Executive Compensation and Ethnic Minority Status

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We examine the compensation of ethnic minority executives in listed US firms. The total pay of African American executives is 9 percent lower than that earned by Caucasians. This is due to lower base salary, lower bonus, and lower restricted stock grants. The lower bonus is due to a lower sensitivity to above average firm performance. African Americans also earn significantly less on the exercise of stock options, increasing the pay gap to 17 percent for total ex-post pay. In contrast to African Americans, the compensation of Hispanic and Asian executives is comparable to Caucasians.

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Introduction

Over the last 30 years, ethnic minorities have been increasingly represented within the executive ranks at US firms. In 1979, just 0.05 percent of executives at Fortune 1000 firms were of an ethnic minority background (Jones 1986). By 2010, we estimate that of 2,682 executives at S&P 1500 firms, 6.8 percent are ethnic minorities. These executives represent an important and interesting group, race and ethnicity being important personal attributes that may impact executives' treatment and behavior. In this paper we empirically examine the compensation outcomes for these executives.

Such evidence is important since it may shed light on whether minority executives suffer discrimination, which is an issue of significant social, economic and political importance (Federal Glass Ceiling Commission 1995). Minority executives could be disadvantaged by prejudice, statistical discrimination, or race based stereotyping, leading to lower compensation. There is anecdotal evidence of perceived racial discrimination in executive pay, such as the following quote from an African American executive:

"I'm experiencing that right now. They bring in a new CFO.... even though I've been running things. They pay him twice as much as me and I've been there 10 years. I see the salary differences between Blacks and Whites." (Federal Glass Ceiling Commission 1995, p. 70)

The Federal Glass Ceiling Commission (1995) concluded that pay discrimination is widespread, noting that where minorities, "are in top positions, they are not being rewarded equally" (1995, p. 80).

We contribute to the labor economics literature on racial pay differences, executive pay studies on gender, and a small number of studies that examine ethnic minority executives (Zweigenhaft and Domhoff 2011; Park and Westphal 2013; Hill, Upadhyay, and Beekun 2015; Guest 2015). Discrimination may also take place through mobility, and Guest (2015) shows

that whilst ethnic minority executives as a whole face similar mobility patterns to Caucasians, African Americans face a lower likelihood of promotion and higher likelihood of demotion and exit. The only executive pay study on ethnic minorities is Hill, Upadhyay, and Beekun (2015) who find ethnic minority CEOs earn higher pay than Caucasians.¹ We examine a much larger sample that includes other executive officers for whom discrimination is more relevant (Newton and Simutin 2015), and consider individual ethnic groups.

Whilst discrimination is a key hypothesis, a limitation of our approach is that compensation differences are not direct tests of discrimination and may be caused by executive characteristics such as ability, effort and risk preferences. Such characteristics may be unobservable and may differ by ethnicity, since ethnic minority executives are unlikely to be a random sample that differ from Caucasians in terms of ethnicity alone. Whilst such differences arguably diminish as one moves up the corporate hierarchy (Bertrand and Hallock 2001), they could still be significant and account for any observed differences in pay.

Our key findings are as follows: The total pay of African American executives is 9 percent lower than that earned by Caucasians. This is due to lower salary, bonus, and stock grants. African Americans also earn less on option exercise, increasing the pay gap to 17 percent for total ex-post pay. The lower bonus is due to a lower sensitivity to above average firm performance. If the lower compensation were the result of discrimination, it could diminish with ethnic minority presence in pay setter positions. However, we find no such evidence. In contrast to African Americans, the compensation of Hispanic and Asian executives is comparable to Caucasians.

¹ At the CEO level there are anecdotal examples of ethnic minorities receiving controversially high compensation such as Derek Raines (Fannie Mae) (Bebchuk and Fried 2005), along with Vikram Pandit (Citigroup) and Fernando Aguirre (Chiquita Brands) both of whom had their pay packages voted down by shareholders in 2011.

The paper proceeds as follows: the next section discusses related literature; the data section describes the data; the empirical results section presents the findings; the final section concludes.

Related Literature

Theoretical Literature on Executive Compensation and Discrimination

Boards, and in particular compensation committees, set the pay levels and structures of executives. The CEO however plays a key role in the compensation of other executives, assessing their performance and making a pay recommendation to the committee (Newton and Simutin 2015). Therefore the key decision maker is different for the CEO (compensation committee) and other executives (CEO in conjunction with the compensation committee). This distinction is relevant to the subsequent discussion and empirical tests.

Principal agent theory shows how executive pay is optimally set given executive ability, effort, and risk preference (Murphy 1999). In contrast, the managerial power theory posits that powerful CEOs capture outside directors on the compensation committee and consequently earn inefficiently high pay (Bebchuk and Fried 2003). Within either framework, discrimination may operate against ethnic minority CEOs and lower executives resulting in lower pay. MacLeod (2003) shows, within a principal agent framework, how introducing subjective evaluation can result in discrimination and a second best solution. Within a managerial power framework, ethnic minority CEOs may find it harder to capture compensation committees if the latter are discriminatory, resulting in less excessive (but more efficient) pay. Theories in economics and social psychology show why the compensation committee (to the extent it is predominantly Caucasian) may discriminate against ethnic minority CEOs, and why a Caucasian CEO may discriminate against ethnic minority executives.

Economic theories are based on either prejudice (Becker 1971) or statistical discrimination (Phelps 1972; Arrow 1973). Compensation committee members may be prejudiced and have a

taste based preference to minimize interaction with minority executives, subsequently awarding them lower pay. Alternatively, committee members may face asymmetric information about executive ability and use their perceptions about average minority group ability (correctly or incorrectly held) to statistically discriminate on pay. If there is no perceived difference in mean ability but the variance of ability or the variance in the signal of ability is higher, then risk averse committee members may award minority executives lower compensation. The latter scenario appears plausible for ethnic minority executives, for whom only a relatively small number are observable. This differential reliability may result in the committee placing less weight on observed performance outcomes associated with minority executives, thus reducing their pay performance sensitivity.

Studies in social psychology show that business leaders are perceived to exhibit traits that are more correlated with those of Caucasians than ethnic minorities (Chung-Herrera and Lankau 2005; Rosette et al. 2008). Such stereotyping may result in ethnic minority executives being perceived as lacking leadership traits, resulting in lower pay and pay performance sensitivity due to a perception of them having less influence on performance (Kulich et al. 2011). Social identity theory (Tajfel and Turner 1986) posits that individuals with similar characteristics, such as ethnicity, will form ‘in-groups’ and treat individuals in ‘out-groups’ less favorably. This could result in minority executives earning lower pay, and subjected to attribution bias, whereby the compensation committee attributes positive (negative) outcomes more (less) strongly to executive actions by Caucasian executives.

Empirical Literature on Compensation and Discrimination

The labor economics empirical literature on racial pay differences shows that African Americans and Hispanics (although not Asians) earn less than Caucasians (Lang and Lehman 2012). As earnings levels increase, this gap declines. However, for jobs with pay for performance, it exists at high seniority levels (Heywood and Parent 2012), the discretionary

nature of performance pay possibly causing discrimination. The only study that examines executive pay is Hill, Upadhyay, and Beekun (2014) who find ethnic minority CEOs earn higher compensation than Caucasian CEOs.

A number of recent studies examine whether executive pay differs by gender. The findings are mixed. In terms of compensation levels, some studies (Bell 2005; Selody 2011; Albanesi, Olivetti, and Prados 2015; Carter, Franco, and Gine 2015; Geiler and Renneboog 2015; Newton and Simutin 2015) find that females are paid less than males, others find no difference (Bertrand and Hallock 2001; Munoz-Bullon 2010; Bueja, Matollesy, and Spiropoulos 2012; Gregory-Smith, Main, and O'Reilly III 2014), whilst others (Gayle, Golan, and Miller 2012; Hill, Upadhyay, and Beekun 2015) find they are paid more. In terms of pay performance sensitivity, both Selody (2010) and Albanesi, Olivetti, and Prados (2015) find this is weaker (stronger) for good (poor) performance, whilst Kulich et al. (2011) find it is weaker for all performance levels. In contrast, Gayle, Golan, and Miller (2012) find it is stronger for good performance yet similar for poor performance.

