AN EMPIRICAL EVALUATION OF THE DETERMINANTS OF EXECUTIVE PERKS AT S&P 500 FIRMS

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ABSTRACT

This paper provides a comprehensive analysis of the determinants of executive perks at S&P 500 firms using manually collected panel data. CEOs receive perks more frequently and at higher levels than other named executive officers (NEOs). In general, S&P 500 firms with larger growth opportunities, realized growth, stock returns, and return on assets are less likely to provide perks and provide lower levels of perks when they do. Firms with powerful CEOs are more likely to provide perks. Firm size and executive monetary compensation are the most influential determinants of the value of perks. Overall, tenure and gender do not impact the likelihood or value of perk compensation at S&P 500 companies.

Keywords: perquisites, executive compensation, competitive market, private benefits

JEL Classifications: C78, J33, G30

I. INTRODUCTION

Compensation for corporate executives has risen much faster than that of average workers over the past forty years(e.g., Hall & Murphy, 2003, and Murphy &Zabojnik, 2004).Controversy over the increasing concentration of wealth and power caused by pay disparity has fostered increased scrutiny of executive compensation. Executive pay packages often include nonmonetary compensation, alternatively called perks or perquisites. These are exclusive benefits provided to top executives but not to other employees at large. Typical perks include limousine services, company automobiles, club memberships, relocation benefits, cost of living allowances, corporate aircraft, legal fees, financial services, and security. Generally, there is a negative public perception regarding perks —their exclusivity and luxury make them even more controversial than monetary compensation. Nonetheless, executive perks remain widespread.

There are two primary rationales for the prevalent use of executive perks. Optimal contracting posits that perk compensation may be an effective method of enhancing executive productivity and satisfaction —perks should be part of optimal executive compensation packages (e.g., Fama, 1980). In contrast, agency theory states that perks are the result of weak corporate governance that enables executives to redirect corporate resources for personal gain (e.g., Jensen & Meckling, 1976, and Bebchuk& Fried, 2004). Consistent with perks being an indication of weak corporate governance, Yermack (2004) finds that the disclosure of executives' personal use of corporate jets leads to lower equity returns, and Grinstein, Weinbaum, and Yehuda (2010) confirm the punitive market reaction to the first-time disclosure of perks and find that perks may reflect managerial excess that reduces shareholder value. In contrast, Rajan and Wulf (2006) find that firms are more likely to offer perks in situations in which perks enhance CEO productivity. The underlying suggestion is that some types of perks have the potential to provide common value for both the firm and the executive.

These opposing schools of thought provide insight into the existence of perks. However, not much is known about the determinants of executive perks. One of the limiting factors in investigating perks is data availability — standard research data such as Execucomp does not contain detailed executive perk compensation information. Existing studies rely on the information of one particular type of perk (e.g., Yermack, 2004, and Rajan & Wulf, 2006) or small random samples or survey data (e.g., Grinstein, Weinbaum, & Yehuda, 2010). In short, the empirical evidence about perks is limited and mixed.

The primary contribution of this paper is that it provides the first comprehensive investigation of the determinants of the likelihood and value of executive perks at S&P (Standard and Poors) 500 firms using extended manually-collected panel data first introduced in Carrothers, Han, and Qju (2012)[1] .This topic is important because perks are widespread and, increasingly, a matter of concern for regulators, policy makers, and shareholders[2]. By understanding the determinants

[1] The extended dataset has twice the number of observations as the original.

[2] For example, in *The New York Times* "Scrutiny of bankers' perks will grow, too" on February 5, 2009, E. Dash calls "for greater corporate review of excessive or luxury items for executives" and gives examples of large dollar perks provided by firms that accepted government bail-out money during the financial crisis.

of perks, we can better evaluate the position of perks along the agency/optimal-contracting continuum. Given that perks represent a small portion of overall executive compensation, what factors influence firms' decisions to include perks in pay packages despite the political and public backlash over perceived excess? First, executives may prefer perks to an equivalent value of incremental salary. For example, perks could signal the relative position of an executive in a company through their exclusivity and prestige(e.g., Hirsch, 1976 and Rajan&Wulf, 2006), or perks may offer tax advantages or represent a form of stealth benefits through which executives can hide compensation from scrutiny (Bebchuk and Fried, 2004). Second, it may be beneficial for optimal contracting firms to provide perks if economies of scale make perks more cost effective than monetary compensation. For example, financial advisers, lawyers, and car services can be shared by multiple executives. In contrast, firms would rationally avoid perks if they create a negative perception amongst investors or magnify agency costs within the firm. For example, a company-provided club membership could divert an executive from working and the negative reaction of investors to the disclosure of personal use of company aircraft, as documented in Yermack (2004), suggests that negative perception of perks by investors could result in significantly higher costs of equity.

To examine the determinants of perks, I created a panel database of executive perk compensation at S&P 500 companies taking advantage of changes in SEC (Security and Exchange Commission) reporting requirements —the SEC required adherence to the new rules for all proxy statement filings after December 15, 2006. Under the old 1992 rules, firms did not have to disclose perks at all if the aggregate value of perks given to an executive was less than $50,000. Further, the old rules did not require firms to itemize the costs of any individual perks that were less than 25% of the overall total perk value. The new 2006 rules lowered the $50,000 threshold to $10,000 and required that every individual perk item be identified. Additionally, any perks valued at greater than $25,000 or 10% of the aggregate perk value must be separately quantified (SEC Release No. 33-8732A). All proxy statements for fiscal years 2006 and beyond provide meaningful and consistent data that enables the analysis of the determinants of executive perks. I manually collected information for named executive officer (NEO) perks from public disclosures contained in the proxy

statements that S&P 500 companies filed with the SEC between January 1, 2007 and December 31, 2013 — depending on a company's chosen month for fiscal year end, sample firms' fiscal years are from 2006 to 2013. To the best of my knowledge, this data provides the most comprehensive NEO perks information to date at S&P 500 companies.

