

Executive Mobility and Minority Status*

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We examine the mobility of minority executives, defined as ethnic minority and female executives, in publicly listed U.S. firms. Minority executives as a whole experience lower promotion, higher demotion, and higher exit than Caucasian males. Female and African American executives account for the majority of these differences. Specifically, female executives experience lower promotion and exit, while African Americans experience lower promotion, higher demotion, and higher exit. In contrast, Asian and Hispanic executives do not experience different mobility outcomes from Caucasian executives.

Introduction

The presence of minority groups within the executive ranks of corporate America has increased significantly over the last three decades. In 1979, of the 1708 senior executives at Fortune 1000 firms, there were three African Americans, two Asians, two Hispanics, and eight females (Jones 1986). By 2010, of the 2682 executives at Standard & Poor's (S&P) 1500 firms, there were 183 ethnic minority executives (comprising 32 African Americans, 106 Asians, and 45 Hispanics) and 122 females. Although these groups make up a disproportionately small number of executives relative to the U.S. workforce, they represent an important subset of executives in which there is a strong media and political interest (Menendez 2010).¹

Race, ethnicity, and gender are important personal attributes that could impact the way in which executives are treated and behave. The economics literature suggests that decision makers may be prejudiced against minority executives (Becker 1971) or apply statistically discriminative rules (Arrow 1973; Phelps 1972). Social psychology theories suggest that minorities may be disadvantaged by race- or gender-based stereotyping (Brenner, Tomkiewicz, and Schein 1989), attribution-biased errors (Hewstone 1990), or being singled out as a token

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¹ Placing these figures in a global context is difficult because comparable data on executives for other countries is not publicly available. However, a recent study for the UK shows that for Financial Times Stock Exchange 100 Index firms, 10.5 percent of executive directors are female and 4.8 percent are from ethnic minorities (Green Park 2014).

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(Kanter 1977). Such discrimination may be unintentional at both the individual and corporate level. Alternatively, it is possible that minority executives are advantaged by firms that wish to promote diversity. In terms of behavior, minority executives may have different preferences and behavioral traits from Caucasian males, with regard, for example, to risk and competition.

These differences in the treatment and behavior of minority executives have potentially wide-ranging consequences.² Our interest here is in labor-market outcomes for these executives. While recent research has examined the compensation (Bertrand and Hallock 2001; Munoz-Bullon 2010) and mobility (Gayle, Golan, and Miller 2012) of female executives, no study has examined these outcomes for ethnic minority executives. In this paper we therefore consider whether mobility outcomes for executives—in particular promotion, demotion, and exit—differ by race, ethnicity, and gender. Establishing this is important, and may, for example, shed light on the widely held perception that the low representation of minority executives is due to differential mobility (Federal Glass Ceiling Commission 1995; Menendez 2010).

Our key original contribution is the examination of mobility outcomes for ethnic minorities at the executive level, on which we provide the first large-sample evidence. We also contribute to the literature on the mobility of female executives, which to date for the United States has only been examined by Gayle, Golan, and Miller (2012). Our work is most closely related to this and prior empirical studies that examine the impact of race, ethnicity, and gender on mobility outcomes at lower levels of the firm hierarchy. As with previous studies, our data reveal mobility outcomes only, and not the career aspirations of sample executives. Although promotion is probably a positive outcome for promoted executives who we presume are mostly seeking it, the absence of promotion for other executives cannot be assumed to be a negative (Pruden 1973). Similarly, we cannot assume that demotion or firm exit is a negative for the executive concerned. Although discrimination may be the cause of these outcomes, so too could unobservable executive characteristics (e.g., preferences and ability) that differ along racial and gender lines. Although it can be argued that executives are a relatively homogenous group compared to lower rank employees (Bertrand and Hallock 2001), such racial and gender differences (and their impact on mobility) could be significant. As such, racial or gender differences in executive mobility outcomes are not direct tests of discrimination.

With these limitations in mind, our objective is to establish whether any robust patterns emerge in the data. Our findings show that minority executives as a whole

² For example, Park and Westphal (2013) found that executives exhibit negative bias in their appraisal of minority chief executive officers, while Huang and Kisgen (2013) found that corporate investment and financial decisions made by female-led firms appear less confident than those by male-led firms.

experience lower promotion rates, higher demotion rates, and higher exit rates than Caucasian males. Specifically, female executives have lower promotion rates and higher exit rates than men, and African American executives have lower promotion rates, higher demotion rates, and higher exit rates than whites. Asian and Hispanic executives in contrast do not experience different outcomes from Caucasians. If these mobility patterns were the result of discrimination or bias, they could be diminished by minority leadership. However, we find no evidence of this.

The paper proceeds as follows: the next section reviews related literature, followed by a description of the data, a presentation of the findings, and a concluding section.

Related Literature

In this section we review the theoretical literature on labor discrimination and bias, potential race- and gender-based differences in executive preferences and ability, and the empirical evidence on race- and gender-based differences in mobility outcomes.

Theoretical literature on labor discrimination and bias. Separate literatures in economics and social psychology provide theories on how the mobility of minority executives could be impacted by discrimination and bias.

Economic theories can be broadly categorized into two main types. First, decision makers may be prejudiced and have a taste-based preference to minimize interaction with minority employees (Becker 1971). The board of directors is responsible for making mobility decisions on executives, and to the extent that it is predominantly Caucasian and male, may be biased toward ethnic minorities and females. Second, decision makers may face asymmetric information about employee ability and use race or gender to statistically discriminate (Arrow 1973; Phelps 1972). With regard to whether statistical discrimination will hold at the executive level, the predictions of these models are mixed, depending on the nature of the inference and the information required for promotion decisions. The models of Lazear and Rosen (1990) and Smith, Smith, and Verner (2013) support discrimination, but Fryer (2007) and Bjerk (2008) do not.³

³ Lazear and Rosen (1990) suggest that women are superior to men in nonmarket work, resulting in a higher probability of voluntary turnover for women, and hence a lower probability of promotion. At higher ranks, promotion rates will differ by gender but less so due to the value of nonmarket work being lower than wages. Fryer (2007) predicts that minorities will be held to a more exacting standard at initial hiring, which lowers their probability of being hired but increases their probability of subsequent promotion. Bjerk (2008) predicts that discrimination in promotion occurs at lower levels due to signaling differences between minority and majority groups, but not at executive levels where promotion is based on task completion only.

