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審計委員會權益薪酬之決定因素

The Determinants of Equity Compensation for Audit Committee Members

賴運霆 / 德州大學達拉斯分校會計碩士生
Yun-Ting Lai, Master Student, Department of Accounting, University of Texas at Dallas

吳淑鈴 / 國立臺灣大學會計學系助理教授
Shu-Ling Wu, Assistant Professor, Department of Accounting, National Taiwan University

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摘 要

由於權益薪酬之使用漸趨廣泛，其相關討論增加，再加上審計委員會職責逐漸加重等因素，促使本研究欲找出哪些因素使得公司給予其審計委員會成員權益薪酬。研究發現代理問題較嚴重之公司傾向不給予權益薪酬。薪酬委員會中成員同時為審計委員會成員之比例則與給予權益薪酬之可能性呈顯著正向關係。而審計委員會中董事同時為其他公司之高階主管之比例越高則公司傾向不給予權益薪酬。本研究期能對審計委員會成員權益薪酬之相關議題做進一步的補充，幫助釐清採用權益薪酬之決定因素。

【關鍵字】公司治理、審計委員會、權益薪酬、代理問題

Abstract

The controversy around the rising use of equity-based compensation for audit committee members and the enhanced responsibilities of audit committee is the basis for this study to examine the factors that affect a firm's use of stocks and stock options to remunerate audit committee members. Our results show that firms having more severe agency conflicts are less likely to give equity-based compensation to audit committee members. Furthermore, firms with more compensation committee members sitting on the audit committee are significantly more likely to compensate audit committee members with stocks and stock options. Moreover, when more audit committee members are also top managers of other companies, the probability of equity remuneration for audit committee members is lower. Given that prior studies find that equity-based compensation for audit committee members is associated with earnings management, accounting restatement, and internal control weakness, our study contributes to the literature by identifying the factors that contribute to the use of equity-based compensation for audit committee members.

【Keywords】corporate governance, audit committee, equity-based compensation, agency conflicts

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1. Introduction

Following the rise in granting stocks and stock options to top executives, such compensation for nonemployee corporate directors has grown tremendously during the past decades (Fich and Shivdasani, 2005; Gong and Li, 2007). According to Executive Compensation Reports, only 1.6% of the 1,000 largest companies in the U.S. offered stocks for directors in 1983, but by 1994, the number has increased to approximately 20% (Lublin and Bulkeley, 2006). Another survey conducted by *Directorship. Inc*. reports that in 1992, just over 200 corporations in the *Fortune 1000* list offered stock option compensation, but by 1997, almost 500 firms in the same list had a stock option remuneration system in place for outside directors (Fich and Shivdasani, 2005).[1] The 2011 U.S. Director Compensation and Board Practices Report also shows that on average, half of the total compensation for board members consists of stock and option awards (Tonello, 2011). The proportion of equity-based compensation to total compensation in the computer services industry reaches as high as 71.1%.[2] Such equity-based compensation schemes have become so popular that some firms choose to fully adopt them. For example, Coca-Cola implemented a new incentive plan in 2006 that compensates its directors only with performance-based equity share units (Myerson, 2006). Given their extensive use by firms, the mechanism of equity-based compensation for directors is particularly worth further investigation.

However, stocks and options as awards for directors bear some potential risks, especially for audit committee members. Since the implementation of the Sarbanes-Oxley Act (SOX), audit committee members have more responsibilities in hiring, compensating, evaluating, and overseeing external auditors. They are also responsible for reviewing the firm's audit process, internal controls, financial statements, supervision of the internal audit function, and resolving differences of opinion between firms and external auditors (Securities Exchange Act of 1934). A higher degree of audit committee independence from a firm's management is thought to be important so that the committee can carry out its responsibilities objectively (Lynch and Williams, 2012).

However, a number of studies argue that the independence of the committee may be

1 In addition to stock options, some firms also award restricted stocks and phantom stocks to outside directors.

2 The proportion of equity-based to total compensation ranges from 22.2% to 71.1% when firms are categorized by industry; 44.9% to 56.2% when categorized by annual revenue, and 35.6 % to 59.4% when categorized by asset value.

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impaired because equity-based compensation aligns the interests of committee members and top managers. Specifically, audit committee members who receive equity-based compensation are more likely to compromise when they have disputes with executives over financial reporting. For instance, Magilke, Mayhew, and Pike (2009) claim that there is a logical inconsistency between what is considered optimal to maintain auditor independence and what is considered optimal for the committee that oversees the auditor. Given the logic for banning auditors from owning stock in the company, it seems rational to apply the same logic to the audit committee members. If owning stock can bias the auditor and management, it seems reasonable to infer that it can also bias the audit committee. Some empirical research supports this idea. According to Bedard, Chtourou, and Courteau (2004) and also Lynch and Williams (2012), a positive relation between earnings management and exercisable option holdings by audit committee members is noted. Moreover, Yang and Krishnan (2005) and Vafeas (2005) both find that stock ownership by audit committee members is positively related to earnings management. Archambeault, Dezoort, and Hermanson (2008) also find a positive association between short-term and long-term stock option grants for audit committee members and the likelihood of accounting restatement.

Despite the possible compromise of audit committee members' monitoring role resulting from the use of equity-based compensation plans, why do some notable firms still offer their audit committee stocks and stock options? This study examines the factors that affect a firm's decision to pay audit committee members with equity-based compensation. We propose three factors that might contribute to this decision: (i) agency conflict in firms, (ii) overlapping membership in audit committees and compensation committees, and (iii) audit committee members who are also top executives of other companies.

Agency conflicts result from separation between ownership and control rights, divergent management and shareholder objectives, and information asymmetry (Dey, 2008). As conflicts increase, there are more opportunities and incentives for audit committee members to benefit at the expense of shareholders, resulting in a greater likelihood of bias and of compromise with management while conducting their duties. To prevent this negative influence, firms with high agency conflict might prefer not to pay their audit committee members with stocks and options.