Firms are more likely to pay perks to CEOs, in particular, and to top executives with higher wages, in general. Firms with higher current year stock return and prior year return on assets, realized growth, and growth opportunities are less likely to pay perks. Firm performance measures such as return on equity and free cash flow return, and manager attributes such as tenure and gender do not have a significant impact on the likelihood of S&P 500 firms paying perks. Firm size, monetary compensation, and being CEO are the most influential determinants of the value of perks. Prior year market-to-book ratio, stock return, prior year ROA, and prior year sales growth have statistically significant and economically meaningful negative impact. The results confirm that perks are not substitutes for monetary compensation and that larger firms reward top executives (particularly CEOs) with higher levels of perks. The determinants of perks depend on executive rank (e.g., CEOs versus other NEOs). For CEOs, firm size and monetary compensation are the primary explanatory factors. The firm-size result confirms that the well-established (optimal contracting) relationship between CEO monetary compensation and firm size (e.g., Gabaix & Landier, 2008) also applies to CEO perks. However, for other NEOs, monetary compensation, not firm size, is the most important factor determining perks. The results for CEOs and other NEOs differ in other important ways. Although for both groups, stock return and ROA have significant negative impacts (i.e., higher stock returns and ROA are associated with lower perk payouts), for other NEOs only, growth opportunities and realized growth have a moderating effect on perk compensation. The rest of the paper proceeds as follows. Section 2 provides empirical evidence. Section 3summarizes and concludes.

II. EMPIRICAL EVIDENCE

Data

The data source for perks is the SEC Edgar database — specifically public disclosures in proxy statements filed by S&P 500 companies between January 1,

2007 and December 31, 2013. Appendix A is a sample of the summary compensation table prescribed by current SEC regulations. The SEC defines named executive officers (NEOs) as CEO, CFO(chief financial officer), and the other top three highest paid officers of the company, and requires publicly traded companies to disclose compensation for named officers in annual proxy statements. Occasionally, firms choose to include compensation for more than five executives. The summary compensation table prescribes the elements of executive compensation that companies must report in separate columns (designated by lower case letters): c) salary, d) bonus, e) stock awards, f) option awards, g) non-equity incentive plan compensation, h) change in pension value and nonqualified deferred compensation earnings, i) all other compensation, and j) total. All other compensation is executive compensation not otherwise included in columns (c) through(h) — there are two categories of all other compensation: perquisites and other personal benefits and additional all other compensation.

There is no formal definition of perquisites and other personal benefits, but the SEC provides guidance[3]. Perquisites and other personal benefits include, but are not limited to, club memberships, financial or tax advice, personal travel, personal use of company property, housing, relocation and other living expenses, security, and discounts on company products or services(SEC Release No. 33-8732A, p.77).Additional all other compensation, includes severance or any payment related to a change of control, company contributions to vested or unvested pension plans, the value of any company-paid insurance premiums, amounts reimbursed during the fiscal year for the payment of taxes (gross-ups), the value of discount on acquired company shares, the value of any dividends or other earnings paid on stock or option awards when the dividends or earnings were not factored into the grant date fair value, director or other fees, commissions, any other miscellaneous cash payment(SEC Release No. 33-8732A, p.79).

[3] In Release No. 33-8732A the SEC expresses concern "that sole reliance on a bright line definition in our rules might provide an incentive to characterize perquisites or personal benefits in ways that would attempt to circumvent the bright lines…. An item is not a perquisite or personal benefit if it is integrally and directly related to the performance of the executive's duties.Otherwise, an item is a perquisite or personal benefit if it confers a direct or indirect benefit that has a personal aspect, without regard to whether it may be provided for some business reason or for the convenience of the company, unless it is generally available on a non-discriminatory basis to all employees."

The SEC does not specify how companies must report the breakdown of all other compensation. Depending on the firm, the detailed information is either summarized in a separate table or in the footnotes to the summary compensation table. I supplemented the executive compensation information available in Execucomp with manually-collected detailed information for all other compensation for executives at S&P 500 companies from the proxy statements, company financial statement information from Compustat, and company governance provisions from Risk Metrics. The final merged dataset has 20,071observationson 5884 named executive officers from 621 firms. The number of firms exceeds 500 because of changes to the composition of the S&P 500 over time. I winsorize all variables at the top and bottom one percent. See Appendix B for detailed definitions of variables used in this study.

Table 1 provides summary statistics of firm (Panel A) and manager (Panel B) characteristics for the data set. Given that the sample pool is the S&P 500, the firms in the sample are large and profitable. Mean (median) market value[4], annual sales, total assets and number of employees are $36.5 ($13.6) billion, $16.9 ($7.3) billion, $47.0 ($12.0) billion, and 42,250 (18,000), respectively. Mean (median) return on equity and return on assets are 12.8% (13.8%) and 5.1% (5.1%). In terms of growth opportunities, realized growth, and market returns, the mean (median) market-to-book ratio, sales growth, and stock return are 2.9 (2.2), 6.3% (5.3%), and 8.9% (8.1%). The average E Index[5] is 2.6 out of a maximum of six. S&P 500 sample firms span 156industry sectors defined by three-digit SIC (standard industry classification) code.

<Table 1>

Summary statistics of firm and manager characteristics

The table provides summary statistics of firm (Panel A) and manager (Panel B) characteristics. The sample includes S&P 500 firms between January 1, 2006 and December 31, 2013. In Panel B, compensation data is from summary compensation tables of SEC filed proxy statements. *Wage* as the sum of *salary*, *bonus*, *stock awards*, *option awards*, *non-equity incentive plan compensation*,

[4] Firm market value = market value of equity plus book value of debt

[5] Entrenchment Governance Index in which lower values reflect better governance – see Bebchuk, Cohen and Ferrell (2009).

and *change in pension value and nonqualified deferred compensation earnings* (i.e., all elements in the summary compensation table excluding *all other compensation*).*Perks* is the amount reported as *perquisites and other personal benefits*.CEO Premium is the ratio of CEO wage to average wage for all NEOs (named executive officers). See Appendix B for a summary of variable definition.

Panel B shows that 18.3% of the samples are CEOs and 7.5% are female. I define wage as all elements in the summary compensation table excluding *all other compensation*. This is a useful measure of monetary compensation because it excludes the distorting impact of one-time very large payouts related to severance or retirement. I define perks as the amount reported as *perquisites and other personal benefits*.Perks are much smaller than salary (monetary compensation not at risk) and wage (overall monetary compensation). For CEOs, mean (median) perks as a percent of salary and wage are 10.1%[6] (3.7%) and 1.1% (0.4%), respectively. For other NEOs, mean (median) perks as a percent of salary and wage are 7.2% (2.0%) and 1.1% (0.8%).Mean (median) NEO tenure is 12.6(10.5) years. Mean (median)CEO premium[7] is 2.1 (2.2).There is considerable right skewness in the following firm and manager characteristics: firm size, market return, growth opportunities, free cash flow, perks, salary, and wage.

