Equity-based Compensation of Outside Directors and Corporate Tax Avoidance

1. Introduction

This study investigates the effect of outside directors' compensation on a firm's tax behavior. The board of directors bears the responsibility of protecting shareholder interests and maximizing firm value. One way to increase shareholder wealth is through effective tax management as tax savings can improve the bottom line of a firm.[1] Accordingly, there is considerable research studying the effects of various board characteristics on corporate tax behavior (Armstrong et al. 2015; Minnick and Noga 2010; Lanis and Richardson 2011; Richardson et al. 2013; Robinson et al. 2012). These studies, focusing on the financial expertise and independence of the board, generally find that tax avoidance is associated with these board attributes. However, the literature has paid less attention to the potential effects of directors' most direct incentives arising from their compensation structure. In this paper, we examine whether outside directors' equity-based compensation (hereafter DEC) is associated with the firm's tax avoidance.

The literature suggests that executive compensation incentives have a significant effect on firms' tax avoidance behavior. Phillips (2003) finds that compensation for business unit managers based on after-tax income is associated with a lower effective tax rate. Similarly, Armstrong et al. (2012) find a negative association between incentive compensation for tax directors and GAAP effective tax rates. Rego and Wilson (2012) document that more equity risk incentives are associated with greater tax risk, whereas Desai and Dharmapala (2006) find that increases in incentive compensation reduce the level of tax sheltering. Overall the abovementioned studies document managerial equity incentives as an important determinant

[1] Prior studies argue that there is an optimal level of tax planning/avoidance for a firm to maximize shareholder value (Slemrod 2004; Desai and Dharmapala 2006; Armstrong et al. 2015). Therefore, in this paper we use the term tax management, tax planning, and tax avoidance interchangeably.

of tax avoidance behavior. As tax decisions are usually approved by the board of directors, directors' compensation incentives should play an essential role in shaping a firm's tax avoidance strategy.

Outside directors are often regarded as independent monitors and charged with overseeing managers' decision-making process. Yermack (2004) suggests that reputation and compensation are two major sources of incentives for outside directors to protect shareholders. As the value of a firm increases, outside directors are rewarded with higher compensation and additional board seats in other companies (presumably due to good reputation). Shareholder activists tend to advocate the use of incentive-based compensation to motivate directors to monitor management in the long-run interest of shareholders. The NACD (2001, 2003) specifically recommends that at least half of director compensation be in the form of equity, including stock options and restricted stock grants. Supporting these advocates, survey studies provide evidence that large U.S. companies have increased the use of stock options and stock grants to compensate their outside directors (Monks and Minow, 2001; Taub, 2005; Winikoff, 2006).

Equity-based compensation can provide outside directors with two types of incentives which could lead to contrasting behavior. On one hand, as the directors' wealth sensitivity to firm performance becomes higher, DEC will increase their incentives to monitor management more diligently (Hermalin and Weisbach 1998; Ryan and Wiggins 2004). The increased monitoring could lead to more effective tax management, which drives higher firm profit. On the other hand, as directors' equity stake in a company rises, they may focus on maximizing the value of their own compensation package rather than protecting shareholder interests. Such personal benefit incentives resulting from DEC will jeopardize directors' independence and exacerbate the agency problem (Archer 2003; Stout 2003). Absent effective monitoring and oversight, managers have lower incentives to engage in tax planning which would otherwise allow them to extract private rents (Desai and Dharmapala 2006). Based on the

above discussions, whether DEC ultimately has a positive or negative influence on tax avoidance is an empirical question.

Our empirical analyses use ExecuComp's director-level compensation data for 2006 through 2015. Following prior studies, we use two commonly used measures of tax avoidance: cash effective tax rate (cash ETR) and GAAP effective tax rate (GAAP ETR), both calculated over a three-year period.[2] Moreover, we employ an instrumental variable approach to mitigate the endogeneity concern of director equity incentives. The two-stage least squares (2SLS) estimation shows that firms paying a higher fraction of their outside director compensation in the form of equity have lower cash ETR and GAAP ETR. This finding is consistent with the argument that DEC increases outside directors' monitoring incentive and facilitates a better tax management strategy. Our results are robust to using the dollar value of total equity compensation (as opposed to a ratio-based measure) and using alternative tax avoidance measures including current-year cash ETR, current-year GAAP ETR, and unrecognized tax benefits.

We conduct additional tests to examine the cross-sectional variations of the relation between outside director equity incentives and tax avoidance. First, we find that the positive association between DEC and tax avoidance is more pronounced in firms adopting the defender-type business strategy relative to those adopting the prospector-type business strategy. Given prior findings that defender firms engage a higher level of tax avoidance (Higgins et al. 2015; Hsu et al. 2018), our results suggest that DEC enhances outside directors' monitoring role so that firms adopt a tax planning strategy which fits the business strategy. Second, we find some evidence that the relation between DEC and tax avoidance is stronger in firms that are more financially constrained, consistent with financial constraints forcing managers to make more effective tax planning.

[2] Prior studies suggest that, relative to one-year ETR, ETR calculated over a longer horizon better reflects a firm's tax planning effectiveness (Dyreng et al 2008).

Our study contributes to the literature in several ways. First, we contribute to the debate regarding the impact of director equity incentives on corporate outcomes. Some studies show that DEC increases firm performance (Becher et al. 2005; Fich and Shivdasani 2005; Perry 1999), improves disclosure quality and reduces cost of capital (Sengupta and Zhang 2015). However, other studies document that firms with higher DEC are more likely to incur option backdating (Minnick and Zhao 2009) and accounting irregularities (Archambeault et al., 2008; Boumosleh, 2009; Cullinan et al. 2008, 2010). Our findings that DEC is positively associated with tax avoidance provide additional evidence which supports the role of director equity incentives in facilitating better tax planning outcomes.

Second, our paper adds to the literature studying the effects of corporate governance and compensation incentives on tax avoidance. Prior research finds that managerial incentives play an important role in influencing corporate tax behavior (Armstrong et al. 2012, 2015; Desai and Dharmapala 2006; Minnick and Noga 2010; Rego and Wilson 2012). In addition, better corporate governance mechanisms such as higher independence and greater financial expertise of the board or audit committee members tend to be associated with a higher level of tax avoidance (Armstrong et al. 2015; Moore et al. 2017; Robinson et al. 2012). We complement this literature by showing a positive effect of director equity incentives on tax avoidance.

