

Manager Race and the Race of New Hires

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Using personnel data from a large U.S. retail firm, we examine whether the race or ethnicity of the hiring manager affects the racial composition of new hires. We exploit manager turnover to estimate models with store fixed effects and store-specific trends. First, we find that all non-black managers—that is, whites, Hispanics, and Asians—hire more whites and fewer blacks than do black managers. This is especially true in the South. Second, in locations with large Hispanic populations, Hispanic managers hire more Hispanics and fewer whites than do white managers. We also examine possible explanations for these differential hiring patterns.

I. Introduction

Is the race or ethnicity of the hiring manager a determinant of the racial and ethnic composition of new hires? Several valuable studies have looked

We are grateful for funding from the Russell Sage Foundation and from the University of California Institute for Research on Labor and Employment. We are also grateful for the generosity of the studied employer in sharing its data and time. For helpful comments and suggestions, we thank David Card, David Lee, and Ed Lazear; seminar participants at Florida Atlantic University, Florida International University, Michigan State University, the University of California, Berkeley, and the University of Miami; and session participants at the 2005 meeting of the Society of Labor Economists. Contact the corresponding author, Laura Giuliano, at l.giuliano@miami.edu.

[*Journal of Labor Economics*, 2009, vol. 27, no. 4]
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0734-306X/2009/2704-0003\$10.00

at this question. Bates (1994), Turner (1997), Carrington and Troske (1998), and Stoll, Raphael, and Holzer (2004) have all found that blacks are employed at greater rates in establishments with black supervisors or owners. In particular, Stoll et al. look at the effect of the hiring officer's race on both applications and hires, and they find that black hiring agents receive more applications from blacks than do white hiring agents and that they also hire a greater proportion of blacks who apply.

However, these prior studies had a common limitation. They could not control for unobserved differences across workplaces and hence could not securely distinguish between the role of manager race and the role of unobserved workplace attributes.¹ This is a significant issue. Manager race is correlated with many characteristics of a workplace that are typically unobserved and that may affect the race of a new hire (e.g., skill requirements and the demographics of the local labor pool). If it is not possible to control for such unobserved attributes, this confounds identification of the role of manager race.

The current study uses a new panel data set that makes it possible to control for unobserved differences across workplaces, and hence it presents new evidence about whether hiring patterns differ systematically across managers of different race groups. This study also makes three other contributions. First, it looks at the importance of manager race not only for blacks and whites but also for Hispanics and Asians. Second, it looks at whether the effects of manager race differ by geographic location. Finally, it examines possible explanations for the observed differences in hiring patterns.

Our data set is constructed from the personnel records of a large U.S. retail chain. It tracks more than 100,000 employees at more than 700 stores for a period of 30 months. The crucial feature of this data set is that it contains hundreds of stores that have at least one change in the manager who is responsible for hiring and these new managers often are of a different race from the managers they replace. This variation in manager race within stores allows us to estimate probit and multinomial logit regressions with both store fixed effects and store-specific trends. We thus control for all fixed attributes of the workplace and the local labor market and also for local trends in labor pool demographics.

Our results suggest that manager race is a significant determinant of the racial composition of new hires, though the main determinants are the characteristics of the workplace and its location. First, our strongest finding is that all nonblack managers—whites, Hispanics, and Asians—hire more whites and fewer blacks than do black managers. The estimates suggest that, when a black manager is replaced by a nonblack manager

¹ For brevity, we often use “race” to denote either race or ethnicity, i.e., “race” refers to each of the four groups we analyze—whites, blacks, Hispanics, and Asians.

in a typical store, the share of new hires that is black falls roughly from 21% to 17% and the share that is white rises from 60% to 64%. This result holds whether the new manager is white, Hispanic, or Asian. Further, the differences between black and nonblack managers are especially large in the South. In a typical southern store, the replacement of a black manager with a nonblack manager causes the share of blacks among new hires to fall from 29% to 21%.

Second, we find a significant difference in the hiring patterns of Hispanic and white managers but only when we restrict the sample to stores in locations where Hispanics make up at least 30% of the local population. In this subpopulation, we focus on the difference between Hispanic and white managers because non-Hispanic managers are nearly all white. Our estimates suggest that, when a Hispanic manager is replaced by a white manager, the share of new hires that is Hispanic falls roughly from 59% to 48% and the share of whites rises from 22% to 32%. By contrast, in locations where Hispanics are less than 30% of the local population, the hiring patterns of Hispanic and white managers are remarkably similar, and Hispanics account for about 10% of new hires on average.

Finally, we find small and only marginally significant differences between Asian and white managers. However, the estimates regarding Asians are relatively imprecise due to small sample sizes.

Why would a manager's race affect the racial composition of new hires? The behavior of either managers or employees could be responsible. Managers may use racially segregated hiring networks when recruiting applicants. Managers may engage in a form of statistical discrimination and hire racially similar employees because of productivity gains from manager-employee similarity. And both managers and employees may engage in taste-based discrimination.

In additional analysis, we explore each of these possibilities. First, we find evidence consistent with managerial hiring networks in that managers tend to hire employees who live somewhat closer to them. Further, we find differences between nonblack and black managers in the relative rates at which blacks are dismissed and promoted, and this suggests that managerial discrimination may help explain why these two groups of managers hire blacks at different rates. But we cannot distinguish whether such managerial discrimination may be statistical or taste based, and if it is taste based, whether it is driven by the preferences of nonblack managers or black managers. Finally, an analysis of employee quit rates suggests that black managers may hire fewer white employees because of discrimination by white job seekers against black managers.

II. Data

The data are the daily personnel records of a large retail employer during a 30-month period from February 1, 1996, through July 31, 1998. These

records identify the demographic traits of both managers and their employees at each store, and they give the dates and descriptions of all personnel actions for each individual. We analyze a sample of more than 1,500 store managers and more than 100,000 frontline entry-level employees who were hired during the sample period. Because we must preserve the anonymity of the employer, we cannot disclose the exact sample sizes.

Our sample contains more than 700 stores located throughout the United States. While geographically diverse, these workplaces nevertheless are all very similar. They display the uniformity typical of a national chain with highly uniform policies and procedures. In a typical store, there is one full-time overall manager who has the title “store manager,” and there are 25–50 mostly part-time employees.

The managers in our analysis are the “store managers.” It is the store manager who is responsible for all hiring decisions. While telephone interviews are used for screening applicants, the vast majority of hiring decisions are made only after a face-to-face interview with the store manager. The company’s official hiring policy is neutral with respect to race and gender, and managers are given a small amount of training in fostering a diverse workforce.²

Roughly 80% of the stores had at least one change in management during the sample period.³ Because there are frequent changes in managers and because there are large numbers of minority managers (see below), our sample has substantial within-store variation in manager race. About 30% of the exiting managers in our sample are replaced by someone of a different race. This variation in manager race is crucial to our analysis because it allows us to estimate models with workplace fixed effects.

The frontline employees we analyze make up 90% of all company employees. All these frontline jobs are highly similar entry-level positions with similar job titles and descriptions. These positions require only basic skills and little training, and they all involve similar duties that entail both dealing with customers and doing support duties. These jobs have high rates of turnover—the median spell in a store for a frontline employee is 91 days, and roughly 90% of employment spells end within a year. As a

² These statements are based on company documents and on interviews with company officials and individual store managers in several states.