Social psychology theories are more unanimous in predicting that minority executives will be subject to bias. First, studies show that business leaders are perceived as exhibiting characteristics that are more closely correlated with the characteristics of Caucasian males than females (Brenner, Tomkiewicz, and Schein 1989; Koenig et al. 2011) or ethnic minorities (Chung-Herrera and Lankau 2005; Rosette, Leonardelli, and Phillips 2008). Female and ethnic minorities may therefore be perceived to lack the characteristics of successful business leaders, and consequently be discriminated against. Minorities themselves may hold such perceptions, potentially deterring them from applying for top positions. Second, minorities may be subject to attribution bias, whereby relative to Caucasian males they are attributed insufficient recognition for outperformance and excess recognition for underperformance. This could occur because of negative stereotyping or because minorities are perceived as an “out-group” by the “in-group” of Caucasian males (Greenhaus and Parasuraman 1993; Hewstone 1990). Third, the theory of tokenism (Kanter 1977) suggests that because they comprise a small proportion of executives, minorities are subject to greater visibility, higher pressure to perform, and isolation. The result could be a deliberate attempt to not outperform the majority, avoidance of promotion (which would bring additional visibility), and higher turnover (Kanter 1977).

Differences in executive preferences and ability by race and gender. Minority executives are unlikely to be a random sample that differ from Caucasian males in terms of race and gender only. Specifically, it is possible that racial and gender differences in preferences and abilities could result in differences in mobility.

Research shows that females are more risk averse and less competitive than males (Bertrand 2010; Croson and Gneezy 2009). There is also evidence that African Americans are more risk averse than whites, while Hispanics do not differ (Sahm 2007). As such, females and African Americans may be reluctant to take on the risk associated with higher executive positions (Smith, Smith, and Verner 2013). Females could have greater family commitments resulting in a preference to avoid long work hours, promotion to the highest executive positions, and geographical relocation (Bielby and Bielby 1992). Such commitments may also lead to higher turnover. Finally, minority executive behavior may differ due to being a highly visible minority.

The ability of minority executives to meet the performance requirements for top executive positions will depend on general and firm-specific skills, combined with the effort with which these skills are applied. These factors may differ from Caucasian males. First, the processes that have generated the minority and nonminority executives may differ. If minorities have been discriminated against and have faced higher hurdles, they could be an exceptional group with

above-average ability and thus a higher probability of subsequent promotion. Alternatively, if they have been promoted through affirmative action policies they could be of lower ability, with a subsequent lower likelihood of promotion.⁴ Second, minority executives may have different functional experience, which is less valuable for firm leadership positions. For example, Collins (1997) finds that African American executives often hold racialized positions, while Zweigenhaft and Domhoff (2011) show that female and African American executives are more likely to work in public relations, human resources, and general counsel. Third, Zweigenhaft and Domhoff (2011) show that while the majority of female, Hispanic, and Asian executives come from the upper and upper middle class (as do white male executives), African American executives come from middle or working class backgrounds. This lower social origin may result in lower tacit knowledge for African Americans (Hansen 2001). Finally, because social networks tend to be gender and race based, white male executives may have a wider executive network (McDonald, Lin, and Ao 2009) which could disadvantage minorities because such networks increase the executive's value to her own firm (Engelberg, Gao, and Parsons 2013) and hence probability of promotion (McDonald, Lin, and Ao 2009).

Empirical literature on mobility outcomes by race and gender. The empirical literature on racial and gender differences in promotions has produced mixed results. Studies that combine all ethnic minority employees together report a lower probability of promotion (Francesconi 2001; Paulin and Mellor 1996; Yap and Konrad 2009). For African American employees, some studies find the probability of promotion is lower than for whites (Elvira and Zatzick 2002; James 2000; Maume 1999; McCue 1996; Pergamit and Veum 1999; Wilson and Maume 2013), while others find it is higher (Blau and Devaro 2007; De Varo 2006; Giuliano, Levine, and Leonard 2011; Shenhav 1992). For Hispanic employees, Wilson and Maume (2013) find a lower probability of promotion compared to whites; other studies find a similar probability (Blau and DeVaro 2007; Elvira and Zatzick 2002; Pergamit and Veum 1999) and Giuliano, Levine, and Leonard (2011) find a higher probability. For Asians, Elvira and Zatzick (2002) find a similar probability of promotion to whites while Giuliano, Levine, and Leonard (2011) find a higher probability. For gender differences, some studies (Blau and Devaro 2007; Cannings 1988; Kunze and Miller 2014; Lyness and Judiesch 1999; Lyness and Schrader 2006; McCue 1996; Olson and Becker 1983; Pekkarinen and Vartiainen 2006; Pergamit and Veum 1999; Smith, Smith, and Verner 2013) find women are less

⁴ Our review of the empirical literature suggests that neither scenario occurs in the aggregate for lower level employees. However, this does not rule out the possibility that it occurs for executives.

likely to be promoted than men, others find a similar likelihood (Booth, Francesconi, and Frank 2003; Giuliano, Levine, and Leonard 2011; James 2000; Paulin and Mellor 1996; Yap and Konrad 2009), while others find a higher likelihood (Gayle, Golan, and Miller 2012; Shenhav 1992). While there is an extensive empirical literature on promotions, the only empirical study on demotions is Gayle, Golan, and Miller (2012), who find no gender differences.

Empirical studies on turnover by race and gender tend to distinguish between involuntary (layoffs and dismissals) and voluntary turnover. With regard to involuntary turnover, there is some evidence that African Americans and Hispanics are more likely to be laid off (Elvira and Zatzick 2002) and dismissed (Giuliano, Levine, and Leonard 2011). For Asians, the probability of either is similar to whites (Elvira and Zatzick 2002; Giuliano, Levine, and Leonard 2011). For females, there is evidence of a higher probability of layoff (Elvira and Zatzick 2002) and dismissal (Becker-Blease, Elkinawy, and Stater 2010). The evidence on voluntary turnover by race is mixed. Sicherman (1996) finds a higher probability for African Americans, but Hom, Roberson, and Ellis (2008) find no difference and Giuliano, Levine, and Leonard (2011) find a lower probability. Hispanic employees face a similar probability of quitting (Giuliano, Levine, and Leonard 2011; Hom, Roberson, and Ellis 2008), while for Asians, the findings are mixed with Giuliano, Levine, and Leonard (2011) finding a higher rate and Hom, Roberson, and Ellis (2008) finding no difference. Females face a higher probability of voluntary turnover than males (Becker-Blease, Elkinawy, and Stater 2010; Hom, Roberson, and Ellis 2008; Sicherman 1996), which is more likely to occur for personal family reasons (Sicherman 1996). Overall turnover is also higher for females than males (Gayle, Golan, and Miller 2012; Krishnan 2009).

In summary, no robust pattern emerges from the empirical literature on promotions in terms of racial and gender differences. However, African Americans and Hispanics experience higher involuntary turnover, while females experience higher involuntary and voluntary turnover.