Moreover, if some audit committee members also sit on compensation committees, these audit committee members can determine their own compensation, and we expect that they will prefer equity-based compensation because they can increase their own wealth by advocating risky strategies to increase the value of the stock option holdings (Deutsch,

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2007). Finally, audit committee members who are also top executives of other companies may not prefer stocks and option pay because the contingency of equity pay increases their personal risk, given that they already have a large portion of personal wealth linked to their home company stocks (Westphal and Zajac, 1997).

Using 5,259 observations of U.S. companies from 2006 to 2012, we find that firms with more agency conflict are less likely to give their audit committee members equity-based compensation. The results indicate that when the concerns about firms' agency conflicts are substantial, firms give less equity-based compensation to audit committee members to alleviate this concern. In addition, firms with a higher proportion of overlapping members on audit and compensation committees are significantly more likely to use equity-based plans for audit committee members. Because the upside potential of stocks and options is higher relative to fixed salary, these overlapping committee members might prefer equity-based compensation in order to increase their personal wealth. Finally, when more audit committee members are also top executives of other firms, the likelihood of equity pay for audit committee members is lower. The results suggest that because these top management members already have a large amount of equity-based compensation from the company where they serve as top managers, because of concerns about risk exposure, they prefer a fixed salary from the board they sit on.

Our study contributes to the literature by identifying factors that might affect the adoption of equity-based compensation for audit committee members. Prior studies have examined the consequences of stocks and stock options for audit committee members, such as the likelihood of earnings management, accounting restatements, or internal control weaknesses. But few studies trace the relation back to its causes. Fich and Shivdasani (2005) have identified general board and governance structures that are associated with adoption of equity compensation plans for the whole board, such as board size and director fees. Considering that more and more studies reveal the adverse effects of giving audit committee members stocks and stock options , we extend their research by considering more factors and investigating why companies still offer equity-based compensation to audit committee members. Our study contributes to the understanding of how audit committee members' compensation is structured.

The remainder of the paper is organized as follows. In Section 2, we provide some background and a literature review related to the rise of equity compensation plans for directors and audit committee members and overlapping membership on audit and compensation committees. We then present our hypotheses in Section 3. Section 4 reports the

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research methods, followed by the results of empirical testing in Section 5. Section 6 provides a summary and concludes the paper.

2. Background and Prior Research

2.1 Background

The rise of CEO compensation throughout the 1990s generated more and more intense debates (Rose and Shepard, 1997; Daily, Johnson, Ellstrand, and Dalton, 1998; David, Kochhar, and Levitas, 1998). Lowenstein (1994) commented that excessive compensation levels had resulted in an "executive pay fiasco." The controversy resulted partly from the fact that the upward trend in compensation was not, generally speaking, accompanied by an increase in firm performance. (Johnson, 1995; Gomez-Mejia and Wiseman, 1997; Klein, 1998). In response, institutional investors, particularly public pension funds, have increasingly pressured boards to compensate CEOs partly with stocks and stock options. The rationale is based on agency theory (Jensen and Meckling, 1976; Fama, 1980; Eisenhardt, 1989; Lynch and Williams, 2012), the basic premise of which is that the desires or goals of the principals and the agent conflict (Eisenhardt, 1989). Putting the case into a business context, the separation between shareholders and the managers who operate corporations creates a potential conflict of interest that may lead managers to engage in behaviors that deviate from shareholders' interests. Stock-based compensation might solve this problem because it more closely aligns the interests of managers and shareholders (Kosnik, 1990; Rock, 1991; Ellis, 1998).

This same movement toward stock-based compensation has filtered into corporate boardrooms (Meltzer and Ash, 1998; Dalton, Daily, Certo, and Roengpitya, 2003). Institutional investors are now pressuring corporate boards to adopt, wholly or in part, stock-option plans to compensate board members (Berk, Bertsch, and Higgins, 1997). Consistent with the underlying reason for stock-based compensation for CEOs, this movement is designed to encourage directors to have a stronger shareholder-oriented perspective. Can this mechanism really fulfill its goal? More recent studies are working on answering this question, focusing especially on audit committees because audit committee members are subjected to many SOX provisions, resulting in a heavier workload and more liability exposure than other board members (Ward, 2009). Hence, audit committee members' compensation has gradually become more individualized in order to reflect members' effort and responsibilities. According to the Hay Group (2003) survey, 58% of the audit committee chairs and 19% of the audit committee members receive higher compensation than members

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of other committees. However, as discussed below, equity-based compensation may be a potential threat to the effectiveness of the audit committee.

2.2 Equity-based Compensation of Audit Committee

Starting from the 1990s, stock options have become an increasingly popular executive compensation component in many countries (Murphy, 1999; Jones, Kalmi, and Makinen, 2006). Although stock options were initially used to reward top executive officers, this practice changed later as more and more companies worldwide started to issue stock and options more broadly (Blasi, Kruse, and Bernstein, 2003). The growth in the use of stock and options has attracted public attention. Based on agency theory, some regard the practice beneficial to shareholders, while others claim that it may bring potential risks to the firm.

Agency theory suggests that equity compensation helps to align the incentives of principals (shareholders) and their agents (executives, board members, audit committee members) (Jensen and Meckling, 1976; Monks and Minow, 2001; Dalton et al., 2003; Hillman and Dalziel, 2003). Board members, including the audit committee, who receive more equity-based compensation are more likely to carry out their responsibility to monitor the CEO and other top managers. For instance, Morck, Shleifer, and Vishny (1988) find that equity ownership by outside directors is positively associated with a firm's performance.

On the other hand, although stock and option plans should align the interests of directors with shareholders' interests, prior research provides much evidence suggesting that the negative effects of giving stocks and stock options to audit committee members may surpass its advantages. For example, Zong (2004) finds that director options may be contrary to the long-term perspective considered appropriate for boards because the use of options in board pay programs promotes a short-term focus, similar to the effect of large option grants on senior executive pay. Carcello and Neal (2003) find that the stock ownership of audit committee members may create incentives for them to affiliate with the executives, hence increasing the likelihood that the audit committee concedes to management. Similarly, Ezzamel and Watson (1997) discover that because audit committee members play conflicting roles in managing business operations and overseeing board decisions at the same time, equity compensation may affect the committee's monitoring effectiveness.