Details of Perks at S&P 500 Firms

Firms choose their own descriptions of perks when disclosing compensation under the category *perquisites and other personal benefits* because the SEC does not provide specific groupings for individual perk items. For example, firms describe car service alternatively as ground transportation, car and driver, limousine, and chauffeur. Therefore, I exercise discretion in grouping perks with different descriptions but with common meaning. In Table 2, I consolidate more than sixty perk descriptions into the twenty specific perk items. For example, "relocation expenses" consist of five separate items (travel assistance, moving expenses, temporary accommodation, cash lump sum in lieu of incidentals, and realtor, legal, and other closing costs) because all are associated with reimbursement for a job-related move. Note that "other perks" consist of company disclosed miscellaneous or other perks plus other not-easily-classifiable descriptions. In the literature, there are examples of other approaches to

[6]$104/$1,033 = 10.1%

[7]CEO premium is a measure of CEO power and equals CEO wage divided by average NEO wage.

consolidating perks. Rajan and Wulf (2006) use a database of 15 perk items based on the responses of approximately 300 companies between 1986 and 1999 to a survey conducted by a well-known U.S. based compensation consultant. The consultant chose the perk items on the survey. Grinstein, Weinbaum, and Yehuda (2010) compile a perk database based on 2007 and 2008 SEC filings for a random sample of small, medium, and large firms that includes 130 large market-capitalization firms. They document 30 descriptions of perks consolidated into ten main perk items, including tax gross-ups[8]. To my knowledge, the perk compensation evaluated herein is the most comprehensive perk database in existence for large market capitalization firms based on consistent, stringent compensation disclosure rules.

Table 2 summarizes *all other compensation* for CEOs and other NEOs for fiscal years 2006 to 2013. Almost all executives receive some form of all other compensation (98.3% of CEOs and 97.6% of other NEOs, at average values of $332,132 and $202,917, respectively). The percentage of CEOs (other NEOs) receiving *additional all other compensation* is 95.8% (95.3%). On average, CEOs (other NEOs) receive *additional all other compensation* worth $222,757 ($162,745).

<Table 2>

Summary statistics of perks provided in S&P 500 firms

The table presents summary statistics for perk benefits provided by S&P 500 firms as detailed in SEC filed proxy statements between January 1, 2006 and December 31, 2013. The SEC classifies "*all other compensation*" into two main categories "*perquisites and other personal benefits*" and "*additional all other compensation*". We further classify perks reported under "*perquisites and other personal benefits"* into 20 main perk items. For each item, the amounts are in $ thousands and Freq is the percentage of firms disclosing a dollar value for the item.

CEOs receive *perquisites and other personal benefits* more frequently and at higher levels, on average, than do other NEOs (76.2% compared to 62.9% and

[8]The SEC specifically classifies tax gross-ups as an item in *additional all other compensation* instead of an item in *perquisite and other personal benefit*. As such, my definition of total perks does not include tax gross-up.

$116,240compared to $37,389 respectively). The most common perks for CEOs are personal use of aircraft (36.3%), other perks (26.2%), financial services (24.1%), personal use of automobile (19.2%), and medical/health (12.2%).The most valuable perks for CEOs are security ($160,317), relocation expenses ($155,653), personal use of aircraft ($139,808), cost of living allowances ($112,946), and car service ($54,060). The most common perks for other NEOs are other perks (24.4%), financial services (21.9%), personal use of automobile(17.3%),medical/health (10.5%), and personal use of aircraft (10.0%).The most valuable perks for named executives other than CEO are cost of living allowances ($185,104), relocation expenses ($152,297), personal use of aircraft ($64,800), car service($54,499), and reimbursement for unused vacation($40,894).

Note that for CEOs, security is the sixth most common perk but the most expensive on average and with a maximum annual value of $1.7 million Personal use of aircraft is a good example of a truly exclusive perk in that CEOs receive it far more frequently than other NEOs, and at a higher dollar value. Chauffeur services are also exclusive, even among executives; CEOs are almost three times as likely as the other NEOs to benefit from the services of a car and driver. Overall, the results indicate that, although the use of perks as a form of executive compensation is widespread acrossS&P500 companies, there is large variation in value and scope of perks offered to executives of different rank.

The Determinants of Perks at S&P 500 Firms

The literature investigates how managerial characteristics (such as gender, job tenure, and managerial power) and firm characteristics (such as size, profitability, stock price, and governance) and affect executive (usually CEO) compensation (e.g., Rose & Shepard, 1997, Lazear, 2003, Murphy & Zabojnik, 2007, and Core, Guay & Larcker, 2008). I use this literature to identify potential determinants of perks and test for statistical significance and economic impact as explanatory variables in regression analyses evaluating the *likelihood* and *value* of perk compensation for NEOs at S&P500 firms. There is widespread consensus that firm size is the most important determinant of CEO pay. Larger firms typically have more complex operations and entice more talented executives with higher levels of compensation (e.g., Murphy, 1999, Core, Holthausen, & Larcker, 1999, and Rose & Shepard, 1997). Prior research uses alternative

measures for firm size including sales, total assets, number of employees, and market capitalization. Gabaix & Landier (2008) suggest that market value is a better measure of firm size — compared to other measures of firm size, the market value of a firm (i.e., sum of book value of debt and market value of equity) offers the highest predictive power in regressions with total compensation as the dependent variable and firm size as the single explanatory variable. I choose this measure of firm size. As a robustness check, I also used number of employees, total sales, and total assets as alternative proxies for firm size and find no meaningful impact on the conclusions of the results. Smith and Watts (1992) find that firms with large growth opportunities attract and retain talented executives with higher levels of compensation and reward them for achieving growth — I use market-to-book ratio and sales growth as proxies for growth opportunities and actual growth, respectively. Core, Holthausen, and Larcker (1999) argue that agency theory predicts that executive compensation is increasing in firm performance — I proxy firm performance with accounting measures return on assets, return on equity, and free cash flow return. Murphy (1999) finds the impact of firm characteristics such as firm performance, growth, growth opportunities, and stock returns on executive monetary compensation can be mechanical (e.g., high levels of certain firm characteristics inherently increase the value of bonus, stock awards, and non-equity incentive plans) or reward for performance (e.g., salary increases based on exceeding performance targets). I expect the impact (if any) of such firm characteristics on perks to be reward-based not mechanical. That is, perk awards do not automatically increase in value with improving firm performance, but firms may provide more perks as recognition for past performance results.