Data

In this section we describe the data that we employ in our analysis. We describe in turn the definition of executive mobility, the identification of minority status, and the control variables employed in the regression analysis.

Mobility of executives. Our sample of executives is drawn from Execu-comp. In order to identify promotions and demotions we follow the approach in Baker, Gibbs, and Holmstrom (1994) and Gayle, Golan, and Miller (2012)

in constructing a hierarchical structure based on the movement of executives across different occupational titles.

Of the 218,128 executive year observations over 1992–2011, occupational title is available for 171,598 using the Execucomp variables TITLEANN, CEOANN, and CFOANN. TITLEANN reports occupational titles, which we check by hand, supplementing with CEOANN and CFOANN, which identify the CEO and CFO, respectively. We identify thirteen titles that occur at least one thousand times each (individually or in conjunction with another);⁵ 14,291 observations cannot be classified as any of the thirteen titles, which we refer to as “other executive of the company.” We classify each executive-year according to one or more of these fourteen titles, and identify which of these fourteen titles (or combination of) occurs at least one thousand times. This results in twenty-six titles, shown in Table 1. There remain 7214 observations (one of the fourteen titles or combination of) that do not occur one thousand times, which we deal with below.

We construct an executive hierarchy based on the movement of executives across these twenty-six titles. We exclude all observations for which the executive’s title is not available in the next annual period, reducing the sample from 171,598 to 125,589 observations. We exclude for the purposes of examining movements the 7214 observations described above, giving a sample of 118,375 movements. In examining movements we include job transitions both within and between firms. We rank the twenty-six titles using the method of Gayle, Golan, and Miller (2012), whereby title Y ranks above title X if the probability of moving from X to Y is greater than the probability of moving from Y to X. Furthermore, if title Z ranks above Y then we assume that it also ranks above X. Applying this rule, seven ranks emerge clearly from the 118,375 movements, shown in the transition probability matrix for all twenty-six titles in Table 2, and in column (1) of Table 1.

Next, we manually allocate the 7214 observations described above into one of the twenty-six groups. The final transition probability matrix for all seven ranks for the 125,589 observations is shown in Table 3. We define promotion as where an executive increases her rank in the next period, and is not defined for rank 1 executives. We define demotion as where an executive decreases her rank in the next period, and is not defined for rank 7 executives. Of the 125,589 observations, we define 10,778 as promotions and 3933 as demotions.

⁵ These titles (number) are as follows: CEO of the company (36,410); chairman of the board (24,086); vice chair of the company (4,139); president of the company (29,426); chief operating officer of the company (11,466); executive vice president of the company (39,547); senior vice president of the company (31,227); vice president of the company (25,040); chief financial officer of the company (27,930); chief executive officer of a subsidiary/region (4436); chairman of a subsidiary/region (1263); president of a subsidiary/region (17,268); and chief operating officer of a subsidiary/region (1859).

TABLE 1
Executive Titles and Ranks

Rank	Order Within Rank	Code	Executive Title
1	a	1	Chairman of the board
2	a	2	Chairman of the board and chief executive officer of the company
	b	3	Chairman of the board and chief executive officer and president of the company
	c	4	Chief executive officer and president of the company
	d	5	Chief executive officer of the company
3	a	6	President and chief operating officer of the company
	a	7	Vice chair of the company
	b	8	President of the company
4	a	9	Executive vice president of the company
	b	10	Executive vice president and chief operating officer of the company
	c	11	Chief operating officer of the company
	c	12	Executive vice president and chief financial officer of the company
5	a	13	Executive vice president and other executive of the company
	a	14	Executive vice president of the company and president of a subsidiary/region
	a	15	Senior vice president of the company
	b	16	Senior vice president and chief financial officer of the company
6	a	17	Senior vice president of the company and president of a subsidiary/region
	a	18	Senior vice president and other executive of the company
	a	19	Vice president of the company
	b	20	Vice president and chief financial officer of the company
7	a	21	President of a subsidiary/region
	b	22	Vice president of the company and president of a subsidiary/region
	b	23	President and chief executive officer of a subsidiary/region
	b	24	Vice president and other executive of the company
	b	25	Chief financial officer of the company
	b	26	Other executive of the company

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. The twenty-six executive titles or combination of executive titles occur at least one thousand times within the dataset. The number of observations is 171,598.

We allow promotions and demotions to occur both within and between firms, as do previous studies (Gayle, Golan, and Miller 2012). Only a small proportion of sample observations (1156) involve interfirm movements, and are associated with a high likelihood of either upward (529) or downward (253) mobility. The vast majority of sample promotions (95 percent) and demotions (94 percent) are within rather than between firms. In our analysis, we control for inter- and intra-firm mobility and check the robustness of our findings to this distinction.

We define exit as where an executive leaves Execucomp in the next period and is missing for the three subsequent years, similar to Gayle, Golan, and Miller (2012). Of the 171,598 observations, we exclude the last 3 years of the sample period (2009–2011) and observations for which the executive's firm is subsequently no longer available on Execucomp. This generates a sample of 135,804

TABLE 3
Transition Probability Matrix for Ranks

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	N
Rank 1	91.8	5.1	0.8	0.1	0.0	0.2	1.9	2017
Rank 2	2.7	96.3	0.4	0.1	0.1	0.0	0.4	29,870
Rank 3	0.3	12.6	83.6	0.9	0.3	0.2	2.2	10,720
Rank 4	0.0	1.7	3.8	88.8	2.8	0.5	2.4	25,426
Rank 5	0.0	0.7	1.4	7.9	85.4	2.5	2.1	22,286
Rank 6	0.0	0.4	0.9	3.5	7.1	84.6	3.4	18,360
Rank 7	0.1	1.6	2.9	3.9	3.4	4.4	83.7	16,910
N	2737	31,158	11,002	25,775	21,681	16,986	16,250	125,589

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. The number of observations is 125,589.

observations for the analysis of exit, 21,005 of which are classified as preceding exit, suggesting that 16 percent of executives exit on average in each year.

Minority status of executives. To identify the gender of the Execucomp executives, we use the Execucomp variable GENDER, which is available for all Execucomp observations.

To establish the racial identity of executives, we start with the Riskmetrics/IRRC database, which reports the race 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 IRRC numerical codes assigned to each director.⁶ This results in 32,612 unique directors over 1996–2011, of which 1680 are minorities, 18,215 are Caucasian, and 12,717 are of unknown race. Due to inaccuracies with the IRRC identification of race⁷ we manually check the race of the 1680 minority directors. To do so, we employ several published lists of minority directors/executives and cross-check these individuals on IRRC. We identify 684 IRRC directors as minorities in this way⁸ (605 of whom were originally identified as minorities by IRRC). Of

⁶ Of the 34,938 unique codes there are 869 directors that have more than one unique code, and 1209 unique codes for which there is more than one director. Directors are identified using name, firm CUSIP (Committee on Uniform Security Identification Procedures) code, and date of birth.