Differences in Ability by Ethnic Minority Status

Executive performance (and subsequent compensation) depends on general and firm-specific skills combined with the effort of their application. These skills, or ability, may be lower for ethnic minorities. First, they may have less valuable functional experience. For example, African American executives are more likely to hold racialized positions (Collins 1997), and work in public relations, human resources or general counsel (Zweigenhaft and Domhoff 2011). Second, whilst the majority of Hispanic and Asian executives come from the upper and upper middle class (as do Caucasians), African Americans come from middle or working class backgrounds (Zweigenhaft and Domhoff 2011). This lower social origin may result in lower tacit knowledge (Hansen 2001). Third, since social networks tend to be ethnically based, Caucasian executives may have a wider executive network (McDonald, Lin,

and Ao 2009) thus increasing their value to the firm (Engelberg, Gao, and Parsons 2013). Fourth, minority status may subject executives to greater visibility, higher pressure to perform, and isolation resulting in a deliberate attempt not to outperform (Kanter 1977). Finally, the processes that generate ethnic minority executives may differ. If minorities are discriminated against and face higher hurdles, they could have above average ability. Alternatively, if they are promoted through affirmative action policies they could be of lower ability.

Differences in Risk Tolerance by Ethnic Minority Status

Differences in executives' risk tolerance levels, investment preferences, and personal wealth levels may impact compensation structures, levels, and equity incentive holdings. These personal characteristics may differ between Caucasian and ethnic minority executives. Evidence on whether African Americans are more risk averse than whites is mixed (Sahm 2007; Barsky et al. 1997). However, African Americans tend to hold a lower proportion of risky assets (Kimball, Sahm and Shapiro 2008), possibly reflecting not just higher risk aversion but lower expected returns (Kezdi and Willis 2009) due to unfamiliarity of the stock market (Brimmer 1988). Hispanics do not display a difference in risk aversion (Sahm 2007; Barsky et al. 1997) or expected returns (Kezdi and Willis 2009), but do hold a lower proportion of risky assets (Kimball, Sahm, and Shapiro 2008). Comparable evidence for Asians is scant, but suggests higher risk tolerance than whites (Barsky et al. 1997).

African Americans and Hispanics own less wealth than whites after controlling for lower income levels (Brimmer 1988; Smith 1995; Gittleman and Wolff 2004), which is possibly due to lower investment returns, lower inheritance (Gittleman and Wolff 2004), and higher consumption (Charles, Hurst, and Roussanov 2009). For African American executives, their lower economic origin also implies lower parental wealth, reinforcing the expectation of lower financial risk tolerance. It is suggested that, "for the vast majority of high income Black

families, this current generation is the first to have any real money to invest. Many of them are, perhaps understandably, averse to taking risks” [Alexis quoted in Loury (1998)].

We hypothesize that African American and Hispanic executives will prefer less variable compensation structures and lower equity incentive holdings than Caucasians, whilst the opposite holds for Asians. Since risk averse executives require additional compensation to compensate for more variable compensation or firm equity holding (Conyon, Core, and Guay 2011), it is important to control for this when examining compensation level differences (Carter, Franco, and Gine 2015).

Data

Our executive compensation measures are derived from ExecuComp, and we therefore seek to classify executives on this database by their ethnic minority status.

Ethnic Minority Status of Executives

Our starting point is the Investor Responsibility Research Center (IRRC) director database, which reports the ethnicity of board directors (executive and outside directors) on S&P 1500 firms as either Caucasian, African American, Asian, Hispanic or Native American. We clean this database to correct inaccuracies in the unique director codes assigned by IRRC.² This results in 32,612 unique directors over 1996-2011, of whom 1,680 are ethnic minorities, 18,215 are Caucasian, and 12,717 are unclassified. However, due to inaccuracies with the IRRC identification of ethnicity (e.g., 343 of the 1,680 ethnic minority directors have inconsistent ethnic classification) we manually check each of these 1,680 directors.

² Of the 34,938 unique codes we identify 869 directors which have more than one unique code, and 1,209 unique codes for which there is more than one director. We identify individual directors using director name, firm CUSIP, and date of birth.

To do so, we employ published lists of ethnic minority board directors/executives and search for these individuals on IRRC. We identify 684 IRRC directors as ethnic minorities in this way³ (605 of whom were originally identified as minorities on IRRC). Of the remaining 1,075 IRRC minority directors, we are able to verify the minority status of 371 using online biographies, 178 using online photos, and 451 using names (Hispanic or Asian sounding name consistent with IRRC classification of either minority). 62 of the 1,075 are concluded to be Caucasian using online biographies and photos. For the 13 remaining directors we are unable to verify ethnicity and accept the IRRC classification. We therefore have 19,933 directors with known ethnicity consisting 18,235 Caucasian and 1,698 ethnic minorities (consisting 682 African American, 616 Asian, 398 Hispanic, and two Native Americans).⁴ From the above sources, we also identify a further 56 executives (that are not on IRRC) as ethnic minorities.

We match these 19,989 individuals of known ethnicity with ExecuComp executives, using names and firm codes. We match 8,128 executives, 433 of which are ethnic minorities, comprising 114 African American, 211 Asian, and 108 Hispanics. We examine years 1992-2011, resulting in 68,962 executive-firm-year observations, reported on a yearly basis in Table 1. The number of ethnic minorities increases from 70 to 152 over the period, driven largely by Asians (37 to 88) and Hispanics (14 to 40), rather than African Americans (19 to 24).

³ 328 African American (Executive Leadership Council 2004, 2008; Zweigenhaft and Domhoff 2011; <http://www.blackenterprise.com/mag/power-in-the-boardroom/>; <http://www.blackenterprise.com/be-lists/the-100-most-powerful-executives-in-corporate-america/4/>; <http://www.blackentrepreneurprofile.com/fortune-500-ceos/>; <http://www.thefreelibrary.com/America's+most+powerful+Black+executives%3A+B.E.+selects+40+all-stars...-a013506897>; <http://savoynetwork.com/category/the-list/>), 168 Asian (Committee of 100 2004, 2007; Leadership Education for Asian Pacifics 2011; Zweigenhaft and Domhoff 2011; <http://www.china4us.com/SinoCEO.htm>; <http://www.88yp.com/Executives.htm>), and 189 Hispanic (Hispanic Business Com 2002, 2004, 2005; Hispanic Association on Corporate Responsibility 2007; Zweigenhaft and Domhoff 2011; http://www.hispanicbusiness.com/branded/2013/elite/boardroom_elite_bios.asp; http://www.hispanicbusiness.com/2009/1/28/2009_boardroom_elite_complete_list.htm). These website links were accessed in December 2012.

⁴ We backfill ethnicity information on directors for earlier IRRC years for which ethnicity is not reported. Of a total 234,858 person-firm year observations, ethnicity is established for 194,800.

TABLE 1

Compensation Variables

We examine three measures of annual executive compensation. The first is salary plus bonus. The second, which we define as total pay, consists of salary, bonus, other pay, non-equity incentives, stock grants, and option grants.⁵ Our third measure, total ex-post pay, is identical to total pay except that option grants is replaced by the value realized from the exercise of options during the year. The latter variable is referred to as option gain.⁶

In addition to these measures, we examine the rank of an executive's pay level within his/her executive team. For each executive in each firm year, we assign a rank by number depending on where he/she ranks in compensation. The executive with the highest compensation is ranked one, the second highest ranked two, etc. We do this for the three compensation measures, and assign ranks to all executives for whom the compensation measure is available.

We also examine the value of equity incentives held. Option holding is the value of in-the-money unexercisable and exercisable options.⁷ Stock and option holding is the value of option holding, restricted stock holding, and stock owned.⁸

The above variables are converted to 2011 US dollars using the consumer price index, then winsorized at the one percent level. Summary statistics are reported in Table 2, along with

⁵ The ExecuComp variable names for these variables are (upper case in parentheses); total pay (TDC1), salary (SALARY), bonus (BONUS), other pay (OTHCOMP plus DEFER_RPT_AS_COMP_TOT), non-equity incentives (NONEQ_INCENT), stock grants (STOCK_AWARDS_FV) and option grants (OPTION_AWARDS_FV). Prior to a reporting change in 2006, certain variables (and hence total pay) are constructed slightly differently as follows: other pay (OTHANN and ALLOTHTOT), non-equity incentives (LTIP), stock grants (RSTKGRNT), and option grants (OPTION_AWARDS_BLK_VALUE).

⁶ The ExecuComp variable names for total ex-post pay and option gain are TDC2 and OPT_EXER_VAL respectively.

⁷ ExecuComp variables OPT_UNEX_EXER_EST_VAL and OPT_UNEX_UNEXER_EST_VAL respectively.

⁸ Restricted stock holding is ExecuComp variable STOCK_UNVEST_VAL. Stock owned is calculated by multiplying the number of shares owned by the fiscal year end share price (PRCCF), where the former is calculated as the number of shares and unvested restricted stock owned (SHROWN_EXCL_OPTS) minus the number of unvested restricted stock owned (STOCK_UNVEST_NUM).

averages for minorities and significance levels from t -tests with Caucasians. Ethnic minorities earn lower cash compensation (salary, bonus and other pay), and higher incentive pay (non-equity incentives, stock grants, and option grants), resulting in higher total pay. Despite higher option grants and total pay for minorities, option gains are no different and total ex-post pay is only slightly higher.

