

## CEO Perquisite Compensation and M&A Performance

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## *Abstract*

In this study, we investigate the impact of CEO perquisite compensation on mergers and acquisition. Despite the widely held negative sentiment toward perquisite compensation, the literature has provided scant, yet mixed empirical evidence of the impacts of perquisite compensation on corporate policies. This paper offers empirical evidence of the role that perks play in a firm's M&A activities. Using hand-collected panel-data on CEO perks from S&P 500 firms between 2006 and 2015, we find that the M&A deals undertaken by CEOs with high levels of perquisite compensation receive significantly worse market reactions around the announcement period, and are more likely to be financed by stock instead of cash. Further, these deals experience lower post-acquisition abnormal operating and stock performance compared to the deals conducted by CEOs with low levels of perquisite compensation. Firms whose CEOs received greater perquisite compensation also exhibit severe crash risk. Therefore, our results are consistent with the widely held negative sentiment toward perquisite compensation, which views perquisite compensation as an agency problem.

*Keywords:* CEO perquisite, M&A, Corporate Governance, Agency Problem, Compensation

*“There’s little economic logic for public companies to reward top executives with perks.”*

- Professor Lucian Bebchuk, The USA TODAY, May 24, 2014<sup>1</sup>

## **Introduction**

The widely held sentiment toward executive perquisite compensation is that it is a form of agency problem. Recent Securities and Exchanges Commission (SEC) enforcement actions against companies on the matters related to CEO’s perquisite compensation disclosures symbolize this negative sentiment toward executive perquisite compensation<sup>2</sup>. Consistently, the leading hypothesis in the literature (Jensen and Meckling 1976, Grossman and Hart 1980, and Jensen 1986) paints a negative picture of executive perquisite compensation, linking it to decreased firm value. However, there is an alternative (but not mutually exclusive) hypothesis of executive perquisite compensation that is more benign and proposes an incentive alignment argument that is associated with enhanced firm value (Rajan and Wulf 2006). This line of literature suggests that executive perquisite compensation has a positive effect on firm value because it may provide a means for managers to supplement their total compensation by ex-post settling up (Fama 1980), may be a cost-effective way to enhance the productivity of managers (Rajan and Wulf 2006), and/or may represent a status in the firm which is believed to increase managers’ utilities (Hirsch 1976; Frank 1985).

Despite these competing theoretical implications of executive perquisite compensation on firm value, the empirical evidence of how perquisite compensation may affect the firm value has been both mixed and scant. This paucity of studies related to executive perquisite compensation is surprising given that a substantial amount of research has examined the impact of the executive compensation contract design on corporate behaviors and ultimately firm value, mainly focused on equity compensation, salary, bonus, and more recently, inside debt, as major components of executive compensation (Murphy, 1985; Morck, Schleifer and Vishny 1988; Guay 1999; Coles, Daniel and Naveen 2006; Wei and Yermack 2011; and Cassell, Huang, Sanchez and Stuart 2012). Thus, the focus of this paper is to address this void in the literature.

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<sup>1</sup> Please see <https://www.usatoday.com/story/money/business/2014/05/24/what-your-kid-shares-with-many-ceos-an-allowance/9011417/>

<sup>2</sup> These are against The Dow Chemical Company who agreed to settle charges related to the company’s inadequate perquisites disclosure in SEC filings by paying a civil penalty in the amount of \$1.75 million in 2018 and against Energy XXI whose CEO consented to a permanent injunction which prohibits him from acting as an officer or director of a public company for a period of five years and imposes a \$180,000 civil penalty.

In this paper, we investigate the relation between CEO perquisite compensation and the performance of mergers and acquisitions. M&As decisions represent one of the most significant discretionary investment decisions that CEOs make and could have major long-term impacts on firm value (Moeller, Schlingemann, and Stultz 2004). M&A investments tend to increase inherent conflicts of interest between managers and shareholders (Masulis, Wang and Xie 2007). This may be because M&A investments can exacerbate the information asymmetry between managers and shareholders, allowing CEOs to act opportunistically to pursue their own interest at the expense of shareholders (Grinstein and Hribar 2004, Harford and Li 2007). Further, Jensen (1986) argues that when the executive perquisite compensation is a sign that a firm has free cash flow problems, such firms tend to undertake M&A activities that reflect a possible overinvestment and/or lax management practices. For these reasons, M&As provide a unique setting to test the two contrasting theoretical implications of perquisite compensation.

One hindrance to empirical study related to perquisite compensation has been the lack of data. We circumvent this problem by exploiting an SEC mandate of perquisite compensation disclosure requirements enacted in 2006. The SEC amended compensation disclosure requirements in 2006 to increase the transparency of executive compensation items that are considered to be stealth items. In particular, this regulatory change lowered the threshold of perquisite compensation reporting requirement to \$10,000 from \$50,000, or 10% of total cash compensation. This new requirement reduced firms' likelihood of strategically hiding perquisite compensation items, except for the single largest item, corporate jets. Further, this amended disclosure rule requires firms to report perquisite compensation in the formulated compensation table, creating a more transparent reporting environment. Therefore, this new requirement allows us to analyze perquisite compensation more comprehensively.

We construct a broad measure of perquisite compensation data for Standard and Poor's (S&P) 500 index constituent firms, excluding firms in financial and utilities industries, for the time period between the fiscal years of 2006 and 2014. Unlike previous studies that focused on a single item or initial announcements of perquisite compensation components around the 2006 rule changes<sup>3</sup>, we compile total perquisite compensation amounts comprised of ten items over time, following Andrews, Linn, and Yi (2017). This perquisite data collection results in a panel data of

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<sup>3</sup> For example, both Yermack (2006) and Rajan and Wulf (2006) focus on corporate jets. Kahle and Shastri (2004) examine executive loans while the focus of Liu and Yermack (2012) is on mansions and real estates.

3,316 firm-year observations of 483 firms that reported perquisite compensation information. Our hand-collected perquisite compensation data show that while corporate jets, the single item of perquisite compensation that the literature has focused on, are important, 35% of our annual observations have none-zero value, with the mean value of about \$50,000. Legal, financial, and tax services account for 31% of observations, with a mean value of about \$46,000, and financial perquisites have a mean value of \$87,000, with 25% of observations employing this perquisite. These observations signify the presence and importance of perquisite items beyond the commonly explored corporate jets. Our total perquisite compensation data support a broader and more comprehensive analysis of the link between such compensation and M&A performance. We identify 958 completed M&A events announced between the fiscal years of 2007 and 2015<sup>4</sup> by the 305 S&P 500 non-financial and non-utilities firms, we examine the link between perquisite compensation and M&A activities and their implications for shareholders. We begin our analysis by examining the impact of perquisite compensation on mergers and acquisitions over the time period of 2007 to 2015. We find that the measures of perquisite compensation are positively associated with the firm's mergers and acquisitions propensities. While this establishes the importance of perquisite compensation on mergers and acquisitions decisions, it does not provide us with the answer whether managers with high perquisite compensation are more likely to conduct mergers and acquisitions because they create value to the shareholders. To investigate this question, we next focus on the subsample of 305 firms that conducted M&A deals between 2007 and 2015.

We focus on the stock market reactions surrounding the M&A announcements. Overall, the market reaction to the M&A announcements of our full sample firms is, on average, not significant, which is consistent with the literature (Fuller, Netter and Stegemoller 2002). However, when we divide our sample into two groups by the median value of perquisite compensation to total compensation ratio, the market reaction is positive at 0.34% when the CEO's perquisite compensation ratio is below sample median. By contrast, when the CEO's pay and perks exceeds the median value for the perquisite ratio, the market reacts more negatively toward M&A deals, with an average CAR of -0.41%. This difference between the CARs of these two groups, -0.65, is significant at the 5% level, indicating that the market reacts to the announcements of M&A events

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<sup>4</sup> Our M&A sample extends from 2007 to 2015 fiscal years because we use the lagged value of perquisite compensation in our analyses.

differently based on the CEO's perquisite compensation. The market reactions continue to be significantly more negative toward M&A deals conducted by CEOs with high perquisite compensation after controlling for various firm and M&A deal specific characteristics and industry and year fixed effects in multivariate regression analysis. These results remain robust after controlling for possible selection bias and possible endogeneity concerns. Our CAR analysis provides initial evidence in support of the agency argument.

Although the pronounced negative market reactions to the M&A deals for acquiring firms with CEOs whose perquisite compensation is high suggest that the quality of these M&A deals is poorer, it is possible that CEOs with high perquisite compensation tend to undertake acquisitions that create value for shareholders in the long-run, but are unpopular among shareholders at the announcement. Therefore, our results of initial market reactions reflect the unfavorable market reassessment of the acquirer's business rather than the value of acquisitions (Grinblatt and Titman 2002). To evaluate whether the M&A deal quality is driving the market reactions, we conduct a series of tests.

First, we explore the long-term effects of these M&A deals to evaluate the quality of M&As. We begin our analysis of the long-term effects by examining whether the acquirers' total and idiosyncratic risks changes following the M&A completion. Datta et al. (2001) find a positive relation between equity-based compensation and changes in acquirers' risk, as measured by the changes in stock return volatility of bidder's stock. Phan (2014) reports a negative relation between CEO inside debt holdings and changes in the same risk measurements as Datta et al. (2001). These results are consistent with the notion that CEO compensation components can affect the risk appetite of CEO, where equity-based compensation is designed to encourage risk-taking behaviors while inside debt discourages such behaviors. Following the methodology employed by Datta et al. (2001) and Phan (2014), we examine the changes in bidder's risk and how these risk changes are associated with perquisite compensation. Our results suggest that there is no relation between perquisite compensation and risk changes surrounding the M&A completion. We attribute the lack of significance of our results to the notion that there is no clear link between the perquisite compensation and risk-taking incentive alignment, unlike equity compensation and inside debt. Thus, we turn our attention to an alternative risk measure that is the firm's stock price crash risk. Gul, Cheng, and Leung (2011) find that firms with higher perquisite compensation are associated with a lower quality of financial reporting, suggesting that the stock price is not informative. Xu,

Li, Yuan, and Chan (2014) argue that attention to perquisite compensation from the media and corporate activists encourages managers to disguise these types of compensation. The resultant lower quality of reporting increases the possibility of a stock price crash risk. To the extent that M&A investments tend to increase the information asymmetry between shareholders and managers, the stock price crash risk should increase more for these firms with high CEO perquisite compensation, under the agency problem view. Our analyses of changes in stock price crash risk in the post M&A period provide consistent evidence to support this argument under the agency problem view. Specifically, we find that there is a significant and positive association between the CEO perquisite compensation and the firm's stock price crash risk following the M&A completion.

In addition to the risk changes after M&A completions, we examine the operating performance of these firms following the M&A completion. If the quality of M&A performance is influenced by the CEO's perquisite compensation, then we would expect that the long-term post performance of M&A completion would be different. We use return on equity to proxy for the operating performance. Employing the matching method of Barber and Lyon (1996), we report a deterioration in ROE following the completion of the M&A. In the univariate analysis, we find evidence that high perquisite sample underperforms its low perquisite counterpart when the performance one year after the M&A completion is examined. The changes in the second year also show signs of underperformance by the high perquisite sample. In the multivariate analysis, after controlling for firm characteristics and deal characteristics, we find that there is a significant and negative relation between changes in operating performance of the sample firms and perquisite compensation of CEO following M&A completion.

We also investigate the stock performance over one to two years after the M&A completion. Following the literature (Datta et al. 2001), we estimate the post-M&A buy and hold abnormal returns of the sample firms benchmarked against characteristic matched peers based on Barber and Lyon (1996) method. Similar to the results of the operating performance analysis, we find that sample firms with high perquisite compensation experience a significant underperformance as measured in buy and hold abnormal returns following the completion of M&A. Our results remain significant after controlling for firm and deal characteristics. Overall, our results from long-term performance analyses are consistent with the notion that perquisite compensation is a manifestation of agency problems as advanced by Jensen and Meckling (1976).