⁷ For example, 343 of these 1680 directors have inconsistent racial classification over time.

⁸ Three hundred twenty-eight 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 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.

the remaining 1075 IRRC minority directors, we verify the minority status of 371 using online biographies, 178 using online photos, and 451 using names (clear Hispanic or Asian name consistent with IRRC classification); 62 of the 1075 are concluded to be Caucasian using online biographies and photos. For the thirteen remaining directors we are unable to verify their race and therefore accept the IRRC classification. We therefore have 19,933 directors with verified racial identification comprising 18,235 Caucasian and 1698 minorities, the latter consisting of 682 African Americans, 616 Asians, 398 Hispanics, and two Native Americans.⁹ From the published lists, we identify a further fifty-six minority executives that are not on IRRC.

We match these 19,989 individuals with Execucomp executives using names and firm CUSIPs, resulting in a sample of 8126 executives. Of these executives, 392 are female and 432 are ethnic minorities, comprising 114 African Americans, 211 Asians, and 107 Hispanics. Thus, in total, there are 792 minority executives accounting for 9.8 percent of sample executives. There are 68,962 executive-firm-year observations for which race and gender is known. This sample of executives and observations is displayed in Panel A of Table 4.

Control variables. In our regression model, we control for executive age, tenure, educational attainment, occupation, interfirm mobility, firm characteristics, and industry.

We collect the age of executives from Execucomp (variable AGE). Company tenure (variable JOINED_CO) is not reported comprehensively on Execucomp. We therefore also collect the years of credited service under the company's pension plan (variable RET_YRS), tenure as CEO (using the variable BECAME CEO), and company tenure (variable Time [Yrs.] in Company) from the BoardEx database. We employ the highest figure from these four sources as our company tenure variable.

We collect educational data from BoardEx (variable Education), and include three dummy variables (bachelor's, master's, and PhD) to measure higher levels of educational attainment 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.

Minority executives may tend to work in functional areas for which promotion is less likely. For example, female and African American executives are more likely to hold positions in the areas of public relations, human resources,

⁹ Identification of directors' race for earlier IRRC years for which race is not reported is backfilled.

TABLE 4
Sample of Executives

All Execucomp				Execucomp Ethnicity Known										
				All			Caucasian		Ethnic		African American			
				All	Male	Female	All	Male	Female	All	All	Asian	Hispanic	Minority
				All	Male	Female	All	Male	Female	All	All	All	All	All
Panel A: Execucomp ^a														
# Executives	39,379	37,120	2,259	8126	7734	392	7694	7334	360	432	114	211	107	792
# Observations	218,218	206,810	11,318	68,962	66,626	2736	65,609	63,106	2503	3353	698	1741	914	5856
Panel B: All control variables available														
# Executives	17,420	16,344	1076	5772	5469	303	5426	5151	275	346	90	169	87	621
# Observations	96,583	91,637	4946	44,414	42,614	1800	42,143	40,512	1631	2271	478	1206	587	3902
Panel C: All control variables available and rank known in subsequent year														
# Executives	14,957	14,067	890	5394	5128	266	5089	4847	242	305	72	155	78	547
# Observations	76,184	72,519	3665	37,681	36,242	1439	35,816	34,512	1304	1865	368	1010	487	3169

NOTES: The data are from Standard & Poor's Execucomp database for 1992-2011.
^aThe following subcategories are not tabulated or analyzed separately due to insufficient sample size: ethnic female (32 executives/233 observations); African American female (12 executives/57 observations); Asian female (15 executives/138 observations); Hispanic female (5 executives/38 observations).

and general counsel (Zweigenhaft and Domhoff 2011). Such functions do not directly contribute to revenues and profits, and do not feed into the higher positions such as chief operating officer (COO), which in turn leads to CEO. We employ the Execucomp variable TITLEANN to identify all executives working in these areas, for which the variable Communications, HR, or Legal is a dummy variable set equal to one.

We control for interfirm transitions by including a dummy variable, Firm Change, which is set equal to one if an executive moves to another firm in the next period, zero otherwise. We employ Firm Size and Firm Performance as control variables. Total assets (Compustat data item 6) is our measure of firm size, and converted to 2011 U.S. dollars using the consumer price index. The variable Stock return is taken from the Center for Research in Security Prices (CRSP) database, and is the annual stock return over the fiscal year. Both variables are winsorized at the 1-percent level. To control for the possibility that minority executives could be located in industries with different mobility patterns, we include industry fixed effects using two-digit standard industrial classification (SIC) codes.

Data availability for these control variables reduces the sample as shown in Panel B of Table 4. Our analysis of promotion and demotion requires data availability on rank for the next period, which reduces our sample further, as shown in Panel C of Table 4.

Empirical Results

In this section we report our empirical results. We report in turn how executive characteristics differ by race and gender, univariate and multivariate analysis of mobility outcomes, robustness tests, and the impact of minority leadership on mobility outcomes.

Executive characteristics. The sample averages for rank, education, age, tenure and functional role are reported in Table 5, along with those for Caucasian males and minorities. Minorities are less likely to be in ranks 1 or 2, equally likely to be in rank 3, and more likely to be in ranks 4 through 7. Minorities achieve a higher education level than Caucasian males, being more likely to hold a master's degree and PhD. Minorities are on average 3 years younger with 3 years fewer firm tenure. The age difference is driven partly by minorities' younger entry into the executive ranks. For their first Execucomp observation (excluding 1992, the first year of Execucomp data), the average age is forty-eight for minorities and fifty for Caucasian males (while firm tenure is 8 years for both), suggesting minorities may have been promoted