Monitoring ineffectiveness as a result of equity compensation for audit committee members could lead to further harmful outcomes. Magilke et al. (2009) suggest that the compensation of the audit committee may affect members' preference for biased financial reporting. They use experimental markets to examine the impact of equity-based

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compensation on the objectivity of audit committee members and reproduce three regimes: cash compensation, unrestricted stock or vested-in-the-money options, which are linked to current shareholders, and restricted stock or unvested options, which are linked to future shareholders. They find that committee members who do not receive stock-based compensation are the most objective, leading to the lowest bias in financial reporting, while the compensation structure linked to current shareholders is associated with aggressive financial reporting. On the other hand, compensation linked to future shareholders is shown to have overly conservative reporting. The results suggest that the relation between audit committee compensation and earnings management may vary based on the form of compensation.

Along these lines, two studies using pre-SOX data provide similar results. Bedard et al. (2004) suggest that earnings management is positively associated with the proportion of audit committee members' equity holdings that are options exercisable in the short term. Stock options may reduce the effectiveness of the committee's monitoring of earnings management and allow an increase in either current earnings (Positive Earnings Management) or future earnings (Negative Earnings Management). Because audit committee members may have a short-term perspective with respect to their ownership stake and because equity-based compensation permit outsiders to become insiders, the independence of audit committee members might be impaired. Archambeault et al. (2008), who examine whether options given to audit committee members are associated with accounting restatements, discover that short-term and long-term options are related to higher likelihood of restatement.

Cullinan, Du, and Jiang (2010) use a post-SOX sample of firms that have internal control weaknesses in 2004-2005 to examine the relationships between internal control weakness and the option compensation of the audit committee. They conclude that firms that compensate audit committee members with stocks and options are significantly more likely to report an internal control weakness.

2.3 Overlapping Membership on Audit and Compensation Committee

Can directors who concurrently serve on audit committees and compensation committees better fulfill their responsibilities? The evidence provided by prior studies is mixed. On one hand, overlapping membership on the two committees may generate a "knowledge sharing" effect, which is useful in carrying out their duties respectively. For example, Carter, Lynch, and Zechman (2009) find that concurrent membership on audit and

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compensation committees is associated with a lower weighting of discretionary accruals, which might be easier for management to manipulate, and a higher weighting of stock return measures in compensation contracts. Chandar, Chang, and Zheng (2012) find that firms with overlapping membership on these two committees are associated with higher financial reporting quality.

On the other hand, an overlap between audit and compensation committee members carries potential risks. Committee members' workload might be the most serious problem. Among standing committees, the heaviest commitments tend to fall on the audit and compensation committee members (Larcker, Tayan, and Zhu, 2014). The audit committee is responsible for monitoring financial reporting and disclosure processes, overseeing choices of accounting policy and principles, hiring auditors, ensuring regulatory compliance, supervising internal controls, and even overseeing risk management. According to reports from the National Association of Corporate Directors (NACD), audit committees meet an average of eight times per year, either in person or over the telephone. The compensation committee is responsible for setting the compensation for the CEO, other senior executives, and the board, including establishing goals and evaluating performance. Compensation committees hold an average of six meetings per year. Because of over-commitment and lack of time to carry out their duties, the effectiveness of those serving on both committees may be limited (Laux and Laux, 2009). For instance, Fich and Shivdasani (2006) find that "busy directors" (directors that serve on multiple boards) are associated with lower governance quality. Mendez, Garcia, and Pathan (2014) suggest that firms with overlapping directors exhibit a higher probability of receiving a qualified audit opinion. Liao and Hsu (2013) claim a decreasing sensitivity in CEO's compensation to firm's performance when there are overlapping committees members.

Hoitash and Hoitash (2009) further explain the conflicts between the objectives of audit and compensation committees. The objective of compensation committees is to offer executive officers compensation packages that reflect their performance. While more incentive-based compensation should motivate management to work harder, it also gives management greater incentive to manipulate earnings, or other specific performance measures, which increases the risk of poor financial reporting quality. The objective of audit committees, on the other hand, is to oversee the accounting process and the quality of financial reporting, so the audit committee will favor compensation packages that reduce the risk of earnings manipulation. The results in Hoitash and Hoitash (2009) suggest that reducing the overlap in these two committees might improve the effectiveness of board

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decisions.

3. Hypothesis Development

Given that equity compensation might reduce an audit committee's monitoring effectiveness, why do some companies still compensate audit committee members with stocks and options? This study argues that the following factors might be related to a company's tendency to give its audit committee members equity-based compensation: agency conflict in a company, overlapping membership on audit and compensation committees, and the proportion of audit committee members who are also top executives in other companies.

3.1 Agency Conflicts

Conflicts exist between shareholders and corporation executives, including not only managers but also directors (Engel, Hayes, and Wang, 2010), because of separation between ownership and control rights, divergent management and shareholder objectives, and information asymmetry between shareholders and corporations (Dey, 2008). These conflicting interests can be collectively referred to as agency conflicts. Similar to managers, these agency conflicts along with sufficient latitude in reviewing firms' accounting processes give audit committee members incentives and opportunities to maximize their own utility, even when those actions do not maximize shareholder wealth (Watts and Zimmerman, 1986).