Our study makes several contributions to the literature. First, unlike previous studies, we focus on the panel data of total perquisite compensation. This data availability allows us to provide more comprehensive evidence that the agency problem is a better than explanation than the more benign argument in relation to CEO perquisite compensation. Further, our perquisite compensation data indicate that corporate jets are merely the most prominent among many perquisite compensation items, highlighting the importance of looking at the total perquisite compensation. This is a sharp contrast to existing studies in which only a single item of perquisite compensation is examined (Yermack 2006 and Rajan and Wulf 2006) or where only short-period perquisite data are employed (Andrew et al. 2017 and Grinstein, Weinbaum and Yehuda 2017). Second, our study contributes to the growing line of studies that examines the role of managerial compensation in M&A activities. Datta et al. (2001) find that CEOs with a higher amount of equity-based compensation pursue M&A investments that accrue benefits to shareholders, while Phan (2014) documents that CEO inside debt components of pay package results in more M&A activities that align CEO interests to those of bondholders. Li and Peng (2020) find that the long duration of CEO pay design does not improve the quality of M&A activities and performance despite the popular belief that long-term CEO compensation creates long-term firm value. Our study adds to this line of literature by showing that CEOs with higher perquisite compensation tend to pursue M&A activities that are lower in quality, leading to lower firm value and high crash risk, which confirms the agency cost view of the CEO perquisite.

## **Hypothesis Development**

The literature is rich in examinations of the effects of CEO compensation on managerial and corporate decisions. Given the importance of CEO compensation contracts under the nexus of contract hypothesis (Jensen and Meckling 1976), researchers, policy makers, and market participants have long paid close attention to CEO compensation as an important contracting mechanism. Despite this focus on CEO compensation, perquisite compensation has received significantly less attention from researchers, although policy makers and market participants have increasingly turned their attention to executive perquisite compensation, since the media argues that perquisite compensation is often too generous (Grinstein et al. 2017). This heightened interest from media and market participants that peaked around financial scandals has resulted in SEC amendments to compensation disclosure in 2006. As a response to this public interest, the 2006



SEC disclosure rule mandates more transparent disclosure for compensation items that had been seen as “stealth items”, such as perquisite compensation<sup>5</sup>.

While the empirical evidence related to perquisite compensation is relatively new due primarily to the lack of data, the theoretical implications of perquisite compensation have been subject of much discussion in the literature. Broadly, there are two competing views of the theoretical implications of the effect of perquisite compensation on firm value although they are not necessarily mutually exclusive. First, based on the arguments of Jensen and Meckling (1976), the existence of perquisite compensation signals agency problems. Jensen (1986) argues that the presence of perquisite compensation is a sign that a firm has free cash flow problems, as perquisites are means by which managers can extract value. Thus, firms with perquisite compensation may be associated with wasteful corporate practices. Managers of a firm as non-owners rationally consume perquisites as a non-pecuniary benefit at the expense of shareholders (Jensen and Meckling, 1976). Therefore, according to this agency problem view, perquisite consumption represents a CEO’s private consumption of the firm’s surpluses, which results in lower firm value. Because top executives have considerable influence over their own pay arrangements (Bebchuk and Fried, 2004), this agency argument of the effect of perquisite consumption is plausible. By contrast, the alternative hypothesis provides more benign view of executive perquisite compensation on firm value. This line of literature argues that executive perquisite compensation is an incentive alignment tool and may be associated with firm value in a positive way. Fama (1980) argues that perquisite compensation may act as an ex-post settling up mechanism used to supplement total compensation as private benefits which incentivize the CEO to work harder. Rajan and Wulf (2006) similarly argue that perquisite benefits provide cost effective ways for firms to improve the productivity of executives. For instance, a manager may be more productive after a more comfortable travel arrangement via a private jet instead of a crowded commercial flight. Yet, the value of this higher productivity may not be internalized by the manager, because she would choose a cheaper option if she were required to pay for transportation. Perquisites may also be used to reflect the executive’s standing in the organization, conveying their status (Hirsch 1976). If executives can derive utility from the status, Rajan and Wulf (2006) argue that perquisite

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<sup>5</sup> The new disclosure rules lowered the minimum threshold of required perquisite amount to \$10,000 from \$50,000. Furthermore, the rule requires the subsequent perquisite compensation following the initial disclosure if the value of perquisite is more than \$25,000 or 10 % of the total perquisite. Overall, this change made perquisite compensation more informative and useful to market participants (Andrews, et al. (2017)).

compensation can be an effective incentive tool. Thus, in contrast to the agency problem view, this line of argument suggests that perquisite compensation can be viewed as mechanism that stimulates executives to work harder. Collectively, in this view, perquisite compensation is positively associated with the firm value.

Empirical evidence of the role perquisite compensation plays in executive compensation contracting has been scarce and mixed. Yermack (2006) finds a significant negative announcement returns around the public disclosure of corporate jets used by the CEO. Further, Yermack (2006) shows that share prices of firms with CEO corporate jet use significantly underperform against market benchmarks in the post-disclosure period. By contrast, Rajan and Wulf (2006) find that there is no evidence for the agency arguments. Instead, Rajan and Wulf (2006) report that firms located in areas without major airports and firms with geographically diverse business segments are more likely to use corporate jets, evidence supportive of the productive use of perquisites. Rajan and Wulf (2006) show that a potential difficulty in studying executive perquisite compensation is that some perquisites may bring operational benefits while others represent personal rent extraction of the executives. Focusing on the consumption complementarities between work-related perquisites and executives' efforts in their utility functions, Marino and Zábajník (2008) develop a model in which work-related perquisites can provide incentive effects. Subsequently, Lee, Lowry, and Shu (2018) provide empirical evidence consistent with Marino and Zábajník's (2008) model, reporting positive operational performance when corporate jets are used for business purposes, and reduced firm value when they are used for personal reasons. More recent studies have exploited the newly changed disclosure requirements of executive perquisite compensation. Andrews et al. (2017), applying the first year of perquisite disclosure requirement in 2006 to test the features of executive perquisite, find that the firms with weaker governance mechanisms are more likely to award perquisite compensation to their CEOs. Grinstein et al. (2017) examine the firm's disclosure behaviors in the first two years of disclosure requirements following the perquisite compensation disclosure requirement changes in 2006. They find evidence consistent with the agency problem of the perquisite compensation, as firms modify their perquisite compensation disclosure to control the optics of their perquisite awards relative to peer firms.

The literature has focused on one item (corporate jets) of perquisite compensation, or used short-time period of data surrounding the 2006 disclosure change. Therefore, to best of our

knowledge, ours is the most comprehensive empirical investigation of the effect of perquisite compensation on CEO corporate decisions to date.

M&A activities are one of the most significant long-term investment decisions that the CEO makes, significantly affecting firm value. M&As can intensify agency problems (Jensen and Meckling 1976; Masulis et al. 2007) as M&A deals can greatly increase firm complexity and information asymmetry between managers and shareholder (Li and Peng 2020). Thus, M&A activities provide a setting to examine the impact of perquisite compensation on corporate investment decisions. A broad stream of literature examines the impact of CEO compensation on M&A decisions. Consistent with the notion that equity-based compensation aligns the interests of managers with those of shareholders, Datta et al. (2001) find that the performance of M&A decisions increases with CEO equity-based compensation. Phan (2014) shows that CEOs with more inside debt undertake M&A deals that are risk decreasing. Finally, Li and Peng (2020) find no improvement in M&A deal quality with long-term duration of CEO compensation.

These studies highlight the possible influence of CEO perquisite compensation on M&A activities. This line of literature allows us to propose our main hypothesis in null form:

*Perquisite compensation has no impact on the M&A deal and propensity and quality, in turn having no effect on acquirer's announcement returns and on the long-term performance of the acquirers.*

## **Data and Sample Selection**

We use five databases to generate our sample: Compustat, the Center for Research in Security Prices (CRSP) database, the Execucomp database, the Securities Data Company's (SDC) Mergers and Acquisitions database, and a manual collection of CEO perquisite data for the Standard & Poor's (S&P) 500 firms. Our overall sample period spans FYE 2006 to 2015. The FYE 2006 starting point is due to changes in SEC disclosure requirements regarding executive perquisites.

We start with the S&P 500 constituent firms, excluding firms in financial and utilities industries, as of the end of 2006 and manually collect perquisite compensation data from all proxy statements covering the fiscal years 2006 – 2014 from the Securities and Exchanges Commission (SEC) Electronic Data Gathering, Analysis and Retrieval (EDGAR) website. As new firms join

the S&P 500 index, we add these firms to our sample and collect the CEO's perquisite compensation data, starting at the end of the fiscal year the firm is added to the index<sup>6</sup>. Similar to Andrews et al. (2017), we collect ten different perquisite compensation items: (1) air travel expenses; (2) company automobile allowance and local transportation; (3) entertainment expenses, club dues, vacation expenses and other personal benefits; (4) securities, housing allowance, moving and relocation expenses, and other home/family-related perquisites; (5) legal, financial, and tax services fees and tax payments or tax-gross-ups; (6) medical and health benefits; (7) financial perquisites, equity-related perquisites and severances; (8) administrative privileges; (9) travel and communication expenses; and 10) deferred compensation and other perquisites. We create total CEO perquisite compensation by summing these ten items. We then merge this hand-collected perquisite compensation data with the Execucomp database. From the Execucomp database, we collect CEO's total compensation (*TDC1*), age and tenure, along with the annual CEO flag variable (*ANNCEO*). We obtain accounting data from Compustat, and stock price and return data from CRSP. This process yields 3,316 firm-year observations during the period of 2006 to 2014. Table 1 reports the summary statistics of our panel data of this firm-year observations. During our sample period, the average total perquisite compensation is about \$256,210 while the median is about \$55,000, indicating the skewed nature of this variable. This is similar to data used in previous studies (Yermack 2006 and Andrews et al. 2017). To standardize the total CEO perquisite compensation, we divide the total perquisite dollar amount by total compensation (*TDC1*). The mean (median) value of *perquisite*, the ratio of total perquisite amount to the total compensation amount, is about 2.9% (0.07%). The average CEO is about 56 years old with more than half of the CEO-year observations is identified as overconfident CEO. Turning our attention to some of the firm characteristics in Panel B of table 1, the average size and average sales amount reflect that our sample firms are S&P 500 firms with mean values of total assets and sales as \$24 billion and \$9 billion, respectively. Other firm characteristics are very similar to the mergers and acquisition sample employed by Phan (2014) who examines the impact of CEO inside debt on the M&A activities.

[Insert Table 1 here]

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<sup>6</sup> Consistent with the Execucomp database practice, we continue to collect perquisite information for the firms that were removed from the S&P 500 index after their exclusion from the index.

We identify mergers and acquisitions during the fiscal years of 2007 to 2015 using the SDC database. We include M&A transactions if they are listed as completed transitions with both announcement and effective dates and the deal value is greater than \$1 million. We exclude firms in the financial industries (SIC codes of 6000s) and in utilities (SIC codes of 4900-4950). In addition, to be included in the final sample, we require the firms to have available accounting data one year prior to their bidding year and enough stock price data from CRSP to be able to calculate abnormal returns during the M&A announcement periods. Our M&A sample include 958 mergers and acquisitions made by 305 unique firms during the fiscal year period of 2007 - 2015. Table 2 provides a sample distribution of our 958 M&A sample from SDC database. Panel A of the Table 2 shows the M&A activities in our sample by year. No clustering of M&A activities by certain years occurs in our sample. Panel B summarizes the sample distribution of M&A activities by industry. Using the Fama-French 48 industry classification, acquirers in Business Service and Pharmaceutical Products industries represent a large number of activities, accounting for more than 10% of the overall sample. Other industries, including Computers, Electronic equipment, Medical equipment, and Communications, represent sizable M&A activities with each having more than 5% of the overall sample.

and on the job for about little over 6 years. In Panel C of Table 2, the average deal size of the acquisition is shown to be \$1.9 billion whereas the median is \$385 million, indicating that deal sizes vary widely in our sample. Less than half of our sample represents non-diversifying acquisitions in which both acquirers and targets are in the same 2-digit SIC code. About 10% of our sample involves tender offers while the majority of the acquisitions are paid in full using cash. Most of the acquisitions (about 31%) in our sample involve public targets. Very small amount of the M&A deals in our sample involves the presence of competing bids as only 1.57% of the M&A deals are classified as challenge.