TABLE 5
Executive Characteristics

Variable	Caucasian		Minority		Female		Ethnic Minority		African American		Asian		Hispanic	
	All		Male		Mean		t(z)-test		Mean		t(z)-test		Mean	
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Rank 1	0.04	0.04	0.01	8.98***	0.01	7.06***	0.01	6.32***	0.01	3.88***	0.01	4.64***	0.02	2.37**
Rank 2	0.51	0.52	0.35	20.33***	0.26	22.30***	0.42	9.32***	0.25	11.86***	0.49	2.30**	0.43	4.70***
Rank 3	0.13	0.13	0.13	1.23	0.12	1.02	0.13	0.46	0.13	-0.07	0.13	0.52	0.13	0.24
Rank 4	0.13	0.12	0.19	-11.34***	0.23	-12.61***	0.16	-4.71***	0.18	-3.58***	0.15	-2.41**	0.16	-2.79***
Rank 5	0.08	0.07	0.14	-15.68***	0.18	-17.12***	0.11	-7.60***	0.20	-10.74***	0.09	-2.54***	0.09	-2.02**
Rank 6	0.04	0.04	0.06	-8.86***	0.08	-8.75***	0.06	-4.90***	0.09	-6.80***	0.05	-2.14**	0.04	-0.68
Rank 7	0.07	0.07	0.11	-9.96***	0.13	-9.45***	0.10	-6.09***	0.14	-5.51***	0.08	-1.51	0.13	-5.17***
Bachelor's	0.98	0.98	0.98	-1.64*	0.98	-1.57	0.98	-1.32	1.00	-3.30***	0.98	0.23	0.98	-0.01
Master's	0.53	0.53	0.61	-10.14***	0.52	0.30	0.69	-14.71***	0.67	-6.11***	0.73	-14.02***	0.60	-3.75***
PhD	0.08	0.07	0.11	-8.98***	0.07	0.80	0.15	-13.62***	0.05	1.67*	0.22	-19.63***	0.08	-0.42
Age	53.83	54.10	51.05	24.32***	50.23	23.16***	51.69	14.53***	51.93	7.00***	51.61	10.58***	51.65	7.67***
Tenure	17.54	17.86	14.24	20.55***	13.04	20.06***	14.97	12.57***	13.71	8.22***	13.78	15.06***	18.45	-1.18
Experience	31.99	32.28	28.94	27.07***	28.42	23.19***	29.31	18.21***	30.00	7.37***	28.83	15.13***	29.73	8.06***
Communications, HR, or legal	0.02	0.02	0.05	-11.54***	0.07	-14.61***	0.03	-4.55***	0.10	-13.31***	0.01	1.44	0.01	0.95
# Observations	44,414	40,512	3902		1800		2271		478		1206		587	

NOTES: The data are from Standard & Poor's Execucomp database for 1992-2011. The t-test is used for differences in age, tenure, and experience while the z-test is used for differences in rank, education levels, and functional area. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels, respectively, from two-sided tests of the difference of the respective variable between Caucasian males and minority groups.

faster. The lower average age for minorities is also caused, as is tenure, by their lower age (fifty-three compared to fifty-eight) and tenure (fifteen compared to twenty) at exit. We calculate work experience as current age minus assumed age of finishing education (eighteen if no undergraduate degree; twenty-one for undergraduate degree; twenty-two for master's degree; twenty-seven for PhD). Minorities have less experience (29 years) than Caucasian males (32 years). Finally, a higher proportion of minorities work in communications, human resources, or law.

Separating minorities into females and ethnic minorities, the patterns hold for both except in the case of education, where females are no more likely to hold a master's degree or PhD than Caucasian males. Splitting ethnic minorities into African Americans, Asians, and Hispanics, reveals some differences. While the rank and age differences hold, Hispanics do not have lower tenure than Caucasian males, and only Asians are more likely to hold a PhD.

In summary, minorities as a whole differ from Caucasian males in terms of rank, education, age, tenure, experience, and functional area.

Univariate analysis of promotion, demotion, and exit. Table 6 reports the univariate analysis of the three mobility events. Panel A shows that there are no significant differences in promotion likelihood between Caucasian males (9.9 percent) and minorities (9.6 percent). Similarly, the likelihood of promotion for females (9.2 percent) and ethnic minorities (10.1 percent) does not differ significantly from Caucasian males. Separating ethnic minorities into African Americans (9.8 percent), Asians (9.6 percent), and Hispanics (11.3 percent) also reveals no significant differences.

Panel B shows that minorities have significantly higher demotion rates (3.7 percent) than Caucasian males (2.2 percent). The demotion probability is higher for females (4.2 percent) than it is for ethnic minorities (3.3 percent) but both are significantly different from Caucasian males. Within the ethnic minority groups, only African Americans face a significantly higher probability (5.9 percent) compared to Caucasian males. In contrast, the probabilities for Asians (2.8 percent) and Hispanics (2.6 percent) are no different.

Panel C shows that the probability of exit is 6.1 percent for Caucasian males, which is significantly lower than the probability of 7.3 percent for minorities. Females face an 8 percent probability of exit, significantly higher than Caucasian males. Ethnic minorities face a 6.9 percent probability, which is not significantly higher. African Americans face a significantly higher probability (11 percent) than Caucasian males while Asians and Hispanics do not.

In summary, we find no significant differences in terms of promotion, but significantly higher probability of demotion and exit for female and African American executives.

TABLE 6
Mobility Events by Minority Status

	No Event		Mobility Event		N	z-test
	N	Proportion	N	Proportion		
Panel A: Promotion ^a						
All	32,956	0.9014	3603	0.0986	36,559	
Caucasian male	30,122	0.9012	3301	0.0988	33,423	
Minority	2834	0.9037	302	0.0963	3136	0.44
Female	1297	0.9083	131	0.0917	1428	0.87
Ethnic minority	1657	0.8991	186	0.1009	1843	−0.30
African American	331	0.9019	36	0.0981	367	0.04
Asian	901	0.9037	96	0.0963	997	0.26
Hispanic	425	0.8873	54	0.1127	479	−1.02
Panel B: Demotion ^b						
All	34,194	0.9770	805	0.0230	34,999	
Caucasian male	31,458	0.9782	700	0.0218	32,158	
Minority	2736	0.9630	105	0.0370	2841	−5.18***
Female	1226	0.9578	54	0.0422	1280	−4.83***
Ethnic minority	1623	0.9666	56	0.0334	1679	−3.13***
African American	304	0.9412	19	0.0588	323	−4.50***
Asian	907	0.9721	26	0.0279	933	−1.25
Hispanic	412	0.9740	11	0.0260	423	−0.59
Panel C: Exit						
All	40,283	0.9376	2679	0.0624	42,962	
Caucasian male	36,813	0.9387	2406	0.0613	39,219	
Minority	3470	0.9271	273	0.0729	3743	−2.80***
Female	1631	0.9204	141	0.0796	1772	−3.11***
Ethnic minority	1985	0.9311	147	0.0689	2132	−1.42
African American	444	0.8898	55	0.1102	499	−4.50***
Asian	1016	0.9469	57	0.0531	1073	1.11
Hispanic	525	0.9375	35	0.0625	560	−0.11

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. *** indicates significance at the 0.01-percent level, from two-sided tests of the difference of the respective variable between Caucasian males and other groups.

^aPromotion is not defined for rank 1 executives.

^bDemotion is not defined for rank 7 executives.