Larcker, Ormazabal, and Taylor (2011) test two theories of governance and executive pay. The managerial power view of governance (e.g., Bebchuk &Fried, 2004) suggests higher levels of governance entrenchment provisions are associated with managerial rent extraction, and predicts that broad government actions that reduce executive pay, increase proxy access, and ban governance provisions are value enhancing. The optimal contracting view of governance (e.g., Fama, 1980) suggests that observed governance choices are the result of value-maximizing contracts between shareholders and management, and predicts that broad government actions that regulate such governance choices

are value destroying. Bebchuk, Cohenand Ferrell (2009) base the E (entrenchment) Index on six governance provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments, assigning one point for each provision. The E Index is a proxy for the balance of power between shareholders and managers — increasing index values shift power to executives (suggesting poor governance). Bebchuk, Cohenand Ferrell (2009) find that the E Index is effective in explaining reduced firm valuation and negative abnormal returns associated with poor governance. Since data to calculate the E Index is readily available from Risk Metrics, I use it as the proxy for governance.

In terms of managerial characteristics, studies of executive compensation often use indicator variables for gender and being CEO. Moreover, powerful executives, particularly CEOs, may exert influence over the firm's compensation committee. Bebchuk, Martijn Cremers, & Peyer(2011) define CEO pay slice, CPS, as CEO total compensation divided by the sum of total compensation for the top five highest paid executives at a firm, and suggest that more powerful CEOs typically take a higher CEO pay slice. For this analysis, one disadvantage of CPS is that regressions would lose observations when the summary compensation table includes fewer or more than five named executives. To mitigate this problem, I define an alternative measure of CEO power, *CEO premium*, that is similar in spirit to CPS. *CEO premium* equals CEO wage divided by the average wage of all NEOs reported in the summary compensation table. The regressions also use tenure as aproxy executive power and influence.

The Spearman's rank correlation coefficients between wage and perks are 0.3729 and 0.2353 for CEOs and other NEOs respectively, both significant at the 1% level, indicating that, in general, perks are not substitutes for wage at S&P 500 firms. While the literature has shown that CEO pay in increasing in firm size, this relationship does not necessarily extend to other NEOs. Noting the significant, positive correlation between wage and perks, I am interested in evaluating the interaction between firm size, wage, and perks and whether the separate impacts of firm size and wage on perks is different for CEOs and other NEOs. The regressions use wage as a managerial attribute that potentially impacts perks.

To summarize, the following are the independent variables used in subsequent regression analyses – note the use of logarithmic transformation on some explanatory variables to mitigate the impact of right skewness in the sample distribution. Appendix B provides further details on all variables.

Firm Attributes

Firm size — prior year ln(market value)

Growth opportunities — prior year market-to-book ratio

Market Performance — prior and current year stock return

Firm Performance — prior and current year return on assets (ROA) and return on equity (ROE), and prior year free cash flow return

Realized growth — prior year sales growth

Governance — E Index

Manager Attributes

Monetary compensation — current year ln(wage)

Power — CEO indicator variable, tenure, and CEO premium

Gender — Gender indicator variable

Table 3 presents the correlation matrices. Panel A (Panel B) summarizes the correlation between perks and the firm (manager) attributes. Column 1 shows that perks are significantly and positively (negatively) correlated with firm size, market performance, governance, monetary compensation, tenure, being CEO, and CEO premium (growth opportunities, firm performance, and realized growth). Perks are not significantly correlated with return on equity and gender. The balance of the columns shows the cross-correlation between attributes. Given the large number of observations, it is not surprising that most of the coefficients are statistically significant. The largest magnitude coefficient is 0.5818 (between ROA and Free Cash Flow Return) — there is no indication that very high correlation between attributes will cause multicollinearity problems in subsequent regression analyses used to conduct more rigorous examination of the determinants of executive perks.

<Table 3>

Correlation matrices

This table presents a summary of correlation coefficients for variables used in subsequent regression analysis. Panel A presents results for firm characteristics: Ln(Market Value), Market-to-book Ratio, Stock Return, Return on Assets, Return on Equity, Free Cash Flow Return, Sales Growth, and E Index. Panel B presents results for manager characteristics: Ln(Wage), Ln(Tenure), CEO indicator, Female indicator, and CEO Premium. See Appendix B for definitions. ***, **, * indicate significance level at 1%, 5% and 10% level respectively.

Given the heterogeneity of perk paying practices across S&P 500 firm demonstrated in Table 2, I first examine what factors influence the likelihood of a firm providing perks to its NEOs. Table 4 presents the marginal effects of three probit regressions indicated by columns (1) — all NEOs, (2) — CEOs only, and (3) – NEOs excluding CEOs. This table reports the impact of firm and manager attributes on the probability of the NEO receiving perks. All regressions control for year and industry(3 digit SIC code) fixed effects. The dependent variable, Y_{it}, is equal to 1 if executive *i* receives perks in year *t*. The explanatory variables are as described above — see Appendix B for full definitions. The main effect probit model is $\Phi^{-1}(p_i) = \mathrm{x}_i'\beta = \sum_i x_i\beta_i$, where $\Phi^{-1}(\ )$ is the inverse of the cumulative normal distribution function. Marginal effects represent the change in probability of being a target for a very small change in one independent variable, holding all others fixed. Since marginal effects are the derivative of p_i [9] with respect to each independent variable, the value of marginal effects depends on the values of all of the independent variables. The marginal effect of the j[th] element in x_i' in the probit model is equal to $\phi(\mathrm{x}_i'\beta)\cdot b_j$ where $\phi(\mathrm{x}_i'\beta)$ is the density function of the standard normal distribution evaluated at $\mathrm{x}_i'\beta$,and b_j is the estimated regression coefficient for j[th] element in x_i'. The regression (1) results for all NEOs shows that monetary compensation, growth opportunities, firm and market performance, realized growth, executive power, and governance all have a significant impact on the likelihood of firms compensating