³ Approximately two-thirds of the manager spells ended with transfer to another company store, 5% ended with a leave of absence, and the rest involved termination of employment with the company. Most of the terminations were voluntary, and the most common reasons given were “found better job/prefer other work” (41%), “personal” (13%), “moving,” “dislike hours,” “limited career growth,” and “return to school.” Roughly 13% of the manager terminations were involuntary, resulting from violations of company policy, substandard performance, or dishonesty. We found no evidence that manager dismissals were correlated with changes in hiring patterns.

Table 1
Workplace and Community Racial Composition

	Workplace		Community	
	Mean	SD	Mean	SD
White (%)	60.4	21.7	73.4	19.1
Black (%)	14.5	12.1	8.9	10.9
Hispanic (%) [*]	13.2	12.9	7.5	9.7
Asian/Pacific Islander (%)	10.2	9.6	6.3	7.7
Native American (%)	.4	.7	.3	.4
Other/unknown (%)	1.3	1.4	3.6	5.2

NOTE.—Workplace statistics are based on stores' average daily employment shares from February 1, 1996, to July 31, 1998, for all stores in the estimation sample. Community statistics are from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

^{*} In the U.S. Census, respondents can categorize themselves as both black and Hispanic or as both white and Hispanic, whereas the employer has mutually exclusive codes of white, black, and Hispanic. In this table, the census figures for whites and blacks refer to non-Hispanics, while the Hispanic figures refer to Hispanics of all races.

result of this turnover, each store hires an average of five new employees per month.

Table 1 summarizes the racial and ethnic composition of the stores in the estimation sample and of the communities surrounding these stores. The racial and ethnic categories follow the company's codes, which form a set of mutually exclusive and collectively exhaustive categories.⁴ The community statistics are constructed from the 1990 U.S. Census and are based on all census tracts within a 2-mile radius from the center of each store's zip code.⁵ The workforce of a store tends to be more racially and ethnically diverse than the population it serves. The workforce of the average store is 60.4% white, 14.5% black, 13.2% Hispanic, and 10.2% Asian.

Table 2 compares the demographic composition of managers and frontline workers in the estimation sample (cols. 1 and 2). The company's managers are much more homogeneous than the frontline employees. Managers are 86.2% white, 5.9% black, 4.6% Hispanic, and 2.4% Asian. Frontline workers are 60.1% white, 15.1% black, 13.2% Hispanic, and 9.8% Asian.

The estimation sample (summarized in cols. 1 and 2 of table 2) is restricted to stores that hire at least one employee of each race group during the sample period. This restriction is necessary to estimate a fixed effects multinomial logit model predicting the probabilities with which each of the four race groups is hired. Obviously, this restriction eliminates stores with the most homogeneous workforces. The wider population of

⁴ The main categories are white, black, Hispanic, and Asian. "White" refers to non-Hispanic whites. Hispanics are classified by ethnicity and not by race. The remaining employees are either Native American or are classified as being of "other" or "unknown" race/ethnicity.

⁵ For consistency with the personnel data, we classify Hispanics in the census by ethnicity and not by race (see the table 1 note).

Table 2
Demographic Composition of Managers and Frontline Workers

	Company Employees				All Retail (CPS)	
	Estimation Sample		All Retail Stores		Managers*	Frontline Workers
	Managers (1)	Frontline Workers (2)	Managers (3)	Frontline Workers (4)		
Race/ethnicity (%):						
White	86.2	60.1	86.7	67.5	81.0	72.6
Black	5.9	15.1	4.9	13.8	6.6	12.7
Hispanic†	4.6	13.2	5.2	10.5	6.9	10.0
Asian/Pacific Islander‡	2.4	9.8	2.3	6.9	5.0	4.1
Native American	.1	.4	.2	.3	.6	.7
Other/unknown	.8	1.3	.7	1.1		
Gender (%):						
Female	77.7	69.4	79.5	72.9	50.1	66.3
Average age	30.0	22.2	30.3	22.1	39.4	32.5

NOTE.—Company statistics are based on company-wide daily employment shares, averaged over the sample period from February 1, 1996, to July 31, 1998. Retail statistics are based on the monthly Current Population Survey (CPS) from February 1996 to July 1998.

* Whereas “managers” in our analysis include only those with the job title store manager, our CPS-based statistics for managers include anyone in a managerial or supervisory position.

† In the CPS, respondents can categorize themselves as both black and Hispanic or as both white and Hispanic, whereas the employer has mutually exclusive codes of white, black, and Hispanic. In this table, the CPS figures for whites and blacks refer to non-Hispanics, while the Hispanic figures refer to Hispanics of all races.

‡ Unlike our employer, the CPS lumps “other” races together with Asians and Pacific Islanders.

the company’s U.S. retail establishments (table 2, cols. 3 and 4) has more whites and fewer minorities than the restricted sample (whites make up 67.5% of the wider sample vs. 60% of the restricted sample). However, a robustness test suggests that our sample restriction has little effect on the estimation results (see appendix table A1).

Our data come from a single employer, and it is important to consider how representative our sample is of a larger population. Because our sample is from a retail firm, it is perhaps most useful to look at how our sample compares to the U.S. retail sector as a whole—a sector that accounts for roughly 18% of all U.S. jobs. Compared to the retail sector (table 2, cols. 5 and 6), our employer is typical with respect to its racial and ethnic composition.⁶ However, both managers and employees are relatively young (with average ages of 22 and 30 vs. 32 and 39, respectively), and this company has a higher share of both female managers (79% vs. 50%) and female employees (73% vs. 66%).

Similar to other establishment data sets, our sample shows a strong correlation between the race of the hiring manager and the racial com-

⁶ Our company is also typical of the retail sector with respect to its turnover rates. Among 16–20-year-olds who worked in low-wage ($\leq \$9.00/\text{hour}$) retail jobs in 1999, the median employment spell was about 110 days; 87% left their job within a year. These figures are based on estimates from the NLSY97 (National Longitudinal Survey of Youth 1997).

Table 3
Average Racial Composition of New Hires by Manager Race

	Manager Race				All Managers
	White	Black	Hispanic	Asian	
White (%)	58.3	44.8	42.1	48.6	56.3
Black (%)	18.5	30.9	20.9	16.2	19.3
Hispanic (%)	12.7	13.5	27.0	13.7	13.6
Asian (%)	9.0	9.3	8.7	19.4	9.3
Native American/other (%)	1.5	1.5	1.3	2.1	1.5

NOTE.—Statistics based on estimation sample—all individuals hired between February 1, 1996, and July 31, 1998 at stores that hired at least one new employee of each race during this sample period. $N > 100,000$ new hires.

position of new hires (table 3). For example, the proportion of new hires that is black is 30.9% in stores with black managers, but it is only 18.5% in stores with white managers, 20.9% in stores with Hispanic managers, and 16.2% in stores with Asian managers. Compared to stores with non-Hispanic managers, the proportion of new hires that is Hispanic is twice as large in stores with Hispanic managers. The proportion of new hires that is Asian is more than twice as large in stores with Asian managers. In the analysis that follows, we investigate whether these correlations can be explained by systematic differences in hiring patterns between white, black, Hispanic, and Asian managers.