Based on Lynch and Williams (2012) finding, the optimal response to calls for equity compensation for board members might differ based on the responsibility of each board member. While using equity compensation for board members involved in making strategic decisions for the firm may be appropriate and more likely to result in positive outcomes, the advantages of compensating audit committee members, whose responsibility is to ensure the integrity of financial reporting, with equity compensation might not be so obvious. When a firm's agency conflicts are high, audit committee members will have more opportunities to benefit themselves. Offering these members stocks and options may further deteriorate this situation. The independence of audit committee members may be impaired; hence the negative effects of equity-compensation, such as the likelihood of earnings management, internal control weaknesses, accounting restatements, and impairment of audit committee members' accounting expertise on earnings quality may be stronger (Bedard et al., 2004; Vafeas, 2005; Archambeault et al., 2008; Cullinan et al., 2010; Krishnan and Yu, 2014). As stated by Gompers, Ishii, and Metrick (2003) and Dey (2008), firms improve their corporate governance by adopting policies and procedures to protect their investments when facing

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agency conflicts. Consistent with this concept, Dey (2008) finds that firms with higher levels of agency conflict have more "efficient" governance structures in place, particularly more independent and better functioning boards and audit committees, and a better quality auditor. Therefore, firms with higher (lower) levels of agency conflict may be less (more) likely to give audit committee members equity compensation. Stated formally,

H1: Firms with higher levels of agency conflict are less likely to grant equity-based compensation to their audit committee members.

3.2 Overlap of Audit Committee and Compensation Committee Members

Although regulatory changes and increased work requirements have made it less common for audit and compensation committees to share membership and leadership (Larcker et al., 2014), in 2012, 74 % of publicly traded companies in the United States still had one or more overlapping members on these two committees.[3] Hoitash and Hoitash (2009) argue that conflict exists between the objectives of the audit committee and those of the compensation committee. While incentive-based compensation, which is favored by compensation committees, can motivate CEOs to work harder, it is also possible that a greater weight on incentives increases CEOs' motivation to manipulate earnings, thus increasing the monitoring risk that audit committee members have to bear. However, the conflicts can be avoided to some extent when it comes to the audit committee members' remuneration. Specifically, fewer conflicts exist if some audit committee members also sit on the compensation committee. We can divide compensation committee members into two groups: pure compensation committee members, those who do not sit on an audit committee, and overlapping compensation members, those who also sit on an audit committee. One of the compensation committee's primary goals is to structure a compensation package that aligns executives' objectives with those of shareholders. One way to achieve this goal that is favored by pure compensation committee members is to structure contracts that include more performance-based incentives, which generally take two forms: cash bonuses and equity compensation. In addition to setting the pay for executives, compensation committees in U.S. companies are responsible for determining the compensation of the board members as

3 The Sarbanes Oxley Act of 2002 sets greater audit specialization and stricter members' background requirements. The Dodd Frank Act of 2010 imposes new rules related to pay disclosure and the adoption of "say on pay." Together, these acts might increase the workload of these committees and discourage directors from serving on both committees.

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well (Segal, Karp, O'Brien, Wahlquist, Shapiro, and Kahan, 2015). Given the logic for aligning the interests of management with shareholders, it seems rational for these compensation committee members to apply the same logic to compensate the board, including the audit committee. As for the overlapping members, they have the power to determine their own compensation. The stock and options compensation, which is easier to exploit by seeking excess risks, may draw their attention. This excess risk-seeking behavior occurs because directors who hold options and stocks would enjoy the increase in share price that may arise from the success of risky decisions, and the downsides of failure are more limited to shareholders (Bebchuk and Fried, 2005). Some studies have shown that firms compensating directors with stocks and options engage in higher-risks strategies. For example, Deutsch (2007) recognizes a significantly positive relation between the stock option pay of outside directors and firms' R&D intensity, suggesting that the inclusion of stock options in outside directors' compensation contributes to firms' adoption of risky strategies such as R&D. The results imply that audit committee members might view equity-based compensation as a tool to seek greater benefits. Based on the analysis above, we propose our second hypothesis as follows:

H2: Firms with more overlapping compensation and audit committee members are more likely to grant equity-based compensation to their audit committee members.

3.3 Audit Committee Members Who are Also Top Executives of Other Companies

Burke, Guy, and Tatum (2009) propose that effective audit committee members should have the following characteristics. First, they should have a general understanding of the company's major economic, operating, and financial risks. In addition, they should have a broad awareness of the interrelationship of the company's operations and its financial reporting. Further, stock exchanges including NYSE, Nasdaq, and AMEX all require that all members of the audit committee be financially literate, which means these members should have a basic knowledge of financial statements, and that at least one member of the committee should possess accounting or financial expertise.[4] People meeting these

4 The Securities and Exchange Commission (SEC) initially proposed a narrow definition to include only accounting financial experts—that is, directors with experience as a certified public accountant (CPA), auditor, chief financial officer (CFO), controller, or chief accounting officer. Subsequently, the SEC defined financial expert broadly to include non-accounting financial experts, such as directors with experience as a chief executive officer (CEO) or president (Krishnan and Visvanathan, 2008).

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requirements are usually chief executives or financial officers of other companies, certified public accountants, auditors, or university professors. Except for chief executives or financial officers of other companies (top-management members), other committee members (non-top-management members) usually receive fixed cash salaries from their own occupations. As for top-management members, they usually receive from their home companies long-term incentive compensation (including stocks and options), which is tied to a company's future performance. By making compensation contingent on a firm's future performance, their compensation packages bear more uncertainty (Westphal and Zajac, 1997). Moreover, option plans effectively increase the non-tradable investment in the firm and reduce the diversification of top-management members' investment portfolios (Beatty and Zajac, 1994). Harris and Raviv (1979) show that agents prefer to structure their compensation package so that they bear less personal risk. Therefore, it is reasonable to assume that top-management members, compared to non-top-management members, prefer less equity-based compensation in their remuneration contracts with the company for which they serve as audit committee members. Thus we propose our third hypothesis:

H3: Firms with a higher proportion of audit committee members who are also top executives of other firms are less likely to grant equity-based compensation to their audit committee members.