The rest of the paper is organized as follows. Section 2 reviews related literature and develops research hypothesis. Section 3 describes the data and research methodology. Section 4 presents the empirical results. Section 5 discusses additional analyses. Section 6 provides concluding remarks.

2. Literature Review and Hypothesis Development

Board Characteristics and Tax Avoidance

Researchers propose that tax planning is a value-enhancing activity and that tax avoidance is valued by shareholders (Cook et al. 2017; Graham and Tucker 2006; Slemrod

2004). Given the importance of tax management to shareholder value, prior literature shows that firms engage in varying levels of tax avoidance activities, which are affected by various firm-level characteristics (Shackelford and Shevlin 2001; Dyreng et al. 2008). Several studies explore the role of various corporate governance dimensions as determinants of tax avoidance/aggressiveness, such as executive compensation (Desai and Dharmapala 2006; Minnick and Noga 2010; Phillips 2003; Rego and Wilson 2012), institutional ownership (Chen et al. 2010; Khurana and Moser 2013), and family firm status (Chen et al. 2010; Moore et al. 2017; Steijvers and Niskanen 2014).

From an agency perspective, the board of directors plays a critical role in advising corporate strategy and monitoring executives' decisions to maximize shareholder interests (Fama and Jensen 1983). On the one hand, risk-averse managers may avoid tax avoidance activities that involve significant uncertainty, even if the activities are expected to generate net benefits for shareholders (Rego and Wilson, 2012). On the other hand, managers may engage in complex and risky tax avoidance activities, possibly as a means of facilitating and/or hiding extraction of private benefits (Desai and Dharmapala, 2006). Consequently, many studies explore how board characteristics affect firms' tax behavior, with most research focusing on two attributes: independence and financial expertise.

The extant empirical evidence is mixed regarding the effect of board independence on tax avoidance. In the context of noncompliant tax avoidance among Australian firms, Lanis and Richardson (2011) and Richardson et al. (2013) find that a higher proportion of independent directors on the board is negatively associated with tax aggressiveness. On the other hand, Moore et al. (2017) find a positive association between board independence and tax avoidance based on a sample of US firms. As for the effect of directors' financial expertise, Armstrong et al. (2015) show that more financially sophisticated boards encourage more (less) aggressive tax positions for firms at the lower (upper) extreme of the tax avoidance continuum. In a similar vein, Robinson et al. (2012) find that audit committee

financial expertise is positively associated with overall tax planning but is negatively associated with the use of risky tax avoidance strategies.

Research Hypothesis

Jensen (1993) suggests that outside directors have stronger incentives to monitor top management if they hold substantial equity interests in the firm. Consistent with this argument, studies find that directors with a sizable equity stake in the firm are more likely to question management's self-dealing proposals (Patton and Baker 1987) and dismiss poorly-performing CEOs (Perry 1999). Fich and Shivdasani (2005) document that firms adopting option plans for outside directors experience significantly positive abnormal returns as well as favorable revisions in analysts' earnings forecasts. Sengupta and Zhang (2015) also show that higher equity-based compensation to outside directors is associated with better disclosure quality measured by more frequent and more accurate earnings guidance.

Despite the argument that equity-based compensation helps align the interests of directors and shareholders, concerns exist about providing incentive-based pay to outside directors who should serve as independent monitors. Opponents of equity compensation argue that tying outside directors' pay more closely to stock performance will jeopardize their independence and lead to biased judgement and ineffective monitoring in corporate decision-making (Archer, 2003; Barrier, 2002; Dalton and Daily, 1999; Stout 2003; Magilke et al. 2009). Supporting this perspective, studies find that higher equity-based pay to outside directors results in more earnings management and financial restatements (Archambeault et al., 2008; Boumosleh, 2009; Cullinan et al. 2008), weaker internal controls (Cullinan et al. 2010), and a greater incidence of option backdating (Minnick and Zhao 2009), all of which hamper shareholder interests.

Following the above discussions, the monitoring incentives from equity-based compensation might motivate outside directors to engage managers in more tax avoidance. In contrast, the private benefit resulting from equity incentives could also undermine outside

directors' oversight quality as they focus on short-term self-interests. Given the contrasting effect, we develop a non-directional hypothesis as follows:

H1: Equity-based compensation to outside directors is associated with corporate tax avoidance.

3. Research Design

Empirical Model

Our hypothesis predicts that outside director equity incentives will affect corporate tax avoidance. However, the level and/or composition of director compensation might be endogenously determined (Rego and Wilson 2012). Therefore, we use the instrumental variable approach and two-stage least-squares (2SLS) estimation method to address the endogeneity issue.[3] The formal models are specified as follows:

$$\begin{aligned} DECPCT_{i,t} = {} & \alpha_0 + \alpha_1 BDMGT_{i,t} + \alpha_2 BDOWN_{i,t} + \alpha_3 SIZE_{i,t} + \alpha_4 LEV_{i,t} + \alpha_5 TBQ_{i,t} \\ & + \alpha_6 RD_{i,t} + \alpha_7 INTAN_{i,t} + \alpha_8 CAPEX_{i,t} + \alpha_9 SGA_{i,t} + \alpha_{10} PTCFO_{i,t} \\ & + \alpha_{11} FOREIGN_{i,t} + \alpha_{12} LOSS_{i,t} + \alpha_{13} DUALITY_{i,t} + \alpha_{14} BDSIZE_{i,t} \\ & + \alpha_{15} COMPAGE_{i,t} + \sum Industry + \sum Year + \mu_{i,t} \quad (1) \end{aligned}$$

$$\begin{aligned} & CETR3Y_{i,t+1}/GETR3Y_{i,t+1} \\ & = \beta_0 + \beta_1 PRE\_DECPCT_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 TBQ_{i,t} + \beta_5 RD_{i,t} \\ & + \beta_6 INTAN_{i,t} + \beta_7 CAPEX_{i,t} + \beta_8 SGA_{i,t} + \beta_9 PTCFO_{i,t} + \beta_{10} FOREIGN_{i,t} \\ & + \beta_{11} LOSS_{i,t} + \beta_{12} DUALITY_{i,t} + \beta_{13} BDSIZE_{i,t} + \beta_{14} COMPAGE_{i,t} \\ & + \sum Industry + \sum Year + \varepsilon_{i,t} \quad (2) \end{aligned}$$

In the first-stage, the dependent variable *DECPCT* is the proportion of equity-based incentives for outside directors. In the main analysis, we use the ratio of the sum of stock awards and option awards of each outside director divided by the director's total compensation. This ratio is averaged across all outside directors of a firm for a particular

[3] Hausman test also indicates the existence of endogeneity (Chi-squared statistic=4.63, p value=0.03), which suggests that 2SLS estimator is better than OLS estimator.

year. Using total compensation as a deflator is less scale dependent than other measures based on the dollar value of equity compensation. Nonetheless, in robustness tests we use the dollar amount of total equity compensation of outside directors as an alternative measure.