TABLE 2

Control Variables

We employ executive and firm specific controls from the existing compensation literature (Bertrand and Hallock 2001; Graham, Li, and Qiu 2011). We collect the gender and age of executives from ExecuComp. Company tenure is not reported comprehensively on ExecuComp. We therefore also collect the number of years of credited service the executive has under the company's pension plan, tenure as CEO, and company tenure from the BoardEx database. We employ the highest number from these sources as our tenure variable.⁹

Following Bertrand and Hallock (2001), we allocate each executive to one of 11 occupational titles ranked in the following order; CEO or executive chair, vice chair, president, CFO, COO, other chief officer, executive VP, senior VP, group VP, VP, other occupations. The latter includes executives who do not hold any of the preceding titles, including the position of CEO, chair, vice chair, president or COO of a division or subsidiary.¹⁰ We identify executives holding positions in public relations, human resources and general counsel. For the pay rank analysis, we control for the number of ExecuComp executives within each firm year.

⁹ The names for these three ExecuComp variables are JOINED_CO, RET_YRS, and BECAME CEO respectively whilst the BoardEx variable is TIME (YRS.) IN COMPANY.

¹⁰ We identify occupational titles using the ExecuComp variables TITLEANN, CEOANN, and CFOANN. TITLEANN reports detailed titles and is available for 58,645 of the 68,962 observations with 7,874 unique titles which we check by hand. We supplement this with CEOANN and CFOANN which identify the CEO and CFO for 26,659 and 374 of the 68,962 observations respectively.

Stock return is the annual stock return over the fiscal year and is from the CRSP database. Firm risk is the standard deviation of monthly returns over the fiscal year. Other variables are from Compustat. Sales is our proxy for firm size, in millions of 2011 US dollars. Return on assets (ROA) is net income before extraordinary items and discontinued operations to total assets. Market-to-book is calculated as market value of equity minus book value of equity plus total assets to total assets. Leverage is long term debt and debt in current liabilities to total assets. CAPEX is net capital expenditure to total assets. R&D is research and development expenditure to total assets. Cash is calculated as cash and short term investments to total assets.¹¹ These variables are winsorized at the one percent level.

Summary statistics for the controls are reported in Table 3. Compared to Caucasians, ethnic minority executives are more likely to be female, younger, of lower tenure and seniority, and to work in public relations, human resources and general counsel. Ethnic minority executives work in larger firms, with higher risk, market-to-book, R&D and cash, lower leverage and CAPEX, but comparable share return and profitability.

TABLE 3

Empirical Results

Compensation Level and Ethnic Minority Status

To examine the impact of ethnic minority status on compensation levels, we employ an OLS model including the above controls, year and firm fixed effects.¹² Firm fixed effects play an important role in explaining executive compensation (Graham, Li, and Qiu 2011) and may

¹¹ The Compustat data item specifications for these variables are as follows: Sales is data item 12; ROA is data item 18 / data item 6; Market-to-book is (data item 25 * data item 24 - data item 60 + data item 6) / data item 6; Leverage is (data item 9 + data item 34) / data item 6; CAPEX is (data item 128 - data item 107) / data item 6; R&D is Max (0, data item 46) / data item 6; Cash is data item 308 / data item 6.

¹² Using all control variables reduces the sample from 68,962 (for which ethnicity and salary are available) to 51,843. Summary statistics for this smaller sample are reported in a separate Appendix (Tables A1-A3) which is available from the author upon request.

capture time invariant firm specific factors that are correlated with both compensation and ethnicity. We employ the natural logarithm of the pay variables and firm sales, and the quadratic term for age (Bertrand and Hallock 2001). The results are shown in Table 4.

TABLE 4

For ethnic minorities as a whole, neither salary and bonus nor total pay differs significantly from Caucasians. Total ex-post pay however is significantly lower, the coefficient of -0.068 implying a difference of 6.6 percent.¹³ There are substantial differences across ethnic groups. The compensation of Asian executives does not differ significantly from Caucasians for any of the three compensation measures. For Hispanics, pay is higher across all three measures but only significantly so for total pay. For African Americans, compensation is significantly lower for all three measures. The implied differences are of a substantial magnitude. In percentage terms, African Americans earn nine percent less than Caucasians in both salary plus bonus and total pay, and 17 percent less total ex-post pay. In dollar terms, the differences are \$109k, \$374k, and \$687k.¹⁴ The lower total ex-post pay for ethnic minorities as a whole appears largely driven by African Americans.

Consistent with several previous studies, female executives earn significantly lower compensation across all three pay measures. It is noteworthy that the negative impact for African Americans is larger than that for females. Other estimated coefficients are consistent with prior findings. Total pay is positively correlated with age, size, profitability, share returns, market-to-book, cash, and negatively correlated with risk and leverage.

¹³ To convert the coefficient into a percentage difference we use the following formula: $(\text{EXP}(-0.068)-1)*100$.

¹⁴ To estimate dollar differences we multiply the implied percentage difference by the mean compensation measure for Caucasians as reported in Table 2.

Robustness Tests

In this section we test the robustness of our key finding that African American executives earn less than Caucasians. To control for omitted time variant variables at the firm level, we employ an ordered probit model with pay rank as the dependent variable. We include all executive controls and the number of firm-year ExecuComp executives. The results, reported in Table 5, show the estimated coefficient for African American is significantly positive in each regression whilst the coefficients for Asian and Hispanic are insignificant.

TABLE 5

The coefficients imply that African Americans face a 21-26 percent probability of being ranked lower than Caucasians. These pay rank results provide a useful alternative analysis, suggesting African Americans are not just paid less on average than Caucasians in the cross section of firms, but often less than Caucasians in the same firm whom they should rank above.¹⁵ The latter is arguably a more important difference. Executives usually have distinct firm roles and a benchmark pay level may not be available internally or externally (at below CEO level). Whilst the firm may have imprecise information on (and no control over) benchmark pay, it is in control of within-firm pay rank. If the pay rank difference is due to discrimination (rather than unobservable executive characteristics) then the behavioral implications are significant. Differences in internal pay rank are more visible to executives than pay level differences from the cross-sectional average of comparable executives (hence wage discrimination claims usually involve intra-firm comparisons) whilst intra-firm pay rank (after controlling for pay level) has been shown to impact employee well-being (Brown et al. 2008) and the propensity to quit (Pfeifer and Schneck 2012).

¹⁵ A lower pay level does not imply a lower pay rank. For example, consider the case of executives A, B, C and D whose respective positions, compensation levels, and firms are: A (senior VP, \$1m, firm 1); B (VP, \$750k, firm 1); C (senior VP, \$900k, firm 2); D (VP, \$750k, firm 2). Executive C earns lower compensation than executive A (his/her comparable executive by seniority), yet has the same pay rank.

Next, we employ industry rather than firm fixed effects. One possibility is that African Americans self-select into high paying firms, and whilst they may earn relatively less at such firms, they may not earn less than the average Caucasian once such firm specific differences are removed. However, the results show the finding of lower pay for African Americans continues to hold.¹⁶

Our results could be driven by omitted variables at the executive level such as human capital. To control for educational attainment we collect data from BoardEx (available for a subsample of 42,390 observations). We include three dummy variables (bachelor's, master's, and PhD) as follows; Bachelor's is set equal to one if the executive has an undergraduate degree, zero if not; Master's is set equal to one if the executive has a postgraduate master's degree (including MBA), zero if not; PhD is set equal to one if the executive has a PhD, zero if not. Our key finding is robust to their inclusion.¹⁷

Finally, we utilize different specifications for the dependent variables, control variables, and standard errors. We model the pay variables as levels rather than logs, employ alternative specifications of the age and tenure variables (quadratic for tenure; natural logarithm of age and natural logarithm of one plus tenure; dummy variables for the middle and upper tertiles of age and tenure), and control for autocorrelations in the errors by computing standard errors that are clustered at the executive and firm level. Our key results are robust to these alternative methods.¹⁸

¹⁶ Asian and Hispanic executives earn significantly higher pay, suggesting that they work for high paying firms. These results are reported in the separate Appendix (Table A4).

¹⁷ The results are reported in the separate Appendix (Table A5). A higher proportion of ethnic minority executives achieve each level of education compared to Caucasians. 97.8, 53, and 7 percent of Caucasian executives have a Bachelor's degree, Master's degree and PhD respectively. The comparable figures for ethnic minorities are 98.5, 69, and 15 percent respectively. The comparable figures for each ethnic minority group are as follows: African Americans 100, 66, and 6 percent; Asians 98, 74, and 22 percent; Hispanics 98, 60 and 7 percent.

¹⁸ The results are reported in the separate Appendix (Tables A6-A11).