[Insert Table 2 here]

Table 3 summarizes the same descriptive statistics except for perquisite compensation variables sorted into two subsamples based on median value of CEO *perquisite*. Total compensations (*TDC1*) are significantly larger for the firms in higher *Perquisite* subsample, suggesting that perquisite might inflate the total compensation which provides a justification for our use of *Perquisite*, the ratio of total perquisite amount to the total compensation amount. Many

firm specific characteristics are significantly different. For example, firm size, measured by total assets, sales, and both measures of financial leverage are significantly larger while sale growth, and ROA are lower for the high *Perquisite* subsample relative to low subsample. By contrast, there is no clear difference in M&A deal characteristics between these two groups although there are some differences, albeit very weak, in deal size and diversifying M&A.

[Insert Table 3 here]

## Research Methods and Empirical Results

Jensen and Meckling (1976) argue that perquisite consumption may be a form of agency problem because a manager with a fractional equity stake in a firm reaps the full benefits of perquisite consumption while not bearing the full cost. By contrast, the literature (Fama 1980; Fama and Jensen 1983; Murphy 2002; Core, Guay and Larcker 2003) suggests that perquisite compensation may be a means to motivate managers to work harder because perks represent potential incentives for CEOs. These competing views of perquisites leave a gap in our understanding of the role that perquisites play in corporate decisions despite the well-documented effects of other forms of executive compensation, such as equity and inside debts. Using mergers and acquisitions events, arguably large and easily observable decisions of the CEO that have value implications, we make an attempt to shed additional light on the impact of perquisite compensation<sup>7</sup>.

### A. *Perquisite compensation and M&A propensity*

We start our analysis with the investigation of whether CEOs with higher perquisite compensation are more likely to conduct acquisitions. We employ the following probit regression model:

$$Pr(M\&A\ dummy_{i,t}) = \Phi(\alpha + \beta_1 \times perquisite\ compensation_{i,t-1} + X'_{i,t-1}\beta + \varepsilon_{i,t-1}) \quad (1)$$

where the dependent variable, *M&A dummy*, takes a value of 1 if a firm announces a completed M&A deal in year *t*, and 0 otherwise. The independent variables, including CEO perquisite

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<sup>7</sup> Studies such as Lewellen et al. (1985) and Masulis et al. (2007) examine whether good governance mitigates the agency problems in M&As.

compensation measures (*Perquisite* and  $\log(1+perquisite)$ ) and control variables, are measured at the end of the fiscal year ( $t-1$ ) prior to the M&A announcements. Following the extant literature (e.g., Datta et al, 2001; Malmendier and Tate, 2008; Phan, 2014; Li and Peng, 2020), in addition to the test variables, we include the following controls: *size*, *leverage*, *ROA*, *book-to-market*, *long-term assets*, *sales growth*, *cash flow*, *prior year return*, *cash and sale volatilities*, *log of firm age*, and *CEO overconfidence measure*. The last item, *CEO overconfidence*, is included because the literature has shown that over-confident CEOs are more likely to be involved in M&A deals (Malmendier and Tate, 2008). The probit model also includes year fixed effects and Fama-French 48 industry fixed effects.

[Insert Table 4 here]

The results from the probit regression analysis are reported in Table 4. Column 1 reports a significant and positive coefficient on *Perquisite*, the ratio of perquisite compensation to the total compensation, at 5 percent level, indicating that CEOs with higher perquisite compensation are more like to conduct M&A deals within next year. We also employ an alternative measure of perquisite compensation with logarithm form of 1 plus *Perquisite*. Column 2 reports the result of this alternative measure of perquisite compensation where the similar positive significance is shown. Most of the control variables show the expected signs. For example, larger firms with more cash flows are more likely to conduct M&A deals. While the results of the probit regression shows the positively significant association between CEO perquisite compensation and M&A propensity, it is difficult to interpret the magnitude of the coefficient estimates. Therefore, we provide the marginal effects at the sample mean from the estimated probit regression model in Columns 3 and 4. Based on the result from Column 3, the probability of M&A deal increases by 2.4% if the CEO's *Perquisite* is increased by 1%. Column 4 reports the very similar results with the increase of 2.7% with M&A propensity with 1 unit increase of  $\log(1+perquisite)$ . Given the sample M&A probability of 28.89%, this translates to about 8.3% increase. This finding seems to be economically significant as the 2.4% increase indicates the additional 23 M&A deals that result in about \$44 billion deal value (using the mean deal value of about \$1.93 billion).

### *B. Event Study Analysis*

In the previous section, we report the significant impact of CEO perquisite compensation on her M&A propensity. If the CEO with high perquisite is motivated to conduct M&A deal to

create shareholder value, the M&A deal should be high quality and the resulting market reaction to such announcement must be positive. On the other hand, a negative market reaction is expected if the motivation behind the M&A deal is associated with agency problems because such M&A deal is low quality. To examine this premise, we investigate announcement-period abnormal returns around M&A announcements. Using the event study methodology with the market model, Fama-French 3 factor model, and Fama-French 4 factor model, we estimate the market reactions to the announcements of the acquisition bids. The estimation period is 255 days, starting from -31 days from the announcement date of the bid. Employing the CRSP value-weighted market index as the market portfolio<sup>8</sup>, we estimate the cumulative abnormal returns for 5-day (-2, 2) window.

The univariate test of CARs around the acquisition bid announcements provides initial evidence regarding the impact of CEO perquisite compensation on mergers and acquisition bid decisions. In addition, to control for some firm- and deal-specific characteristics that affect the CARs, we conduct a multivariate regression analysis:

$$CAR(-2,2)_{i,t} = a_{i,t} + b_{i,t-1}(Perquisite) + \sum c_{i,t-1}(control\ variables) + year + industry \quad (2)$$

Following the literature (Phan 2014 and Chang, Lin and Ma 2019), we include the following firm characteristics: natural logarithm of the total assets (*Size*), book leverage (*Book leverage*), ROA (*ROA*), market-to-book ratio (*Market to book*), , and 3-year sales growth (*Sale growth*). Past year stock return. We use the lagged values of these firm specific characteristics. In addition to the firm specific characteristics, the literature (Datta et al. 2001; Fuller, Netter, Stegemoller 2002; and Phan 2014) shows the importance of deal-specific characteristics. To control for these, we include the following: a natural logarithm of deal value (*Log deal value*), a dummy variable that takes the value of 1 if the acquirer is bidding for a target in the same industry as the acquirer based on the SIC 2-digit classification, or 0 otherwise (*Diversify*), a dummy variable that takes the value of 1 if the acquisition is a tender offer, or 0 otherwise (*Tender*), a dummy variable that takes the value of 1 if the acquirer is bidding for a target that is a public firm (*Public*),

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<sup>8</sup> This is for the market model estimation. We obtain the factors for Fama-French 3 and 4 factor models from the Professor Kenneth French's website: [https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)



a dummy variable that takes the value of 1 if the deal is paid in cash in full, or 0 otherwise (*Cash*), and a dummy variable that takes the value of 1 if the M&A deal has competing bids or 0 otherwise (*Challenge*). Finally, to control possible influence of CEO overconfidence, we include this variable in the model. We include the industry (Fama-French 48 industry classification) and year fixed dummy in the model, and cluster the standard errors by firm. To mitigate the effect of outliers, we winzorize all continuous variables except for the dependent variable at the 1% and 99% levels.

Table 5 summarizes the results of 5-day window market model CARs surrounding the acquirers' bid announcements. Consistent with previous studies (Datta et al. 2001; Bruner 2002), there are no significant announcement abnormal returns during the 5 days around the acquisition announcement period in our overall sample regardless of the estimation models. To examine the impact of perquisite compensation, we divide the entire sample by the median value of perquisites to total compensation, *Perquisite*, and create two groups. In Panel A, Colum 2 of Table 3 summarizes the 5-day window of CARs from the market model for the firms with CEO perquisite below the median, while Colum 3 shows the same figure for firms above the median value. Panel A shows that the acquirers that have CEOs with low perquisite compensation enjoy positive CARs, though not significantly different from zero, whereas acquirers with high perquisite compensation exhibit significantly negative CARs. These results are consistently shown with Panel B with Fama French 3 factor model and Panel C with Fama French 4 factor model, suggesting that the results are not driven by the choice of the estimation method. More importantly, in all Panels A through C, the difference tests of the means between these two groups are significant for all panels at the 5% level or better. However, the median CARs do not show significant differences between these groups. Overall, there is some evidence that there is a negative relation between the CEO perquisite compensation and acquirers' CARs surrounding the bid announcements.

[Insert Table 5 here]

While our results are significant, albeit weak, with the univariate analysis of CARs, it is possible that some of the firm and deal characteristics impact the CARs. To further understand the impact of perquisite compensation on the CARs surrounding the acquisition announcements, we conduct multivariate regression analyses with the specification of equation (2). The results of these regression analyses are summarized in Table 6. Column 1 shows the results of the CARs from the market model after controlling for firm characteristics. The variable of interest, *Perquisite*, is found to be -0.015 which is significant at the 5% level. This means that there is a significantly negative

relation between the amount of CEO perquisite compensation and the acquirers' stock price reactions around acquisition announcements after controlling for firm- and deal-specific characteristics. In Column 2, we use an alternative measure of perquisite compensation with  $\log(1+perquisite)$ . Consistent with the Column 1, the perquisite compensation is found to be statistically significant at the 5% level with the estimated coefficient of -0.0196.

We only observe acquirers' abnormal returns when the M&A deal is announced because firm self-select whether to pursue M&A deals in the first place, we potentially face a self-selection bias. To ensure that our results from the multivariate regression results of CAR analyses are robust to this possible self-selection bias, we employ Heckman (1976, 1979) two-stage selection model. Following the studies of Phan (2017) and Li and Peng (2020), we run the same model as in our Equation (1) to estimate the firm's propensity to undertake M&A within the next year. From this first-stage probit model, we estimate the inverse Mill's ratio. The estimated inverse Mill's ratios are included in our Equation (4) as the second-stage model. In Columns 3 and 4, we report the second-stage multivariate regression model estimates of 5-day window CARs with the inverse Mill's ratio. These results are consistent with results from Columns 1 and 2 as the respective perquisite compensation coefficients remain positive and significant.

Columns 5 to 8, we replace the dependent variables with the 5-day CAR estimated from Fama French 3 factor model while Columns 9 to 12 are with the 5-day CAR estimated from Fama French 4 factor model. Consistently, we find the positive and significant association between CEO perquisite compensation and 5-day CAR around M&A announcements even with these CARs from Fama French multi factor model. One of the noticeable results from results in Table 6 is that only a few of the control variables are found to be significant. However, this is similarly reported in the earlier studies of Phan (2014) and Li and Peng (2020). However, the signs of the controls are mostly as expected. For example, the size of the acquirers, deal size, and M&A deals that target public firms are negatively but not significantly associated with the cumulative abnormal returns of the bid announcements. Our results indicate that the impact of perquisite compensation appears to be economically significant as well. Given the standard deviation of *Perquisite*, the ratio of perquisite compensation to total compensation is 0.2153, and a one standard deviation change in *Perquisite* causes the 5-day window CARs from the market model to change by -0.0032. This is more than 3 times the mean value of CARs around -0.001. Overall, we find that there is a significant and negative relation between the amount of CEO perquisite compensation and the

acquirers' stock price reactions around acquisition announcements. Our findings in this section are consistent with the agency problem argument for the impact of perquisite compensation.