We use two variables as the instruments in model (1): board meeting frequency (*BDMTG*) and total equity ownership by directors and executives (*BDOWN*). These instruments are shown to be determinants of director compensation (Boyd 1996; Cordeiro et al. 2000) but are less likely to be correlated with tax avoidance. We then use the predicted value of *DECPCT* from model (1) in the second-stage regression, denoted *PRE_DECPCT*, and test whether it has a significant effect on tax avoidance. As suggested by prior research (Larcker and Rusticus 2010), we also include the second-stage control variables in model (1).

Consistent with prior literature (Chen et al. 2010; Dyreng et al. 2010; Hanlon and Heitzman 2010), in model (2) we measure tax avoidance by two broad and easy to understand measures: the cash effective tax rate (cash ETR) and the GAAP effective tax rate (GAAP ETR). Both measures capture the amount of tax firms pay relative to their pre-tax accounting income. Cash ETR is based on cash flows and reflects firms' actual cash tax payments. GAAP ETR is based on GAAP tax expense which includes tax accruals for financial reporting purposes. We examine both types of effective tax rates because survey results in Graham et al. (2017) suggest that there is a potential variation among top management regarding which tax rates are used in corporate decisions. Prior research also suggests that long-run tax rate better captures a firm's tax management ability despite isolated events (Dyreng et al. 2008; Graham et al. 2014), thus we compute both effective tax rates over a three-year period. Moreover, to control for the industry effect, we follow prior studies and use industry-adjusted effective tax rate as the dependent variable (Armstrong et al. 2015; Hsu et al. 2018; Minnick and Noga 2010). More specifically, *CETR3Y* (*GETR3Y*) in model (2) is calculated as the firm's mean three-year cash ETR (GAAP ETR) minus the corresponding industry mean, with industry defined by the two-digit SIC code.

The control variables in model (2) are commonly used determinants of tax avoidance (Armstrong et al. 2015; Dyreng et al. 2010). *SIZE* is measured by the natural logarithm of net sales. *LEV* is measured by long-term debt divided by lagged total assets. *TBQ* refers to Tobin's Q, calculated as the sum of market value of common stock, book value of preferred stock, and book value of total debt divided by book value of lagged total assets. *RD* is measured by research and development expense scaled by lagged total assets. *INTAN* is measured by total intangible assets divided by lagged total assets. *CAPEX* is measured by capital expenditures divided by lagged total assets. *SGA* is measured by selling, general and administrative expense scaled by lagged total assets. *PTCFO* is measured by pre-tax operating cash flows (net cash flows from operations plus cash taxes) scaled by lagged total assets. *FOREIGN* is an indicator equal to one if the firm reports foreign sales, and zero otherwise. *LOSS* is an indicator equal to one if the firm has net operating loss, and zero otherwise. *DUALITY* is an indicator equal to one if the CEO also serves as the board chairman, and zero otherwise. *BDSIZE* is the board size. *COMPAGE* is the firm age, measured by the number of years the firm has been included in Compustat. Finally, we control for industry and year fixed effects. All variable definitions are summarized in the Appendix. To mitigate the influence of potential outliers, we winsorize all continuous variables at the top and bottom one percentiles. In addition, standard errors are adjusted based on the Huber-White sandwich estimate of variances and are clustered by firm.

Data and Sample Selection

Our data come from several sources: financial data is obtained from Compustat, director compensation is obtained from Execuomp, and other director-related governance data is obtained from MSCI-GMI database.

We start from an initial sample of firms covered by Compustat from 2006 to 2018, including 118,511 observations. Since we examine three-year effective tax rate, this requirement removes 49,954 observations with missing tax rate data and reduces our sample

period to 2006~2015. Following Dyreng et al. (2010), we exclude 15,546 observations that have negative effective tax rate. Next, we remove 40,547 observations not covered in Execucomp database. Finally, removing 4,932 observations with missing data on other empirical variables results in a final sample of 7,532 observations from 1,368 firms. The detailed sample selection process is summarized in Table 1.

[Table 1 Here]

Table 2 reports the breakdown of sample by year and by industry. Panel A shows that the number of firms are generally distributed evenly across the sample period. The industry breakdown in Panel B shows that our sample encompasses a broad cross-section of industries, with manufacturing industry accounting for the largest percentage (40.45%).

[Table 2 Here]

4. Empirical Results

Descriptive Statistics

Table 3 provides descriptive statistics of key variables used in the main analyses. The mean (median) industry-adjusted cash ETR is -0.059 (-0.007), while the mean (median) industry-adjusted GAAP ETR is -0.176 (-0.006). These findings are comparable with those of prior studies (Hsu et al. 2018) and suggest that a majority of our sample firms have effective tax rates lower than the mean value of their corresponding industry. The descriptive statistics also show a large cross-sectional variation in both effective tax rate measures. The average percentage of equity-based compensation is 51.7% (median=53.2%) for the outside directors in our sample. This result is consistent with recent survey reports that more companies are increasing outside directors' equity incentives in attempt to align their interests with shareholders'.[4]

[Table 3 Here]

[4] Papadopoulos, K. May 6, 2019. Update on U.S. Director Pay. *Harvard Law School Forum on Corporate Governance and Financial Regulation.* https://corpgov.law.harvard.edu/2019/05/06/update-on-u-s-director-pay/

Correlation Matrix

Next, we conduct bivariate analysis by obtaining the Pearson correlation coefficients of the major variables used in our test. Table 4 shows that DECPCT is negatively correlated with both *CETR3Y* (-0.10, significant at p=0.01) and *GETR3Y* (-0.08, significant at p=0.01). These results provide preliminary evidence that firms that grant outside directors higher equity-based compensation are associated with higher tax avoidance. The correlations of other variables are generally consistent with the literature.