Multivariate analysis of promotion. To examine these mobility events within a multivariate regression framework, we employ a binary logit model. The multivariate analysis of promotion, shown in Table 7, produces different results from the univariate analysis. From column (1), the estimated coefficient for the minority dummy variable is a significant -0.338 , implying that minority groups have a 29 percent lower probability of promotion than Caucasian males. This impact is very much driven by females as shown in column (2), where the coefficient for female is a significant -0.541 , implying a 42 percent lower probability. In contrast, the coefficient for ethnic is an insignificant -0.112 and therefore ethnic minorities as a whole do not have a significantly lower probability. However, column (3) shows that African Americans have a

TABLE 7
Logit Regressions of the Effect of Minority Status on Promotion

Independent Variable	(1)	(2)	(3)
Constant	1.655** (0.647)	1.668** (0.646)	1.635*** (0.647)
Minority	−0.338*** (0.068)		
Female		−0.541*** (0.099)	−0.539*** (0.099)
Ethnic		−0.112 (0.086)	
African American			−0.431** (0.187)
Asian			−0.038 (0.118)
Hispanic			0.005 (0.156)
Rank 2	−2.537*** (0.069)	−2.539*** (0.069)	−2.539*** (0.069)
Rank 3	−0.330*** (0.061)	−0.330*** (0.061)	−0.329*** (0.061)
Rank 4	−0.652*** (0.065)	−0.650*** (0.065)	−0.651*** (0.065)
Rank 5	−0.239*** (0.069)	−0.234*** (0.069)	−0.231*** (0.069)
Rank 6	0.020 (0.082)	0.024 (0.082)	0.028 (0.082)
Bachelor's	0.325** (0.140)	0.333** (0.140)	0.337** (0.140)
Master's	−0.014 (0.040)	−0.019 (0.040)	−0.019 (0.040)
PhD	−0.067 (0.080)	−0.073 (0.080)	−0.077 (0.080)
Age	−0.121*** (0.021)	−0.121*** (0.021)	−0.121*** (0.021)
Age ²	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Tenure	0.009*** (0.002)	0.009*** (0.002)	0.009*** (0.002)
Communications, HR, or legal	−0.397*** (0.123)	−0.392*** (0.123)	−0.381*** (0.123)
Firm change	2.383*** (0.110)	2.384*** (0.110)	2.386*** (0.110)
Log (Assets)	0.003 (0.014)	0.001 (0.014)	0.003 (0.014)
Share return	−0.081* (0.046)	−0.081* (0.046)	−0.081* (0.046)
Pseudo R ²	0.1520	0.1524	0.1525
Observations	36,550	36,550	36,550

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels, respectively. Standard errors are in parentheses. Each model includes year dummy variables and controls for industry effects measured at the two-digit SIC level.

significantly lower probability of promotion while Hispanics and Asians do not. The coefficient for African Americans of -0.431 implies that African Americans face a 35 percent lower probability. The lower probability of promotion for female and African Americans is economically as well as statistically significant.

In terms of control variables, the probability of promotion decreases linearly with rank, except for rank 3, which has a higher probability than rank 4. Having a bachelor's degree is significantly positively associated with promotion, while a master's degree or PhD is not. Age has a negative but diminishing impact on promotion, while tenure is positively correlated. The coefficient for the communications, HR, or legal variable is significantly negative, thus those working in these areas are less likely to be promoted. The coefficient for firm change is significantly positive, thus for executives that change firms the probability of promotion increases significantly. Firm size does not have a significant impact on promotion probability. Firms with lower share returns have a higher probability of promotion, possibly reflecting higher executive exit (and hence opportunity for promotion) in underperforming firms.

Minorities are often described as facing a glass ceiling, whereby progression becomes less likely beyond a certain rank. To examine this, we run the promotion regression separately for ranks 2 through 7. The results, reported in a separate Appendix (Table A1),¹⁰ show that the negative effect for minorities is greatest at ranks 2, 4, and 7, yet at its smallest and insignificant at rank 3. There is therefore no clear evidence of a glass ceiling for one particular rank. To test further for significant differences by rank, we interact the minority dummy variable with the rank dummy variables. The results, reported in the Appendix (Table A2), show the coefficients for these interactive variables to be insignificant. Therefore, the probability of promotion by rank for minorities does not differ from that of Caucasians, and hence there is no evidence of a glass ceiling.

Our conclusion that female executives face a lower probability of promotion than male executives differs from Gayle, Golan, and Miller's (2012) conclusion that females face a higher probability. However, Gayle, Golan, and Miller base their conclusion on a select sample of executives that are included in the publication *Marquis Who's Who*, which by definition are a select group of (probably) the most highly successful executives. In an earlier version of their paper (Gayle, Golan, and Miller 2009), Gayle and colleagues also present results for a larger comprehensive sample and find that the probability of promotion for females is significantly lower than that for males. Gayle, Golan, and Miller prefer the use of the smaller *Who's Who* sample because it enables

¹⁰ The Appendix is available from the author upon request.

them to control for age and education. However, not controlling for these factors results in an upward bias on the probability of promotion for females, and it follows that for their larger sample, the lower probability for females would likely be lower still with the inclusion of these variables.

Multivariate analysis of demotion. The regression results for demotion are shown in Table 8. Consistent with the univariate analysis, minority status is associated with a significantly higher probability of demotion. Column (1) shows that the coefficient for the minority variable is a significant 0.275, implying a 32 percent higher probability of demotion. From column (2), the coefficient for the female dummy variable is a statistically insignificant 0.241, while the coefficient for the ethnic dummy variable is 0.274 and significant at the 10-percent level. Column (3) shows that the coefficient for African American is statistically significant with a value of 0.555. This implies a probability of demotion that is some 73 percent higher than Caucasians. In contrast, neither Hispanics nor Asians experience a different probability of demotion from Caucasians.

Considering the control variables, chairmen (rank 1) face a higher probability of demotion, while CEOs (rank 2) and those just below them (rank 3) face a lower probability. Executives with a master's degree face a lower probability of demotion, while those working for larger firms face a higher probability. Executive age, tenure, and functional role do not impact demotion likelihood. Our finding for the impact of gender, positive but insignificant, is consistent with Gayle, Golan, and Miller (2012). In summary, minorities as a whole face a higher probability of demotion, in particular to African American executives.