[Insert Table 6 here]

### *B. Payment Method*

we examine the

### *C. Risk Changes*

In the previous section, we showed that there is a negative and significant relation between the CEO perquisite compensation and the acquirers' stock price reactions around acquisition announcements, providing consistent evidence for the agency problem argument of executive perquisite compensation. However, it is possible that CEOs with high perquisite compensation tend to undertake acquisitions that create value for shareholders in the long run, but are unpopular among shareholders, leading to more pronounced negative reactions from the market. To ensure that our results from the announcement period CAR analyses are related to the lower quality of M&A performance undertaken by CEOs with high perquisite compensation, we examine the long-term effects of these M&A activities. Specifically, in this section, we examine a more direct effect of the acquisition activities on the acquirers to further explore the possibility of agency problems associated with CEO perquisite compensation. Specifically, we test the changes in firm risk before and after the acquisition and relate this change to the CEO perquisite compensation. Following Datta et al. (2001) and Phan (2014), we employ changes in total and idiosyncratic risks as a result of the acquisition activities. Datta et al. (2001) find positive changes in both risk measures and these changes increase with the amount of CEO equity compensation. By contrast, Phan (2014) finds that the risk changes are negatively related to the CEO inside debt holdings as inside debt encourages the CEO to reduce risk-taking activities. These studies suggest that there is a significant impact of CEO compensation on risk changes through acquisition activities.

Following Datta et al. (2001), we calculate the stock return volatility, measured as a standard deviation of the firm's daily stock returns, for the window of (-120, -61) prior to the bid announcement as the pre-M&A total firm risk. For the post-period, we use the window of (11, 70) from the effective (or completion) date of the acquisition to calculate the stock return volatility. The difference is calculated as the post-period volatility minus the pre-period volatility. We multiply this change by 100 to make it as a percentage. For idiosyncratic risk, we estimate the

residuals from the market model for the windows (-120, -61) and (11, 70). The difference between the standard deviations of the residuals for each period in percent are used to estimate the change in the firm's idiosyncratic risk.

Panel A of Table 7 summarizes our analyses of the risk changes surrounding acquisition activities. Columns 1 through 4 present the results from the analysis of the firm's total risk changes of Datta et al. (2001) and Phan (2014). Noticeably, we do not find any relation between CEO perquisite compensation and changes in firm risk measures. The coefficient on *Perquisite* is not significantly different from zero in both models: *Perquisite* as the interest variable (Column 1) and *log(1+perquisite)* as the interest variable (Column 2). Most control variables are also not significant, suggesting that the model estimated is not powerful. However, similar results for the control variables are shown in Phan (2014), who found no significant results for most of the variables we employed in our models. These results are robust to the potential selection bias with the inclusion of the inverse Mill's rasion in Columns 3 and 4. Turning our attention to the second measure of firm risk employed in Datta et al. (2001) and Phan (2014), Idiosyncratic risk, our results are still insignificant. Columns 5 and 6 shows perquisite measures are not significantly associated with idiosyncratic risk whereas the inclusion of the inverse Mill's ratios in the model does not change the insignificant results in Columns 7 and 8. Overall, our analyses of the changes in firm risk surrounding the acquisition activities in relation to CEO perquisite compensation do not reveal any significant results.

[Insert Table 7 here]

While our results are different from those of Datta et al. (2001) and Phan (2014), we attribute this difference to the nature of perquisite compensation, which is different from equity-based compensation and inside debt. Executive perquisite compensation may not have a direct impact on the risk appetite of the executives, unlike equity-based compensation for which CEOs are encouraged to take more risk, or inside debt which reduces the risk appetite of CEOs. Benefits that CEOs are believed to enjoy through perquisite compensation, such as the productivity gains and status symbol with the organizations, do not have any clear implications for the CEOs' risk appetite changes. Although it is plausible that CEOs are encouraged to take more risk as perquisite compensation can provide an ex-post settlement that affects CEO wealth, the possibility of this appears to be weak. For example, Fama (1980) who strongly argues for the ex-post settlement mechanism, admits that there are some occasions in which persistent deviations from this ex-post

settlement are possible. Consistent with this, Amihud and Lev (1981) show that it is possible that perquisite compensation might be related to risk-reducing M&A activities.

To further examine the possible impact of CEO perquisite compensation on risk changes associated with the M&A activities, we test the changes in the firms' stock price crash risk before and after the M&A completion. Our focus on the stock price crash risk is motivated by the literature. Gul et al. (2011) find that firms with high perquisites are associated with a lower quality of financial reporting. This in turn affects the informativeness of stock prices. Similarly, Xu et al. (2014) argue that increased attention to executive perquisites from media and corporate activist provides managers with an incentive to obfuscate the financial reporting. Therefore, Xu et al. (2014) find that firms with high excess perquisites are more likely to experience stock price crash risk. Based on this line of research, unlike the firm risk measures used in previous studies, we expect the stock price crash risk to increase following the completion of the acquisition if the agency problem is dominant in CEO perquisite compensation. For M&A activities, Jory, Ngo, and Susnjara (2020) find that changes in stock price crash risk increases following mergers and acquisitions financed by stock.

To estimate the stock price crash risk, we follow the literature (Kim, Li and Zhang 2011a, 2011b and Callen and Fang 2015). Following Callen and Fang (2015), we calculate the negative conditional skewness using the daily firm-specific returns as our first measure of the stock price crash risk. We also estimate the second measure of stock price crash risk that is the natural logarithm of the ratio of the standard deviation in the "down" days to the standard deviation in the "up" days. We estimate these measures of stock price crash risk for 255 days using the windows (-315, -61) and (11, 265). We subtract the pre-period risk measure from the post-period risk measure to estimate the change in stock price crash risk.

Our results of the stock price crash risk are reported in Panel B of Table 7. In our model of stock price crash risk, based on the literature (Xu et al. 2014; Jory et al. 2020), we add two additional control variables, the standard deviation of firm's stock returns and the average firm's stock return during the pre-acquisition periods. In a sharp contrast to the results from the firm risk changes, the coefficients on *Perquisite* and  $\log(1+\text{perquisite})$  are significant and positive at the 5% level on Negative conditional skewness (Columns 1 and 2). With the inclusion of the inverse Mill's ratio does not change this positive and significant association (Columns 3 and 4) Additionally, the second measure of stock crash price risk, Down-to-up volatility, reported in Columns 4 and 5 show

the similar positive and significant associations. Columns 7 and 8 report the results with the inverse Mill's ratio in the model where we still find the significant and positive coefficients on both measures of perquisite compensations. Combined, these results indicate that there is a significant and positive relation between CEO perquisite compensation and changes in stock price crash risk around the acquisition activities. The results from the analyses of stock price crash risk surrounding the M&A activities are consistent with the prediction of the agency arguments and provides corroborating evidence for our analyses to further strengthen the agency problem explanation of the effects of CEO perquisites.

#### *D. Long-Term Operating Performance Change*

Given the size of the M&A activities, it is expected that the acquirers experience the impact of M&A activities on a long-term basis. Importantly, studies show that the stock payments are more likely to be used by the acquirers when they are uncertain about the value of the targets. This creates uncertainty in potential value of synergies expected from the combinations of firms, and this implies that the stock acquisitions may experience underperformance in the post-acquisition period compared to cash acquisitions. Since we have established the link on this study between CEO perquisite compensation and the lower likelihood of cash acquisition, it is plausible that acquisitions by CEO with high perquisite compensation are followed by operating underperformance. We test this conjecture in this section.

We use return on assets, earnings before interests and taxes, EBIT, by the total assets, as the operating performance. Following the method outlined by Barber and Lyon (1996) and previous works (Datta et al. 2001 and Phan 2014), we create a matched portfolio for each acquiring firm in the year prior to the bid announcement. The matched portfolio includes firms in the same Fama-French 48 industry classification as the acquiring firm, which have not been involved in any M&A activities in prior three years, and whose ROA is within 90%-110% of the sample firm. Using this sample of firms to form a portfolio, we calculate the median ROE of this matching portfolio. We subtract the median matching portfolio ROA from the acquiring firm's ROA and then compare the median matched-portfolio adjusted ROA in each of the 2 years after the acquisition completion to that of the year preceding the bid announcement, similar to the study of Phan (2014).

Table 8 reports the analyses of this long-term operating performance. Panel A summarizes the results of the univariate analysis. From the year preceding to the bid year to 1 year after the completion of the acquisition, these acquiring firms are profitable. However, when the whole sample is divided into high and low subsamples based on the CEO perquisite ratio as before, a clear difference emerges. While both subsamples have positive mean and median ROA, the subsample of acquiring firms with low CEO perquisite compensation outperforms the high CEO perquisite subsample. For the low perquisite subsample, the average ROA change is 3.00%, while the median is 1.74%. By contrast, the high perquisite subsample has an average ROE change of 1.79% and a median of 0.88%. These differences in means and medians between these two subsamples are statistically significant at 5% levels. for the underperformance of high perquisite compensation group is consiste with the agency problem argument of the perquisite compensation. This operating underperformance of high perquisite group persists into 2 years following the completion of M&A deal. The two year mean difference in ROA performance is 4.82% with low perquisite group experience better operating performance. Similarly, the median difference is 1.60% again with the low perquisite groups performing better. As in the 1-year difference, these mean median ROA differences are significant at 5% level.

[Insert Table 8 here]

Panel B provides the regression analyses of the long-term operating performance. While the univariate tests are useful, for better analysis several of the characteristics of the firm and deal should be controlled for. Columns 1 and 2 of the Panel B in Table 8 show the result for the 1-year operating performance change for *Perquisite* and  $\log(1+perquisite)$ , respectively. Similar to the univariate analysis, there is a significant underperformance by the acquiring firms with high CEO perquisites. Columns 3 and 4 confirms that these findings are robust to the remedy for the possible selection bias. The results for 2-year changes in ROA are consistent with the univariate results. Columns 5 and 6 report the significant and negative association between perquisite compensation measures and 2-year ROA changes. As in the 1-year case, the results do not change after including the inverse Mill's ratio (Columns 7 and 8). Overall, the results from the analyses of the long-term operating performance in this section are consistent with our conjecture and provide further evidence for the agency problem view of executive perquisite compensation.

### *E. Long-term Stock Performance*

Next, we examine the effect of CEO perquisite compensation on the long-term stock performance following the acquisition activities. To do this, we estimate the buy and hold abnormal stock return of the acquiring firms as follows:

$$BHAR_i = \prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{Benchmark,t}) \quad (2)$$

Following Barber and Lyon (1997), we identify the matched firm as a benchmark firm to calculate the abnormal buy and hold abnormal return of the acquiring firm. Similar to Datta et al. (2001) and Phan (2014), a matched firm is selected from potential firms in the same Fama-French 48 industry classification as the sample firm. This firm should not have been involved in M&As over the last three years, and should have a size, measured as the market capitalization 11 days prior to the acquisition announcement, of between 70% and 130% of the sample firm, and the closest book-to-market ratio to the sample firm in the prior year. Further, like Datta et al (2001), we retain only the first announcement of the acquiring firm if an acquiring firm has multiple acquisitions in our sample period. This screen process reduced our sample size to 128 and 128 unique firms for one-year and two-year buy and hold abnormal returns, respectively. This reduction is expected because our firms are S&P 500 constituents which limits the size matches as these are large cap firms<sup>12</sup>.

Panel A of Table 9 summarizes our findings of long-term stock performance analyses. Panel A of Table 9 reports the univariate analysis. Overall, mean and median one-year BHARs are not significantly different from zero. However, when we divide the sample into low and high perquisite subsamples, differences in BHARs between these two groups appear. For the low perquisite firms, the mean (median) BHARs are 6.04% (6.02%) while high perquisite firms exhibit a mean (median) BHARs of -12.17% (-11.94%). Both mean and median are significantly different at the 1% level. Two-year BHARs show significant differences between the two groups as well. For the high perquisite compensation subsample, mean (median) BHAR is -21.02 % (-16.24%), and both are significantly different from zero, while the low perquisite subsample enjoys 2.97% mean BHAR and 1.01% median BHAR. The difference tests show that these mean and median BHARs are statistically different between these two subsamples, providing some evidence that firms with high CEO perquisite compensation underperform following the M&A completion compared to those with low CEO perquisite compensation.

