDivti* refers to cash dividends at year *t* of the *i*th firm. DP_{ti} refers to dividend payout ratio for firm *i* at year t. *EXERCISE* refers to an indicator variable that takes value of one if the firms with large ESOs exercise; 0 otherwise. *GI*, referring to poor governance, is an indicator variable that takes value of one if the average G_Index of the firm is equal or above the mean value of total matched sample; 0 otherwise. MS of *EXERCISE* and *EXERCISE*GI* in equation (15b) is reported in billion.

Table 9: Post Hoc Analysis of Dividend Payout Ratios as a Dependent Variable: Scheffe Method of Multiple Comparisons

Panel A: Event Window (-2,-1)

		***EXERCISE* (LSMEANS)**		
		0	**1**	**t value= -0.78**
GI	**0**	18.20***	24.99***	
(LSMEANS)	**1**	17.03***	13.64***	
	t value= 2.88* **			

Panel B: Event Window (-1, 0)

		***EXERCISE* (LSMEANS)**		
		0	**1**	**t value= 0.64**
GI	**0**	20.18***	21.84***	
(LSMEANS)	**1**	18.11***	12.71***	
	t value= 1.91*			

Panel C: Event Window (0, 1)

		***EXERCISE* (LSMEANS)**		
		0	**1**	**t value= 1.73***
GI	**0**	25.31***	22.45***	
(LSMEANS)	**1**	21.26***	13.71***	
	t value= 2.12**			

Panel D: Event Window (1, 2)

		***EXERCISE* (LSMEANS)**		
		0	**1**	**t value= -0.56**
GI	**0**	21.81***	28.06***	
(LSMEANS)	**1**	18.69***	15.02***	
	t value= 3.48* **			

Notes:
*, **, *** refers to significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. The sample includes 9,868 firm-year observations, spanning between 1992 and 2010. LSMEANS refers to least square means. *EXERCISE* refers to an indicator variable that takes value of one if the firms with large ESOs exercise; 0 otherwise. *GI* ,referring to poor governance, is an indicator variable that takes value of one if the average G_Index of the firm is equal or above the mean value of total matched sample; 0 otherwise.

4.3 Regression Analysis

Table 10 examines whether abnormal earnings management or cash dividend increase the likelihood of managers' large ESOs exercise. We focus on the test firms and create an indicator variable, *ExerESO,* which takes a value of one if the event year is the exercise year (year=0), and zero otherwise. Equation (11) and (12) display the relation between discretionary accruals, their components, and managers' decision of large ESOs exercise. The results of Equation (11) and (12) show that discretionary accruals fail to increase the likelihood of managers' decision in large option exercise. Equation (13) depicts the association between managers' large ESOs exercise and cash dividends and incremental effect of cash dividends[4]. The coefficient of *CashDiv* is -7.51 and is statistically significant, which suggests that the amount of cash dividends does not trigger managers' decision in large option exercise. However, the coefficient of *ΔCashDiv* (7.52) is significantly positive, which suggests that higher cash dividends increment increases the likelihood of managers' early exercise decision, which further supports the conjecture that cash dividends provide incentives to managers' large ESOs exercise.

Table 10: Logistic regression analysis of the relation between large ESOs exercise, opportunistic behavior, and dividend policy

Dependant Variable: *ExerESO*						
	(11)		**(12)**		**(13)**	
Independent Variable	**Estimated Coefficient**	**P Value**	**Estimated Coefficient**	**P Value**	**Estimated Coefficient**	**P Value**
INTERCEPT	-2.23	<0.01***	-2.24	<0.01***	-2.11	<0.01***
DA$_{tij}$	-0.18	0.81				
RDA$_{tij}$			-0.81	0.04		
NewDA$_{tij}$			-0.43	0.53		
CashDiv$_{ti}$					-7.51	<0.01***
ΔCashDiv$_{ti}$					7.52	0.02**
GI	0.03	0.74	0.01	0.91	-0.03	0.74
DA$_{tij}$ *GI	0.97	0.35				
NewDA$_{tij}$ *GI			1.46	0.12		
ΔCashDivti*GI					2.86	0.44

Notes:

*, **, *** refers to significant at 10%, 5%, and 1% levels, respectively, using a two-tailed test. LR test refers to the likelihood ratio test. The sample includes 4,934 firm-year observations for test sample, spanning between 1992 and 2004. *ExerESO* refers to an indicator variable that takes value of one if the event year of the test sample is the exercise year; 0 otherwise. *DAtij* refers to discretionary accruals at year t of the *i*th firm in the *j*th industry. *RDAtij* refers to reversal of discretionary accruals at year t of the *i*th firm in the *j*th industry. *NewDAtij* refers to discretionary accruals initiated at year t of the *i*th firm in the *j*th industry. *CashDivti* refers to total amount of cash dividend for firm *i* at year t scaled by the market value of equity at the beginning of year t. *ΔCashDivti* refers to the difference between the cash dividends of firm *i* at year *t* and that of year *t − 1*. *GI* ,referring to poor governance, is an indicator variable that takes value of one if the average G_Index of the firm is equal or above the mean value of total matched sample; 0 otherwise.