4. Research Methodology

4.1 Sample Selection

The sample selection process begins with 13,245 observations of U.S. publicly traded firms in the ExecuComp database from 2006 to 2012. The sample period starts with 2006 because 2006 is the first year that "Director Compensation" in the ExecuComp database (ExecuComp data set name: Director Compensation) provides detailed director compensation components. Because the ExecuComp database does not provide data about the committee membership of the specific directors, these samples are then merged with the GMI Ratings database to determine whether a director is an audit committee member. Additionally, we exclude firms in financial (4-digit SIC codes 6000-6999), utilities (4-digit SIC codes 4900-4999) and government sectors (4-digit SIC codes 9900-9999) from the sample. These firms operate in regulated environments and are usually limited in the compensation alternatives they can offer to their employees (Fich and Shivdasani, 2005). Observations with missing values in any variables are excluded, and extreme values of numeric variables (top and bottom 1 percent) are winsorized. This selection process, shown

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in Table 1, yields a final sample of 5,259 observations. Financial statement data are from Compustat, internal governance and audit committee and director compensation data are from ExecuComp, stock return data are from CRSP, and external governance data are from I/B/E/S and Thomson Reuters.

Table 1 Sample Selection Procedure

	Firm-Year
Initial Sample from ExecuComp for 2006-2012	13,245
Missing GMI Ratings Data	(1,482)
Financial Firms	(2,486)
Utilities	(1,250)
Government Sectors	(34)
Missing Value in Variables	(2,734)
Final Sample	5,259

4.2 Variable Definition

4.2.1 Proxy for Agency Conflict (*FREE_TOBIN*)

We follow Liang, Stulz, and Walkling (1991), Doukas, Kim, and Pantzalis (2000), and McKnight and Weir (2009) and use the interaction between the company's free cash flow and its growth opportunity (Tobin's Q) to proxy for agency conflict. Agency conflict exists when managers have the incentives and the ability to engage in activities that maximize their own utility at the cost of shareholders. Free cash flow is cash flow in excess of cash that is required to fund all projects that have positive net present values when discounted at the relevant cost of capital. Jensen (1986) claims that conflicts are especially severe when substantial free cash flow is generated in the organization, since the manager has more power over using the cash. Agency conflicts grow when shareholders have to find a way to motivate managers to disgorge the cash rather than waste it on organization inefficiencies or invest it below the cost of capital (Lehn and Poulsen, 1989). In our study, free cash flows are calculated by the equation below, based on the definition of Lehn and Poulsen (1989):

$$FCF = \frac{INC_t - TAX_t - INTEXP_t - PFDDIV_t - COMDIV_t}{TA_{t-1}} \quad (1)$$

where

INC_t = operating income before depreciation (Compustat data item *OIBDP*)

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TAX_t = total income taxes (Compustat data item *TXT*)

$INTEXP_t$ = gross interest expense on short- and long-term debt (Compustat data item *XINT*)

$PFDDIV_t$ = total amount of preferred dividend requirement on cumulative preferred stock and dividends paid on noncumulative preferred stock (Compustat data item *PDVC*)

$COMDIV_t$ = total dollar amount of dividends declared on common stock (Compustat data item *CDVC*)

TA_{t-1} = book value of total assets in the beginning of the fiscal year (Compustat data item *AT*)

Opler and Titman (1993) argue that firms with higher growth prospects are less likely to have excess free cash flow because the available cash will be spent on positive net present value projects. Therefore, these firms have less agency conflict. On the other hand, firms with low growth prospects are susceptible to having more agency conflict since these companies are more likely to waste free cash flow in projects with negative net present value. We use Tobin's Q to proxy for growth opportunity, following the computational procedures of Chung and Pruitt (1994):

$$\textbf{Tobin's } Q = \frac{MVE_t + PS_t + DEBT_t}{TA_t} \tag{2}$$

where

MVE_t = the product of share price and number of common shares outstanding (Compustat data item *MKVALT*)

PS_t = the liquidating value of outstanding preferred stock (Compustat data item *PSTKL*)

$DEBT_t$ = the value of short-term liabilities net of short-term assets, plus book value of long-term debt (Compustat data item *LT*)

TA_t = the book value of total assets (Compustat data item *AT*)

The Tobin's Q of the firm is compared to the median of its industry (classified by 2-digit SIC codes) in that year. If the Tobin's Q of the firm is smaller than the industry median, the indicator *TOBIN* takes the value of 1, representing lower growth opportunity, and the value of 0, otherwise.

Our agency conflict proxy, *FREE_TOBIN*, is the interaction between *FCF* and *TOBIN*.

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A higher *FREE_TOBIN* suggests higher agency conflict.

4.2.2 Measure of Committee Overlapping (*OVERLAP_AUCOMP*)

We identify board members who serve on both the compensation committee and the audit committee from the GMI Ratings database. The number of overlapping audit and compensation committee members is divided by the number of compensation committee members. Therefore, the variable measures the overlapping members' influence on the compensation decision. The equation is given below:

$$\boldsymbol{OVERLAP_AUCOMP} = \frac{\boldsymbol{number\ of\ overlapping\ members\ on\ audit\ and\ compensation\ committee}}{\boldsymbol{number\ of\ compensation\ members}} \tag{3}$$

4.2.3 Measure of Members Who Are Also Top Executives of Other Company (*OTHER_EXE*)

We identify whether audit committee members in a firm serve as top executives in other firms by investigating whether the member is also listed as a top-paid executive in the ExecuComp database. We then divide the number of audit committee members also listed as a top-paid executive by the total number of audit committee members. The equation is presented below:

$$\boldsymbol{OTHER_EXE} = \frac{\boldsymbol{audit\ committee\ members\ listed\ as\ top-paid\ executives\ from\ other\ firms}}{\boldsymbol{number\ of\ audit\ committee\ members}} \tag{4}$$

4.2.4 Control Variables

Corporate governance has been shown to affect the compensation decisions of outside directors, mostly audit committee members (Fich and Shivdasani, 2005). To better control for the effect of a firm's governance on audit committee members' compensation, we include both internal governance (*INGOV*) and external governance (*EXGOV*) proxies in the regression model.