III. Estimation Equations and Methods

We begin by estimating several probit equations that predict, as a function of manager race, the probability that a new hire belongs to a given race group. Equation (1) illustrates the model predicting the probability that an employee i hired in store j at time t is white:

$$\Pr(\text{White}_{ijt} = 1) = \varphi(b_o^w + \text{MgrBl}_{jt} b_B^w + \text{MgrHi}_{jt} b_H^w + \text{MgrAs}_{jt} b_A^w + S_j b_S^w + C_j b_C^w + M_t b_M^w). \quad (1)$$

Here White is a dummy variable equal to one if the employee is white, and φ is the cumulative normal distribution function. The parameters of interest are the coefficients b_B^w , b_H^w and b_A^w on dummy variables indicating that the hiring manager in store j at time t is black, Hispanic, or Asian. Because white managers are the omitted category in this equation, a negative value for b_B^w would indicate that the probability of hiring a white employee is smaller for black managers than it is for white managers.

Apart from the manager's race, other variables that may affect the probability that a new hire is white include the proportion of whites in the local labor pool, the particular needs of the store (e.g., the share of whites in the customer base if matching the customers is important), and any attributes of the store that may influence the preferences of whites for

working at the store.⁷ To learn how much these variables contribute to the observed correlation between manager race and the race of new hires, we estimate the model with several measured characteristics of the store (S_j) and community (C_j). These controls include the population share of each race group in the local community, population density, median household income, and the location type (mall, street, etc.) of the store.⁸

The racial composition of the labor pool might also be affected by changes over time in labor supply and demand. For example, whites may be more likely to work in low-wage retail jobs when labor markets are weak. To control for such labor market fluctuations, we include a dummy variable for each of the 30 months in the sample (M_t).

Despite the uniformity of jobs in the sample and the ability to control for several store and community characteristics, there may still be unobservable features of the store and community that are correlated both with the manager's race and with the probability of hiring a white employee. For example, the exact racial composition of each store's potential applicant pool is not observed, and the community demographics may provide only an imperfect proxy. To the extent that the unobserved factors affecting both manager and employee demographics are fixed over time, we can control for them using store fixed effects. The fixed effects model is

$$\Pr(\text{White}_{ijt} = 1) = \varphi(b_0^w + \text{MgrBl}_{jt}b_B^w + \text{MgrHi}_{jt}b_H^w + \text{MgrAs}_{jt}b_A^w + M_t b_M^w + \alpha_j^w). \quad (2)$$

The workplace fixed effects, α_j^w , summarize the effects of any permanent differences across stores, communities, and local labor markets on the probability that a new hire is white.

To estimate the fixed effects model, our estimation equation includes a dummy variable for each store. A potential concern with this method is that maximum likelihood estimation provides consistent estimates of the fixed effects only if the number of observations per group is large

⁷ Also, it is possible that managers with more experience are better at managing diverse workforces. In our initial analysis, we experimented with two proxies for manager experience: the manager's age and the amount of experience with the company. But these variables were not correlated with hiring patterns in any of our estimations, so we did not include them in our final estimation model.

⁸ Measures of "community" demographics are constructed from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

enough.⁹ Fortunately, our data include an average of 140 employee hires per store, which is large by the standards of the current literature.¹⁰

If there are omitted variables that vary both across stores and over time, then even the fixed effects specification in equation (2) may produce biased estimates. In particular, if trends in local demographics lead to parallel trends in the applicant pools of both managers and employees, then the coefficients from equation (2) would overstate the effect of manager race on hiring patterns. To rule out local trends as a source of any correlations between manager race and hiring patterns, we estimate equations that include store-specific trends in addition to store fixed effects.

The binomial probit model is restrictive in that it ignores the fact that managers may choose simultaneously from among four possible race categories rather than choosing white versus nonwhite, black versus non-black, and so forth. Therefore, in addition to the probit models, we estimate a multinomial logit model that incorporates the full set of possible choices with respect to race.¹¹ Because the fixed effects proved important in the probit estimations, we estimate a multinomial logit model with store fixed effects by including a dummy variable for each store. We do not control for store trends, however. This is because of computational limitations and because the store trends proved to be relatively unimportant in the probit estimations.

⁹ The other common method for estimating nonlinear binomial choice models with panel data is Chamberlain's (1980) conditional logit model. This model bypasses estimation of the fixed effects by estimating the probability of a positive outcome conditional on the number of positive outcomes in the group. Unfortunately, it is impractical to estimate conditional logit models with well over 100 observations per group and large numbers of both positive and negative outcomes. However, we ran several tests using the conditional logit model on smaller subsets of the data in order to compare these estimates with those from the fixed effects probit model. The estimates from the two models were very close. We also ran all binomial specifications using a fixed effects linear probability model, and obtained results substantively similar to those obtained from the probit estimations (see appendix table A1).

¹⁰ For example, Greene (2004) presents Monte Carlo evidence suggesting that the bias from estimating nonlinear models using maximum likelihood with fixed effects drops off rapidly as the number of observations per group increases above three and is substantially reduced even at 20 observations per group.

¹¹ There are too few Native Americans in our sample to obtain reliable estimates for this group. In all analyses reported in this article, the small number of Native American and "other" race employees are treated as white. In the probit equation predicting the probability that a new hire is white, we also calculated estimates treating Native Americans and others as nonwhite. The results were nearly identical.

In the fixed effects multinomial logit model, the probability that employee i hired in store j at time t belongs to race group k is

$$\Pr(\text{race}_{ijt} = k) = \frac{\exp(b_0^k + \text{MgrBl}_{jt}b_B^k + \text{MgrHi}_{jt}b_H^k + \text{MgrAs}_{jt}b_A^k + M_t b_M^k + a_j^k)}{\sum_{l=1}^4 \exp(b_0^l + \text{MgrBl}_{jt}b_B^l + \text{MgrHi}_{jt}b_H^l + \text{MgrAs}_{jt}b_A^l + M_t b_M^l + a_j^l)}, \quad (3)$$

where $k = 1, \dots, 4$ represents the four race groups, white, black, Hispanic, and Asian.

An important assumption of the multinomial logit model is that the odds ratio for any two alternatives is independent of the other alternatives. This implies, for example, that the ratio of the odds of choosing a white employee to the odds of choosing a black employee is not affected by the presence of Hispanic and Asian employees as other alternatives. To test the validity of this “independence of irrelevant alternatives” assumption, we apply a Hausman-type specification test by comparing estimates from models with and without each of the four alternatives. The test provides no evidence against the model.¹²

IV. Results

A. Probit Estimates of the Effect of Manager Race on the Race of New Hires

Tables 4–7 show the results from the probit models estimating the effect of manager race on the race of a new hire.¹³ The dependent variable in table 4 is a dummy variable equal to one if the new hire is white and zero otherwise. In tables 5–7, the dependent variables are dummies indicating that a new hire is black, Hispanic, and Asian. In each regression, the omitted manager race category is white.

Cross-sectional analysis.—In tables 4–7, column 1 shows the results from the regressions with no controls. These results simply confirm the strong correlations between manager race and the race of a new hire that were seen in table 3. The representation of each race group among new hires is significantly higher when the manager is of that race group.