[4] The reason we do not employ dividend payout ratio lies in that that total amount of cash dividends scaled by market capitalization at the beginning of the year represents more probable lure the managers exercise for.

4.4 Additional Checks

4.4.1 Sample Selection Criterion

We tune up the exercise criterion in the sample selection procedure and require that the sample firms must have all event years from year -3 to year +1, which leads to only 334 distinct firms for test sample. The unreported results are qualitatively similar to the main findings.

4.4.2 Market Model

To ensure our results are not driven by the bias in the estimation of abnormal returns, we re-perform the work based on market model developed by Sharpe (1964) and Fama-French three factor model. The unreported results remain qualitatively similar.

5. Conclusion

The issues whether stock-option awards induce opportunistic managerial behavior have been extensively investigated in literature for the last decades. Bartov and Mohanram (2004) find that abnormally large option exercises can predict stock return future performance, and this predictive ability represents private information about disappointing earnings in the post-exercise period. They attribute such a reversal of inflated earnings in the pre-exercise period to management's manipulation of discretionary accruals for personal cash out. We extend their work and propose two arguments. First of all, we argue that dividend policy is one of the crucial factors that may affect managers' decision of early exercising ESOs. Secondly, we argue that because earnings management is an unceasing pattern, mean-reverting nature of discretionary accruals plays an important role on abnormal earnings management, and hence we develop a model to decompose abnormal discretionary accruals into reversion of discretionary accruals and new discretionary initiated and examine the relationship between these two components of abnormal discretionary and managers' early exercise decision of stock options.

The findings of descriptive statistics provide some evidence of the role of mean-reverting nature of discretionary accruals on earnings management, and show a sign of the relation between firms' dividend policy and managers' large ESOs exercise. Specifically, we observe that although there is no evidence of managers' successful timing discretionary accruals for large ESOs exercises, managers may maintain relatively higher level of discretionary accruals prior to exercise. By further decomposing discretionary accruals into reversion of discretionary accruals and new discretionary accruals initiated, we find that this higher level of discretionary accruals in the pre-exercise years is mainly sustained by positive new discretionary accruals initiated, and that managers make an attempt depress earnings by negative new discretionary accruals initiated in the post-exercise years. Furthermore, we observe that firms with abnormally large ESOs exercises have significantly higher level of dividends prior to exercise, which implies that executives attempt to utilize dividend policy to affect the firm's stock performance. We also observe that firms with abnormally large ESOs exercises have significantly higher amount of cash dividends in the post-exercise years.

The findings of the effect of corporate governance on abnormal earnings

management and dividend policy indicate that the dividend payments of the firms with abnormally large ESOs exercise are significantly higher than that with normal ESOs exercise, and this finding is not affected by firms' corporate governance quality. In addition, the dividend payout ratios for the firms with large ESOs exercise and weak corporate governance are significantly lower than that with large ESOs exercise and good corporate governance in all event years, which confirms the role of corporate governance mechanism in forcing higher dividend payout. We also find that higher dividend payout ratios prior to exercise are more likely to be subject to the firms with good corporate governance.

In the regression analysis we examine whether abnormal earnings management or cash dividend increase the likelihood of managers' large ESOs exercise. The findings indicate that higher cash dividends increment increases the likelihood of managers' early exercise decision.

In summary, the results provide some evidence that managers may intend to influence stock returns by keeping higher level of new discretionary accruals initiated, and that dividend policy is one crucial factor that affects managers' abnormally large exercise of ESOs.

Reference

Aboody, D., J. Hughes, J. Liu, and W. Su. 2008. Are executive stock option exercises driven by private information? *Review of Accounting Studies*, 13, 551-570.

Baber, W. R., S. H. Kang, and Y. Li. 2011. Modeling discretionary accrual reversal and the balance sheet as earnings management constraint. *Accounting Review* forthcoming available on SSRN: 1-44.

Balvers, R., Y. Wu, and E. Gilliland. 2000. Mean reversion across national stock markets and parametric contrarian investment strategies. *The Journal of Finance* LV(2): 745-772.

Bartov, E. and P. Mohanram. 2004. Private information, earnings manipulations, and executive stock-option exercises. *The Accounting Review* 79 (4): 889-920.

Bebchuk, L., A. Cohen, and A. Ferrell. 2009. What matters in corporate governance? *Review of Financial Studies* 22 (2): 783-827.

Beneish. M. D. and M. E. Vargus. 2002. Insider trading, earnings quality, and accrual mispricing. *The Accounting Review* 77 (4): 755-791.