[Insert Table 9 here]

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<sup>12</sup> Datta et al. (2001) also show reductions in sample size on their matched sample.



We further investigate post M&A BHAR using a multivariate regression. The dependent variables are one-year and two-year BHARs. The control variables include firm and deal characteristics employed in the earlier models. Also, we add CEO overconfidence and last year returns in the regression model. Panel B of Table 9 shows the results from the multivariate analysis. Columns 1 and 2 show the results of one-year BHAR. We find a weak but statistically significant negative relation between the one-year BHAR and CEO perquisite compensation. Column 2 reports the results of the two-year BHAR. The results are stronger at the 10% level of significance. With inclusion of the inverse Mill's ratio does not change our findings significantly. The regression results when 2-year BHARs are dependent variable, we still find the negative relation between perquisite measures. However, these negative coefficients on perquisite measures are not significant at the conventional level. Therefore, our results for the post-M&A stock performance provide further evidence, albeit weak, that the quality of M&A deals for CEOs with high perquisite compensation is lower than for the M&A deals of CEOs with low perquisites. Overall, these findings are consistent with the agency arguments of perquisite compensation.

#### *F. Endogeneity Concerns*

One major concern with our results from multivariate regression analyses is possible endogeneity issues. To mitigate such issues and to establish a causal relationship between CEO perquisite compensation and acquirers' stock price reactions around acquisition announcements, we employ a 2SLS/IV model approach. The availability of good instruments that meet both relevance and exclusion conditions is challenging. We rely on research related to CEO compensation for possible instruments (Anantharaman, Fang, and Gong 2014; Kim, Li, and Li 2014; Cassell, Huang, Sanchez, and Stuart 2012; Phan 2014). We use the following instruments: industry-average perquisite<sup>13</sup>, a dummy variable that takes the value of 1 if the firm reported a positive perquisite value in 2005, or 0 otherwise, and log of CEO age. Table 10 reports the results from this 2SLS/IV model estimation. Column 1 summarizes the first-stage results of our instruments and shows that our instruments are relevant as they are both significant at 5 percent or less with the expected signs. The second-stage results of this 2SLS/IV analysis are presented in Column 2 of Table 5, in which the CARs from the market model are used as dependent variables.

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<sup>13</sup> We require at least 5 firms in industry to calculate the industry average perquisite following Jiraporn, Jiraporn, Boeprasert, and Chang (2014).

The coefficient on the instrumented *Perquisite* is negative and significant at the 10% level. Looking at the control variables, the coefficients estimated in the IV model are quite similar to the OLS model. Sargan's J-test for overidentification and weak instrument tests indicate that our choice of instruments are appropriate.

[Insert Table 10here]

## **Conclusion**

Perquisite compensation represents a non-trivial component of the executive compensation package, yet empirical research has largely neglected this compensation component. The agency problem view suggests that executive perquisite compensation is associated with lower firm value because perquisite compensation represents the means by which executives can extract personal benefits from the firms' resources. By contrast, more benign arguments support the notion that perquisite compensation can enhance the productivity of executives which in turn leads to increased firm value. In this paper, we examine the effect of executive perquisite compensation on the mergers and acquisition decisions and their performance.

Our results are consistent with the agency view of the perquisite compensation. Our event study analysis around the M&A announcement reveals that the market reactions to such announcements by firms with CEOs whose perquisite compensation is high are significantly more negative than the market reaction to firms with low CEO perquisite compensation. This negative relation between perquisite compensation and CARs is robust to a potential endogeneity concern and alternative measures of perquisite compensation amounts. Further, the CEOs with high perquisite compensation are more likely to finance their acquisitions with non-cash resources, indicating that the quality of the acquisitions may be worse than those of their low perquisite compensation counterparts.

We also investigate the long-term implications of these M&A activities. Because it has been shown that the CEOs with perquisite compensation have incentives to reduce the reporting quality of their financials due to negative media and public sentiment toward perks, we examine how the firms' stock price crash risk is affected by their M&A activities. Consistent with this conjecture, we find that there is a significant increase in stock price crash risk when M&A are

undertaken by the CEOs with high perquisite compensation. Additionally, we document that there is pronounced underperformance following the completion of mergers and acquisitions by firms whose CEOs have high perquisite compensation. Both operating performance measures and buy-and-hold abnormal stock returns following the completion of M&A deals are significantly lower for firms with high CEO perquisite compensation. Overall, our results provide evidence for the agency argument of the impact of perquisite compensation.

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**Table 1**  
**Descriptive statistics**

This table reports the descriptive statistics of the entire firm-year observations of non-financial and non-utility S&P 500 firms with perquisite compensation data during the period of 2006 to 2014. The detailed definition of these variables presented in this table can be found in Appendix.

*Perquisite* is the ratio of total perquisite to the total compensation of the CEO of the firm. *Market leverage* is the ratio of the total long-term debt to the sum of the total long-term debt and market value of equity adjusted for the deferred tax and investment tax credit. *Book leverage* is the ratio of the total long-term debt to the total assets. *FCF ratio* is the ratio of (operating income before depreciation minus interest expenses and capital expenditure) to the total assets at the beginning of the fiscal year. *Market-to-book* is the ratio of market value of equity to the book value of equity. *ROA* is EBIT divided by the total asset. *Sales growth 3-year* is defined as the geometric average of the last 3 year sales growth. *Momentum* is defined as the buy-and-hold return over the 12 months preceding the bid announcement. *Deal Value* is the M&A deal value in million \$. *Diversify* is the dummy variable that takes a value of 1 if the target is not in the same 2-digit industry and otherwise 0. *Tender* takes value of 1 if the tender offer is made and otherwise 0. *Public* is a dummy variable that takes a value of 1 if the target is a public firm and otherwise 0. *Cash* dummy takes a value of 1 if the payment method of the acquisition is 100% cash and otherwise 0. Panel A reports the descriptive statistics for the overall sample. Panel B summarizes the same statistics in the subsamples sorted by median size of CEO *perquisite*. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Variable	N	Mean	Q1	Median	Q3	Std. Dev.
<i>Panel A: CEO compensation and CEO characteristics</i>						
Total Perquisite	3,316	256.21	2.19	54.83	199.34	1,308.03
TDC1	3,316	10,768.76	5,660.69	8,648.00	13,107.50	9,653.24
Perquisite	3,316	0.0286	0.0003	0.0067	0.0190	0.1240
CEO age	3,259	56.25	52.00	56.00	60.00	6.49
CEO overconfidence	3,316	0.5729	0.00	1.00	1.00	0.4947
<i>Panel B: Firm characteristics</i>						
Total assets	3,316	24,611.98	4,649.92	9,295.71	23,018.00	55,120.69
Sales	3,316	20,512.99	3,776.03	7,820.00	18,820.00	40,312.62
Market leverage	3,316	0.2041	0.0789	0.1623	0.2856	0.1750
Book leverage	3,316	0.2242	0.1285	0.2242	0.3311	0.1630
Market-to-book	3,316	3.96	1.79	2.82	4.49	4.70
ROA	3,316	0.1204	0.0733	0.1118	0.1610	0.0975
Cash flow	3,316	0.1158	0.0558	0.1060	0.1648	0.1141
Long-term assets	3,316	0.4561	0.1259	0.2019	0.3820	0.7723
Sales growth 3-year	3,316	0.0829	0.0109	0.0611	0.1232	0.4192
Past year return	3,316	0.1491	-0.0722	0.1300	0.3318	0.3969
Cash flow volatility	3,316	0.0813	0.0408	0.0638	0.1004	0.0775
Sale volatility	3,316	0.1402	0.0567	0.1024	0.1832	0.1192
Firm age	3,316	36.88	20.00	36.00	57.00	18.62



**Table 2**  
**Distributions of M&A and deal characteristics**

This table summarizes the sample of mergers and acquisitions (M&As) distributions by year and industry over the period of 2007 to 2015.

<i>Panel A: M&amp;A distribution by year</i>			
	Year	Frequency	%
	2007	133	13.88
	2008	89	9.29
	2009	90	9.39
	2010	131	13.67
	2011	100	10.44
	2012	102	10.65
	2013	90	9.39
	2014	99	10.33
	2015	124	12.94
	Total	958	100.00

  

<i>Panel B: M&amp;A distribution by Industries</i>			
FF48	Industry Description	Frequency	%
34	Business Services	164	17.12
13	Pharmaceutical products	109	11.38
35	Computers	89	9.29
36	Electronic equipment	77	8.04
12	Medical equipment	62	6.47
32	Communications	54	5.64
37	Measuring and control equipment	48	5.01
42	Retail	43	4.49
21	Machinery	38	3.97
30	Petroleum and natural gas	32	3.34
2	Food Products	29	3.03
	Industries with < 3% representation	213	22.23
	Total	958	100.00

  

<i>Panel C: Deal characteristics</i>						
	N	Mean	Q1	Median	Q3	Std. Dev.
Deal value (in million \$)	958	1,928.07	135.00	385.50	1,300.00	5,518.70
Diversify	958	0.4165	0	0	1	0.4932
Tender	958	0.1023	0	0	0	0.3032
Public	958	0.3132	0	0	1	0.4640
Cash	958	0.7223	0	1	1	0.4481
Challenge	958	0.0157	0	0	0	0.1242

**Table 3****Merger and acquisition sample descriptive statistics**

This table reports the descriptive statistics of our sample that have a completed M&A during the sample period of 2007 to 2015, separate into two groups based on the median value of *perquisite*. There are 958 M&A events from S&P 500 firms. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Low CEO Perquisite Compensation			High CEO Perquisite Compensation			Difference Tests (low – high)	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median
<i>CEO compensation and CEO characteristics</i>								
TDC1	10,800.4	9,057.8	9,412	13,466.6	10,767.9	12,402	0.0002***	0.0004***
CEO age	55.25	56.00	6.27	55.44	55.00	6.54	0.6301	0.9785
CEO overconfidence	0.59	1.00	0.49	0.53	1.00	0.50	0.0510*	0.0510*
<i>Firm characteristics</i>								
Total Assets	25,880.0	9,974.5	42,284	43,183.3	19,256.0	87,918.0	0.0001***	0.0001***
Sales	19,120.2	7,143.00	28,421.9	27,976.4	12,562.0	39,322.8	0.0001***	0.0001***
Market leverage	0.1468	0.1057	0.1588	0.1789	0.1371	0.1466	0.0012***	0.0001***
Book leverage	0.1983	0.1753	0.1514	0.2247	0.2156	0.1416	0.0054***	0.0007***
Market-to-book	3.77	3.10	3.87	3.83	2.95	5.44	0.8229	0.0464**
ROA	0.1278	0.1132	0.0842	0.1158	0.1109	0.0600	0.0116**	0.2845
Sales growth 3-year	0.1162	0.0824	0.1448	0.0843	0.0642	0.1259	0.0003***	0.0003***
Past year return	0.1581	0.1294	0.3350	0.1704	0.1550	0.3315	0.5681	0.5056
<i>Deal characteristics</i>								
Deal value (in million \$)	1,584.61	375.00	3,869.08	2,271.53	400.00	6,765.32	0.0540*	0.5226
Diversify	0.3862	0	0.4874	0.4467	0	0.4977	0.0574*	0.0575*
Tender	0.0939	0	0.2921	0.1106	0	0.3140	0.3942	0.3939
Public	0.3111	0	0.4634	0.3152	0	0.4651	0.8893	0.8892
Cash	0.7056	1	0.4562	0.7390	1	0.4396	0.2488	0.2486
Challenge	0.0188	0	0.1359	0.0125	0	0.1113	0.4355	0.4352