[Table 4 Here]

Regression Results

Table 5 presents the 2SLS regression results. The first-stage regression in column (1) shows that the instrument *BDMTG* is not significant but *BDOWN* has a negative and significant coefficient ($p<0.01$). This suggests that director equity incentives are decreasing with director ownership, consistent with the expectation. The first-stage partial F test is statistically significant ($F=14.65$, $p<0.01$), suggesting that the instruments are jointly relevant.[5] The second-stage regression results show that our main variable of interest *PRE_DECPCT* is negatively associated with both three-year cash ETR (coefficient=-0.23, significant at $p<0.05$) and three-year GAAP ETR (coefficient=-0.627, significant at $p<0.05$). These findings suggest that firms engage in more tax avoidance when they grant higher equity-based compensation to outside directors. The results are consistent with equity compensation providing long-term incentives for outside directors to protect shareholder interests by encouraging managers to perform better tax planning.

[Table 5 Here]

Robustness Tests

[5] The Cragg-Donald Wald F-statistic rejects the null hypothesis (F=93.14), indicating that the chosen instruments are jointly relevant in the first-stage and less likely to suffer from the weak instrument problem. Moreover, Hansen *J*-statistic on the test of overidentifying restrictions is insignificantly different from zero (p value=0.92), suggesting that the instruments satisfy the exclusion restriction criterion.

We conduct several sensitivity tests to ensure the robustness of our findings. First, we use total equity-based compensation (DECAMT, measured by the natural logarithm of the sum of stock awards and option awards) as an alternative measure of equity incentives. While the percentage of equity-based compensation reflects the relative incentives, the total amount of equity compensation captures the magnitude of total incentives. The results of this analysis are presented in Table 6.

[Table 6 Here]

Column (1) of Table 6 reports the first-stage regression results, showing that outside director equity compensation is positively related to *BDMTG* and negatively related to *BDOWN*. The results in the second-stage regression consistently show a negative and significant coefficient on *PRE_DECAMT* for both cash ETR and GAAP ETR. Therefore, this sensitivity analysis still supports our main finding that firms engage in more tax avoidance when they provide a higher level of equity compensation to outside directors.

Second, our main analyses use long-term effective tax rates to measure tax avoidance. Following prior research, we also use industry-adjusted current-period cash ETR (*CETR*) and GAAP ETR (*GETR*) as a robustness check. The results of this analysis are reported in columns (1) and (2) of Table 7. For brevity the first-stage regression results are not tabulated. We find that *PRE_DECPCT* is negatively and significantly associated with both current cash ETR (coefficient=-0.249, significant at $p<0.05$) and current GAAP ETR (coefficient=-0.948, significant at $p<0.05$). Therefore, combined with Table 5 these results suggest that firms tend to have lower effective tax rates, both short-term and long-term, when outside directors have higher equity incentives.

In addition to effective tax rate, prior studies also use unrecognized tax benefits (UTBs) as another tax avoidance measure (Rego and Wilson 2012; Lisowsky et al. 2013; Armstrong et al. 2015). UTBs represent the amount of income taxes associated with uncertain tax positions and are considered one proxy for risky tax planning. Thus our third robustness test

uses UTB as the dependent variable in the second-stage regression. Higher UTB indicates a greater level of tax avoidance. The results of this analysis are reported in column (3) of Table 7. We find a positive and significant coefficient on *PRE_DECPCT*, suggesting that higher equity incentives for outside directors are associated with more aggressive tax management. Overall, our inferences are robust to different tax avoidance measures.

[Table 7 Here]

5. Additional Analyses

In this section we perform conditional tests to examine the cross-sectional variations in the relation between outside director equity incentives and tax avoidance.

The Effect of Business Strategy

Miles and Snow (1978) identify two distinct business strategies that will affect a firm's tax planning strategy. More specifically, firms that follow a cost leadership strategy, characterized as defenders, tend to minimize their exposure to risk and uncertainty, whereas firms that follow an innovative strategy, characterized as prospectors, tend to actively pursue new opportunities and engage in more risk-taking activities. Consistent with this theoretical framework, empirical studies provide evidence supporting that defenders (prospectors) have lower (higher) levels of tax avoidance (Higgins et al. 2015; Hsu et al. 2018).

Since the board of directors plays a key role in formulating a firm's business strategy as well as tax management strategy, we examine whether the documented association between equity incentives and tax avoidance varies with the firm's business strategy type. Following Bentely et al. (2013), we identify a firm's type of business strategy based on the following six variables: (1) the ratio of research and development expense to sales, (2) the ratio of employees to sales, (3) annual percentage change in total sales, (4) the ratio of SG&A expense to sales, (5) standard deviation of total employees, and (6) the ratio of net PPE to total assets. To construct a composite measure, we rank each of the six variables by forming quintiles within each two-digit SIC industry-year. Observations in the top quintile receive a

score of 5 and those in the lowest quintile are given a score of 1. Then for each firm-year we sum the scores across the six variables such that the maximum (minimum) strategy score a firm could receive is 30 (6). Higher strategy scores represent prospector types while lower strategy scores represent defender types. We partition our sample into defenders and prospectors based on the median value of the strategy score and perform the main analyses for the two subsamples. The results are summarized in Table 8.

[Table 8 Here]

Columns (1) and (2) measure tax avoidance by three-year cash ETR. The results show that the coefficient on *PRE_DECPCT* is significantly negative (coefficient=-0.293, significant at $p<0.05$) in the group of defender-type firms but not significant in the group of prospector-type firms. The Wald test yields a statistically significant Chi-squared statistic of 1.74, suggesting that the effect of outside director equity incentives is significantly different among the two subsamples. More specifically, the negative relation between equity incentives and tax avoidance is more pronounced in firms adopting the defender-type business strategy, consistent with the findings in Hsu et al. (2018). We obtain similar results in columns (3) and (4) where the dependent variable is three-year GAAP ETR: *PRE_DECPCT* has a negative and significant (insignificant) coefficient in the subsample with the defender (prospector) strategy, and the Wald test (Chi-squared statistic=1.48, p value<0.1) suggests a significantly different coefficient across the two subsamples. Taken together, the results in Table 8 suggest that higher equity incentives facilitate outside directors' monitoring role in encouraging mangers to adopt a tax planning strategy consistent with the firm's business strategy.