We use two dummy variables to construct a firm's internal corporate governance measure: CEO chair dummy and CEO ownership dummy, explained below:

CEO chair dummy: A dummy variable that equals 1 if the CEO is not the board chair and 0 otherwise. Therefore, a larger *CEO chair dummy* means better corporate governance.

CEO ownership dummy: A dummy variable that takes the value of 1 if the CEO ownership is larger than the median across CEOs in the sample for the year and 0 otherwise.

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Therefore, a larger *CEO ownership dummy* means better corporate governance.

We then add these two measures into one variable so that we can obtain a score that represents a firm's internal governance.[5]

Following He and Tian (2013), we use *Coverage* and *InsOwn* to proxy for external governance, explained below:

Coverage: the natural logarithm of the number of analysts following for the fiscal year.

InsOwn: Institutional holding percentage for the firm, the arithmetic mean of the four quarterly institutional ownerships reported through 13F.

We divide the observations of these two variables into ten groups based on the magnitudes and score them from 1 to 10, where 1 is the score for the smallest group and 10 for the largest. Then we add the scores in order to obtain a score showing the quality of the firm's external governance.

The study includes other control variables that may affect a firm's equity-based compensation. Following Fich and Shivdasani (2005), we include the market-adjusted, 12-month stock return (*STOCK_RETURN*) to control for the preference for stocks or options arising from the stock price performance of the company, annual R&D expense over sales (*R&D*) to control for a company's growth opportunities, percentage of annual cash retainer to total compensation of the entire audit committee (*CASHCOMP*) to control for the impact of other compensation components, and the natural logarithm of the firm's sales (*LNSALES*) to control for the firm's size. In addition, we use the percentage of interest expense to sales to proxy for the liquidity constraints (*LIQ_CONSTRAINTS*) of a firm based on Core and Guay (2001) study. Finally, we control for board size (*BOARDSIZE*) and the 2-digit SIC industry dummy in the model.

4.2.5 Empirical Model

To sum up, we use the binary logistic regression model below to test the association between the occurrence of equity-based compensation for audit committee members and the firm's agency conflict, level of overlapping audit committee and compensation committee members, and proportion of audit committee members who are top executives receiving compensation from other companies. The dependent variable (*EQUCOMP*) takes the value of 1 if the company gives equity-based compensation to at least one of its audit committee

5 Albuquerque (2009) also includes the *number* of *meetings* and *interlock* to construct the corporate governance variables. We do not include these two variables because including them causes a large drop in our sample.

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members, and the value of 0 otherwise.

$$EQUCOMP = \alpha+\beta_1 FREE_TOBIN+\beta_2 OVERLAP_AUCOMP+\beta_3 OTHER_EXE+\beta_4 INGOV+\beta_5 EXGOV+\beta_6 CASHCOMP+\beta_7 BOARDSIZE+\beta_8 LNSALES+\beta_9 LIQ_CONSTRAINTS+\beta_{10} STOCK_RETURN+\beta_{11} R\&D+INDUSTRY\ DUMMIES+\varepsilon \quad (5)$$

Variable definitions are summarized in Table 2.

Table 2 Variable Definitions

Variable	Expected Sign	Variable Definition
Dependent Variable *EQUCOMP*		A dummy variable equal to 1 if the company grants equity-based compensation to at least one of its audit committee members, and 0 otherwise.
Independent Variables		
FREE_TOBIN	-	Interaction between the company's free cash flow and its growth opportunity, proxied by *Tobin's Q*. *Tobin's Q* is coded to 1 if it is smaller than the industry median in the year, and 0 otherwise
OVERLAP_ AUCOMP	+	The number of overlapping audit and compensation committee members divided by the number of compensation members
OTHER_EXE	-	The number of audit committee members receiving compensation from other firms divided by the number of audit committee members
INGOV	?	The sum of the *CEO chair dummy* and the *CEO ownership dummy*. The *CEO chair dummy* is a dummy variable that equals 1 if the CEO is not the board chair and 0 otherwise. The *CEO ownership dummy* is a dummy variable that takes the value of 1 if the CEO ownership share is lower than the median for the year across CEOs in the sample and 0 otherwise. A larger number means better internal governance
EXGOV	?	The sum of the scores of *Coverage* and *InsOwn*. *Coverage* means the natural logarithm of the number of analysts following for the fiscal year. *InsOwn* represents the institutional holding for the firm. These two variables are ranked, divided into ten groups, scored from 10 (highest) to 1 (lowest) and added up. Higher number means better external governance
CASHCOMP	-	Proportion of cash retainer to total compensation of the audit committee
BOARDSIZE	?	The number of directors on the board
LNSALES	?	Natural logarithm of the company sales revenue of the year

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Variable	Expected Sign	Variable Definition
LIQ_ CONSTRAINTS	+	Proportion of interest expense to sales
STOCK_RETURN	?	Market-adjusted average 12-month stock return
R&D	?	Proportion of R&D expense to sales.

5. Results

5.1 Descriptive Statistics

Table 3 presents the descriptive statistics for key variables. A typical board size has approximately 8 directors, 2 of whom are on the audit committee and 4 of whom are on the compensation committee. On average, one director serves on both audit and compensation committees. Forty-two percent of audit committee members are top executives receiving compensation from other companies. Approximately 16% of audit committee members' total compensation are cash fees. Descriptive statistics related to the control variables, firm governance, and financial variables in the regression are also included.