¹² This application of Hausman’s specification test is described by Hausman and McFadden (1984). The test is based on the test statistic $(b_r - b_f)(V_r - V_f)(b_r - b_f)$, where b_r denotes the estimates of the restricted model in which one race alternative is omitted. These estimates are inefficient but still consistent under the null hypothesis of independence; b_f denotes estimates of the full model, which are efficient and consistent under the null. The statistic is distributed $\chi^2(>800)$ under the null hypothesis. The values of the test statistics are 36.12 (omitting white), 4.35 (black), 2.49 (Hispanic), and 2.24 (Asian), none of which provides evidence against the null.

¹³ For ease of interpretation, we report marginal effects. In the case of dummy variable regressors (such as the manager race indicators), we report the effect of a discrete change from 0 to 1.

Table 4
Probit Estimates of the Effect of Manager Race on the Probability That a New Hire Is White

	(1)	(2)	(3)	(4)	(5)	(6)
Hiring manager is black	-.135** (.027)	-.103** (.021)	-.108** (.020)	-.105** (.020)	-.044** (.012)	-.052** (.013)
Hiring manager is Hispanic	-.162** (.034)	-.056* (.028)	-.062** (.024)	-.056* (.024)	-.005 (.012)	-.014 (.014)
Hiring manager is Asian	-.098* (.041)	.021 (.031)	-.004 (.025)	.001 (.025)	-.007 (.014)	-.012 (.020)
Population % black		-.691** (.082)	-.669** (.076)	-.675** (.076)		
Population % Hispanic		-1.219** (.144)	-.964** (.097)	-.978** (.096)		
Population % Asian		-1.278** (.168)	-.959** (.090)	-.960** (.090)		
Population % other race		-.656** (.190)	-.584** (.166)	-.580** (.166)		
Median household income (\$10,000s)			-.023** (.004)	-.023** (.004)		
Population within 2 miles (100,000s)			-.073** (.008)	-.073** (.008)		
Location type is open mall			.047* (.023)	.045 (.023)		
Location type is street			.043* (.020)	.042* (.020)		
Location type is strip			.058** (.016)	.058** (.016)		
Month dummies	No	No	No	Yes	Yes	Yes
Store dummies	No	No	No	No	Yes	Yes
Store-specific trends	No	No	No	No	No	Yes
No. hires	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
No. stores	>700	>700	>700	>700	>700	>700

NOTE.—Table reports marginal effects or, for dummy variables, the effect of a discrete change from 0 to 1. Parentheses contain Huber-White robust standard errors, corrected for within-store clustering. Omitted manager race is white. Omitted location type is mall. Population variables are constructed from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

* Significant at the 5% level.

** Significant at the 1% level.

Table 5
Probit Estimates of the Effect of Manager Race on the Probability
That a New Hire Is Black

	(1)	(2)	(3)	(4)	(5)	(6)
Hiring manager is black	.124** (.022)	.091** (.018)	.093** (.018)	.090** (.018)	.035** (.008)	.048** (.011)
Hiring manager is Hispanic	.024 (.024)	.034 (.025)	.042 (.023)	.038 (.023)	-.004 (.010)	-.002 (.016)
Hiring manager is Asian	-.024 (.021)	-.031 (.018)	-.015 (.017)	-.017 (.016)	-.005 (.013)	-.001 (.014)
Population % black		.615** (.070)	.634** (.070)	.637** (.070)		
Population % Hispanic		-.118 (.068)	-.266** (.065)	-.255** (.065)		
Population % Asian		.141 (.097)	.005 (.069)	-.001 (.069)		
Population % other race		.092 (.118)	.070 (.110)	.063 (.109)		
Median household income (\$10,000s)			.018** (.004)	.019** (.004)		
Population within 2 miles (100,000s)			.033** (.005)	.032** (.005)		
Location type is open mall			-.053** (.014)	-.052** (.013)		
Location type is street			-.002 (.018)	-.002 (.018)		
Location type is strip			-.028 (.014)	-.028 (.014)		
Month dummies	No	No	No	Yes	Yes	Yes
Store dummies	No	No	No	No	Yes	Yes
Store-specific trends	No	No	No	No	No	Yes
No. hires	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
No. stores	>700	>700	>700	>700	>700	>700

NOTE.—Table reports marginal effects or, for dummy variables, the effect of a discrete change from 0 to 1. Parentheses contain Huber-White robust standard errors, corrected for within-store clustering. Omitted manager race is white. Omitted location type is mall. Population variables are constructed from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

** Significant at the 1% level.

Table 6
Probit Estimates of the Effect of Manager Race on the Probability
That a New Hire Is Hispanic

	(1)	(2)	(3)	(4)	(5)	(6)
Hiring manager is black	.008 (.016)	-.010 (.010)	-.004 (.009)	-.005 (.009)	-.003 (.006)	-.003 (.007)
Hiring manager is Hispanic	.143** (.025)	.026* (.011)	.023* (.009)	.021* (.009)	.005 (.007)	.004 (.009)
Hiring manager is Asian	.010 (.018)	-.019 (.013)	-.011 (.009)	-.012 (.009)	-.000 (.001)	-.006 (.012)
Population % black		-.017 (.044)	-.085 ⁺ (.046)	-.085 ⁺ (.046)		
Population % Hispanic		.817** (.075)	.739** (.059)	.736** (.059)		
Population % Asian		.142* (.070)	-.014 (.040)	-.015 (.040)		
Population % other race		.424** (.074)	.323** (.061)	.326** (.061)		
Median household income (\$10,000s)			.001 (.002)	.001 (.002)		
Population within 2 miles (100,000s)			.031** (.003)	.031** (.003)		
Location type is open mall			.001 (.014)	.002 (.014)		
Location type is street			-.018* (.008)	-.018* (.008)		
Location type is strip			-.004 (.007)	-.005 (.007)		
Month dummies	No	No	No	Yes	Yes	Yes
Store dummies	No	No	No	No	Yes	Yes
Store-specific trends	No	No	No	No	No	Yes
No. hires	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
No. stores	>700	>700	>700	>700	>700	>700

NOTE.—Table reports marginal effects or, for dummy variables, the effect of a discrete change from 0 to 1. Parentheses contain Huber-White robust standard errors, corrected for within-store clustering. Omitted manager race is white. Omitted location type is mall. Population variables are constructed from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Table 7
Probit Estimates of the Effect of Manager Race on the Probability
That a New Hire Is Asian

	(1)	(2)	(3)	(4)	(5)	(6)
Hiring manager is black	.003 (.010)	.008 (.008)	.007 (.008)	.006 (.007)	.001 (.005)	.004 (.007)
Hiring manager is Hispanic	-.003 (.009)	-.009 (.008)	-.007 (.008)	-.010 (.008)	.008 (.005)	.017* (.007)
Hiring manager is Asian	.104** (.027)	.027 (.019)	.028+ (.018)	.027+ (.017)	.015+ (.008)	.022** (.007)
Population % black		-.077** (.025)	-.051* (.024)	-.049* (.024)		
Population % Hispanic		-.040 (.033)	-.029 (.033)	-.027 (.033)		
Population % Asian		.525** (.046)	.530** (.052)	.530** (.051)		
Population % other race		.228** (.081)	.247** (.088)	.245** (.088)		
Median household income (\$10,000s)			.003* (.001)	.003* (.001)		
Population within 2 miles (100,000s)			-.005 (.003)	-.004 (.003)		
Location type is open mall			.010 (.012)	.010 (.012)		
Location type is street			-.004 (.007)	-.004 (.007)		
Location type is strip			-.028** (.005)	-.027** (.005)		
Month dummies	No	No	No	Yes	Yes	Yes
Store dummies	No	No	No	No	Yes	Yes
Store-specific trends	No	No	No	No	No	Yes
No. hires	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
No. stores	>700	>700	>700	>700	>700	>700