The Effect of Financial Constraints

The corporate finance theory posits that financial constraints are frictions that prevent firms from making all desired investments (Lamont et al. 2001). Firms facing higher financial constraints experience an increase in the cost of external financing or an increase in the difficulty of accessing external funds (Whited and Wu 2006). As a result, financially

constrained firms need to seek for alternative sources to fund operations, among which tax savings become an important source of internal financing. Law and Mills (2015) and Edwards et al. (2016) both provide evidence that firms with increased financial constraints engage more heavily in tax avoidance. Therefore, in this section we effect of outside director equity incentives on tax avoidance is conditional on firms' financial constraints.

We use two commonly used measures of financial constraints: the WW Index proposed by Whited and Wu (2006) and the SA Index developed by Hadlock and Pierce (2010). Then we divided the sample into high-constraint and low-constraint groups based on the industry median of the financial constraint index. The results of this cross-sectional test are presented in Table 9.

Panel A of Table 9 uses WW Index as the measure of financial constraints. For both cash ETR and GAAP ETR, the results indicate a significantly negative coefficient on *PRE_DECPCT* in the high-constraint sample. Panel B of Table 9 uses the SA Index to measure financial constraints. We obtain consistent results that *PRE_DECPCT* is negative and significant in the high-constraint sample but not significant in the low-constraint sample. These findings collectively suggest that outside directors' equity incentives have a stronger effect on tax avoidance in firms facing higher financial constraints, consistent with financially constrained firms having a greater demand for internally generated funds through tax planning.

[Table 9 Here]

6. Conclusion

To enhance the link between directors' monetary incentives and firm performance, many companies award directors large stock and option grants that are more closely tied to the firm's stock price performance. As equity-based compensation of directors becomes more popular, it is important to examine the consequences of this form of compensation. Advocates of incentive compensation argue that, by providing ownership incentives, equity-based pay

can motivate directors to focus on maximizing stock returns and shareholder value. On the other hand, however, focusing on stock prices might hamper directors' independent monitoring as they become more short-sighted. In this study, we examine how these two contrasting incentives affect a firm's tax planning decisions.

We find that firms that pay a higher proportion of outside directors' compensation in the form of equity have lower long-term effective tax rates, consistent with equity-based incentives aligning managers' interests with shareholder interests. We also find that the positive effect of outside director equity incentives on tax avoidance is more pronounced in firms adopting a prospector business strategy and in firms that are more financially constrained. Overall the findings collectively suggest that equity-based compensation helps motivate outside directors to perform better advising and monitoring so that managers engage in more tax avoidance to maximize shareholder wealth.

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Appendix: Variable Definitions

Variable	Definition
$CETR3Y_{i,t+1}$	Industry-adjusted three-year cash effective tax rate, computed as the firm's mean three-year cash ETR (cash tax payment scaled by pre-tax income) minus the industry (based on 2-digit SIC code) mean three-year cash ETR
$GETR3Y_{i,t+1}$	Industry-adjusted three-year GAAP effective tax rate, computed as the firm's mean three-year GAAP ETR (total tax expense scaled by pre-tax income) minus the industry (based on 2-digit SIC code) mean three-year GAAP ETR
$DECPCT_{i,t}$	The sum of stock awards and option awards divided by the total compensation of outside directors
$BDMTG_{i,t}$	Number of board meetings during the year
$BDOWN_{i,t}$	Number of shares held by executives and directors divided by total number of outstanding shares
$SIZE_{i,t}$	Natural logarithm of net sales
$LEV_{i,t}$	Long-term debt divided by lagged total assets
$TBQ_{i,t}$	The sum of market value of common stock, book value of preferred stock, and book value of total debt divided by book value of lagged total assets
$RD_{i,t}$	Research and development expense scaled by lagged total assets
$INTAN_{i,t}$	Total intangible assets divided by lagged total assets
$CAPEX_{i,t}$	Capital expenditures divided by lagged total assets
$SGA_{i,t}$	Selling, general and administrative expense scaled by lagged total assets
$PTCFO_{i,t}$	Pre-tax operating cash flows (net cash flows from operations plus cash taxes) scaled by lagged total assets
$FOREIGN_{i,t}$	An indicator equal to one if the firm reports foreign sales, and zero otherwise
$LOSS_{i,t}$	An indicator equal to one if the firm has net operating loss, and zero otherwise
$DUALITY_{i,t}$	An indicator equal to one if the CEO also serves as the board chairman, and zero otherwise

$BDSIZE_{i,t}$	Number of directors on the board
$COMPAGE_{i,t}$	Firm age, measured by the number of years the firm has been included in Compustat

Table 1 Sample Selection Process

Selection Criteria	Observations	Firms
Compustat coverage 2006~2018	118,511	16,318
Less:		
Missing three-year effective tax rates	(49,954)	(5,841)
Negative effective tax rates	(15,546)	(414)
Not covered in Execucomp	(40,547)	(8,042)
Missing data on other variables	(4,932)	(653)
Final sample during 2006~2015	7,532	1,368

Table 2 Sample Distribution by Year and by Industry

Panel A: Sample Distribution by Year

Year	Number of Firms	Percentage
2006	575	7.63%
2007	773	10.26%
2008	741	9.84%
2009	770	10.22%
2010	832	11.05%
2011	853	11.32%
2012	847	11.25%
2013	824	10.94%
2014	723	9.60%
2015	594	7.89%
Total	7,532	100.00%

Panel B: Sample Distribution by Industry

2-digit SIC code	Industry Name	Observations	Percentage
01~09	Agricultures	18	0.24%
10~14	Mining	134	1.78%
15~17	Construction	98	1.30%
20~39	Manufacturing	3,047	40.45%
40~49	Transportation	590	7.83%
50~59	Retail	1,092	14.50%
60~67	Financial, Insurance, Real Estate	1,260	16.73%
70~89	Services	1,221	16.21%
99	Others	72	0.96%
Total		7,532	100.00%

Table 3 Descriptive Statistics (N=7,532)