Table 3 Summary Statistics of Key Variables

Variable	Mean	Std. Dev.	25 Percentile	Median	75 Percentile
Board Characteristics					
Number of audit committee members	2.441	1.215	2	2	3
Number of compensation committee members	3.555	1.064	3	3	4
Board size	8.150	2.343	6	8	10
Overlapping members on audit and compensation committee	0.967	0.972	0	1	1
Proportion of audit committee members receiving compensation from other firms	0.423	0.618	0	0	0.667
Proportion of cash fee to total compensation	0.156	0.120	0.070	0.125	0.205
Governance Structure					
CEO ownership	0.020	0.050	0.000	0.003	0.012
CEO is board chair (dummy)	0.535	0.500	0	1	1
Average number of earnings forecasts	10.494	7.019	5	9	15
Institutional holdings (percentage)	0.821	0.161	0.728	0.839	0.924

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Variable	Mean	Std. Dev.	25 Percentile	Median	75 Percentile
Financial-Control Variables					
Sales (in millions)	7286.68	25574.64	608.17	1596.14	4803
Interest expense to sales	0.015	0.022	0.002	0.008	0.020
Stock return	0.010	0.036	0.008	0.011	0.029
R&D expense to sales	0.000	0.002	0	0	0

Table 4 shows the complete correlation matrix between the variables in the regression. There is a significant positive correlation between the incidence of equity-based compensation and board size, which suggests that if there are more directors on the board, firms tend to compensate audit committee members with stock and options. The correlation between the occurrence of equity-based compensation and the proportion of cash fees to total compensation is negative, suggesting that if a company gives directors more cash, given a fixed total compensation, the proportion of compensation in stock and options is less. Internal corporate governance is significantly negatively correlated with equity-based compensation, while external governance is significantly positively correlated with equity-based compensation. The correlation between equity-based compensation (*EQUCOMP*) and the proportion of audit committee members receiving compensation from other firms (*OTHER_EXE*) is significantly positive, which is different from our expectation. The insignificance of the correlation between *EQUCOMP* and *FREE_TOBIN* and *OVERLAP_AUCOMP* and the contradictory results on the correlation between *OTHER_EXE* and *EQUCOMP* may result from the influence of omitted factors on the univariate correlation test. In section 5.2, we conduct a multivariate regression analysis to control for other factors that might affect audit committee members' equity-based compensation.

We also compare characteristics of firms that compensate their audit committee members with stocks and options to those of firms that do not. Table 5 presents the results of this univariate analysis. The first and the second column present mean estimates of board, governance, and firm characteristics for the two subsamples respectively. The third column presents the absolute differences between the two subsamples and their significance.

The result shows that firms without equity pay tend to compensate their audit committee members with cash. Also, CEOs in firms without equity-based compensation tend to own more shares and have higher probability to be the chairman of the board than those in firms with equity-based compensation. Stock return seems to be higher in firms that do not pay equity-based compensation to audit committee members.

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Table 4 Pearson Correlation of Variables Used in Multivariate Analysis

		1	2	3	4	5	6	7	8	9	10	11	12
1	*EQUCOMP*	1											
2	*FREE_TOBIN*	-0.0117	1										
3	*OVERLAP_AUCOMP*	-0.0141	-0.0301	1									
4	*OTHER_EXE*	0.0397	0.013	-0.2360	1								
5	*INGOV*	-0.0785	-0.0422	0.0259	-0.0975	1							
6	*EXGOV*	0.1051	0.0475	-0.0610	0.0489	-0.0904	1						
7	*CASHCOMP*	-0.3342	-0.0550	0.4224	-0.2942	0.0778	-0.2193	1					
8	*BOARDSIZE*	0.0527	0.1255	-0.1334	0.2871	-0.1750	0.1095	-0.2728	1				
9	*LNSALES*	0.0414	0.2274	-0.0563	0.2620	-0.1259	0.2744	-0.1748	0.6000	1			
10	*LIQ_CONSTRAINTS*	0.0332	0.0862	-0.0128	-0.0251	-0.0126	0.0825	-0.0511	0.0717	0.0192	1		
11	*STOCK_RETURN*	-0.0335	-0.1480	-0.0172	-0.0156	0.0296	0.0135	0.008	-0.0181	-0.0399	0.0242	1	
12	*R&D*	0.0249	-0.0078	0.011	-0.0008	-0.0483	0.0655	-0.0416	0.0248	-0.0183	-0.0109	-0.0590	1

Note: Bold numbers denote that the coefficients are significant at the 0.1 percent level or better. N = 5,259. See Table 2 for variable definitions.

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Table 5 Differences in Board, Governance, and Firm Characteristics for Subsamples of Firms with and without Equity-Based Pay for Audit Committee

Variable	Mean of the Subsample without equity Pay (N=256)	Mean of the Subsample with equity Pay (N=5,003)	Difference of Means (Absolute Value)
Board Characteristics			
Number of audit committee members	2.219	2.453	0.234
Number of compensation committee members	3.313	3.567	0.254
Board size	7.605	8.179	0.574
Overlapping members on audit and compensation committee	1.027	0.963	0.064
Proportion of audit committee members receiving compensation from other firms	0.315	0.430	0.115
Proportion of cash compensation to total compensation	0.334	0.147	0.187***
Governance Structure			
CEO ownership	0.047	0.019	0.028***
CEO are board chair (dummy)	0.645	0.529	0.116***
Average number of earnings forecasts	8.511	10.595	2.084
Institutional holdings (percentage)	0.763	0.824	0.061
Financial-Control Variables			
Sales (in millions)	9087.186	7194.273	1892.913
Interest expense to sales	0.012	0.016	0.004
Stock return	0.015	0.010	0.005***
R&D expense to sales	0.000	0.000	0.000

Note: The following indicators represent the significance of the t-test statistic: *: significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

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5.2 Multivariate Test

We use logit regression to investigate what factors are associated with equity-based compensation for audit committee members, including stock and options. The results are presented in Table 6. We find that *FREE_TOBIN*, a proxy for agency conflict, is significantly and negatively associated with stock and option compensation for audit committee members (Coefficient = -0.001, Z-statistics = -3.26). This finding confirms the first hypothesis, suggesting that if the agency conflict in firms is severe, which implies that audit committee members have more opportunities and stronger incentives to benefit themselves, firms are inclined to not provide audit committee members with equity-based compensation. However, if agency conflicts in the firm are mild, implying fewer incentives and opportunities for the audit committee members to benefit themselves, the firm will have fewer concerns about providing equity-based compensation to its audit committee members.