Compensation Components and Ethnic Minority Status

In this section we examine the separate components of pay. The results are reported in Table 6. For African Americans, both salary, bonus, restricted stock grants and option gains are significantly lower than for Caucasians, whilst other pay, non-equity incentives, and option grants are no different. The implied dollar difference for salary of \$25k is small relative to those for bonus (\$143k), stock grants (\$174k), and option gain (\$454k).¹⁹

TABLE 6

For Asian executives, none of the pay components differ significantly from Caucasians. Hispanic executives earn significantly higher salary, other pay, non-equity incentives, and option grants, with implied dollar differences of \$35k, \$37k, \$85k, and \$818k respectively. However, Hispanics earn 31 percent (\$439k) less on option exercise. Hence why Hispanics earn higher total pay but not higher total ex-post pay. The analysis for ethnic minorities as a whole shows higher option grants but lower option gains and hence why minorities earn lower total ex-post pay but not lower total pay.²⁰

We examine whether compensation structure, defined as fixed compensation (salary) to total pay, differs by ethnicity. The results show no difference for African American and Asian executives, though a significantly lower ratio for Hispanics.²¹ Our findings do not support the possibility that African Americans' lower total pay is the result of a less risky pay package with a higher level and proportion of fixed compensation.

We now investigate further the lower bonus and option gains to African Americans, since they account for a substantial fraction of the difference in pay.

¹⁹ For the non-salary components of compensation, a proportion of observations are censored at zero. To check that our results are robust to the issues associated with a censored dependent variable, we also employ a Tobit regression. The results, reported in the separate Appendix (Table A12), for African Americans are consistent with those in Table 6.

²⁰ The results are reported in the separate Appendix (Table A13).

²¹ The results are reported in the separate Appendix (Table A14).

Bonus-Performance Sensitivity and Ethnic Minority Status

To test whether bonus-performance sensitivity differs for ethnic minorities, we interact the ethnic minority dummy variables with ROA. Since pay-performance may differ by gender (Kulich et al. 2011) and occupational role (Aggarwal and Samwick 2003), we interact ROA with the female, occupational title, and the communications, HR or legal dummy variables. The results, reported in column 1 of Table 7, show the ROA coefficient to be 4.229 whilst the coefficient for African American * ROA is -3.877 and highly significant. A one unit increase in ROA increases bonus pay by 4.229 percent for Caucasians, whilst the corresponding figure for African Americans is 1.0 percent (EXP (0.04229-0.03877)). In contrast, Asian and Hispanic executives' bonus-performance sensitivity is no different to Caucasians.

TABLE 7

We test whether the lower bonus-performance sensitivity for African Americans differs by ROA level, by including two variables, $ROA \geq \text{median}$ and $ROA < \text{median}$, which are set equal to ROA if the ROA is equal to or greater than, or less than the median ROA of 4.68 percent. We include the interaction of these two variables with the dummy variables described above. The results (column 2) show that African Americans' bonuses are significantly less ROA sensitive than Caucasians at above median ROA, but not at below median ROA.

In columns 3 and 4 we run the standard bonus regression on subsamples according to whether ROA is below or above the median respectively. For below median ROA, bonuses do not differ between African Americans and Caucasians. In contrast, for above median ROA the bonus is significantly lower for African Americans. Since bonuses are a significant fraction of total pay, this pattern also holds for salary and bonus, and total pay.²²

²² The results are reported in the separate Appendix (Table A15).

One explanation for these findings is that African Americans did not perform as well as Caucasians and were thus less responsible for any above average firm performance. An alternative explanation is discrimination or bias. However, the specific pattern observed is not precisely consistent with the theoretical predictions. Statistical discrimination theories predict (if the variance in ability or in the signal of ability is higher) lower pay-performance sensitivity, but this should be independent of performance level. The same outcome is predicted if there is biased stereotyping of African American executives. Alternatively, attribution bias theory suggests that African Americans could be attributed positive outcomes less strongly but negative outcomes more strongly.²³

Stock Option Gains and Ethnic Minority Status

We perceive two potential explanations for the substantially lower option gains to African American and Hispanic executives. The first is less profitable timing of option exercise. This could be due to early option exercise as a result of higher risk aversion and/or lower personal wealth (Hall and Murphy 2002) or more profitable timing by Caucasian executives achieved by superior insider knowledge or self-serving managerial behavior.²⁴ It is conceivable that minorities are less able to time exercise to coincide with a high share price (manipulated or otherwise) because of weaker information, due for example to narrower social networks within the firm. Testing this explanation thoroughly is beyond the scope of the paper.²⁵

²³ A risk preference explanation does not appear feasible, since African American executives would not rationally choose a bonus plan that rewarded them less for above average performance but equally for below average performance.

²⁴ Exercise timing has been shown to coincide with a high share price (Aboody et al. 2008). Self-serving managerial behavior at the exercise date could take the form of earnings management (Bartov and Mohanram 2004), backdating (Cicero 2009), or voluntary disclosure (Brockman, Martin, and Puckett 2010).

²⁵ As a basic test of whether ethnic minorities exercise options early, we model as our dependent variable the annual number of exercised options divided by the annual number of exercisable options. The results, reported in the separate Appendix (Table A16), show no evidence of significantly positive impacts for ethnic minorities, and therefore no evidence of early exercise. Exercised options is ExecuComp variable OPT_EXER_NUM, and

Alternatively, the lower gains may reflect a lower value of options held. Although, as showed above, ethnic minorities do not receive lower option grants within our sample period, this may have occurred prior to their being reported on ExecuComp. Additionally, option terms (such as re-pricing) may be favorable to Caucasians. We therefore examine whether option holding value differs for ethnic minorities. The results, reported in Table 8, show that African Americans' option holdings are a significant 34 percent lower, or in dollar terms a substantial \$2.9m. Option holding value for Asians and Hispanics are not significantly different from Caucasians. We next examine whether the lower option gains hold after controlling for the lagged ($t-1$) value of option holding. The results in column 2 show that the coefficient for African American is now insignificant, whilst the coefficient for Hispanic is still significantly negative. We conclude that the lower gains to African Americans are due to lower option holding, whilst the lower gains to Hispanics could instead reflect less profitable option exercise.

TABLE 8

Equity Incentive Holdings, Compensation and Ethnic Minority Status

We examine whether equity incentive holdings differ by ethnic minority status, modelling stock and option holdings as our dependent variable. The results, reported in Table 9, are consistent with our expectation that African Americans will hold lower incentives due to higher risk aversion and lower wealth. African American executives hold a significant 33 percent less equity incentives than Caucasians, implying a substantial dollar difference of \$16.7m. For Asian executives, total holdings are a significant 17 percent higher, implying a dollar difference of \$8.5m. Hispanics hold less equity incentives, but the difference is statistically insignificant.

TABLE 9

exercisable options is the sum of OPT_EXER_NUM and exercisable options at year end (ExecuComp variable OPT_UNEX_EXER_NUM).

We check whether our key findings on compensation levels hold after controlling for these differences in incentive holdings. We adopt a similar approach to Carter, Franco, and Gine (2015), including the lagged value of incentives in the compensation regressions. The results, reported in columns 3-6, show that the coefficient for African American continues to be significantly negative and of comparable magnitude in both the salary and bonus, and total pay regressions. Similarly, the coefficient for Hispanic continues to be significantly positive in the total pay regression, whilst the coefficient for Asian continues to be insignificant. We conclude that the lower pay for African Americans is not explained by their lower equity incentives.²⁶

Ethnic Minority Pay Setters, Compensation and Ethnic Minority Status

If the lower pay to African Americans were due to discrimination, it may diminish where other ethnic minorities, particularly African Americans, are involved in setting pay. Since CEO pay is set by the compensation committee whilst lower level executive pay is set by the CEO in conjunction with this committee, we firstly examine whether the lower pay to African Americans holds for both the highest ranked executives (CEOs and executive chairs) and lower level executives. The results show that whilst lower level African American executives earn lower pay, CEOs and executive chairs do not.²⁷ Given this, we examine the impact of pay setter ethnic minority status on the subsample of lower level executives only.

²⁶ For robustness, we repeat the analysis using the portfolio delta (instead of stock and option holding), defined as the change in the dollar value of the executive's firm wealth for a one percent change in the stock price. We employ the dataset of Coles, Daniel and Naveen (2013) which includes ExecuComp executives for 1992-2010. The results, reported in the separate Appendix (Table A17), are consistent with those in Table 9. African Americans face much lower powered incentives compared to Caucasian executives, receiving 19 percent less (or \$125k given an average delta of \$657k) for each one percent increase in value. Asians face significantly higher powered incentives, whilst Hispanics do not differ. Inclusion of lagged delta in the compensation regressions does not impact the significantly negative coefficient for African American or the significantly positive coefficient for Hispanic.