Multivariate analysis of exit. Table 9 reports the binary logit regressions for exit. Column (1) shows that the coefficient for minority is a significant 0.311, implying that minorities are 37 percent more likely to exit than Caucasian males. Column (2) shows that this effect is driven by females, the coefficient for female being 0.35 and implying a 42 percent higher probability of exit. The coefficient for ethnic minorities is an insignificant 0.079. Column (3) shows that there is a notable difference between African Americans and other ethnic minorities. The coefficient for the former is 0.438 and highly significant, rendering African Americans 55 percent more likely to exit than Caucasians. In contrast, Asian and Hispanic executives do not differ from Caucasians in exit probability. Higher rank (except the chairman), tenure, a PhD, and share return are associated with a lower probability, while age and firm size are associated with a higher probability.

One possibility is that minorities are punished more for firm underperformance, and are therefore more likely to exit when performance is poor. To test

TABLE 8
Logit Regressions of the Effect of Minority Status on Demotion

Independent Variable	(1)	(2)	(3)
Constant	-4.480*** (1.312)	-4.471*** (1.313)	-4.442*** (1.314)
Minority	0.275** (0.115)		
Female		0.241 (0.155)	0.236 (0.155)
Ethnic		0.274* (0.150)	
African American			0.555** (0.255)
Asian			0.179 (0.216)
Hispanic			0.110 (0.318)
Rank 1	0.670*** (0.191)	0.670*** (0.191)	0.674*** (0.191)
Rank 2	-2.108*** (0.157)	-2.109*** (0.157)	-2.105*** (0.157)
Rank 3	-0.872*** (0.157)	-0.873*** (0.157)	-0.868*** (0.157)
Rank 4	-0.147 (0.141)	-0.147 (0.141)	-0.141 (0.141)
Rank 5	-0.318** (0.154)	-0.318** (0.154)	-0.314** (0.154)
Bachelor's	0.105 (0.253)	0.105 (0.253)	0.102 (0.253)
Master's	-0.171** (0.080)	-0.172** (0.080)	-0.172** (0.080)
PhD	-0.069 (0.158)	-0.071 (0.158)	-0.063 (0.159)
Age	0.017 (0.038)	0.017 (0.038)	0.017 (0.038)
Age ²	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Tenure	-0.003 (0.004)	-0.003 (0.004)	-0.003 (0.004)
Communications, HR, or legal	0.128 (0.198)	0.127 (0.198)	0.112 (0.199)
Firm change	2.378*** (0.141)	2.377*** (0.141)	2.377*** (0.141)
Log (Assets)	0.084*** (0.027)	0.084*** (0.027)	0.081*** (0.028)
Share return	0.014 (0.088)	0.014 (0.088)	0.013 (0.088)
Pseudo R ²	0.1351	0.1351	0.1353
Observations	34,536	34,536	34,536

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels, respectively. Standard errors are in parentheses. Each model includes year dummy variables and controls for industry effects measured at the two-digit SIC level.

TABLE 9
Logit Regressions of the Effect of Minority Status on Exit

Independent Variable	(1)	(2)	(3)
Constant	-11.025*** (0.779)	-10.629*** (0.789)	-11.048*** (0.782)
Minority	0.311*** (0.071)		
Female		0.350*** (0.098)	0.451*** (0.097)
Ethnic		0.079 (0.094)	
African American			0.438*** (0.155)
Asian			-0.057 (0.147)
Hispanic			0.108 (0.185)
Rank 1	0.663*** (0.101)	0.619*** (0.101)	0.662*** (0.101)
Rank 2	-0.874*** (0.077)	-0.902*** (0.077)	-0.872*** (0.077)
Rank 3	-0.319*** (0.086)	-0.315*** (0.086)	-0.322*** (0.086)
Rank 4	-0.240*** (0.086)	-0.252*** (0.087)	-0.243*** (0.086)
Rank 5	-0.136 (0.096)	-0.154 (0.096)	-0.145 (0.096)
Rank 6	-0.159 (0.125)	-0.169 (0.125)	-0.169 (0.125)
Bachelor's	0.261* (0.157)	0.269* (0.157)	0.251 (0.157)
Master's	0.070 (0.045)	0.058 (0.045)	0.072 (0.045)
PhD	-0.201** (0.081)	-0.141* (0.082)	-0.185** (0.081)
Age	0.198*** (0.024)	0.194*** (0.024)	0.200*** (0.024)
Age ²	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Tenure	-0.009*** (0.002)	-0.008*** (0.002)	-0.009*** (0.002)
Communications, HR, or legal	0.086 (0.133)	0.082 (0.133)	0.053 (0.134)
Log (Assets)	0.143*** (0.015)	0.129*** (0.015)	0.142*** (0.015)
Share return	-0.434*** (0.053)	-0.370*** (0.057)	-0.435*** (0.053)
Pseudo R ²	0.0860	0.0933	0.0865
Observations	36,792	36,792	36,792

NOTES: The data are from Standard & Poor's Execucomp database for 1992–2011. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 percent levels, respectively. Standard errors are in parentheses. Each model includes year dummy variables and controls for industry effects measured at the two-digit SIC level.

this, we interact the minority dummy variable with the share return variable. The results, reported in the Appendix (Table A3), show that exit for minorities is not more closely linked to performance than for Caucasian males. Because we expect the link between performance and exit to be strongest for CEOs (rank 2), we include an interaction term for rank 2 and share return, and also interact the minority dummy with this variable. Exit for rank-2 executives is more highly correlated with share return than other ranks; however, this link is not stronger for minorities.

Prior promotions and demotions may impact the likelihood of exit. Promoted employees may be more attached to the firm and less likely to leave (Carson et al. 1994), while demoted employees may be the opposite. Because minorities experience lower promotion and higher demotion, we would a priori expect a higher likelihood of exit and we therefore test whether their higher exit propensity is independent of prior promotion and demotion. We include as explanatory variables the promotion and demotion variables for the current year. The results, reported in the Appendix (Table A4), show that promotion has a significantly negative impact on exit and demotion has an insignificantly positive impact. Minority status continues to be significantly positively correlated with exit. However, the coefficient for African American is statistically insignificant. Because this analysis employs a reduced sample size (due to prior year rank being required), we rerun our original model on this reduced sample. The coefficients for the minority dummy variables are very similar in magnitude and significance, indicating that any difference from the Table 9 results is due to the smaller sample rather than the inclusion of promotion and demotion. This makes it difficult to draw a firm conclusion on African Americans, but we can conclude that the higher exit for minorities as a whole (and females) holds after controlling for promotion and demotion.