NOTE.—Table reports marginal effects or, for dummy variables, the effect of a discrete change from 0 to 1. Parentheses contain Huber-White robust standard errors, corrected for within-store clustering. Omitted manager race is white. Omitted location type is mall. Population variables are constructed from the 1990 U.S. Census and are based on all census tracts within 2 miles of the center of each store's zip code.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Columns 2 and 3 show how much of the correlation between manager race and employee race is explained by observable differences across stores and locations. Not surprisingly, a significant part of this correlation is explained by differences in community demographics. In column 2, which controls for the population share of each race group in the community, the manager race coefficients that were significant in column 1 are reduced in magnitude by at least one-quarter. However, most of them remain significantly different from zero. Column 3 adds more location variables, including population density, median household income, and store location type. Although these variables are often statistically significant, they explain little of the correlation between manager race and employee race.

In column 4, the inclusion of month dummies controls for unobserved differences across time. This also has little effect and suggests that the similarities between managers and new hires are not explained by seasonal and national fluctuations in the labor market.

Store fixed effects estimates.—After controlling for observed differences across stores and locations (cols. 2 and 3) and unobserved differences across time (col. 4), a substantial amount of the correlation between manager race and the race of new hires still remains to be explained. Column 5 of tables 4–7 shows the store fixed effects specifications of the probit models. These estimates control for all fixed differences across stores and locations. A comparison of columns 4 and 5 reveals that, in many cases, unobserved differences across stores and locations account for nearly all of the remaining correlation between manager race and the race of new hires. In the equation predicting that a new hire is white (table 4, col. 5), the Hispanic and Asian manager effects are very small and not significantly different from zero. In the equations predicting that a new hire is Hispanic (table 6, col. 5) or Asian (table 7, col. 5), none of the manager race effects are significantly different from zero at a 5% level.

However, even after controlling for store fixed effects, one salient pattern remains. There is a significant difference between the hiring patterns of black managers and all nonblack managers (i.e., white, Hispanic, and Asian managers). This difference lies mainly in the share of whites and blacks hired by these two groups of managers. First, the manager race coefficients in table 4, column 5, indicate that the probability a new hire is white is between 3.7 and 4.4 percentage points lower under black managers than it is under nonblack managers in the same store. Second, the coefficients in table 5, column 5, indicate that the probability that a new hire is black is between 3.5 and 4.0 percentage points lower under nonblack managers than it is under black managers. In both cases, the estimated differences between black managers and each nonblack group are significant at a 1% level of confidence, and the estimated differences among nonblack managers are statistically insignificant.

We would stress three points about the fixed effects estimates. First, the main finding is that all nonblack managers hire more whites and fewer blacks than do black managers. Second, hiring patterns on average are similar among all nonblack manager groups—white, Hispanic, and Asian managers all hire roughly the same proportions of white, black, Hispanic, and Asian employees. Finally, it is notable that black managers differ very little from the three nonblack groups in the shares of Hispanics and Asians hired.

Two caveats also apply. First, we shall see below that the effect of manager ethnicity on the probability that a new hire is Hispanic becomes significant when we restrict the sample to locations with large shares of Hispanics in the local population. Second, we note that, in the analysis of Asian hires, the lack of significant manager race effects is due partly to a lack of precision. We cannot rule out moderate effects. For example, the Asian manager coefficient in table 7, column 5, suggests that the probability a new hire is Asian is 1.5 percentage points higher under an Asian manager than it is under a white manager in the same store; however, the 95% confidence interval for this estimate is between -0.1 and 3.1 percentage points.

Store-specific trends.—If trends in local demographics lead to parallel trends in the demographics of applicant pools for both managers and employees, then the fixed effects model might overestimate the causal effect of manager race on hiring patterns. The specification in column 6 of tables 4–7 addresses this concern by including store-specific trends as controls. The results of this specification are somewhat surprising. In almost all cases, the magnitudes of the manager race coefficients become larger rather than smaller, suggesting that, if anything, the fixed effects model underestimates the causal effect of manager race. However, the differences between the estimates in columns 5 and 6 are generally quite small.

Figure 1A and B provides additional evidence that the estimates of the relationship between manager and employee race are not driven by trends in store demographics. The figure also provides some insight as to why the column 6 estimates are larger in magnitude than those in column 5. The figure shows trends in the white share of new hires (fig. 1A) and the black share of new hires (fig. 1B) before and after a change in manager.¹⁴ Trends are shown for three cases: (1) a nonblack manager is replaced by a black manager, (2) a black manager is replaced by a nonblack manager, and (3) a nonblack manager is replaced by a nonblack manager. In all cases, the introduction of a new manager whose race differs from the outgoing manager results either in a clear intercept shift or in a break

¹⁴ The figure is based on all stores where we observe two consecutive managers for at least 4 months each.