²⁷ The results are reported in the separate Appendix (Tables A18-A19). For the total pay measure, we find that ethnic minority CEOs earn significantly more (at the ten percent significance level) than Caucasian CEOs, a result consistent with that of Hill, Upadhyay, and Beekun (2015).

Using the IRRC data, we identify the ethnicity of all compensation committee members for 12,289 of the 23,049 firm year observations for lower level executives.²⁸ We include a dummy variable set equal to one if, for the executive firm year observation, there is an ethnic minority member on the compensation committee, and interact this with the ethnic minority dummy variables.²⁹ The results, reported in columns 1-3 of Table 10, show the coefficient for the interactive variables to be statistically insignificant.³⁰ To test whether African American executive pay is higher where there is an African American on the compensation committee, we include a dummy variable set equal to one if, for the executive firm year observation, there is an African American member on the compensation committee, and interact this with the ethnic minority dummy variables.³¹ The results, shown in columns 4-6 show there is no significant impact.

TABLE 10

We consider the ethnic minority status of the CEO, by including a dummy variable set equal to one for executive firm years where the firm CEO is an ethnic minority³² and interact this with the ethnic minority dummy variable.³³ The results show the coefficient for the interaction of ethnic minority CEOs and ethnic minority executives to be statistically insignificant. Due to

²⁸ Of these 12,289 observations, 834 are observations for ethnic minority executives comprising 253 observations for African Americans, 368 observations for Asians, and 213 observations for Hispanics.

²⁹ 3,766 of the 12,289 observations are associated with an ethnic minority member on the compensation committee. 337 of the 834 observations for ethnic minority executives are associated with an ethnic minority member on the compensation committee. The corresponding numbers for individual ethnic minorities are as follows: African Americans (102 of 253 observations); Asians (161 of 368 observations); Hispanics (74 of 213 observations).

³⁰ In additional tests, reported in the separate Appendix (Table A20), we find no significant impact on ethnic minority executives as a group.

³¹ 2,490 of the 12,289 observations are associated with an African American member on the compensation committee, whilst for African American executives this is the case for 69 of the 253 observations.

³² Where the executive chair earns a higher salary and bonus than the CEO, we assume that the executive chair is more influential in setting pay and employ his/her ethnic minority status rather than the CEO.

³³ Of the 23,049 observations for lower level executives, 21,331 observations have CEO ethnicity available, for which 721 are associated with an ethnic minority CEO. 142 of the 1,248 observations for ethnic minority executives are associated with an ethnic minority CEO.

small sample size, it is not possible to examine the impact of ethnic minority CEOs or African American CEOs on African American executive pay.³⁴

Whilst the CEO and compensation committee set executive pay for lower level executives, the board of directors has ultimate responsibility, and we therefore examine the impact of ethnic minority directors. Using the IRRC data, we identify the ethnicity of all board directors for 10,902 of the 23,049 observations for lower level executives. We include a dummy variable set equal to one if the board has at least one ethnic minority member (excluding the sample executive if he/she is a board member) and interact this with the ethnic minority dummy variables.³⁵ The results show that ethnic minority board member presence has no significant impact on the pay of ethnic minorities as a whole or African Americans. Finally, we use a dummy variable set equal to one if the board has an African American director, and interact this with the ethnic minority dummy variables.³⁶ The results however are again insignificant.

We conclude that the presence of ethnic minorities and African Americans in pay setter positions does not impact the lower compensation of African American executives. We therefore find no evidence to support a discrimination explanation. We are however unable to rule this out since other minorities may discriminate, and African Americans on compensation committees or boards may have a weak influence due to being in a numerical minority.

³⁴ The results are reported in the separate Appendix (Table A21). Of the 21,331 observations with CEO ethnicity available, there are 355 African American executive firm year observations. However, just seven of these 355 observations overlap with the 721 observations for which there is an ethnic minority CEO. For the 141 executive firm year observations where the CEO is an African American, there are just two overlapping observations (with the 355). Increasing the sample of CEOs to also include female CEOs increases the overlapping observations to just 17, and thus does not permit meaningful analysis either.

³⁵ The results are reported in the separate Appendix (Table A22). 7,426 of these 10,902 observations are associated with an ethnic minority board member. 560 of the 737 observations for ethnic minority executives are associated with an ethnic minority board member. The corresponding numbers for individual ethnic minorities are as follows: African Americans (206 of 236 observations); Asians (209 of 308 observations); Hispanics (145 of 193 observations).

³⁶ The results are reported in the separate Appendix (Table A23). 6,197 of the 10,902 observations are associated with an African American board member, whilst for African American executives this is the case for 182 of the 236 observations.

Conclusion

We show that ethnic minority status is associated with different executive compensation outcomes. Whilst we find no difference between Asian, Hispanic, and Caucasian executives, African Americans earn significantly lower pay. This difference is as large as that for female executives, and is robust to different econometric methods. The lower total pay can be traced to lower salary, bonus, stock grants and stock option exercise. The lower bonus is due to lower sensitivity to above average firm performance. Our findings contribute to the racial pay gap literature by showing that a gap also exists at the executive level and to the executive pay literature by showing that ethnicity is an important managerial attribute.

There are several potential explanations for the lower pay to African American executives. One is that African Americans are risk averse, thus preferring less variable pay and lower equity incentives, with subsequent lower overall pay. Whilst we find no difference in pay structures, African Americans do hold significantly lower equity incentives. However, these lower incentives do not explain the lower compensation. Another explanation is discrimination. However, if the lower pay were caused by discrimination, we may expect it to diminish when there is ethnic minority presence on the compensation committee or board of directors. Yet we find no evidence of this. Rather than discrimination, the lower pay (and pay-performance sensitivity) may reflect underperformance by African Americans. Since the lower pay occurs only for executives below the CEO level (for whom individual performance data is not available), we are unable to test this. Such underperformance could however be due to lower ability as a result of lower social origin, narrower social networks, or affirmative action policies. Finally, we cannot rule out the possibility that an omitted executive characteristic, correlated with both African Americans and lower pay, is driving our results.

Our inability to pinpoint precisely why African Americans earn lower compensation limits our understanding and interpretation. Distinguishing between the above explanations is

imperative, and we hope future research will do so. However, we conclude that the small select group of African Americans who reach the upper echelons of corporate America appear on average to be disadvantaged, either by discrimination and/or bias, or by lower ability and performance. This conclusion is supported by Guest's (2015) finding that this same group are promoted less, demoted more and have higher turnover, as well as the low growth of African American executives over our sample period. Such lower achievement at the executive level is a concern. Organizational diversity is a stated goal for most firms, and African American executives may increase the representation of African Americans at lower levels by mentoring and motivating them, the latter by demonstrating that African Americans are valued within the organization. Our conclusion for African American executives thus potentially has implications far broader than the immediate impact on the executives themselves.

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TABLE 1
SAMPLE OF EXECUTIVES

Year	ExecuComp ethnicity unknown	ExecuComp ethnicity known					
		All	Caucasian	Ethnic minority			
				All	African American	Asian	Hispanic
1992	5,207	2,838	2,768	70	19	37	14
1993	6,537	3,284	3,197	87	21	46	20
1994	7,180	3,509	3,414	95	23	48	24
1995	7,390	3,757	3,644	113	28	50	35
1996	7,707	3,989	3,866	123	25	57	41
1997	7,941	4,122	3,970	152	30	72	50
1998	8,372	4,284	4,110	174	35	86	53
1999	8,093	4,121	3,930	191	41	92	58
2000	7,625	3,917	3,717	200	46	94	60
2001	7,620	3,764	3,561	203	41	104	58
2002	7,844	3,715	3,513	202	44	102	56
2003	8,179	3,638	3,434	204	45	101	58
2004	7,511	3,393	3,196	197	44	96	57
2005	6,321	3,067	2,883	184	36	98	50
2006	7,676	3,296	3,098	198	44	105	49
2007	8,465	3,341	3,123	218	43	125	50
2008	8,173	3,091	2,873	218	45	125	48
2009	7,735	2,864	2,675	189	32	109	48
2010	7,319	2,682	2,499	183	32	106	45
2011	6,271	2,290	2,138	152	24	88	40
Observations	149,166	68,962	65,609	3,353	698	1,741	914
Executives	31,257	8,128	7,695	433	114	211	108
Executive-firm observations	33,114	9,664	9,153	511	138	250	123
Firms	3,298	2,856	2,801	398	122	199	108

NOTES: The sample of executives is drawn from the ExecuComp database. The ethnicity of these executives is established using the IRRC database, internet searches and various publications.