**Table 4**  
**CEO Perquisite compensation and M&A propensity**

This table reports the probit regression results of acquisition propensities. The dependent variable is a binary variable that is equal to 1 if the firm announces a merger and acquisition at time  $t$ , and zero if the firm does not announce a merger and acquisition at time  $t$ . All independent variables are measured at the end of year  $t-1$ . Year-fixed and Fama-French 48 industry fixed effects are included. P-values are derived from firm-level clustered robust standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Probit coefficients		Marginal effects	
	(1)	(2)	(3)	(4)
Perquisite	0.0069** (0.0034)		0.0024** (0.0012)	
Log(1+Perquisite)		0.0077*** (0.0028)		0.0027*** (0.0010)
CEO overconfidence	-0.603 (0.0631)	-0.0585 (0.0631)	-0.0214 (0.0224)	-0.0208 (0.0224)
Size	0.1877*** (0.0319)	0.1879*** (0.0318)	0.0666*** (0.0112)	0.0666*** (0.0112)
Market leverage	-0.0107*** (0.0025)	-0.0107*** (0.0025)	-0.0038*** (0.0009)	-0.0038*** (0.0009)
ROA	-0.0101* (0.0054)	-0.0099* (0.0054)	-0.0036* (0.0019)	-0.0035* (0.0019)
Market-to-book	-0.0027 (0.0061)	-0.0028 (0.0061)	-0.0010 (0.0022)	-0.0010 (0.0022)
Long-term assets	0.0002 (0.0005)	0.0002 (0.0005)	0.0001 (0.0002)	0.0001 (0.0002)
Sales growth	0.0081*** (0.0026)	0.0080*** (0.0026)	0.0029*** (0.0009)	0.0028*** (0.0009)
Cash flow	0.0014*** (0.0032)	0.0014*** (0.0032)	0.0048*** (0.0011)	0.0048*** (0.0011)
Prior year return	0.0004 (0.0008)	0.0004 (0.0008)	0.0001 (0.0002)	0.0001 (0.0003)
Cash volatility	-0.0059 (0.0052)	-0.0060 (0.0052)	-0.0021 (0.0019)	-0.0021 (0.0019)
Sale volatility	-0.0042 (0.0028)	-0.0042 (0.0028)	-0.0015 (0.0010)	-0.0015 (0.0010)
Log firm age	-0.0063 (0.0577)	-0.0049 (0.0576)	-0.0022 (0.0205)	-0.0018 (0.0205)
Constant	-0.0095*** (0.0032)	-0.0097*** (0.0032)		
Year-fixed effect	Yes	Yes		
FF48 Ind. fixed effect	Yes	Yes		
N	3,316	3,316		
Pseudo-R <sup>2</sup>	0.1115	0.1120		

**Table 5**  
**Univariate CAR**

This table reports the 5-day cumulative abnormal returns (-2, 2) based on the market model surrounding the M&A announcements. The estimation period is 255 days, starting -31 days preceding the M&A announcement. The sample consists of 970 completed M&A announcements during the period between 2007 and 2015. Column 5 reports the test statistics for mean and median difference tests between the low and high perquisite subgroups based on the mean and median value of Perquisite/TDC1. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Attribute	All samples	Low perquisite	High perquisite	Difference tests
<i>Panel A: Market model</i>				
Mean	-0.0002	0.0031	-0.0034*	0.0230**
Median	-0.0001	0.0014	-0.0011	0.1846
N	958	479	479	
<i>Panel B: Fama-French 3 factor model</i>				
Mean	-0.0007	0.0025	-0.0040**	0.0234**
Median	-0.0012	0.0005	-0.0021	0.2026
N	958	479	479	
<i>Panel C: Fama-French 3 factor and momentum</i>				
Mean	-0.0008	0.0023	-0.0038*	0.0368**
Median	-0.0013	-0.0002	-0.0018	0.3004
N	958	479	479	

**Table 6**  
**Multivariate CAR regression**

This table reports the results from the multivariate regression modeling impact of CEO perquisite on the cumulative abnormal returns (-2, 2) surrounding the M&A announcement. Column 1 focuses on the firm characteristics. Column 2 employs the deal specific characteristics as controls. Column 3 include both firm and deal characteristics. The dependent variable is the cumulative abnormal returns (-2, 2). *Perquisite* is defined as the ratio of total perquisites to the total compensation of the CEO of the firm. *Perquisite* and company specific variables are based on the prior fiscal year. The definition of some of the control variables are provided in the Appendix. All models include year and Fama-French 48 industry fixed effects. P-values are derived from firm-level clustered robust standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Variable	Market model (-2,2)			Fama-French 3 factor model (-2,2)				Fama-French and momentum model (-2,2)				
	1	2	3	4	5	6	7	8	9	10	11	12
Perquisite	-0.0150** (0.0076)		-0.0193** (0.0085)		-0.0128* (0.0072)		-0.0174** (0.0081)		-0.0108* (0.0064)		-0.0159** (0.0077)	
Log(1+Perquisite)		-0.0196** (0.0097)		-0.0277** (0.0121)		-0.0184* (0.0099)		-0.0270** (0.0122)		-0.0140* (0.0078)		-0.0244** (0.0111)
CEO overconfidence	0.0027 (0.0030)	0.0028 (0.0030)	0.0031 (0.0031)	0.0031 (0.0030)	0.0026 (0.0031)	0.0027 (0.0030)	0.0029 (0.0031)	0.0030 (0.0031)	0.0020 (0.0030)	0.0021 (0.0030)	0.0025 (0.0031)	0.0025 (0.0030)
Size	-0.0010 (0.0014)	-0.0011 (0.0014)	-0.0035 (0.0025)	-0.0034 (0.0025)	-0.0009 (0.0015)	-0.0009 (0.0015)	-0.0036 (0.0025)	-0.0034 (0.0025)	-0.0015 (0.0015)	-0.0015 (0.0015)	-0.0047* (0.0026)	-0.0046* (0.0025)
Book leverage	0.0018 (0.0128)	0.0020 (0.0128)	0.0014 (0.0165)	0.0134 (0.0163)	0.0045 (0.0129)	0.0046 (0.0129)	0.0017 (0.0160)	0.0167 (0.0159)	0.0035 (0.0126)	0.0037 (0.0125)	0.0019 (0.0161)	0.0184 (0.0159)
ROA	-0.0086 (0.0262)	-0.0088 (0.0262)	-0.0165 (0.0273)	-0.0168 (0.0273)	-0.0113 (0.0253)	-0.0118 (0.0253)	-0.0198 (0.0260)	-0.0202 (0.0261)	-0.0268 (0.0269)	-0.0270 (0.0269)	-0.0370 (0.0277)	-0.0373 (0.0278)
Market-to-book	0.0004 (0.0005)	0.0004 (0.0005)	0.0003 (0.0005)	0.0003 (0.0005)	0.0005 (0.0005)	0.0005 (0.0005)	0.0004 (0.0005)	0.0004 (0.0005)	0.0006 (0.0005)	0.0006 (0.0005)	0.0005 (0.0005)	0.0005 (0.0005)
Sales growth	0.0192 (0.0143)	0.0191 (0.0143)	0.0111 (0.0154)	0.0116 (0.0154)	0.0234* (0.0138)	0.0236* (0.0138)	0.0148 (0.0152)	0.0155 (0.0150)	0.0246* (0.0148)	0.0246* (0.0147)	0.0141 (0.0149)	0.0148 (0.0148)
Past year return	0.0059 (0.0070)	0.0057 (0.0070)	0.0043 (0.0069)	0.0041 (0.0069)	0.0047 (0.0071)	0.0046 (0.0070)	0.0029 (0.0070)	0.0028 (0.0070)	0.0018 (0.0073)	0.0016 (0.0073)	-0.0004 (0.0074)	-0.0005 (0.0074)
Log deal value	-0.0018 (0.0014)	-0.0018 (0.0014)	-0.0018 (0.0014)	-0.0018 (0.0014)	-0.0019 (0.0014)	-0.0019 (0.0014)	-0.0019 (0.0014)	-0.0019 (0.0014)	-0.0015 (0.0014)	-0.0015 (0.0014)	-0.0015 (0.0014)	-0.0015 (0.0014)
Diversify	-0.0022 (0.0034)	-0.0023 (0.0042)	-0.0025 (0.0034)	-0.0025 (0.0034)	-0.0017 (0.0033)	-0.0018 (0.0033)	-0.0020 (0.0033)	-0.0021 (0.0033)	-0.0010 (0.0034)	-0.0011 (0.0034)	-0.0014 (0.0034)	-0.0014 (0.0034)
Tender	0.0017 (0.0056)	0.0016 (0.0056)	0.0013 (0.0056)	0.0012 (0.0056)	0.0001 (0.0055)	-0.0001 (0.0055)	-0.0003 (0.0055)	-0.0007 (0.0054)	0.0014 (0.0057)	0.0013 (0.0057)	0.0009 (0.0057)	0.0008 (0.0057)
Public	-0.0024 (0.0042)	-0.0023 (0.0042)	-0.0022 (0.0042)	-0.0021 (0.0042)	-0.0024 (0.0042)	-0.0023 (0.0040)	-0.0021 (0.0042)	-0.0021 (0.0042)	-0.0037 (0.0042)	-0.0037 (0.0042)	-0.0035 (0.0042)	-0.0034 (0.0042)
Cash dummy	-0.0006 (0.0040)	-0.0006 (0.0040)	-0.0013 (0.0040)	-0.0013 (0.0040)	-0.0004 (0.0040)	-0.0004 (0.0040)	-0.0012 (0.0040)	-0.0012 (0.0040)	0.0004 (0.0041)	0.0004 (0.0041)	-0.0005 (0.0040)	-0.0006 (0.0040)
Challenge	0.0029 (0.0138)	0.0028 (0.138)	0.0027 (0.0140)	0.0026 (0.0140)	-0.0032 (0.0111)	-0.0034 (0.0111)	-0.0035 (0.0112)	-0.0036 (0.0112)	-0.0048 (0.0110)	-0.0049 (0.0110)	-0.0051 (0.111)	-0.0052 (0.0111)
Inverse Mill's ratio			-0.0226	-0.0214			-0.0240	-0.0228			-0.0290	-0.0279

			(0.0198)	(0.0196)			(0.0197)	(0.0194)			(0.0197)	(0.0194)
Intercept	0.0023 (0.0149)	0.0028 (0.0149)	0.0357 (0.0304)	0.0345 (0.0300)	0.0013 (0.0153)	0.0017 (0.0152)	0.0369 (0.0304)	0.0354 (0.0300)	0.0077 (0.0156)	0.0080 (0.0156)	0.0506 (0.0313)	0.0492 (0.0309)
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	958	958	958	958	958	958	958	958	958	958	958	958
Adjusted R <sup>2</sup>	0.0455	0.0460	0.0473	0.0477	0.0748	0.0757	0.0771	0.0777	0.0692	0.0696	0.0728	0.0729