	Mean	Std. Dev.	1%	Q1	Median	Q3	99%
CETR3Y	-0.059	0.290	-1.593	-0.083	-0.007	0.051	0.409
GETR3Y	-0.176	0.895	-5.255	-0.070	-0.006	0.038	0.367
DECPCT	0.517	0.210	0.000	0.425	0.532	0.646	0.962
BDMTG	7.323	3.566	0.000	5.000	7.000	9.000	21.000
BDOWN	0.105	0.159	0.000	0.019	0.042	0.110	0.816
SIZE	7.675	1.596	4.261	6.504	7.547	8.738	11.588
LEV	0.180	0.186	0.000	0.021	0.141	0.276	0.986
TBQ	2.297	1.477	0.736	1.316	1.845	2.714	8.872
RD	0.022	0.043	0.000	0.000	0.000	0.025	0.241
INTAN	0.227	0.233	0.000	0.028	0.161	0.359	1.047
CAPEX	0.044	0.048	0.000	0.013	0.030	0.058	0.300
SGA	0.218	0.203	0.000	0.050	0.171	0.325	0.934
PTCFO	0.158	0.108	-0.055	0.085	0.143	0.215	0.511
FOREIGN	0.596	0.491	0.000	0.000	1.000	1.000	1.000
LOSS	0.666	0.471	0.000	0.000	1.000	1.000	1.000
DUALITY	0.526	0.499	0.000	0.000	1.000	1.000	1.000
BDSIZE	9.340	2.605	0.000	8.000	9.000	11.000	16.000
COMPAGE	28.073	17.332	3.000	14.000	22.000	43.000	64.000

Note: Variable definitions are summarized in the Appendix.

Table 4 Pearson Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) *CETR3Y*	1.000																	
(2) *GETR3Y*	**0.923**	1.000																
(3) *DECPCT*	**-0.101**	**-0.083**	1.000															
(4) *BDMTG*	**-0.032**	**-0.029**	-0.016	1.000														
(5) *BDOWN*	**0.030**	0.016	**-0.150**	**-0.100**	1.000													
(6) *SIZE*	**0.033**	**0.038**	**0.098**	**0.079**	**-0.196**	1.000												
(7) *LEV*	**0.027**	**0.047**	**0.063**	**0.050**	**-0.059**	**0.195**	1.000											
(8) *TBQ*	**-0.100**	**-0.096**	**0.243**	**-0.118**	**0.027**	**-0.148**	-0.015	1.000										
(9) *RD*	**-0.129**	**-0.098**	**0.245**	-0.002	**-0.055**	**-0.158**	**-0.120**	**0.318**	1.000									
(10) *INTAN*	**-0.127**	**-0.131**	**0.164**	**0.057**	-0.018	**0.096**	**0.345**	**0.059**	**0.042**	1.000								
(11) *CAPEX*	**0.030**	**0.047**	**0.079**	**-0.086**	**0.062**	-0.011	**0.092**	**0.213**	**-0.055**	**-0.205**	1.000							
(12) *SGA*	**-0.028**	**-0.052**	**0.142**	**-0.118**	**0.142**	**-0.074**	**-0.100**	**0.374**	**0.227**	**0.043**	**0.123**	1.000						
(13) *PTCFO*	-0.005	**-0.047**	**0.179**	**-0.147**	**0.078**	**-0.031**	**-0.026**	**0.667**	**0.157**	**0.035**	**0.370**	**0.427**	1.000					
(14) *FOREIGN*	**-0.086**	**-0.094**	**0.202**	**-0.023**	**-0.094**	**0.248**	**0.074**	**0.067**	**0.231**	**0.266**	**-0.073**	**0.113**	**0.087**	1.000				
(15) *LOSS*	**-0.057**	**-0.058**	**0.120**	**-0.115**	**0.045**	**0.026**	**0.042**	**0.104**	**0.109**	**0.133**	**0.074**	**0.184**	**0.172**	**0.169**	1.000			
(16) *DUALITY*	**0.039**	**0.043**	0.001	**-0.030**	0.001	**0.096**	-0.003	**-0.037**	**-0.029**	-0.013	-0.018	**-0.031**	**-0.028**	0.012	**-0.039**	1.000		
(17) *BDSIZE*	*0.020*	**0.036**	**-0.064**	**0.090**	**-0.161**	**0.418**	**0.040**	**-0.175**	**-0.145**	**-0.029**	**-0.129**	**-0.183**	**-0.208**	0.004	**-0.157**	0.010	1.000	
(18) *COMPAGE*	**0.066**	**0.073**	**-0.108**	*-0.021*	**-0.171**	**0.456**	**0.080**	**-0.193**	**-0.079**	0.006	**-0.024**	**-0.112**	**-0.125**	**0.170**	**-0.074**	**0.158**	**0.285**	1.000

This table describes the Pearson correlation coefficients below the diagonal for the variables used in the regression. Significant correlations are indicated in bold ($p<0.05$, two-tailed test) and in italics ($p<0.10$, two-tailed test). All variables are defined in the Appendix.

Table 5 Outside Director Equity Incentives (Based on Proportion) and Tax Avoidance

		First-Stage	Second-Stage	
		(1)	(2)	(3)
Variable	Expected Sign	*DECPCT*	*CETR3Y*	*GETR3Y*
PRE_DECPCT	?		**-0.230****	**-0.627****
			(-2.01)	**(-2.16)**
BDMTG	?	0.000		
		(0.14)		
BDOWN	?	-0.202***		
		(-5.41)		
SIZE	?	0.022***	0.002	0.008
		(5.52)	(0.62)	(0.90)
LEV	?	-0.018	0.004	0.080
		(-0.70)	(0.20)	(1.48)
TBQ	+	0.022***	-0.012**	-0.005
		(5.56)	(-2.54)	(-0.34)
RD	−	0.815***	-0.163	0.773*
		(6.58)	(-1.13)	(1.92)
INTAN	−	0.075***	-0.020	-0.052
		(3.30)	(-0.95)	(-1.02)
CAPEX	−	0.325***	-0.244**	-0.310
		(3.03)	(-1.98)	(-0.88)
SGA	−	0.010	0.062**	0.049
		(0.30)	(2.57)	(0.86)
PTCFO	+	-0.103**	0.290***	0.193
		(-1.99)	(5.95)	(1.52)
FOREIGN	+	0.028**	0.012	0.013
		(2.44)	(1.28)	(0.55)
LOSS	−	0.000	-0.013*	-0.029
		(0.03)	(-1.87)	(-1.63)
DUALITY	+	0.018**	0.006	0.030*
		(2.11)	(0.94)	(1.78)
BDSIZE	−	-0.001	-0.004**	-0.005
		(-0.33)	(-2.25)	(-1.32)
COMPAGE	−	-0.002***	-0.001*	-0.001*
		(-6.31)	(-1.86)	(-1.92)
Intercept		0.121***	0.073***	0.242***
		(2.93)	(3.05)	(4.10)
N		7,532	7,532	7,532

Industry Fixed Effect	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes
Adj. R^2		0.303	0.355
Partial F statistic	14.65***		

All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. Robust standard errors are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are defined in the Appendix.