[9] p_i =Prob($\mathrm{Y}_i = 1$) = $\Phi(\mathrm{x}_i'\beta)$

executives with perks. The regression coefficients for Ln(Wage$_t$), the CEO indicator, and CEO Premium are *positive* and significant, the coefficients for Market-to-Book Ratio$_{t-1}$, Stock Return$_t$, Return on Assets$_{t-1}$, Sales Growth$_{t-1}$, E Index are *negative* and significant. Defining Δ probability as the change in the likelihood of the NEO receiving perks for a one standard deviation increase in the level of a given explanatory variable (holding all others at their mean values), we find that the statistically significant regression results are economically meaningful as well. Table 4 shows that the predicted probability (at means) of an NEO receiving perks is 69.6%.The Δ probabilities for logarithmic monetary compensation and CEO premium are 5.6%[10] and 1.9%, respectively. Being CEO increases the likelihood of receiving perks by a full 7.3%. Higher levels of prior period market-to-book ratio, stock return, prior period ROA, prior period sales growth, and E Index *decrease* the chance of receiving perks. The Δ probabilities are -2.0%, -2.0%, -2.2%, -1.5%, and -2.6%, respectively.

<Table 4>

Probit analysis of perk compensation at S&P 500 firms from 2007 to 2013

The dependent variable is equal to 1 if the executive receives perks. Regression (1) includes all NEOs (named executive officers), (2) includes CEOs only, and (3) includes NEOs other than CEOs. The explanatory variables are Ln(Wage$_t$), Ln(Market Value$_{t-1}$), Market-to-book Ratio$_{t-1}$, Stock Return$_t$, Stock Return$_{t-1}$, Return on Assets$_t$, Return on Assets$_{t-1}$, Return on Equity$_t$, Return on Equity$_{t-1}$, Free Cash Flow Return$_{t-1}$, Sales Growth$_{t-1}$, Ln(Tenure$_t$), CEO indicator$_t$, Female indicator$_t$, CEO Premium$_t$, and E Index$_t$ (see Appendix B for definitions). Subscripts t and t-1 indicate current and prior year. All regressions control for firm and year fixed effects. Cluster-robust cluster standard errors are in parentheses with clustering at firm level. ***, **, * indicate significance level at 1%, 5% and 10% level respectively.

[10]For example, an NEO with Ln(Wage$_t$) that is one standard deviation above the mean value has a probability of receiving perks of 69.6% + 5.6% = 75.2%.

The results show that NEOs who earn higher monetary compensation are more likely to receive perks. Firms that have higher demonstrated growth, growth opportunities, stock market returns, or ROA are *less* likely to provide perks; this result may signal that better managed firms may be less likely to use perks or, conversely, that stagnant firms are more susceptible to the agency issue of excess perk consumption. CEOs are more likely to receive perks than other NEOs. However, when CEOs receives a larger share of the total NEO monetary compensation, all NEOs are more likely to receive perks. For example, powerful CEOs could exert more influence over firms' compensation committee decisions over discretionary compensation such as perks, and thereby increase the likelihood that all NEOs receive perks.

The results for regression 2(CEOs only) show that wage, firm size, stock returns, and ROA are the significant explanatory variables (at the 1%, 5%, 10%, and 10% levels, respectively).The predicted probability (at means) of an S&P 500 CEO receiving perks is 77.9%. The Δ probabilities for logarithmic wage and firm size, stock returns, and ROA are 6.3%, 4.0%, -1.8%, and -2.4%. The results for regression 3 (NEOs excluding CEOs) show that the significant explanatory variables are wage, market-to-book ratio, stock return, prior period ROA, prior period sales growth, CEO premium, and E Index. The predicted probability (at means) of other NEOs receiving perks is 64.8%. Higher levels of logarithmic wage and CEO premium increase the likelihood of other NEOs receiving perks — the Δ probabilities are 6.0% and 2.1%. Conversely, higher market-to-book ratio, stock return, prior period ROA, prior period sales growth, and E Index decrease the likelihood of other NEOs receiving perks — the Δ probabilities are -2.1%, -2.1%, -2.2%, -1.6%, and -2.7%.

A key insight is that the important factors determining the probability of receiving perks are different for CEOs and other NEOs. For CEOs, both firm size and monetary compensation are the most important factors affecting the likelihood of receiving perks with stock returns and ROA having a moderating effect. In contrast, for other NEOs, wage and CEO premium are the dominant factors leading to higher perk compensation, with market-to-book ratio, stock return, prior period ROA, and prior period sales growth acting as moderators. For other NEOs, firm size is not a significant explanatory variable. Also note that many of the traditional compensation determinants are not important factors

impacting the likelihood of receiving perks; return on equity, cash flow return, tenure, and gender are not significant in any of the regressions.

Having established the firm and manager attributes that affect the *likelihood* of receiving perks, we now investigate the determinants of the *value* of executive perks by estimating the following regression model:

$$Ln(Perks_{it}) = \alpha + \mathbf{X}'_{it-1}\beta + u_j + v_t + \varepsilon_{it}$$

where $Ln(Perks_{it})$ is the natural logarithm of NEO *i*' sperks compensation in year *t*. The regression is conditional on firms paying perks. **X** is a vector including the same explanatory variables for firm and manager attributes used in the probit regressions. u_j is industry *j*'s fixed effect. v_t is year *t*'s fixed effect. Table 5 presents the results for three regressions in which the dependent variables are $Ln(Perks_t)$ for (1) all NEOs, (2) CEOs only, and (3) NEOs excluding CEOs. Regression (1) shows that monetary compensation, firm size, and being CEO all have a statistically significant and economically meaningful *positive* impact on the level of executive perks. Prior year market-to-book ratio, stock return, prior year ROA, and prior year sales growth have statistically significant and economically meaningful *negative* impact. A 1% higher level of wage (firm size) is associated with a 0.77% (0.31%) higher level of perks. Being CEO almost triples compensation[11]. A 0.01 higher level of prior year market-to-book ratio, stock return, prior year ROA, and prior year sales growth are associated with a 0.06%, 0.49%, 3.78%, 0.79% *lower* level of perks. The results confirm that perks are not substitutes for monetary compensation, and that larger firms reward top executives (particularly CEOs) with higher levels of perks. Return on equity, free cash flow return, tenure, gender, CEO premium, and E index do not have a significant impact on the level of perk compensation for named executive officers.