**Table 7**  
**Post-acquisition risk change**

This table reports the results of the regression analyses on the impact of CEO perquisite on the changes in risk following the M&A completion. Following previous studies, a change in total risk, measured as the post-acquisition minus pre-acquisition change in stock-return standard deviation, and a post-acquisition minus pre-acquisition change in idiosyncratic risk, measured as the change in the standard deviation of the return residuals estimated from the market model, are tested. Columns 1 and 2 reports results from these risk measures. Columns 3 and 4 reports the post-acquisition minus pre-acquisition changes in firm's stock crash risk following the M&A completions. Two measures of the stock crash risk, the negative conditional skewness and the down-to-up volatility, are employed to test the stock crash risk changes following the literature. *Perquisite* and *company specific variables* are based on the prior fiscal year. The definition of some of the control variables are provided in the Appendix. All models include year and Fama-French 48 industry fixed effects. P-values are derived from firm-level clustered robust standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Panel A: Firm risk</i>	Total risk				Idiosyncratic risk			
Variable	1	2	3	4	5	6	7	8
Perquisite	-0.0156 (0.2527)		-0.1476 (0.2954)		-0.0107 (0.2052)		-0.1188 (0.2327)	
Log(1+Perquisite)		0.0168 (0.2587)		-0.2411 (0.3316)		0.0404 (0.2144)		-0.1706 (0.2607)
CEO overconfidence	0.0229 (0.0524)	0.0235 (0.0528)	0.0337 (0.0536)	0.0332 (0.0541)	-0.0022 (0.0440)	-0.0013 (0.0441)	0.0067 (0.04500)	0.0066 (0.0450)
Size	-0.0007 (0.0237)	-0.0010 (0.0237)	-0.0763 (0.0471)	-0.0763 (0.0467)	0.0105 (0.0193)	0.0101 (0.0192)	-0.0515 (0.0377)	-0.0515 (0.0371)
Book leverage	-0.2223 (0.2397)	-0.2201 (0.2397)	0.1438 (0.3234)	0.1432 (0.3209)	-0.2180 (0.1755)	-0.2149 (0.1750)	0.0819 (0.2476)	0.0822 (0.2444)
ROA	-0.4005 (0.5532)	-0.3967 (0.5529)	-0.6406 (0.5818)	-0.6513 (0.5830)	-0.2879 (0.4076)	-0.2821 (0.4073)	-0.4845 (0.4316)	-0.4904 (0.4321)
Market-to-book	-0.0153 (0.1223)	-0.0154 (0.0123)	-0.0176 (0.0127)	-0.0175 (0.0127)	-0.0145 (0.0096)	-0.0147 (0.0097)	-0.0164 (0.0098)	-0.0164 (0.0098)
Sales growth	-0.0585 (0.2831)	-0.0634 (0.2856)	-0.3047 (0.3044)	-0.3062 (0.3086)	-0.1961 (0.2334)	-0.2033 (0.2348)	-0.3977 (0.2510)	-0.4018 (0.2519)
Past year return	-0.3407 (0.1229)	-0.0340 (0.1231)	-0.0851 (0.1273)	-0.0861 (0.1278)	-0.0314 (0.0932)	-0.0311 (0.0933)	-0.0731 (0.0993)	-0.0738 (0.0995)
Log deal value	0.0067 (0.0208)	0.0067 (0.0208)	0.0064 (0.0208)	0.0063 (0.0208)	0.0096 (0.0140)	0.0096 (0.0140)	0.0094 (0.0141)	0.0093 (0.0141)
Diversify	-0.0683 (0.0668)	-0.0685 (0.0668)	-0.0762 (0.0671)	-0.0770 (0.0670)	-0.0276 (0.0484)	-0.0279 (0.0484)	-0.0341 (0.0484)	-0.0349 (0.0484)
Tender	0.0769 (0.1284)	0.0773 (0.1284)	0.0656 (0.1276)	0.0655 (0.1277)	0.0449 (0.0960)	0.0455 (0.0960)	0.0357 (0.0957)	0.0359 (0.0958)
Public	-0.0016	-0.0016	0.0052	0.0046	0.0091	0.0092	0.0148	0.0142

	(0.0790)	(0.0791)	(0.0773)	(0.0774)	(0.0606)	(0.0607)	(0.0589)	(0.0591)
Cash dummy	0.0772	0.0780	0.0547	0.0546	0.0385	0.0397	0.0201	0.0206
	(0.0611)	(0.0612)	(0.0601)	(0.0600)	(0.0434)	(0.0434)	(0.0417)	(0.0416)
Challenge	-0.4198	-0.4187	-0.4260	-0.4250	-0.3350	-0.3332	-0.3401	-0.3384
	(0.2972)	(0.2973)	(0.2948)	(0.2947)	(0.2571)	(0.2572)	(0.2564)	(0.2564)
Inverse Mill's ratio			-0.6841*	-0.6869*			-0.5602*	-0.5619*
			(0.3646)	(0.3620)			(0.3096)	(0.3067)
Intercept	0.2980	0.3000	1.3101**	1.3144**	0.3224	0.3249	1.1512**	1.1546**
	(0.2907)	(0.2906)	(0.5819)	(0.5803)	(0.2396)	(0.2388)	(0.4641)	(0.4591)
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	957	957	957	957	957	957	957	957
Adjusted R <sup>2</sup>	0.3057	0.3057	0.3104	0.3105	0.2071	0.2071	0.2135	0.2137

<i>Panel B: Crash Risk</i>								
Variable	Negative conditional skewness				Down-to-up volatility			
	1	2	3	4	5	6	7	8
Perquisite	0.8987*** (0.3042)		0.7649** (0.3295)		0.4734*** (0.1827)		0.3829* (0.1955)	
Log(1+Perquisite)		0.9583*** (0.3442)		0.7350* (0.4390)		0.5199** (0.2037)		0.3649 (0.2558)
CEO overconfidence	-0.0313 (0.1708)	-0.0433 (0.1694)	-0.0178 (0.1732)	-0.0326 (0.1712)	-0.0836 (0.0964)	-0.0898 (0.0954)	-0.0744 (0.0979)	-0.0823 (0.0965)
Size	-0.1451* (0.0742)	-0.1413* (0.0734)	-0.2077* (0.1074)	-0.1949* (0.1035)	-0.0748* (0.0438)	-0.0730* (0.0434)	-0.1172* (0.0661)	-0.1102* (0.0638)
Book leverage	-0.0050 (0.6558)	-0.0336 (0.6517)	0.3218 (0.7953)	0.2455 (0.7782)	0.1166 (0.3669)	0.1021 (0.3647)	0.3375 (0.4613)	0.2958 (0.4502)
ROA	2.4413* (1.4196)	2.4270* (1.4089)	2.3024 (1.4101)	2.2963 (1.3976)	1.5438* (0.8180)	1.5370* (0.8130)	1.4499* (0.8293)	1.4462* (0.8249)
Market-to-book	0.0366 (0.0273)	0.0376 (0.0269)	0.0349 (0.0278)	0.0364 (0.0273)	0.0225 (0.0143)	0.0230 (0.0141)	0.0214 (0.0147)	0.0222 (0.0145)
Sales growth	0.2032 (0.8615)	0.2317 (0.8513)	-0.0540 (0.9221)	0.01332 (0.9012)	0.1939 (0.4517)	0.2069 (0.4459)	0.0200 (0.4889)	0.0553 (0.4764)
Past year return	1.6072*** (0.2949)	1.6209*** (0.2957)	1.5700*** (0.3011)	1.5877*** (0.3021)	0.9772*** (0.1756)	0.9845*** (0.1757)	0.9519*** (0.1811)	0.9614*** (0.1813)
Log deal value	-0.0216 (0.0562)	-0.0212 (0.0561)	-0.0217 (0.0563)	-0.0213 (0.0561)	-0.0143 (0.0329)	-0.0141 (0.0329)	-0.0144 (0.0330)	-0.0142 (0.0329)
Diversify	-0.0844 (0.1631)	-0.0812 (0.1627)	-0.0869 (0.1620)	-0.0839 (0.1615)	-0.1035 (0.0976)	-0.1019 (0.0975)	-0.1052 (0.0970)	-0.1037 (0.0968)



Tender	0.2451	0.2453	0.2279	0.2298	0.0768	0.0772	0.0653	0.0664
	(0.2402)	(0.2405)	(0.2408)	(0.2411)	(0.1538)	(0.1539)	(0.1543)	(0.1543)
Public	-0.0250	-0.0289	-0.0152	-0.0209	-0.0059	-0.0079	0.0008	-0.0023
	(0.2006)	(0.2007)	(0.1990)	(0.1992)	(0.1158)	(0.1158)	(0.1149)	(0.1150)
Cash dummy	0.0418	0.0390	0.0253	0.0243	0.0311	0.0299	0.0200	0.0197
	(0.1619)	(0.1620)	(0.1588)	(0.1589)	(0.0909)	(0.0910)	(0.0909)	(0.0909)
Challenge	-0.3282	-0.3273	-0.3360	-0.3345	-0.2822	-0.2811	-0.2875	-0.2861
	(0.5264)	(0.5256)	(0.5343)	(0.5324)	(0.3196)	(0.3192)	(0.3247)	(0.3236)
Sigma x100	0.0406	0.0379	0.0738	0.0669	0.0513	0.0495	0.0738	0.0696
	(0.1774)	(0.1783)	(0.1850)	(0.1859)	(0.1018)	(0.1023)	(0.1035)	(0.1038)
Return x100	7.9472***	8.0057***	7.9893***	8.0392***	5.1957***	5.2265***	5.2242***	5.2498***
	(1.7348)	(1.7335)	(1.7360)	(1.7361)	(0.9789)	(0.9786)	(0.9782)	(0.9781)
Inverse Mill's Ratio			-0.6127	-0.5291			-0.4142	-0.3673
			(0.6707)	(0.6547)			(0.4130)	(0.4010)
Intercept	1.1742	1.1417	1.9619	1.8192	0.8182	0.8031	1.3507	1.2734
	(1.1009)	(1.0987)	(1.3192)	(1.2847)	(0.6097)	(0.6088)	(0.8221)	(0.8023)
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	934	934	934	934	934	934	934	934
Adjusted R <sup>2</sup>	0.1138	0.1135	0.1136	0.1131	0.1282	0.1281	0.1283	0.1280

**Table 8**  
**Post-acquisition accounting performance change**

This table summarizes the results of an industry matched portfolio adjusted post-acquisition accounting performance changes. A matched portfolio includes the firms that are in the same Fama French 48 industry classification as the sample firms, have not been involved in M&A activities over the past 3 years, and have an ROA within 90%-110% of the sample firm's ROA. Panel A reports the univariate analyses of the industry matched portfolio adjusted accounting performance. Column 5 reports the P-values for mean and median difference tests between the low and high perquisite subgroups based on the median value of Perquisite/TDC1. Panel B reports the results from multivariate regression analyses. The dependent variable is the change in the industry matched portfolio adjusted accounting performance. *Perquisite* and *company specific variables* are based on the prior fiscal year. The definition of some of the control variables are provided in the Appendix. All models include year fixed effect. P-values are derived from firm-level clustered robust standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate analyses				
Attribute	Full sample	Low perquisite	High perquisite	Difference tests
Year t+1				
Mean ROE change	0.0240***	0.0300***	0.0179***	0.0267**
Median ROE change	0.0139***	0.0174***	0.0088***	0.0252**
N	838	419	419	
Year t+2				
Mean ROE change	0.0367***	0.0441***	0.0290***	0.0482**
Median ROE change	0.0216***	0.0243***	0.0184***	0.0160**
N	810	410	405	