Table 6 Outside Director Equity Incentives (Based on Total Level) and Tax Avoidance

		First-Stage	Second-Stage	
		(1)	(2)	(3)
Variable	Expected Sign	*DECAMT*	*CETR3Y*	*GETR3Y*
PRE_DECAMT	?		**-0.019****	**-0.049****
			(-2.00)	**(-2.05)**
BDMTG	?	0.023**		
		(2.54)		
BDOWN	?	-2.328***		
		(-6.40)		
SIZE	?	0.328***	0.004	0.011
		(10.90)	(0.83)	(1.06)
LEV	?	0.164	0.012	0.100*
		(0.90)	(0.56)	(1.88)
TBQ	+	0.069**	-0.016***	-0.015
		(2.33)	(-3.99)	(-1.29)
RD	−	5.062***	-0.255**	0.512
		(6.04)	(-2.15)	(1.52)
INTAN	−	0.508***	-0.027	-0.073
		(3.66)	(-1.41)	(-1.56)
CAPEX	−	1.873**	-0.284**	-0.421
		(2.54)	(-2.45)	(-1.27)
SGA	−	-0.022	0.060***	0.044
		(-0.09)	(2.60)	(0.81)
PTCFO	+	-0.832***	0.296***	0.214*
		(-2.65)	(6.28)	(1.75)
FOREIGN	+	0.295***	0.011	0.010
		(3.39)	(1.26)	(0.45)
LOSS	−	-0.011	-0.014**	-0.030*
		(-0.18)	(-1.97)	(-1.74)
DUALITY	+	-0.088	0.001	0.015
		(-1.35)	(0.10)	(0.95)
BDSIZE	−	0.061***	-0.003	-0.002
		(4.35)	(-1.39)	(-0.46)
COMPAGE	−	-0.011***	-0.000	-0.001
		(-4.08)	(-1.37)	(-1.32)
Intercept		0.173	0.053*	0.189***
		(0.47)	(1.90)	(2.77)
N		7,528	7,528	7,528

Industry Fixed Effect	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes
Adj. R^2		0.315	0.366

All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. Robust standard errors are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. DECAMT is measured by the natural logarithm of the sum of stock awards and option awards. All other variables are defined in the Appendix.

Table 7 Alternative Tax Avoidance Measures

Variable	Expected Sign	(1) *CETR*	(2) *GETR*	(3) *UTB*
PRE_DECPCT	?	**-0.249****	**-0.948****	**1.587***
		(-1.97)	**(-2.57)**	**(1.92)**
SIZE	?	0.001	0.006	0.889***
		(0.25)	(0.56)	(28.89)
LEV	?	-0.017	0.020	0.198
		(-0.74)	(0.31)	(1.39)
TBQ	+	-0.021***	-0.002	0.045*
		(-4.17)	(-0.13)	(1.81)
RD	−	-0.230	0.680	6.157***
		(-1.59)	(1.57)	(6.72)
INTAN	−	-0.015	-0.049	-0.037
		(-0.65)	(-0.69)	(-0.24)
CAPEX	−	-0.224**	-0.038	-2.446***
		(-2.02)	(-0.12)	(-4.28)
SGA	−	0.055**	0.052	-0.790***
		(2.22)	(0.76)	(-4.37)
PTCFO	+	0.436***	0.276*	-0.257
		(8.30)	(1.81)	(-0.84)
FOREIGN	+	0.015	0.011	0.461***
		(1.52)	(0.44)	(6.93)
LOSS	−	-0.014*	-0.029	-0.027
		(-1.73)	(-1.20)	(-0.53)
DUALITY	+	0.001	0.018	-0.032
		(0.16)	(0.94)	(-0.63)
BDSIZE	−	-0.002	-0.002	0.032***
		(-0.94)	(-0.51)	(2.82)
COMPAGE	−	-0.001*	-0.002*	0.005**
		(-1.89)	(-1.81)	(2.19)
Intercept		0.070***	0.295***	-7.332***
		(2.95)	(4.55)	(-15.43)
N		9,900	9,900	8,872
Industry and Year Fixed Effect		Yes	Yes	Yes
Std Error Clustered by Firm		Yes	Yes	Yes
Adj. R^2		0.146	0.159	0.614

All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. Robust standard errors are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in the Appendix.

Table 8 Conditional Test: The Effect of Business Strategy

Variable	Expected Sign	*CETR3Y*		*GETR3Y*	
		(1) Defenders	(2) Prospectors	(3) Defenders	(4) Prospectors
PRE_ DECPCT	?	**-0.293****	-0.080	**-0.852****	-0.248
		(-2.15)	(-0.63)	**(-2.32)**	(-0.65)
SIZE	?	0.006	-0.004	0.014	-0.000
		(1.09)	(-0.93)	(1.04)	(-0.01)
LEV	−	0.020	0.011	0.145*	0.056
		(0.68)	(0.37)	(1.81)	(0.67)
TBQ	+	-0.005	-0.018***	0.006	-0.014
		(-0.86)	(-2.67)	(0.36)	(-0.72)
RD	−	0.104	-0.480***	1.435*	-0.035
		(0.38)	(-2.92)	(1.82)	(-0.07)
INTAN	−	-0.028	-0.039	-0.017	-0.126
		(-0.91)	(-1.24)	(-0.21)	(-1.53)
CAPEX	−	-0.177	-0.356	-0.168	-0.822
		(-1.28)	(-1.50)	(-0.41)	(-1.24)
SGA	−	0.030	0.084**	-0.047	0.118
		(0.84)	(2.22)	(-0.45)	(1.30)
PTCFO	+	0.283***	0.316***	0.215	0.240
		(4.69)	(4.37)	(1.37)	(1.18)
FOREIGN	+	0.014	0.021	0.042	0.006
		(1.11)	(1.49)	(1.17)	(0.18)
LOSS	−	-0.022**	-0.006	-0.025	-0.032
		(-2.42)	(-0.57)	(-1.11)	(-1.16)
DUALITY	+	0.004	0.003	0.029	0.015
		(0.41)	(0.28)	(1.14)	(0.60)
BDSIZE	−	-0.004	-0.002	-0.009	-0.000
		(-1.59)	(-0.89)	(-1.32)	(-0.01)
COMPAGE	−	-0.001	-0.000	-0.002*	-0.000
		(-1.28)	(-0.44)	(-1.69)	(-0.46)
Intercept		0.042	0.199**	0.166**	0.570**
		(1.29)	(2.55)	(2.02)	(2.54)
N		4,092	3,222	4,092	3,222
Industry Fixed Effect		Yes	Yes	Yes	Yes
Year Fixed Effect		Yes	Yes	Yes	Yes
Adj. R^2		0.283	0.332	0.346	0.363