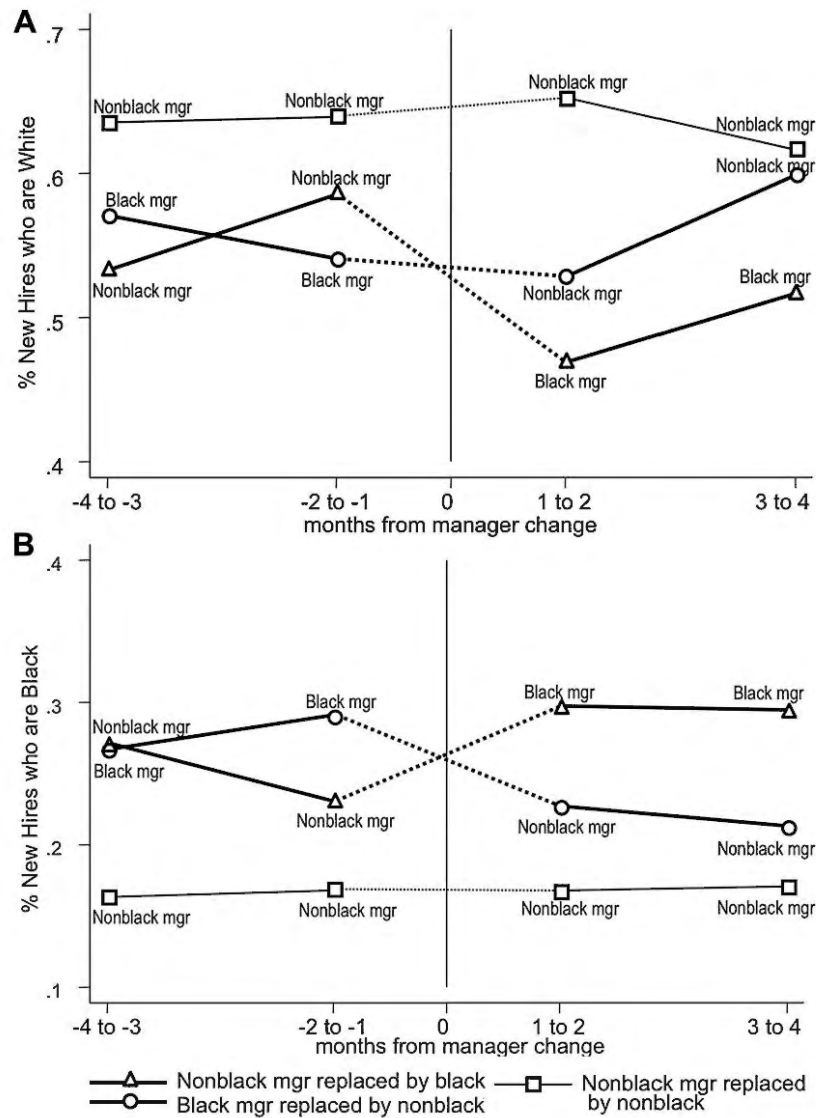


FIG. 1.—A, Trends in black share of new hires after change of manager. B, Trends in white share of new hires after change of manager. Based on sample of all manager changes for which our data contain at least one hire every 2 months from 4 months before a manager change to 4 months after the change. Cases where a black manager is replaced by a black manager are not graphed due to small sample size.

with the previous trend rather than in a continuation of the current trend. Hence, figure 1*A* and *B* clearly shows that manager race is not simply following the same trends as the race of new hires.

However, the graphs of figure 1*A* and *B* do raise another concern. It appears that nonblack managers who hire increasingly more whites (fig. 1*A*) and fewer blacks (fig. 1*B*) over a 4-month period are more likely to be replaced by black managers. One possible explanation of this pattern is that the company tries to maintain a certain level of diversity in their stores and that this goal results in the replacement of nonblack managers with black managers in stores where there is a noticeable decline in the ratio of blacks to whites. But in a robustness test described below (Sec. V.B), we use regression analysis to examine whether the company's choice of a new manager may be influenced by the hiring patterns of the previous manager. We find that any such balancing effect is small and statistically insignificant.

B. Fixed Effects Multinomial Logit Estimates

The multinomial logit results are remarkably similar to the binomial probit results. These results are shown in tables 8 and 9, and they facilitate the comparison of hiring patterns across all four manager race groups. First, table 8 shows the coefficients of the model (cols. 1–6) and Wald tests assessing the overall similarity in hiring patterns between managers of different races (col. 7). This table again shows that there are no significant differences in the hiring patterns of the three nonblack groups of managers (white, Hispanic, and Asian). Moreover, it confirms that the hiring choices of each nonblack group differ significantly from those of black managers. Specifically, the differences between nonblack managers and black managers lie in the ratios of black hires to hires of other races and mainly in the ratio of black hires to white hires (col. 1).

Next, table 9 presents the predicted hiring probabilities for each manager race group.¹⁵ Differences among the three nonblack groups are very small—the largest being the 1.3 percentage point difference between white and Asian managers in the share of Asians hired.¹⁶ Black managers differ very little from the three nonblack groups in the shares of Hispanics and Asians hired. Once again, the differences that stand out are those between nonblack managers and black managers in the shares of blacks and whites hired. The estimates imply that, when any nonblack manager replaces a black manager in a typical store, the share of new hires that is black falls

¹⁵ Predicted probabilities are calculated at the means of all store and month dummy variables.

¹⁶ The ratios of Asians to whites and of Asians to blacks are higher under an Asian manager than under a white manager, but these differences are significant only at the 9% and 13% levels.

Table 8
Multinomial Logit Estimates of the Effects of Manager Race on the Race of New Hires

Change in Race of Hiring Manager	Change in Log Odds That New Hire Is Race 1 vs. Race 2						$\chi^2(\text{Pr} > \chi^2)$ (7)
	White vs. Black (1)	White vs. Hispanic (2)	White vs. Asian (3)	Black vs. Hispanic (4)	Black vs. Asian (5)	Hispanic vs. Asian (6)	
White to black	-.274** (.059)	-.095 (.072)	-.112 (.074)	.179* (.075)	.162* (.073)	-.018 (.079)	21.82** (.000)
White to Hispanic	.039 (.068)	-.013 (.067)	-.096 (.077)	-.053 (.089)	-.136 (.093)	-.083 (.088)	2.26 (.520)
White to Asian	.053 (.094)	-.009 (.106)	-.163+ (.095)	-.044 (.121)	-.217 (.142)	-.173 (.120)	3.33 (.343)
Black to Hispanic	.313** (.086)	.081 (.089)	.016 (.101)	-.232* (.106)	-.297** (.115)	-.065 (.109)	13.89** (.003)
Black to Asian	.327** (.110)	.104 (.127)	-.051 (.118)	-.223* (.139)	.378* (.157)	-.155 (.143)	9.24* (.026)
Hispanic to Asian	.014 (.115)	.023 (.126)	-.067 (.118)	.009 (.150)	-.081 (.165)	-.089 (.145)	.46 (.093)

NOTE. — Estimates from multinomial logit regressions predicting the race of a new hire. Controls include month dummies and store fixed effects. Parentheses contain robust standard errors, adjusted for clustering on store. Column 7 reports Wald test of the hypothesis that there is no change in hiring pattern. $N > 100,000$ new hires.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Table 9
Predicted Probabilities of Race of New Hires by Manager Race

	Predicted Probability That New Hire Is:			
	White	Black	Hispanic	Asian
White manager	.641	.171	.111	.078
Black manager	.597	.209	.114	.081
Hispanic manager	.639	.163	.112	.086
Asian manager	.638	.161	.109	.091

NOTE.—Simulations based on multinomial logit predicting the race of a new hire. Controls include month dummies and store fixed effects. $N > 100,000$ new hires.

by 3.8–4.8 percentage points. In all cases, this decline is offset mainly by an increase in the share that is white.

C. Geographic Differences in the Effects of Manager Race and Ethnicity

The estimates presented thus far are national averages, and hence they may obscure important geographic differences in the effects of manager race and ethnicity on hiring patterns. We are able to perform clean tests of whether the effects of manager race vary by geographic location because the workplaces in our sample are all very similar except for their geographic locations. Here we report the results of two such geographic tests. First, we show that differences between nonblack and black hiring patterns are particularly strong in the South. Second, we show that differences between Hispanic and white hiring patterns are large and statistically significant in locations with large Hispanic populations.¹⁷

Nonblack vs. black managers in the South.—We ask whether the differences between nonblack and black hiring patterns are larger in the South. This question is important because the South is home to over half the nation's blacks (Frey 2001) and because there is evidence that racial attitudes remain more divisive in the South than in the rest of the country. For example, the General Social Survey (GSS; 1990–2000) reveals that, in nonsouthern states, 3.0% of blacks and 11.4% of whites favored laws against interracial marriage but, in the South, 5.7% of blacks and 23.0% of whites favored such laws.¹⁸ Also, Kuklinski, Cobb, and Gilens (1997) estimate that, while 10% of nonsouthern whites react negatively to the idea of living next door to a black family, 42% of southern whites react negatively. Too, Dee (2005) finds that, in the South, but not in other regions of the United States, a student is more likely to be seen as dis-

¹⁷ We found no geographical differences in the effect of having an Asian manager on the probability that a new hire is Asian.