Panel B: Regression Analyses								
Variable	$\Delta ROA_{t+1}$	$\Delta ROA_{t+1}$	$\Delta ROA_{t+1}$	$\Delta ROA_{t+1}$	$\Delta ROA_{t+2}$	$\Delta ROA_{t+2}$	$\Delta ROA_{t+2}$	$\Delta ROA_{t+2}$
Perquisite	-0.403*** (0.0132)		-0.494*** (0.0138)		-0.0607*** (0.0198)		-0.082*** (0.0202)	
Log(1+Perquisite)		-0.0454*** (0.0164)		-0.0609*** (0.0177)		-0.0666*** (0.0247)		-0.1024*** (0.0246)
CEO overconfidence	0.0041 (0.0064)	0.0045 (0.0063)	0.0045 (0.0063)	0.0049 (0.0063)	0.0059 (0.0099)	0.0067 (0.0098)	0.0063 (0.0097)	0.0069 (0.0096)
Size	0.0060** (0.0029)	0.0058** (0.0029)	0.0003 (0.003)	0.0002 (0.0030)	0.0060 (0.0043)	0.0058 (0.0042)	-0.0064 (0.046)	-0.0067 (0.0046)
Market-to-book	-0.0001 (0.0010)	-0.0001 (0.0010)	0.0000 (0.0009)	-0.0001 (0.0009)	0.0015 (0.0014)	0.0015 (0.013)	0.0016 (0.0012)	0.0015 (0.0012)
Sales growth	0.0140 (0.0420)	0.0125 (0.0417)	-0.0090 (0.0444)	-0.0109 (0.0441)	0.0068 (0.0630)	0.0042 (0.0626)	-0.0411 (0.0657)	-0.0442 (0.0654)
Prior year return	-0.0104 (0.0154)	-0.0109 (0.0154)	-0.0103 (0.0158)	-0.0105 (0.0158)	-0.0249 (0.0208)	-0.0258 (0.0209)	-0.0245 (0.0213)	-0.0255 (0.0214)
Log deal value	-0.0024 (0.0019)	-0.0024 (0.0019)	-0.0022 (0.0018)	-0.0022 (0.0018)	-0.0055** (0.0026)	-0.0054** (0.0026)	-0.0048** (0.0024)	-0.0048** (0.0024)
Diversify	0.0010 (0.0055)	0.0004 (0.0055)	0.0032 (0.055)	0.0030 (0.0055)	-0.0098 (0.0072)	-0.0100 (0.0072)	-0.0038 (0.0067)	-0.0041 (0.0067)
Tender	0.0124 (0.0113)	0.0123 (0.0113)	0.0084 (0.0112)	0.0082 (0.0112)	0.0263 (0.0164)	0.0261 (0.0165)	0.0189 (0.0160)	0.0186 (0.0160)
Public	-0.0159* (0.0079)	-0.0156** (0.0079)	-0.0142* (0.0078)	-0.0140* (0.0078)	-0.0112 (0.0097)	-0.0108 (0.0098)	-0.0082 (0.0095)	-0.0079 (0.0096)
Cash dummy	-0.0038 (0.0067)	-0.0033 (0.0066)	-0.0046 (0.0066)	-0.0045 (0.0066)	-0.0114 (0.0103)	-0.0113 (0.0103)	-0.0138 (0.0096)	-0.0137 (0.0096)
Challenge	-0.0250 (0.0270)	-0.0251 (0.0270)	-0.0211 (0.0259)	-0.0212 (0.0258)	-0.0469 (0.0305)	-0.0470 (0.0305)	-0.0359 (0.0282)	-0.0360 (0.0282)
Inverse Mill's ratio			-0.0405*** (0.0107)	-0.0406*** (0.0108)			-0.0895*** (0.0167)	-0.0903*** (0.0168)
Intercept	-0.0027 (0.0257)	-0.0010 (0.0255)	0.0845** (0.0330)	0.0865*** (0.0329)	0.0204 (0.0397)	0.0233 (0.394)	0.2120*** (0.0560)	0.2165*** (0.0559)
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	838	744	838	838	810	810	810	744
Adjusted R <sup>2</sup>	0.020	0.016	0.036	0.035	0.021	0.020	0.072	0.072

**Table 9****Post-acquisition stock performance**

This table summarizes the results of post-acquisition stock performance of the sample firms. The post-acquisition stock performance is defined as the matched firm adjusted buy-and-hold abnormal return. A matched firm is selected from the potential firms in the same Fama-French 48 industry classification as the sample firm, which has not been involved in M&As over the last three years, has a size, measured as the market capitalization 11 days prior to the acquisition announcement, of between 70% and 130% of the sample firm, and has the closest book-to-market ratio to the sample firm in the year prior to the acquisition announcement year. Following Datta et al. (2001), only the first announcement of the acquiring firm is included in this analysis. Panel A summarizes the results of univariate analysis while Panel B reports the multivariate analysis. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate analyses				
Attribute	Full sample	Low prerequisite	High prerequisite	Difference tests
Year t+1				
Mean BHAR	-3.06%	6.04%	-12.17% <sup>***</sup>	0.0011 <sup>***</sup>
Median BHAR	-2.86%	6.02%	-11.94% <sup>**</sup>	0.0009 <sup>***</sup>
N	128	64	64	
Year t+2				
Mean BHAR	-9.03%	2.97%	-21.02% <sup>***</sup>	0.0087 <sup>***</sup>
Median BHAR	-9.08%	1.01%	-16.24% <sup>***</sup>	0.0009 <sup>***</sup>
N	128	64	64	

Panel B: Regression Analyses								
Variable	BHAR <sub>t+1</sub>	BHAR <sub>t+1</sub>	BHAR <sub>t+1</sub>	BHAR <sub>t+1</sub>	BHAR <sub>t+2</sub>	BHAR <sub>t+2</sub>	BHAR <sub>t+2</sub>	BHAR <sub>t+2</sub>
Perquisite	-0.1507*		-0.1281*		-0.18001		-0.1383	
	(0.0823)		(0.0774)		(0.1345)		(0.1280)	
Log(1+Perquisite)		-0.2242*		-0.1662		-0.2737		-0.1448
		(0.1333)		(0.1425)		(0.2080)		(0.2204)
CEO overconfidence	-0.0327	-0.0286	-0.0292	-0.0268	-0.2323	-0.2279	-0.2259	-0.2239
	(0.1079)	(0.1071)	(0.1081)	(0.1079)	(0.1438)	(0.1421)	(0.1438)	(0.1427)
Book leverage	-0.1532	-0.1571	-0.1963	-0.1896	0.2994	0.2950	0.2201	0.2227
	(0.2519)	(0.2508)	(0.2595)	(0.2593)	(0.3869)	(0.3860)	(0.4045)	(0.4031)
ROA	0.3316	0.3486	0.3672	0.3772	0.1459	0.1661	0.2114	0.2296
	(0.6553)	(0.6553)	(0.6489)	(0.6493)	(0.9500)	(0.9820)	(0.9822)	(0.9958)
Sales growth	0.1260	0.1351	0.2519	0.2338	1.0506	1.0637	1.2827	1.2830
	(0.4212)	(0.4239)	(0.4945)	(0.5029)	(0.8713)	(0.8761)	(1.0316)	(1.0514)
Last year return	0.0612	0.0615	0.0619	0.0613	-0.1838	-0.1826	-0.1824	-0.1830
	(0.1006)	(0.1008)	(0.1028)	(0.1029)	(0.1938)	(0.1931)	(0.1928)	(0.1934)
Log deal value	-0.0002	0.0013	0.0019	0.0028	-0.0506	-0.0490	-0.0467	-0.0455
	(0.0264)	(0.0263)	(0.0266)	(0.0265)	(0.0426)	(0.0424)	(0.0433)	(0.432)
Diversify	-0.0910	-0.0908	-0.0840	-0.0853	0.0346	0.0350	0.0475	0.0474
	(0.0928)	(0.0923)	(0.0951)	(0.0950)	(0.1638)	(0.1630)	(0.1693)	(0.1694)
Tender	0.0186	0.0142	0.0148	0.0119	0.1384	0.1330	0.1315	0.1280
	(0.1457)	(0.1456)	(0.1493)	(0.1488)	(0.2225)	(0.2234)	(0.2304)	(0.2311)
Public	-0.0033	-0.0005	-0.0068	-0.0027	0.0625	0.0659	0.0561	0.0610
	(0.0783)	(0.0781)	(0.0786)	(0.0784)	(0.1122)	(0.1117)	(0.1145)	(0.1139)
Cash dummy	-0.0222	-0.0185	-0.0008	-0.0020	-0.0760	-0.0718	-0.0364	-0.0352
	(0.0824)	(0.0816)	(0.0897)	(0.0894)	(0.1302)	(0.1292)	(0.1441)	(0.1444)
Challenge	0.3438**	0.3388**	0.3181*	0.3187*	0.5254**	0.5194**	0.4778**	0.4747**
	(0.1580)	(0.1584)	(0.1660)	(0.1650)	(0.2231)	(0.2230)	(0.2277)	(0.2287)
Inverse Mills' ratio			0.1705	0.1305			0.3144	0.2898
			(0.2064)	(0.2090)			(0.3796)	(0.3850)
Intercept	-0.2594	-0.2690	-0.4529	-0.4165	0.1618	0.1508	-0.1951	-0.1769
	(0.2909)	(0.2912)	(0.3559)	(0.3608)	(0.4437)	(0.4435)	(0.6098)	(0.6168)
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.01	0.01	0.01	0.01	0.002	0.003	0.001	0.001
N	128	128	128	128	128	128	128	128

**Table 10**  
**Addressing endogeneity**

This table reports the results of the instrumental variable estimations and residual perquisite. We employ the industry average perquisite and dummy variable that takes a value of 1 if the firm reported non-zero perquisite prior to 2006. Column 1 shows the results from the first stage model. Column 2 reports the results of instrumented perquisite model. Column 3 reports the result from residual perquisite model. All models include year and Fama-French 48 industry fixed effects. P-values are derived from the firm-level clustered robust standard errors are in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	First- stage	Market	FF factor	3	FF factor	4	First- stage	Market	FF factor	3	FF factor	4
Variable	1	2	3	4	5	6	7	8	9	10	11	12
Industry average perq	0.5818** (0.2382)						- 0.4691*** (0.1811)					
Pre2006 dummy	- 0.1290** (0.0522)						- 0.0959*** (0.0369)					
Log of CEO age	-0.0974 (0.1082)						-0.0691 (0.0812)					
Instrumented perq		-0.0746* (0.0394)	- 0.0729** (0.0369)	- 0.0713** (0.0359)			-0.0989* (0.0524)	-0.0965* (0.0489)	- 0.0944** (0.0475)			
Instrumented log (1+ perq)												
Residual perq												
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sargan's J test	2.086 (0.3523)						2.237 (0.3268)					
Underidentification Test	13.32*** (0.004)						13.05*** (0.0045)					
N	893	893	893	893	893	893	893	893	893	893	893	893
Partial R <sup>2</sup>	0.072						0.055					
R <sup>2</sup>		0.006	0.012	0.008				0.004	0.010	0.008		

## Appendix

### Variable definition

Variable	Source	Definition
Book leverage	COMPUSTAT	$(dltt+dlc)/at$
Challenge	SDC	An indicator that takes a value of 1 if a competing bid is present, otherwise 0
Cash dummy	SDC	An indicator that takes a value of 1 if the payment is made fully in cash, otherwise 0
Cash flow	COMPUSTAT	The cash flow from operation that is the difference between EBIT and the change of net working capital
Cash volatility	COMPUSTAT	The standard deviation of the ratio of cash flows over lagged total assets over the previous 5 years
CEO age	ExecuComp	Age of the CEO
CEO overconfidence	Execucomp	An indicator variable that takes a value of 1 if a CEO keeps option grants that are more than 100% in-the-money at the expiration year at least two times during her tenure
CEO tenure	ExecuComp	The number of years that a CEO has held the its title at the current firm
Diversify	SDC	An indicator that takes a value of 1 if the acquirer and target do not belong to the same 2-digit SIC code industry, otherwise 0
Firm age	COMPUSTAT	The number of years that firms are listed in COMPUSTAT
Log deal value	SDC	The natural logarithm of the deal value
Last year return	CRSP	the buy-and-hold return over the 12 months in the prior fiscal year
Market leverage	COMPUSTAT	$(dltt+dlc)/(prcc\_f*csho+dltt+dlc-txdite)$
Market-to-book	COMPUSTAT	$(prcc\_f*csho)/ceq$
Perquisite	SEC filing and ExecuComp	Total perquisite/TDC1
Public	SDC	An indicator that takes a value of 1 if the target is a publicly listed firm, otherwise 0
ROA	COMPUSTAT	$ebit/at$
Sales growth	COMPUSTAT	The average annual sales growth rate over the last three years
Sale volatility	COMPUSTAT	The standard deviation of the firm's annual sales growth over the previous five years
Size	COMPUSTAT	The natural logarithm of (total assets)
Tender	SDC	An indicator that takes a value of 1 if an M&A is conducted through tender offer, otherwise 0.
TDC1	ExecuComp	CEO's total compensation
Total perquisite	SEC filing	Sum of 10 perquisite items reported in the firm's proxy statement