Regressions (2) and (3) allow us to compare differences in the determinants of perks for CEOs and other NEOs. We see that firm size is an important determinant of CEO perks (i.e., the regression coefficient is significant at the 1% level and large). A 1% higher level of prior year firm size is associated with a

[11] $\left(e^{1.0092-\frac{0.1711^2}{2}}-1\right)\times 100 = 170.3\%$

0.62% higher level of perks for CEOs. However, firm size is not associated with a significant impact on perk compensation for other NEOs. Sales growth is associated with a negative impact on NEOs other than the CEO. Gender does not impact CEO perk compensation, but being female is associated with lower levels of perks for named executives other than CEO.

In regression (2), both ROA and lagged ROA have significant (1% and 5% levels respectively) *negative* relationship with perks. A 0.01 higher level of ROA (lagged ROA) is associated with a 4.39% (4.15%) lower level of CEO perks. Stock return has a more muted impact. None of the other explanatory variables have a significant impact on CEO perks. In regression (3), we see that monetary compensation (significant at the 1% level) is the dominant *positive* explanatory factor for perks for other NEOs — a 1% higher wage level translates to 0.79% higher perks. Growth opportunities, market and firm performance, and realized growth are firm attributes that are significant and are *negatively* related to other NEO perks. A 0.01 higher level of market-to-book ratio, stock return free, ROA, and sales growth is associated with a 0.06%, 0.51%, 3.61%, and 0.83% lower level of perks for other NEOs.

Once again we see that the determinants that affect the level of executive perks are different for CEOs and other NEOs. For CEOs, firm size is important. Supporting the optimal contracting view of executive compensation, many studies (e.g., Murphy & Zabojnik, 2007, Tervio, 2008, Gabaix & Landier, 2008 and Edmans, Gabaix & Landier, 2009) examine CEOs with different levels of managerial talent matching with firms in a competitive matching model. These models have CEOs compensated by wage without perks. In a compensation environment that includes perks, it is reasonable to expect CEOs to competitively bargain both the wage and perk components of their compensation packages. The results in Table 5 confirm that the well-established relationship between CEO monetary compensation and firm size also applies to CEO perks —for CEOs, competitive matching results in contracts in which firm size is an important factor determining both wage and perks. However, for other NEOs, monetary compensation, not firm size, is the most important factor determining perks — firms negotiate optimal compensation packages with other NEOs (that include both wage and perks) in which perks are, primarily, an increasing function of wage. Firm size is not a statistically significant factor.

<Table 5>

The determinants of executive perks

This table reports the determinants of named executive officer (NEO) perks estimated from the following equation:

$$Ln(Perks_{it}) = \alpha + \mathbf{X}'_{it-1}\beta + u_j + v_t + \varepsilon_{it}$$

Where *Ln(Perks$_t$)* is the natural logarithm of NEO *i*'s perks compensation in year *t*. *Perks* is the amount reported in the category *perquisites and other personal benefits* of SEC filed proxy statements. $\mathbf{X}_{t-1}$ are explanatory variables including Ln(Wage$_{it}$), Ln(Market Value$_{it-1}$), Market-to-book Ratio$_{t-1}$, Stock Return$_t$, Stock Return$_{t-1}$, Return on Assets$_t$, Return on Assets$_{t-1}$, Return on Equity$_t$, Return on Equity$_{t-1}$Free Cash Flow Return$_{t-1}$, Sales Growth$_{t-1}$, Ln(Tenure$_t$), CEO, Female, CEO Premium, and E Governance Index. The subscripts $_t$ and $_{t-1}$ indicate current and prior fiscal year respectively. The detail definition of these variables are provided in Appendix B. u_j is industry *j*'s fixed effect. v_t is year t's fixed effect. Cluster-robust standard errors are in parentheses with clustering at firm level. ***, **, * indicate significance level at 1%, 5% and 10% level respectively.

The results for CEOs and other NEOs differ in other important ways. Although for both groups, stock return and ROA have significant negative impacts (i.e., higher stock returns and ROA are associated with lower perk payouts), for other NEOs only, growth opportunities and realized growth have a moderating effect on perk compensation. In general, female NEOs who are not CEOs receive lower perk compensation that male other NEOs. Note that tenure, CEO power, and governance do not have an impact on perk compensation.

III. CONCLUSIONS

This paper provides a comprehensive analysis of the determinants of executive perks at S&P 500 firms using new manually collected panel data. Despite widespread use of perks by S&P 500 companies, there is large variation in value and scope of perks offered to executives of different rank. CEOs receive perks more frequently and in larger amounts than other named executives. The determinants that affect the likelihood and value of executive perks are different for CEOs and other NEOs. Overall, the most important factors affecting perk

compensation are wages and firm size. Many traditional determinants of monetary compensation are not important factors for perks.

There are two primary arguments for the prevalence of executive perks — agency theory (i.e., perks are the result of weak corporate governance that allows top executives to divert corporate resources for personal gain) and optimal contracting (i.e., perks are part of optimal executive compensation packages because they are a cost-effective way to enhance executive satisfaction and productivity). Recognizing that perks are heterogeneous, it is quite possible for perks, in general, to reflect optimal contracting and, yet, suggest agency conflicts in particular instances. Consistent with agency predictions, we find that stagnant firms and firms with powerful CEOs are more likely to provide perks.

The unique nature of different perk items and the difficulty in collecting perk information have limited the research on perks. An interesting future research question is to understand, from the executive's perspective, the difference between perks and wage, which will provide further insight regarding the cross-sectional variation in executive compensation packages.