TABLE 2
SUMMARY STATISTICS ON EXECUTIVE COMPENSATION MEASURES (\$000s)

Variable	All executives						Caucasian	Ethnic minority			
	Observations	Mean	Median	Standard deviation	Minimum	Maximum		All	African American	Asian	Hispanic
Salary and bonus	68,962	1,211.5	862.5	1,190.4	48.9	7,755.9	1,216.3	1,118.5***	1,215.8	1,028.7***	1,215.1
Total pay	64,045	4,234.5	2,272.4	5,617.0	197.3	34,188.8	4,207.9	4,765.7***	5,441.3***	4,615.7***	4,566.9*
Total ex-post pay	68,665	4,036.2	1,761.4	6,525.7	134.4	42,461.5	4,026.2	4,232.3*	4,249.6	4,273.5	4,140.6
Rank (Salary and bonus)	68,949	2.5	2.0	1.8	1.0	15.0	2.5	2.8***	3.7***	2.5	2.7***
Rank (Total pay)	64,042	2.3	2.0	1.5	1.0	12.0	2.3	2.5***	3.2***	2.3	2.5***
Rank (Total ex-post pay)	68,663	2.6	2.0	1.8	1.0	15.0	2.6	2.9***	3.7***	2.7	2.8***
Salary	68,962	651.3	574.6	359.5	27.0	1,905.2	653.1	614.6***	625.5**	579***	673.9*
Bonus	68,962	551.8	232.9	973.6	0.0	6,351.3	554.5	497.9***	583.2	442.5***	538.4
Other pay	68,668	197.5	44.6	544.2	0.0	4,185.7	198.3	181***	211.3	154.4***	208.5
Non-equity incentives	68,962	326.3	0.0	818.6	0.0	5,033.7	324.0	369.6***	495.5***	332.4	344.2
Stock grants	68,709	639.2	0.0	1,634.4	0.0	10,182.4	629.6	827.7***	830.1***	816.2***	847.8***
Option grants	64,078	1,549.8	416.2	3,194.2	0.0	20,784.8	1,532.2	1,901.1***	2,156.9***	1,929.5***	1,660.4
Option gain	68,665	1,424.7	0.0	4,359.4	0.0	30,111.4	1,419.2	1,531.3	1,229.8	1,727.4***	1,385.7
Option holding	63,372	8,624.6	1,699.1	19,677.3	0.0	132,652.3	8,554.1	10,039.7***	9,151.3	11,267.1***	8,312.2
Stock and option holding	59,978	50,081.2	9,027.8	147,894.9	4.8	1,129,660.8	50,784.5	36,167.9***	16,518.0***	45,336.6	32,426.3***

NOTES: Compensation data is from the ExecuComp database. Asterisks in columns 9-12 indicate significance levels from two-sided *t*-tests between ethnic minority and Caucasian executives. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 3
SUMMARY STATISTICS ON EXECUTIVE AND FIRM CHARACTERISTICS

Variable	All executives						Caucasian	Ethnic minority			
	Observations	Mean	Median	Standard deviation	Minimum	Maximum		All	African American	Asian	Hispanic
Executive characteristics											
Female	68,962	0.04	0.00	0.20	0.00	1.00	0.04	0.07***	0.08***	0.08***	0.04
Age	68,575	53.34	53.00	8.42	21.00	95.00	53.47	50.86***	51.17***	50.92***	50.52***
Tenure	64,559	17.25	15.50	11.81	0.00	43.00	17.38	14.56***	12.91***	12.97***	18.79***
Communications, HR or legal	58,946	0.021	0.000	0.143	0.000	1.000	0.020	0.035***	0.127***	0.011**	0.013
Occupational title											
CEO / chair	58,946	0.53	1.00	0.50	0.00	1.00	0.53	0.43***	0.25***	0.51**	0.42***
Vice chair	58,946	0.04	0.00	0.20	0.00	1.00	0.04	0.04	0.03	0.04	0.04
President	58,946	0.09	0.00	0.29	0.00	1.00	0.09	0.09	0.10	0.08**	0.09
CFO	58,946	0.10	0.00	0.30	0.00	1.00	0.10	0.11**	0.13***	0.08**	0.15***
COO	58,946	0.02	0.00	0.13	0.00	1.00	0.02	0.02	0.01	0.02	0.02
Other chief officer	58,946	0.01	0.00	0.11	0.00	1.00	0.01	0.03***	0.08***	0.02*	0.01
Executive VP	58,946	0.08	0.00	0.27	0.00	1.00	0.08	0.12***	0.16***	0.11***	0.11***
Senior VP	58,946	0.04	0.00	0.19	0.00	1.00	0.04	0.05***	0.10***	0.04	0.05*
Group VP	58,946	0.00	0.00	0.06	0.00	1.00	0.00	0.00	0.01	0.00	0.00
VP	58,946	0.02	0.00	0.15	0.00	1.00	0.02	0.02	0.02	0.02	0.02
Other occupations	58,946	0.06	0.00	0.23	0.00	1.00	0.05	0.09***	0.10***	0.08***	0.10***
# Executives	68,962	6.10	6.00	1.40	1.00	15.00	6.10	6.13	6.37***	5.93***	6.33***
Firm characteristics											
Sales	68,784	8,163.6	2,332.2	16,121.5	67.3	106,058.5	8,089.6	9,608.2***	16,635.8***	6,573.1***	10,016.4***
Share return	67,085	0.17	0.12	0.46	-0.75	2.12	0.17	0.17	0.14*	0.19	0.15
Firm risk	67,011	0.10	0.09	0.06	0.03	0.35	0.10	0.11***	0.10**	0.13***	0.10
ROA	68,790	0.04	0.04	0.08	-0.34	0.24	0.04	0.04	0.04	0.04***	0.05***
Market-to-book	68,106	1.93	1.48	1.28	0.81	8.19	1.92	2.10***	1.92	2.19***	2.05***
Leverage	68,529	0.23	0.22	0.18	0.00	0.79	0.24	0.21***	0.26***	0.17***	0.25*
CAPEX	65,141	0.05	0.04	0.05	0.00	0.27	0.05	0.05***	0.05***	0.05***	0.04***
R&D	68,815	0.02	0.00	0.04	0.00	0.22	0.02	0.04***	0.03***	0.05***	0.02
Cash	68,793	0.12	0.06	0.15	0.00	0.68	0.12	0.16***	0.10***	0.22***	0.11

NOTES: The executive characteristic variables are from the ExecuComp database. The variable tenure is from the ExecuComp and BoardEx databases. The variables share return and firm risk from the CRSP database. The other firm characteristic variables from the Compustat database. Asterisks in columns 9-12 indicate significance levels from two-sided *t*-tests between minority and Caucasian executives. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 4
REGRESSION OF COMPENSATION ON ETHNIC MINORITY STATUS

Independent variable	Dependent variable					
	Log (Salary and bonus)		Log (Total pay)		Log (Total ex-post pay)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	3.308*** (0.112)	3.305*** (0.112)	2.817*** (0.135)	2.813*** (0.135)	1.252*** (0.152)	1.247*** (0.151)
Ethnic minority	-0.022 (0.014)		0.013 (0.019)		-0.068*** (0.021)	
African American		-0.094*** (0.024)		-0.093*** (0.029)		-0.187*** (0.033)
Asian		-0.006 (0.023)		0.043 (0.032)		-0.035 (0.034)
Hispanic		0.028 (0.025)		0.079*** (0.031)		0.005 (0.036)
Female	-0.050*** (0.013)	-0.050*** (0.013)	-0.077*** (0.017)	-0.077*** (0.017)	-0.103*** (0.019)	-0.103*** (0.019)
Age	0.048*** (0.003)	0.048*** (0.003)	0.048*** (0.004)	0.048*** (0.004)	0.072*** (0.004)	0.072*** (0.004)
Age ²	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Tenure	0.002*** (0.000)	0.002*** (0.000)	-0.003*** (0.000)	-0.003*** (0.000)	0.004*** (0.000)	0.003*** (0.000)
Communications, HR or legal	-0.064*** (0.015)	-0.061*** (0.015)	-0.138*** (0.021)	-0.133*** (0.021)	-0.144*** (0.024)	-0.138*** (0.024)
Log (Sales)	0.229*** (0.008)	0.229*** (0.008)	0.356*** (0.010)	0.356*** (0.010)	0.397*** (0.011)	0.397*** (0.011)
ROA	0.880*** (0.052)	0.879*** (0.052)	0.579*** (0.066)	0.577*** (0.066)	1.268*** (0.074)	1.266*** (0.074)
Share return	0.097*** (0.006)	0.097*** (0.006)	0.050*** (0.008)	0.050*** (0.008)	0.125*** (0.010)	0.125*** (0.010)
Log (Firm risk)	-0.055*** (0.008)	-0.055*** (0.008)	-0.039*** (0.009)	-0.039*** (0.009)	-0.069*** (0.011)	-0.069*** (0.011)
Market-to-book	0.012*** (0.004)	0.012*** (0.004)	0.088*** (0.006)	0.088*** (0.006)	0.185*** (0.007)	0.185*** (0.007)
Leverage	-0.183*** (0.031)	-0.184*** (0.031)	-0.241*** (0.039)	-0.242*** (0.039)	-0.332*** (0.044)	-0.333*** (0.044)
CAPEX	-0.051 (0.084)	-0.052 (0.084)	0.442*** (0.109)	0.441*** (0.109)	0.223* (0.127)	0.221* (0.127)
R&D	-0.002 (0.194)	-0.007 (0.194)	-0.830*** (0.285)	-0.837*** (0.285)	-1.757*** (0.328)	-1.766*** (0.328)
Cash	0.072* (0.039)	0.071* (0.039)	0.203*** (0.052)	0.202*** (0.052)	0.321*** (0.061)	0.320*** (0.061)
Adjusted R ²	0.6110	0.6111	0.6572	0.6574	0.6028	0.6029
Observations	51,843	51,843	51,495	51,495	51,785	51,785