¹⁸ Calculations were made by the authors and are based on a sample of 8,351 from the GSS from the years 1990, 1991, 1993, 1994, 1996, 1998, and 2000.

Table 10
Black versus Nonblack Managers in the South

	South		Non-South	
	White	Black	White	Black
Nonblack manager	.614	.212	.571	.144
Black manager	.520	.293	.544	.169
Difference	.094** (.020)	-.081** (.014)	.027* (.013)	-.025** (.009)

NOTE.—Predicted probabilities based on estimates from probit models for the probability that a new hire is white (black). Regressions include store and month dummies and store-specific trends. South is defined here as Arkansas, Alabama, Georgia, Florida, Louisiana, Mississippi, North Carolina, Tennessee, South Carolina, and Virginia. Parentheses contain robust standard errors, adjusted for clustering on store. $N > 100,000$.

* Significant at the 5% level.

** Significant at the 1% level.

ruptive or inattentive by a teacher if the teacher does not share the student's race.

To compare hiring patterns in the South to those in the rest of the country, we run separate fixed effects probit regressions for the two subsamples.¹⁹ The regressions estimate the probability (1) that a new hire is white and (2) that a new hire is black. Table 10 shows the results. The tendency of nonblack managers to hire more whites and fewer blacks than black managers is particularly strong in the South, and the differences between southern and nonsouthern states are substantial.

When a nonblack manager replaces a black manager in a nonsouthern store, the predicted probability of a white hire increases from 54.4% to 57.1% and the probability of a black hire falls from 16.9% to 14.4%. This amounts to a 5% increase in white employment and a 15% decline in black employment. In southern stores, the differences are much larger. When a nonblack manager replaces a black manager in a southern store, the probability of a white hire increases from 52.0% to 61.4% and the probability of a black hire falls from 29.3% to 21.2%. This represents an 18% increase in white employment, and a 28% decline in black employment.²⁰

Again, we use a graphical analysis to confirm that these estimates are not driven by demographic trends. Figure 2A and B shows trends in the white share and black share of new hires for the subsample of southern

¹⁹ We define the South as Arkansas, Alabama, Georgia, Florida, Louisiana, Mississippi, North Carolina, Tennessee, South Carolina, and Virginia.

²⁰ For perspective, we note the predicted probabilities from a comparable probit regression that pools southern and nonsouthern stores. On average nationally, when a nonblack manager replaces a black manager, the share of new hires that is white rises from 53.1% to 57.5% and the share that is black falls from 19.1% to 15.4%. This amounts to an 8% increase in white employment and a 19% decline in black employment.

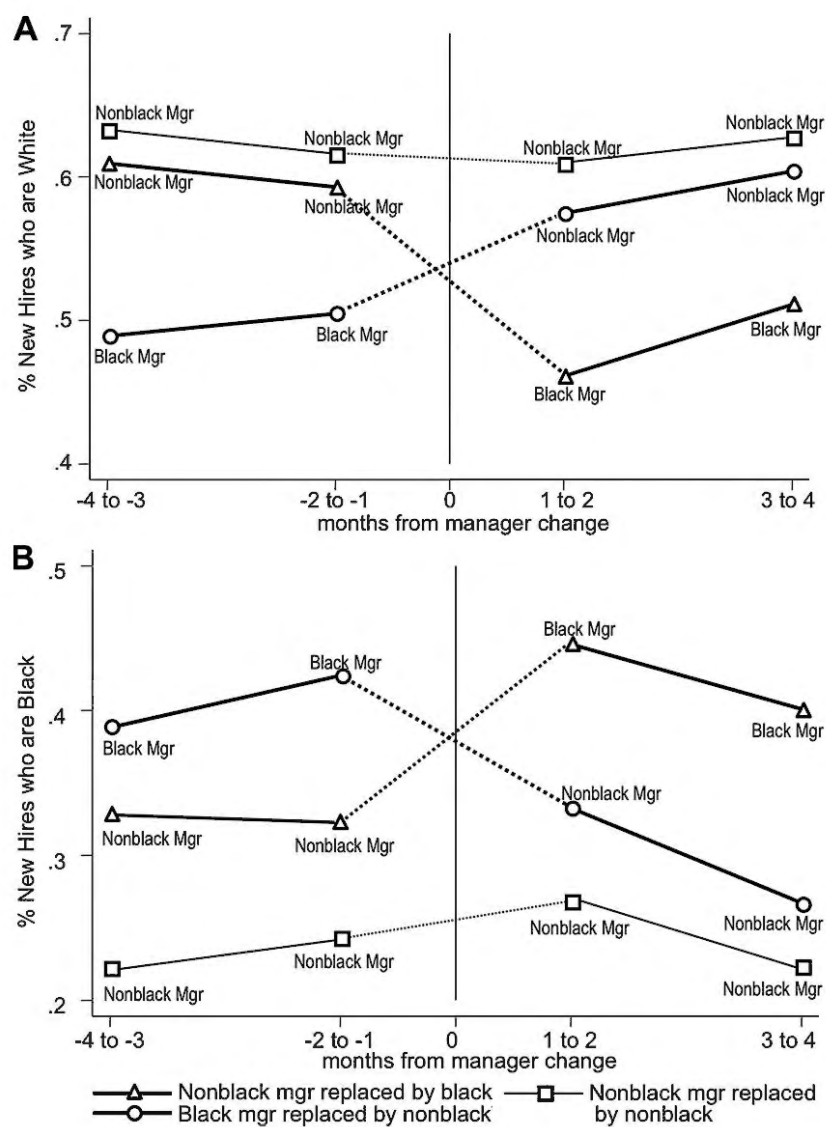


FIG. 2.—A, Trends in black share of new hires in subsample of southern stores. B, Trends in white share of new hires in subsample of southern stores. Based on sample of all manager changes for which our data contain at least one hire every 2 months from 4 months before a manager change to 4 months after the change. Cases where a black manager is replaced by a black manager are not graphed due to small sample size.

stores and compare these trends for the cases where a nonblack manager is replaced by a black manager to the cases where the order is reversed. Just as in the full-sample graphs, the introduction of a new manager whose race differs from the outgoing manager always results either in a clear intercept shift or in a break with the previous trend rather than in a continuation of the current trend.

White versus Hispanic managers in locations with large Hispanic populations.—Census data suggests that there is less assimilation of Hispanics and non-Hispanics in areas with larger Hispanic populations.²¹ Regional variation in the assimilation of Hispanics and non-Hispanics might cause the effect of manager ethnicity to differ by geographic region. Hence, we ask whether the effect of manager ethnicity is stronger in locations with larger Hispanic populations. Specifically, we examine the subsample of stores where the population share of Hispanics in the community is at least 30%.²² These stores are located primarily in the southern parts of Texas, Florida, and California.

To maintain a sufficient sample size, we do not restrict the sample to stores with one hire of each new race group; rather we examine all stores that have at least one Hispanic hire and one white hire. Further, because nearly all of the non-Hispanic managers in this subsample are white, we focus only on the differences between Hispanic and white managers.