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Appendix A Sample summary Compensation Table

Appendix A: Sample Summary Compensation Table[13]

Name and Principal Position (a)	Year (b)	Salary ($) (c)	Bonus ($) (d)	Stock Awards ($) (e)	Option Awards ($) (f)	Non-Equity Incentive Plan Compensation ($) (g)	Change in Pension Value and Nonqualified Deferred Compensation Earnings ($) (h)	All Other Compensation ($) (i)	Total ($) (j)
PEO[1]									
PFO[2]									
A									
B									
C									

[1] Refers to principal executive officer
[2] Refers to principal financial officer

[13] See: http://www.sec.gov/news/press/2006/2006-123_table.pdf

APPENDIX B: Definition of Variables

Variable Name	Variable Definition
Firm Level Variables	
E Index	a measure of corporate governance (entrenchment) as defined in (Bebchuk, Cohen, and Ferrell, 2009) in which lower values correspond to higher levels of corporate governance
Employees	number of employees
Free Cash Flow	net income plus depreciation & amortization plus interest after tax minus the increase in net working capital minus capital expenditures
Free Cash Flow Return	free cash flow divided by total assets
Market-to-book Ratio	fiscal year-end share price times common shares outstanding divided by book value of equity
Market Value	book value of debt plus market value of equity
Return on Assets (ROA)	net income divided by prior year total assets
Return on Equity (ROE)	net income divided by prior year book value of equity
Sales Growth	increase in sales over prior year divided by prior year sales
Stock Return	fiscal year-end price plus all per share dividend payments during the fiscal year all divided by prior fiscal year-end share price
Manager Level Variables	
CEO	indicator variable equal to 1 if the executive is CEO
CEO Premium	a measure of CEO power equal to CEO wage divided by mean NEO (named executive officer) wage
Female	indicator variable equal to 1 if the executive is female
Perks	the sum of personal use of aircraft, relocation expenses, personal use of automobile, security, financial services, club memberships, reimbursement for unused vacation, personal

services/use of assets, car service (car and driver), tickets and entertainment, personal meals, personal travel, professional association dues, perk cash allowance, legal fees, parking, cost of living allowance, charitable gift matching, medical/health, and other perks

Table 1: Summary statistics of firm and manager characteristics

Panel A — Firm Characteristics					
	Mean	Std	P25	Median	P75
Employees	42250	64991	6850	18000	44879
Net Sales ($mns)	16875	26607	3427	7339	15835
Total Assets ($mns)	46961	134170	5108	11951	31421
Market Value ($mns)	36507	83170	7291	13607	28843
Market to Book Ratio	2.9	3.8	1.4	2.2	3.6
Stock Return	8.9%	43.2%	-15.4%	8.1%	27.3%
Return on Assets	5.1%	7.7%	1.8%	5.1%	9.1%
Return on Equity	12.8%	39.2%	6.8%	13.8%	21.7%
Free Cash Flow ($mns)	1432	3704	69	483	1316
Sales Growth	6.3%	19.3%	-2.6%	5.3%	13.3%
E Index	2.6	1.5	2	3	4
Panel B — Manager Characteristics					
	Mean	Std	P25	Median	P75
All NEOs					
CEO Dummy	0.183	0.387	0	0	0
Gender Dummy	0.075	0.264	0	0	0
Tenure (years)	12.6	8.1	7.1	10.5	14.5
CEO Premium	2.1	0.7	1.8	2.2	2.5
Perks ($thousands)	51	117	12	12	41
Salary ($thousands)	634	340	413	550	788
Wage ($thousands)	4704	4947	1728	3026	5645
CEOs only					
Perks ($thousands)	104	166	2	37	126
Salary ($thousands)	1033	370	834	1000	1201
Wage ($thousands)	9886	6627	5153	8334	12855
NEOs excl. CEOs					
Perks ($thousands)	39	99	0	10	32
Salary ($thousands)	545	259	394	500	648
Wage ($thousands)	3541	3567	1570	2551	4205

Table 2: Summary statistics of perks provided in S&P 500 firms

	CEOs only (N=3679)			Top Executives Excluding CEOs (N=16392)		
	Freq	Mean	Std	Freq	Mean	Std
Total *All Other Compensation*	98.3%	332.1	580.2	97.6%	202.9	527.1
Main Categories						
Perquisites & Other Personal Benefits	76.2%	116.2	132.4	62.9%	37.4	61.9
Additional All Other Compensation	95.8%	222.8	525.2	95.3%	162.7	493.8
Main Perquisite Items Under Perquisites & Other Personal Benefits						
Personal Use Of Aircraft	36.3%	139.8	136.3	10.0%	64.8	101.7
Relocation Expenses	3.7%	155.7	239.9	6.5%	152.3	271.3
Personal Use Of Automobile	19.2%	20.3	15.4	17.3%	16.2	11.4
Security	12.0%	160.3	331.7	3.6%	32.2	112.2
Financial Services	24.1%	17.3	16.4	21.9%	10.7	9.8
Club Memberships	7.4%	12.0	16.2	5.3%	7.5	11.2
Reimbursement for Unused Vacation	1.8%	52.5	62.0	2.3%	40.9	50.1
Personal Services/Use Of Assets	2.7%	30.1	44.7	1.8%	18.3	41.4
Car Service (Car And Driver)	8.2%	54.1	59.8	2.9%	54.5	65.7
Tickets And Entertainment	0.3%	36.9	53.9	0.3%	7.3	9.9
Personal Meal	0.4%	11.9	15.7	0.3%	8.1	15.2
Personal Travel	4.4%	16.7	23.8	3.4%	9.6	14.0
Professional Association Dues	0.2%	41.6	54.2	0.2%	18.5	24.3
Perquisite Cash Allowance	5.9%	40.2	23.8	5.6%	27.2	15.6
Legal Fees	2.0%	37.2	53.0	0.6%	37.8	72.2
Parking	1.9%	3.0	1.7	2.2%	3.2	2.0
Cost Of Living Allowance	2.7%	112.9	146.8	3.6%	185.1	275.6
Charitable Gift Matching	6.1%	29.2	38.9	4.4%	15.4	24.4
Medical/Health	12.2%	6.1	10.3	10.5%	5.6	9.9
Other Perquisites	26.2%	24.3	26.0	24.4%	17.0	20.4

Table 3: Correlation matrices

Panel A - Correlation Matrix: Firm Attributes (N = 19136)