Robustness tests. In this section we conduct additional tests to check the robustness of our key findings. First, we consider intra- and interfirm mobility. For our sample of 37,681 observations (Panel C, Table 4), there are 457 interfirm movements consisting of 237 promotions, 85 demotions, and 135 same-rank movements. For minorities, there are forty-five interfirm movements, consisting of twenty-three promotions, fourteen demotions, and eight same-rank movements. In the above analysis, we controlled for the possibility that minorities have a different likelihood of interfirm movement by including the dummy variable, firm change. We now examine whether this is the case, employing this variable as the dependent variable in a logit regression. The results, reported in the Appendix (Table A5), show that the coefficient for the minority variable is insignificant and therefore interfirm mobility is not correlated with minority status. Next, we examine how our main findings differ if

we exclude all 457 interfirm transitions. The results for internal promotion show that the coefficient for minority is of the same magnitude and significance. However, for internal demotion the coefficient for minority is smaller (0.192 rather than 0.275) than in Table 8 and now statistically insignificant. Therefore, our finding of higher demotion for minorities does not hold for internal transitions. We also separately examine interfirm promotions and demotions, although as noted above the number of external transitions involving minorities is low. The coefficient for minority in the external promotion regression is of a similar magnitude to that for the internal promotion regression although statistically insignificant. For the external demotion regression, the coefficient for minority is significantly negative, suggesting that minorities that change firms are more likely to lower their rank. This is consistent with biased stereotyping (lower positions) occurring where knowledge of the individual is lower, namely the external labor market.

As noted above, our finding that females face a lower likelihood of promotion differs from Gayle, Golan, and Miller (2012). We examine the robustness of this finding by utilizing a larger sample for which all variables are available except ethnicity. This sample, described in Table 4 (Panel C) consists of up to 76,184 observations. The results, reported in the Appendix (Table A6), are consistent with those in Tables 7, 8, and 9. The coefficient for gender is significantly negative in the promotion regression, insignificantly positive in the demotion regression, and significantly positive in the exit regression.

We examine how robust our findings are over time and whether the relation between minority status and mobility has changed, by employing a dummy variable, post-2001, set equal to one for years 2002–2010 and zero for 1992–2001. We include this variable and its interaction with the minority variable to test whether the impact of minority status differs across time. The results, reported in the Appendix (Table A7), show that the coefficient for the interaction variable is statistically insignificant in the demotion and exit regressions, and significantly negative at the 10-percent level in the promotion regression. There is therefore no strong evidence of a changing relation over time.

Finally, to control for the possibility that minorities are located in firms that are correlated with lower promotion, higher demotion, or higher exit, we employ a firm fixed effects model. The results, reported in the Appendix (Table A8), are consistent with those in Tables 7, 8, and 9 and thus our key findings are robust to the potential problem of omitted firm fixed effects.

The impact of minority leadership. If the mobility patterns are due to discrimination, this may diminish where minorities occupy firm leadership positions. Prior evidence on such effects is mixed. For example, Matsa and Miller

(2011) show that the proportion of female directors leads to a higher number of female executives, while other gender studies find no such impacts (Blau and DeVaro 2007; Smith, Smith, and Verner 2013). A limitation here is that our sample of mobility events for minorities is small, making it difficult to look within and find statistically reliable correlations.

First, for 20,188 non-CEO sample observations, we identify 946 where the firm CEO (rank 2) is a minority. We include a dummy variable set equal to one for these observations and interact it with the minority variable. The results, reported in the Appendix (Table A9), show that the interaction term is statistically insignificant, while the coefficient for minority retains the same sign and significance as in Tables 7, 8, and 9. Second, we identify the ethnicity and gender of all board directors for 17,412 sample observations, and for this subsample calculate the proportion of minority directors to total directors (excluding the sample executive from the numerator and denominator if he/she is also a director). We include this variable and interact it with the minority variable. The coefficients, reported in the Appendix (Table A9), for both variables are insignificant. The coefficient for minority continues to be of the same sign and significance in the promotion and exit regressions, although it loses its statistical significance in the demotion regression. The latter appears to be the result of the smaller sample employed because the coefficient for the interaction term is positive.

In summary, the presence of minorities in leadership positions does not impact the mobility of minority executives. This does not imply that discrimination is not a factor in the mobility patterns observed. Minority CEOs or board members may not wish or be able to eradicate taste-based or statistical discrimination, while biased stereotyping and attribution bias may occur without their conscious knowledge or intent.

Conclusion

We have shown that minority executives experience different outcomes in mobility compared to Caucasian male executives. Minorities experience a lower probability of promotion, a higher probability of demotion, and a higher probability of exit. These differences are statistically robust and economically important, being 29, 32, and 37 percent, respectively. This pattern differs across minority groups, being driven by female and African American executives. Compared to male executives, females face a lower probability of promotion and a higher probability of exit. Compared to Caucasian executives, African Americans face a lower probability of promotion, and a higher

probability of demotion and exit. In contrast, Asian and Hispanics do not experience differences in mobility outcomes compared to Caucasians.

Our primary objective has been to identify whether executive mobility outcomes differ by race and gender. We contribute to the literature by showing that race and gender have important implications for labor-market outcomes at the highest level of corporate America. A limitation of our analysis is that we do not show why these differences in mobility occur, and as such, our interpretation and understanding of these outcomes is limited. Our results are consistent with multiple explanations, which our empirical approach does not enable us to tease apart.

The mobility outcomes of females and African Americans are consistent with several theories of discrimination and/or bias. Boards of directors could have a taste-based preference against working with female and African American executives, statistically discriminate against them, be biased by stereotyping, or make attribution-bias errors. On the question of why African Americans would be discriminated against but not Hispanics and Asians, such bias is likely most prevalent toward African Americans because they face more difficult barriers in terms of stereotypes, physical difference, and a history of slavery and segregation.

However, the outcomes are also consistent with racial and gender differences in preferences or ability. For African Americans, lower promotion could reflect a preference not to apply for higher positions due to lower risk aversion. It is not clear, however, how lower risk aversion could lead to the higher rate of demotion. Alternatively, our sample of African Americans could have lower ability, resulting in lower promotion, higher demotion, and higher exit. For females, lower risk aversion, lower preference for competition, or external time demands due to greater family commitments could result in higher positions not being sought. Similarly, higher exit could reflect a preference to leave voluntarily due to family commitments. Alternatively, females could on average have lower ability. While this could explain lower promotion and higher exit, one would also expect to observe higher demotion, which we do not.

Distinguishing between these alternative explanations is essential to our interpretation of these outcomes. We hope that future research will attempt to do so and believe there are a number of interesting lines of enquiry. It would be interesting to know how minority executives fare in other labor-market outcomes, such as compensation and the interaction of compensation with mobility outcomes; how prior career paths, experience, and firm-specific roles differ by race and gender; and, given the high exit rate for minority executives, their subsequent career path and alternatives outside the firm. Finally, a potentially fruitful approach would be to interview minority executives. This could shed considerable light, particularly with regard to their preferences, on why they

are less likely to be promoted, more likely to be demoted, and more likely to exit the executive ranks.

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