NOTES: OLS regression where the dependent variable is the natural log of the variable value. Firm fixed effects, year dummies, and occupational title dummies are included in every regression but not reported. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 5
REGRESSION OF COMPENSATION RANK ON ETHNIC MINORITY STATUS

Independent variable	Dependent variable					
	Rank (Salary and bonus)		Rank (Total pay)		Rank (Total ex-post pay)	
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic minority	0.043** (0.021)		0.026 (0.022)		0.039* (0.021)	
African American		0.264*** (0.039)		0.210*** (0.039)		0.223*** (0.040)
Asian		-0.023 (0.031)		-0.021 (0.032)		0.015 (0.031)
Hispanic		-0.017 (0.039)		-0.037 (0.041)		-0.060 (0.037)
Female	0.135*** (0.020)	0.134*** (0.020)	0.154*** (0.021)	0.154*** (0.021)	0.108*** (0.022)	0.107*** (0.022)
Age	-0.143*** (0.005)	-0.143*** (0.005)	-0.137*** (0.006)	-0.137*** (0.006)	-0.138*** (0.005)	-0.139*** (0.005)
Age ²	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Tenure	-0.005*** (0.000)	-0.005*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.005*** (0.000)	-0.005*** (0.000)
Communications, HR or legal	0.211*** (0.024)	0.200*** (0.024)	0.287*** (0.025)	0.278*** (0.025)	0.258*** (0.026)	0.250*** (0.026)
# Executives	0.184*** (0.004)	0.184*** (0.004)	0.149*** (0.004)	0.149*** (0.004)	0.161*** (0.004)	0.161*** (0.004)
Pseudo R^2	0.1950	0.1952	0.1838	0.1840	0.1453	0.1454
Observations	55,742	55,742	55,366	55,366	55,677	55,677

NOTES: Ordered probit regression where dependent variable is compensation rank within each firm year. This variable takes on a value of one for the highest paid executive, two for the second highest paid executive, etc. Occupational title dummies are included in every regression but not reported. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 6
REGRESSION OF COMPENSATION COMPONENTS ON ETHNIC MINORITY STATUS

Independent variable	Dependent variable						
	Log (Salary)	Log (Bonus)	Log (Other)	Log (Non-equity incentive)	Log (Stock grants)	Log (Option grants)	Log (Option gain)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	3.510*** (0.092)	0.395 (0.428)	-1.996*** (0.260)	-4.585*** (0.394)	-3.580*** (0.463)	-2.626*** (0.538)	-10.386*** (0.610)
African American	-0.039** (0.019)	-0.299*** (0.106)	0.059 (0.065)	-0.073 (0.120)	-0.323** (0.138)	-0.001 (0.127)	-0.386** (0.156)
Asian	-0.020 (0.018)	-0.022 (0.092)	-0.098* (0.057)	0.005 (0.091)	0.183 (0.116)	0.090 (0.118)	-0.211 (0.134)
Hispanic	0.052** (0.021)	-0.036 (0.112)	0.172*** (0.065)	0.233* (0.121)	0.157 (0.141)	0.428*** (0.130)	-0.370** (0.168)
Female	-0.044*** (0.011)	-0.108* (0.058)	-0.048 (0.036)	0.014 (0.064)	-0.036 (0.075)	-0.193** (0.075)	-0.243*** (0.088)
Age	0.050*** (0.003)	0.043*** (0.013)	0.066*** (0.008)	0.071*** (0.011)	0.075*** (0.013)	0.104*** (0.015)	0.172*** (0.018)
Age ²	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Tenure	0.004*** (0.000)	-0.008*** (0.001)	0.004*** (0.001)	0.009*** (0.001)	-0.013*** (0.002)	-0.016*** (0.002)	0.047*** (0.002)
Communications, HR or legal	-0.049*** (0.012)	0.039 (0.071)	-0.162*** (0.040)	-0.127* (0.075)	-0.011 (0.089)	-0.246*** (0.089)	-0.259** (0.110)
Log (Sales)	0.148*** (0.007)	0.396*** (0.030)	0.297*** (0.018)	0.301*** (0.028)	0.298*** (0.033)	0.551*** (0.038)	0.722*** (0.043)
ROA	0.239*** (0.045)	4.822*** (0.200)	-0.446*** (0.131)	3.194*** (0.184)	0.693*** (0.226)	0.753*** (0.254)	3.963*** (0.263)
Share return	0.008 (0.005)	0.532*** (0.026)	0.044*** (0.016)	0.270*** (0.023)	0.139*** (0.029)	-0.018 (0.033)	0.333*** (0.038)
Log (Firm risk)	-0.034*** (0.006)	-0.199*** (0.032)	-0.084*** (0.019)	-0.383*** (0.032)	-0.280*** (0.038)	-0.081** (0.040)	-0.174*** (0.045)
Market-to-book	-0.005 (0.003)	0.032** (0.015)	-0.007 (0.010)	-0.046*** (0.014)	-0.110*** (0.017)	0.098*** (0.021)	0.693*** (0.025)
Leverage	-0.041 (0.026)	-0.861*** (0.122)	-0.089 (0.075)	0.116 (0.113)	-0.110 (0.142)	-0.306* (0.160)	-1.213*** (0.174)
CAPEX	0.004 (0.072)	-0.664** (0.362)	-0.049 (0.214)	-0.176 (0.326)	0.879** (0.390)	0.145 (0.471)	1.509*** (0.532)
R&D	0.203 (0.162)	0.487 (0.746)	0.911* (0.489)	1.906*** (0.638)	1.418* (0.841)	-0.709 (1.037)	-4.720*** (1.212)
Cash	-0.012 (0.033)	0.517*** (0.154)	0.347*** (0.095)	0.145 (0.141)	-0.122 (0.177)	-0.016 (0.202)	0.640*** (0.234)
Adjusted R ²	0.5716	0.5330	0.5384	0.5530	0.4530	0.3881	0.2605
Observations	51,843	51,843	51,788	51,843	51,808	51,515	51,785

NOTES: OLS regression where the dependent variable is the natural log of the value for salary, and the natural log of one plus the variable value for other variables. Firm fixed effects, year dummies, and occupational title dummies are included in every regression but not reported. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 7
REGRESSION OF BONUS ON ETHNIC MINORITY STATUS AND PERFORMANCE

Independent variable	Sample	Dependent variable		
		Log (Bonus)		
		All	All	ROA < median
		(1)	(2)	(3)
Constant		0.425 (0.429)	0.503 (0.430)	0.004 (0.678)
African American		-0.134 (0.118)	0.047 (0.135)	-0.066 (0.153)
Asian		-0.070 (0.100)	-0.040 (0.119)	-0.158 (0.138)
Hispanic		-0.152 (0.142)	-0.037 (0.157)	-0.076 (0.186)
Female		-0.037 (0.068)	-0.006 (0.075)	-0.187** (0.083)
ROA		4.229*** (0.761)		4.024*** (0.310)
African American * ROA		-3.877*** (1.269)		
Asian * ROA		0.939 (0.735)		
Hispanic * ROA		2.114 (1.407)		
Female * ROA		-1.290* (0.667)		
ROA ≥ median			5.594*** (0.803)	
ROA < median			2.955** (1.288)	
African American * ROA ≥ median			-7.847*** (1.900)	
African American * ROA < median			-0.242 (1.563)	
Asian * ROA ≥ median			0.528 (1.195)	
Asian * ROA < median			1.561 (1.071)	
Hispanic * ROA ≥ median			0.163 (1.757)	
Hispanic * ROA < median			5.616** (2.567)	
Female * ROA ≥ median			-1.951** (0.887)	
Female * ROA < median			-0.445 (1.001)	
Adjusted R ²		0.5335	0.5341	0.5071
Observations		51,843	51,843	25,913