Bettis, J. C., J. M. Bizjak, and M. L. Lemmon. 2005. Exercise behavior, valuation, and the incentive effects of employee stock options. *Journal of Financial Economics* 76 (2): 445-470.

Bhagat, S., and B. Bolton. 2008. Corporate governance and firm performance. *Journal of Corporate Finance* 14 (3): 257-273.

Blouin, J. L., J. S. Raedy, and D. A. Shackelford. 2011. Dividends, share repurchases, and tax clienteles: evidence from the 2003 reductions in shareholder taxes. *The Accounting Review* 86 (3): 887.

Carhart, M. M. 1997. On persistence in mutual fund performance. *Journal of Finance* 52 (1): 57-82.

Cheng, C. S. A. and W. Thomas. 2006. Evidence of the abnormal accruals anomaly incremental to operating cash flows. *The Accounting Review* 81 (5): 1151-1167.

Cicero D. C. 2009. The manipulation of executive stock option exercise strategies: information timing and backdating. *The Journal of Finance* LXIV (6): 2627-2663.

Collins, M. C., A. K. Saxena, and J. W. Wansley. 1996. The role of insider and dividend policy: a comparison of regulated and unregulated firms. *Journal of Financial and Strategic Decisions* 9 (2): 1-9.

Gompers, P., J. Ishii and A. Metrick. 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118(1): 107-155.

Diz, F. and T. Finucane. 1993. The rationality of early exercise decisions: evidence from the S&P 100 index options market. *Review of Financial Studies* 6 (4): 765–798.

Doidge, C., G.. A. Karolyi, and R. M. Stulz. 2007. Why do countries matter so much for corporate governance? *Journal of Financial Economics* 86 (1): 1-39

Fairfield, P. M., J. S Whisenant, and T. L. Yohn. 2003. Accrued earnings and growth: implications for future profitability and market mispricing. *The Accounting Review* 78 (1): 353-371.

Graham, J. R. and A. Kumar. 2006. Do dividend clienteles exist? evidence on dividend preferences of retail investors. *The Journal of Finance* 61 (3): 1305-1336.

Harvey, C. R. and R. E. Whaley. 1992. Market volatility prediction and the efficiency of the S&P 100 index option market. *Journal of Financial Economics* 31: 43-73.

Healy, P. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7(1-3): 85-107.

Huddart, S. and M. Lang. 2003. Information distribution within firms: evidence from stock option exercises. *Journal of Accounting and Economics* 34 (1-3): 3-31.

Jakob, K. J. and T. Ma. 2007. Are ex-day dividend clientele effects dead? Dividend yield versus dividend size. *Journal of Empirical Finance* 14 (5): 718-735.

Klein, A. 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics* 33 (3): 375-400.

Kothari, S.P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163-197.

Lambert, R. A., W. N. Lanen, and D. F. Larcker. 1989. Executive stock option plans and corporate dividend policy. *The Journal of Financial and Quantitative Analysis* 24 (4): 409-425.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 2000. Investor protection and corporate governance. *Journal of Financial Economics* 58: 3-27.

Leuz, C., D. Nanda and P. D. Wysocki. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69 (3): 505-527

Litzenberger, R., and K. Ramaswamy. 1982. The effects of dividends on common stock prices: tax effects or information effects?. Journal of Finance 37: 429-443.

Merton, R. C. 1973. The theory of rational option pricing. *Bell Journal of Economics* 4 (1): 141-183.

Miller, M., and M. Scholes. 1978. Dividends and taxes. *Journal of Financial Economics* 9: 333-364.

———————————. 1982. Dividends and taxes: some empirical evidence. *Journal of Political Economy* 90: 1118-1141.

Miller, M. and K. Rock. 1985. Dividend policy under asymmetric information. *Journal of Finance* 40 (4): 1031-1051.

Mitton, T. 2004. Corporate governance and dividend policy in emerging markets. *Emerging Markets Review* 5 (4): 409-426

Pittman, J. A. and S. Fortin, 2004. Auditor choice and the cost of debt capital for newly public firms. *Journal of Accounting and Economics* 37: 113-136.

Richardson, G.; S. Sefcik; and R. Thompson. 1986. A test of dividend irrelevance using volume Reactions to a change in dividend policy. *Journal of Financial Economics* 17: 313-333.

Sharpe, W. 1964. Capital asset prices: a theory of market equilibrium under conditions of risk. *The Journal of Finance* XIX (3): 425-442.

Subramanyam, K. R. 1996. The pricing of discretionary accruals. *Journal of Accounting and Economics* 22 (1-3): 249-281.

Whaley, R. E. 1982. Valuation of American call options on dividend-paying stocks empirical test. *Journal of Financial Economics* 10 (1): 29-58.

Xie, H. 2001. The mispricing of abnormal accruals. *The Accounting Review* 76 (3) 357-373.

Xie, B., W. N. Davidson III, P. J. DaDalt. 2003. Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance* 9: 295– 316.