In addition, consistent with hypothesis H2, the coefficient on *OVERLAP_AUCOMP* is positive and significant (Coefficient = 1.956, Z-statistics = 6.00), suggesting that a higher proportion of compensation committee members who also serve on the audit committee is associated with a higher probability of using stock and options as remuneration for audit committee members. This result suggests that when more audit committee members are also compensation committee members, they have more power to determine their compensation, and because the possible benefit from equity-based compensation is greater than that from a fixed salary, compensation committee members are more likely to provide equity-based compensation to audit committee members.

Finally, as discussed in section 3.3, audit committee members who are top executives of other firms and receive executive compensation from their home company prefer a cash retainer over stocks and options so that they can diversify their personal portfolio and lower their compensation contingency. This conjecture is also supported by the data. The results show that the proportion of audit committee members who are also top executives in other firms (*OTHER_EXE*) is significant and negatively associated with the probability of providing equity-based compensation to audit committee members (Coefficient = -0.405, Z-statistics = -2.68).

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Table 6 Logistic Regression for the Occurrence of Equity-based Compensation for Audit Committee

Variable	Coefficient	Z-statistic
FREE_TOBIN	-0.001***	(-3.26)
OVERLAP_AUCOMP	1.956***	(6.00)
OTHER_EXE	-0.405***	(-2.68)
INGOV	-0.450***	(-4.14)
EXGOV	0.060***	(2.87)
CASHCOMP	-10.414***	(-17.29)
BOARDSIZE	-0.008**	(-2.02)
LNSALES	0.062	(0.37)
LIQ_CONSTRAINTS	6.936*	(1.45)
STOCK_RETURN	-6.556***	(-3.17)
R&D	27.905	(0.49)
Intercept	6.235***	(5.42)
Industry Indicator Included	Yes	
Pseudo-R^2	25%	
Number of Observations	5,259	

Note: The table presents model coefficients, with the following indicators of significance of the Z-statistic: *: significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level. Variables are as defined in Table 2.

Most of the other control variables also reveal a significant association with the dependent variable. The results of the corporate governance variables (*INGOV* and *EXGOV*) are mixed. *INGOV* shows a significantly negative association (Coefficient = -0.450 Z-statistics = -4.14), suggesting that better internal governance structure leads firms to give their audit committees cash retainers instead of stocks and options. On the other hand, the results of *EXGOV* (Coefficient = 0.06, Z-statistics = 2.87) indicate that a better external governance structure makes firms more likely to compensate audit committee members with stocks and options. Because our external governance measure is constructed using institutional ownership and analyst following, the results might suggest that these external monitors, including institutional investors and analysts, prefer equity-based compensation for audit committee members because stocks and options better align committee members' interests with those of investors. *BOARDSIZE* and *STOCK RETURN* are significant and negatively associated with equity-based compensation for audit committee members (Coefficient = -0.008 and -6.556, Z-statistics = -2.02 and, -3.17, respectively). Not surprisingly, *CASHCOMP* shows a significantly negative (Coefficient = -10.414, Z-statistics

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= -17.29) and *LIQ_CONSTRAINTS* shows a significantly positive (Coefficient = 6.936, Z-statistics = 1.45) relationship with *EQUCOMP*. Cash and equity-based awards tend to be complementary components of audit committee members' compensation. Firms facing liquidity constraint problems may substitute equity compensation for cash pay, in accord with Core and Guay (2001). *LNSALES* and *R&D* show no significant relation to equity compensation for audit committee members.

6. Conclusion

Motivated by the growing trend of offering equity-based compensation to audit committee members, the enhanced role of the audit committee because of new regulations and the focus on audit committee independence, we examine factors that affect firms' decisions to offer equity-based compensation to audit committee members. Given that equity-based compensation might provide incentives for executives to conduct earnings management to increase stock prices, such compensation might result in these committee members' compromising their monitoring roles. However, companies continue to provide equity-based compensation for their audit committee members. In this study, we investigate the factors that might be associated with companies' decisions to choose equity-based compensation for audit committee members.

Using 5,259 observations of U.S. companies from 2006 to 2012, we find that agency conflict in a firm is significant and negatively associated with the presence of equity-based compensation for audit committee members, suggesting that when concerns about agency conflict are large, firms provide less equity-based compensation to alleviate these concerns. In addition, firms where more compensation committee members also sit on the audit committee are significantly more likely to give equity-based compensation to audit committees. Because the potential benefit of stock and options is higher relative to that of a fixed salary, these overlapping committee members might prefer equity-based compensation to enlarge their personal wealth. Finally, firms with more audit committee members who are top managers in other firms are less likely to give equity pay to audit committee members. The results suggest that because these top management members already receive a large amount of equity-based compensation from their home company, because of risk exposure concerns, they prefer a fixed salary from the board they sit on.

Our study is subject to several caveats. First, some of the variables involve several assumptions; thus they may contain some measurement errors. Second, while we control for

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several governance attributes to mitigate the correlated omitted variables problem, it is difficult to capture all the relevant corporate governance factors. Despite these limitations, the study contributes to the literature by proposing several factors that affect adoption of equity plans for audit committee members. It provides a starting point for further research into the impact of firm characteristics or audit and compensation committee characteristics on corporate decisions regarding audit committee compensation. Finally, Lynch and Williams (2012) suggest that the two different compensation forms, stocks and stock options, might result in different effects on audit committee members' decisions. Future analysis may separately investigate the determinants of granting stocks and the determinants of granting stock options to audit committee members to reach a more precise conclusion about firms' choice of compensation forms for audit committee members.

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作者簡介

賴運霆

國立臺灣大學會計研究所碩士。目前為美國德州大學達拉斯分校會計學碩士生。

*** 吳淑鈴**

美國德州大學達拉斯分校會計博士，現任國立臺灣大學會計學系助理教授。主要研究領域為高階主管薪酬、應計項目異像、及公司治理。論文曾被接受發表於 Contemporary Accounting Research 及 Accounting Horizon 等重要國際期刊。

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* E-mail: shulingwu@ntu.edu.tw