NOTES: OLS regression where the dependent variable is the natural log of one plus the bonus. Firm fixed effects, year dummies, occupational title dummies, and the variables age, age², tenure, communications, HR or legal, log (sales), share return, log (firm risk), market-to-book, leverage, CAPEX, R&D, and cash are included in all regressions but not reported. Column 1 also includes the interaction of ROA with the occupational title dummies and the communications, HR or legal dummy variable. In column 2, ROA ≥ median is set equal to ROA if the ROA is equal to or greater than the median ROA of 4.68 percent. ROA < median is set equal to ROA if the ROA is less than the median ROA of 4.68 percent. Column 2 also includes the interaction of ROA ≥ median and ROA < median with the occupational title dummies and the communications, HR or legal dummy variable. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 8
REGRESSION OF OPTION HOLDING AND OPTION GAINS ON ETHNIC MINORITY STATUS

Independent variable	Dependent Variable	
	Log (Option holding)	Log (Option gain)
	(1)	(2)
Constant	-9.274*** (0.540)	-5.976*** (0.623)
African American	-0.413*** (0.131)	-0.121 (0.172)
Asian	0.045 (0.114)	-0.219 (0.139)
Hispanic	-0.043 (0.138)	-0.479*** (0.177)
Female	-0.400*** (0.075)	-0.042 (0.095)
Age	0.229*** (0.016)	0.067*** (0.018)
Age ²	-0.002*** (0.000)	0.000*** (0.000)
Tenure	0.020*** (0.002)	0.031*** (0.002)
Communications, HR or legal	-0.281*** (0.093)	-0.052 (0.119)
Log (Sales)	0.607*** (0.036)	0.443*** (0.044)
ROA	6.226*** (0.245)	1.953*** (0.274)
Share return	1.451*** (0.032)	0.666*** (0.039)
Log (Firm risk)	-0.605*** (0.039)	0.055 (0.046)
Market-to-book	0.447*** (0.021)	0.504*** (0.026)
Leverage	-0.691*** (0.150)	-1.043*** (0.178)
CAPEX	1.844*** (0.460)	-1.277** (0.544)
R&D	0.950 (0.985)	-5.605*** (1.256)
Cash	0.312 (0.192)	0.557** (0.236)
Log (Option holding $t-1$)		0.387*** (0.005)
Adjusted R^2	0.5039	0.3314
Observations	51,792	46,392

NOTES: In column 1 the dependent variable is the natural log of one plus the option holding. In column 2 the dependent variable is the natural log of one plus the option gain. Firm fixed effects, year dummies, and occupational title dummies are included in every regression but not reported. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 9
REGRESSION OF EQUITY INCENTIVES AND COMPENSATION ON ETHNIC MINORITY STATUS

Independent variable	Dependent variable					
	Log (Stock and option holding)		Log (Salary and bonus)		Log (Total pay)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	1.767*** (0.305)	1.739*** (0.304)	3.446*** (0.119)	3.445*** (0.119)	2.970*** (0.144)	2.968*** (0.144)
Ethnic minority	-0.071* (0.037)		-0.018 (0.015)		0.014 (0.020)	
African American		-0.400*** (0.074)		-0.091*** (0.027)		-0.086*** (0.031)
Asian		0.154*** (0.054)		-0.012 (0.024)		0.023 (0.033)
Hispanic		-0.094 (0.064)		0.043 (0.027)		0.097*** (0.033)
Female	-0.185*** (0.039)	-0.189*** (0.038)	-0.048*** (0.014)	-0.049*** (0.014)	-0.061*** (0.018)	-0.062*** (0.018)
Age	0.016* (0.010)	0.017* (0.010)	0.043*** (0.004)	0.043*** (0.004)	0.042*** (0.004)	0.042*** (0.004)
Age ²	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Tenure	0.037*** (0.001)	0.037*** (0.001)	-0.001** (0.000)	-0.001** (0.000)	-0.004*** (0.000)	-0.005*** (0.000)
Communications, HR or legal	-0.287*** (0.047)	-0.271*** (0.047)	-0.088*** (0.017)	-0.085*** (0.017)	-0.131*** (0.024)	-0.127*** (0.024)
Log (Sales)	0.418*** (0.019)	0.419*** (0.019)	0.222*** (0.008)	0.222*** (0.008)	0.320*** (0.010)	0.320*** (0.010)
ROA	2.979*** (0.146)	2.971*** (0.146)	0.785*** (0.051)	0.785*** (0.051)	0.555*** (0.069)	0.555*** (0.069)
Share return	0.523*** (0.016)	0.524*** (0.016)	0.103*** (0.007)	0.103*** (0.007)	0.084*** (0.009)	0.085*** (0.009)
Log (Firm risk)	-0.173*** (0.020)	-0.173*** (0.020)	-0.047*** (0.008)	-0.047*** (0.008)	-0.036*** (0.010)	-0.036*** (0.010)
Market-to-book	0.371*** (0.011)	0.371*** (0.011)	0.005 (0.004)	0.005 (0.004)	0.068*** (0.006)	0.068*** (0.006)
Leverage	-0.285*** (0.080)	-0.288*** (0.080)	-0.194*** (0.032)	-0.195*** (0.032)	-0.215*** (0.040)	-0.216*** (0.040)
CAPEX	2.222*** (0.233)	2.221*** (0.232)	-0.111 (0.086)	-0.112 (0.086)	0.184 (0.115)	0.182 (0.115)
R&D	-2.643*** (0.527)	-2.677*** (0.525)	0.074 (0.197)	0.068 (0.197)	-0.875*** (0.297)	-0.884*** (0.297)
Cash	0.157 (0.106)	0.154 (0.106)	0.068* (0.041)	0.067 (0.041)	0.170*** (0.054)	0.169*** (0.054)
Log (Stock and option holding $t-1$)			0.016*** (0.003)	0.016*** (0.003)	0.058*** (0.003)	0.058*** (0.003)
Adjusted R^2	0.6312	0.6316	0.6350	0.6351	0.6784	0.6785
Observations	49,842	49,842	44,449	44,449	44,258	44,258

NOTES: OLS regression where the dependent variable is the natural log of the variable value. Firm fixed effects, year dummies, and occupational title dummies are included in every regression but not reported. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.

TABLE 10

REGRESSION OF COMPENSATION ON ETHNIC MINORITY STATUS: THE EFFECT OF ETHNIC MINORITY AND
AFRICAN AMERICAN PRESENCE ON THE COMPENSATION COMMITTEE

Independent variable	Dependent variable					
	Log (Salary and bonus)		Log (Total pay)		Log (Total ex-post pay)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	3.969*** (0.266)	3.969*** (0.266)	3.861*** (0.353)	3.855*** (0.353)	1.502*** (0.407)	1.503*** (0.407)
African American	-0.151*** (0.038)	-0.151*** (0.038)	-0.168*** (0.056)	-0.161*** (0.050)	-0.214*** (0.067)	-0.192*** (0.060)
Asian	-0.026 (0.034)	-0.026 (0.034)	-0.009 (0.062)	0.010 (0.053)	0.027 (0.062)	0.026 (0.057)
Hispanic	-0.011 (0.036)	-0.011 (0.036)	0.035 (0.046)	0.016 (0.046)	-0.081 (0.063)	-0.086 (0.060)
Ethnic minority on compensation committee	-0.002 (0.014)		-0.011 (0.018)		-0.026 (0.022)	
Ethnic minority on compensation committee * African American	0.080 (0.053)		0.044 (0.073)		0.048 (0.088)	
Ethnic minority on compensation committee * Asian	-0.044 (0.061)		0.021 (0.088)		0.037 (0.093)	
Ethnic minority on compensation committee * Hispanic	-0.026 (0.070)		-0.051 (0.075)		0.027 (0.098)	
African American on compensation committee		-0.002 (0.014)		-0.019 (0.019)		-0.031 (0.023)
African American on compensation committee * African American		0.080 (0.053)		0.039 (0.071)		-0.010 (0.087)
African American on compensation committee * Asian		-0.044 (0.061)		-0.047 (0.093)		0.076 (0.109)
African American on compensation committee * Hispanic		-0.026 (0.070)		0.000 (0.077)		0.049 (0.102)
Adjusted R^2	0.6956	0.6956	0.7011	0.7011	0.6236	0.6236
Observations	12,289	12,289	12,235	12,235	12,281	12,281

NOTES: OLS regression where the dependent variable is the natural log of the variable value. Firm fixed effects, year dummies, occupational title dummies, and the variables female, age, age², tenure, communications, HR or legal, log (sales), share return, log (firm risk), market-to-book, leverage, CAPEX, R&D, and cash are included in all regressions but not reported. The sample employed is all observations for which the executive is not the CEO or executive chair. Huber-White robust standard errors are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels respectively.