Defenders (prospectors) refer to firms that have a strategy score below (above) the sample median, where strategy scores are calculated following Bentley et al. (2013). All firm-level continuous variables are winsorized at the 1st and the 99th percentiles.

Robust standard errors are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Conditional Test: The Effect of Financial Constraints

Panel A: Financial constraints measured by WW index

Variable	Expected Sign	*CETR3Y* (1) High WW	*CETR3Y* (2) Low WW	*GETR3Y* (3) High WW	*GETR3Y* (4) Low WW
PRE_ DECPCT	?	**-0.418***	-0.092	**-1.061***	-0.268
		(-1.96)	(-0.72)	**(-1.81)**	(-0.93)
SIZE	?	0.009	-0.003	0.003	0.006
		(1.10)	(-0.55)	(0.16)	(0.52)
LEV	−	-0.018	0.024	0.001	0.151*
		(-0.58)	(0.75)	(0.02)	(1.71)
TBQ	+	-0.010	-0.011	-0.007	0.011
		(-1.35)	(-1.46)	(-0.36)	(0.49)
RD	−	-0.014	-0.244	0.996	0.495
		(-0.06)	(-1.43)	(1.44)	(1.13)
INTAN	−	0.000	-0.020	0.011	-0.095
		(0.01)	(-0.77)	(0.10)	(-1.52)
CAPEX	−	-0.132	-0.371*	-0.111	-0.734
		(-0.72)	(-1.94)	(-0.21)	(-1.46)
SGA	−	0.040	0.076*	0.042	0.009
		(1.18)	(1.87)	(0.48)	(0.09)
PTCFO	+	0.305***	0.271***	0.216	0.163
		(4.80)	(3.34)	(1.30)	(0.74)
FOREIGN	+	0.012	0.003	0.022	-0.010
		(0.88)	(0.21)	(0.60)	(-0.31)
LOSS	−	-0.012	-0.013	-0.012	-0.045**
		(-1.01)	(-1.41)	(-0.42)	(-1.96)
DUALITY	+	0.014	-0.004	0.043	0.020
		(1.20)	(-0.46)	(1.42)	(0.88)
BDSIZE	−	-0.006**	-0.001	-0.002	-0.004
		(-2.46)	(-0.53)	(-0.35)	(-0.59)
COMPAGE	−	-0.001	-0.000	-0.003	-0.001
		(-1.50)	(-0.81)	(-1.58)	(-1.17)
Intercept		0.042	0.046	0.095***	0.269**
		(1.29)	(0.88)	(2.69)	(2.03)
N		4,092	3,222	4,092	3,222
Industry Fixed Effect		Yes	Yes	Yes	Yes
Year Fixed Effect		Yes	Yes	Yes	Yes
Adj. R^2		3,383	4,024	3,383	4,024

Panel B: Financial constraints measured by SA index

Variable	Expected Sign	*CETR3Y* (1) High SA	*CETR3Y* (2) Low SA	*GETR3Y* (3) High SA	*GETR3Y* (4) Low SA
PRE_ DECPCT	?	**-0.389***	-0.073	**-1.114***	-0.106
		(-1.80)	(-0.70)	**(-1.93)**	(-0.48)
SIZE	?	0.009	-0.004	0.017	-0.004
		(1.30)	(-0.96)	(1.02)	(-0.35)
LEV	−	0.013	-0.021	0.133*	-0.003
		(0.42)	(-0.70)	(1.69)	(-0.04)
TBQ	+	-0.012*	-0.009	-0.005	0.002
		(-1.72)	(-1.32)	(-0.23)	(0.08)
RD	−	-0.020	-0.374**	1.314**	-0.000
		(-0.09)	(-2.05)	(2.06)	(-0.00)
INTAN	−	0.009	-0.035	-0.001	-0.089
		(0.25)	(-1.35)	(-0.01)	(-1.44)
CAPEX	−	-0.127	-0.259	-0.036	-0.481
		(-0.68)	(-1.40)	(-0.07)	(-0.97)
SGA	−	0.092***	0.031	0.135	-0.069
		(2.67)	(0.74)	(1.53)	(-0.67)
PTCFO	+	0.267***	0.300***	0.229	0.158
		(4.08)	(3.85)	(1.30)	(0.77)
FOREIGN	+	0.006	0.009	0.018	-0.006
		(0.40)	(0.75)	(0.47)	(-0.22)
LOSS	−	-0.005	-0.017*	-0.021	-0.029
		(-0.43)	(-1.92)	(-0.67)	(-1.34)
DUALITY	+	0.020	-0.002	0.050	0.021
		(1.57)	(-0.27)	(1.48)	(1.08)
BDSIZE	−	-0.006*	-0.001	-0.006	-0.002
		(-1.71)	(-0.48)	(-0.72)	(-0.46)
COMPAGE	−	-0.001	-0.000	-0.002	-0.000
		(-0.93)	(-0.10)	(-0.91)	(-0.28)
Intercept		0.042	0.002	0.125***	0.073
		(1.29)	(0.05)	(3.80)	(0.70)
N		4,092	3,222	4,092	3,222
Industry Fixed Effect		Yes	Yes	Yes	Yes
Year Fixed Effect		Yes	Yes	Yes	Yes
Adj. R^2		3,732	3,800	3,732	3,800

All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. Robust standard errors are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.