ID	Variable	1	2	3	4	5	6	7	8	9
1	Ln (Perks)	1								
2	Ln (Market Value)	0.0614***	1							
3	Market-to-book Ratio	-0.0313***	0.0213***	1						
4	Stock Return	0.0155**	0.0079	0.1266***	1					
5	Return on Assets	-0.0402***	0.127	0.2502***	0.1394***	1				
6	Return on Equity	-0.0070	0.0604***	0.4766***	0.0807***	0.4215***	1			
7	Free Cash Flow Return	-0.0221***	0.0050	0.1252***	0.0593***	0.5818***	0.2606***	1		
8	Sales Growth	-0.0628***	0.0456***	0.1159***	0.0212***	0.2551***	0.0792***	0.0526***	1	
9	E Index	0.0349***	-0.2087***	-0.0352***	0.0773***	-0.0690***	-0.0639***	-0.0755***	-0.052***	1

Panel B - Correlation Matrix: Manager Attributes (N = 20071)

ID	Variable	1	2	3	4	5	6
1	Ln(Perks)	1					
2	Ln(Wage)	0.2250***	1				
3	Ln(Tenure)	0.0573***	0.1669***	1			
4	CEO	0.14736***	0.4387***	0.2609***	1		
5	Female	-0.0179	-0.0512***	-0.0467***	-0.0796***	1	
6	CEO Premium	0.0488***	-0.0283***	-0.0604***	-0.0131*	0.0316***	1

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Probit analysis of perk compensation at S&P 500 firms from 2007 to 2013

	(1) All NEOs	(2) CEOs Only	(3) NEOs excl CEOs
	Marginal Effects	Marginal Effects	Marginal Effects
Ln (Wage$_t$)	0.0614***	0.0725***	0.0651***
	(0.0092)	(0.0195)	(0.0099)
Ln (Market Value$_{t-1}$)	0.0193	0.0373**	0.0140
	(0.0141)	(0.0164)	(0.0152)
Market-to-book Ratio$_{t-1}$	-0.0055*	-0.0040	-0.0058*
	(0.0029)	(0.0037)	(0.0030)
Stock Return$_t$	-0.0460**	-0.0411*	-0.0485**
	(0.0192)	(0.0236)	(0.0201)
Stock Return$_{t-1}$	-0.0185	-0.0187	-0.0195
	(0.0177)	(0.0214)	(0.0187)
Return on Assets$_t$	-0.1223	-0.3053*	-0.0812
	(0.1306)	(0.1663)	(0.1349)
Return on Assets$_{t-1}$	-0.2917*	-0.2330	-0.3008*
	(0.1549)	(0.1996)	(0.1608)
Return on Equity$_t$	-0.0158	-0.0157	-0.0175
	(0.0206)	(0.0235)	(0.0217)
Return on Equity$_{t-1}$	-0.0072	-0.0263	-0.0045
	(0.0301)	(0.0423)	(0.0304)
Free Cash Flow Return$_{t-1}$	0.0658	0.1000	0.0593
	(0.0892)	(0.1093)	(0.0963)
Sales Growth$_{t-1}$	-0.0736*	-0.0402	-0.0807*
	(0.0394)	(0.0470)	(0.0415)
Ln(Tenure$_t$)	0.0008	-0.0235	0.0124
	(0.0111)	(0.0280)	(0.0131)
CEO	0.0746***		
	(0.0160)		
Female	-0.0274	0.0799	-0.0351
	(0.0205)	(0.0511)	(0.0219)
CEO Premium	0.0281**	0.0040	0.0314**
	(0.0140)	(0.0237)	(0.0148)
E (Entrenchment)	-0.0175*	-0.0133	-0.0189*
	(0.0105)	(0.0117)	(0.0110)
Year Fixed Effects	Y	Y	Y
Industry Fixed Effects	Y	Y	Y
Observations	18,403	3,034	14,968
Pseudo R-squared	0.1422	0.1537	0.1349
Observed Probability	66.9%	74.2%	64.8%
Predicted Probability at	69.6%	77.9%	66.8%

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: The determinants of executive perks

	(1) All NEOs	(2) CEOs Only	(3) NEOs excl CEOs
Ln ($Wage_t$)	0.7709***	1.0059***	0.7933***
	(0.0951)	(0.2220)	(0.0945)
Ln (Market $Value_{t-1}$)	0.3069**	0.6177***	0.2126
	(0.1305)	(0.1794)	(0.1378)
Market-to-book $Ratio_{t-1}$	-0.0587**	-0.0628	-0.0563**
	(0.0276)	(0.0412)	(0.0272)
Stock $Return_t$	-0.4873***	-0.4287*	-0.5108***
	(0.1769)	(0.2261)	(0.1810)
Stock $Return_{t-1}$	-0.2083	-0.2678	-0.2009
	(0.1604)	(0.2005)	(0.1660)
Return on $Assets_t$	-1.6509	-4.3874***	-1.0334
	(1.1542)	(1.6212)	(1.1781)
Return on $Assets_{t-1}$	-3.7722**	-4.1500*	-3.6122**
	(1.5289)	(2.2815)	(1.5178)
Return on $Equity_t$	-0.0917	-0.0107	-0.1129
	(0.1789)	(0.2315)	(0.1823)
Return on $Equity_{t-1}$	0.1073	0.0206	0.1150
	(0.2899)	(0.4550)	(0.2803)
Free Cash Flow $Return_{t-1}$	0.6298	1.0442	0.5197
	(0.8523)	(1.2233)	(0.8868)
Sales $Growth_{t-1}$	-0.7903**	-0.6064	-0.8294**
	(0.3836)	(0.4991)	(0.3964)
Ln($Tenure_t$)	0.1045	-0.1889	0.1824
	(0.1051)	(0.2945)	(0.1196)
CEO	1.0092***		
	(0.1711)		
Female	-0.2826	0.4584	-0.3223*
	(0.1849)	(0.5248)	(0.1938)
CEO Premium	0.2144	-0.0213	0.2275
	(0.1354)	(0.2350)	(0.1397)
E Index	-0.1443	-0.1090	-0.1533
	(0.0944)	(0.1149)	(0.0984)
Constant	-9.6161***	-20.5744***	-9.6410***
	(1.9467)	(2.9442)	(2.1647)
Year Fixed Effects	Y	Y	Y
Industry Fixed Effects	Y	Y	Y
Observations	18,873	3,465	15,408
R-squared	0.206	0.255	0.1929

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

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