The results of this analysis are shown in table 11. In locations where Hispanics are less than 30% of the population, the hiring patterns of Hispanic and white managers are remarkably similar, and Hispanics account for roughly 10% of new hires on average. However, in stores where the local community is at least 30% Hispanic, we find that Hispanic managers hire significantly more Hispanics and fewer whites than do white managers.²³ Our estimates imply that, when a Hispanic manager is

²¹ For example, in communities in the 1990 U.S. Census where Hispanics make up at least 30% of the population, Hispanics are roughly 50% more likely than Hispanics elsewhere to speak no English (calculations made by the authors). Suro and Tafoya (2004) find similar patterns in the 2000 U.S. Census; compared to Hispanics in minority-Hispanic neighborhoods, Hispanics in majority-Hispanic neighborhoods are 24% more likely to be foreign born, are 52% more likely to speak only Spanish, and are 54% less likely to speak only English.

²² For ease of exposition, we report results for this subsample instead of reporting the coefficient on a variable interacting the Hispanic manager dummy with percent Hispanic in the community. The interaction term is indeed statistically significant, and this suggests that the effect of manager ethnicity increases as the share of Hispanics in the community increases. Hence, our choice of 30% Hispanic as the cutoff is somewhat arbitrary. The basic result that manager ethnicity has a larger effect on hiring patterns in locations with larger Hispanic populations is robust to other cutoff points.

²³ This subsample of stores is only a small fraction (roughly 7%) of the national sample. This explains why the probit estimates based on the national sample showed only small and statistically insignificant differences between Hispanic and white managers.

Table 11
Hispanic versus Non-Hispanic Managers in High-Hispanic Locations

	High-Hispanic Locations		Low-Hispanic Locations	
	White	Hispanic	White	Hispanic
White manager	.320	.483	.570	.101
Hispanic manager	.219	.595	.574	.102
Difference	.101** (.038)	-.112** (.052)	.004 (.011)	.001 (.006)

NOTE.—Predicted probabilities based on estimates from probit models for the probability that a new hire is white (Hispanic). Regressions include store and month dummies and store-specific trends. High-Hispanic location is defined here as a location where at least 30% of local population is Hispanic. Parentheses contain robust standard errors, adjusted for clustering on store. $N > 100,000$.

** Significant at the 1% level.

replaced by a white manager in one of these stores, the share of new hires that is Hispanic falls roughly from 59% to 48% and the share that is white rises from 22% to 32%. This represents a 17% decline in Hispanic employment and a 45% increase in white employment.

Figure 3A and B shows the graphical analysis of trends in hiring patterns for stores where the local community is at least 30% Hispanic. Once again, the patterns suggest that the estimated effect of manager race on hiring patterns cannot be attributed to trends in the demographics of the labor pool.

D. How Large Are the Effects of Manager Race and Ethnicity on Hiring Patterns?

To help interpret the magnitude of our results, we consider what happens to the racial composition of a store's workforce over the course of a year when a black manager is replaced by a nonblack manager in a nonsouthern store and in a southern store. We also consider what happens to the racial composition of a store in a Hispanic neighborhood over the course of a year after a Hispanic manager is replaced by a white manager. Employee turnover is so high at our company that, within a year of a change in management, almost all employees will have been hired by the new manager.

First, the estimates in table 10 suggest that, when a black manager is replaced by a nonblack manager, the employment share of blacks in non-southern stores falls roughly from 16.9% to 14.4% within a year and the share of whites rises from 54.4% to 57.1%. In a store of 40 employees, this change amounts to going from roughly seven blacks and 22 whites to six blacks and 23 whites—in other words, replacing one black employee with one white employee. Now, from the viewpoint of someone (such as a district manager) who is observing just a small sample of stores, this change might either go unnoticed or appear insignificant. However, the change may appear more significant from the point of view of job

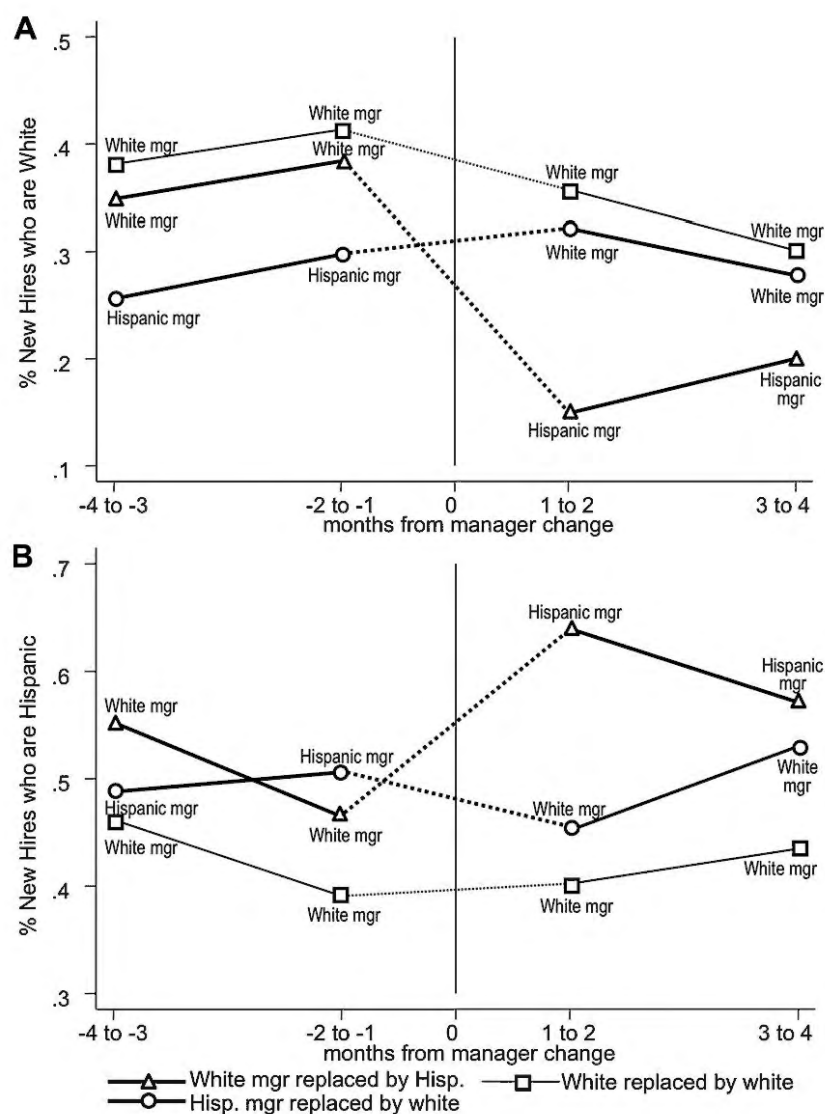


FIG. 3.—A, Trends in white share of new hires in high-Hispanic locations. B, Trends in Hispanic share of new hires in high-Hispanic locations. Based on sample of all manager changes for which our data contain at least one hire every 2 months from 4 months before a manager change to 4 months after the change. Cases where a Hispanic manager is replaced by a Hispanic manager are not graphed due to small sample size.

seekers—especially black job seekers. Indeed, the change amounts to a proportional decline of 15% in the number of blacks employed.

Further, we have seen that the effects of manager race are larger in southern stores. In a typical southern store with a black manager and 40 employees, there are 12 black employees and 21 white employees on average. Our estimates suggest that replacing a black manager with a nonblack manager would result in the replacement of three to four black employees with white employees. This amounts to a 28% decline in black employment and a 17% rise in white employment.

Second, in a store of 40 employees in a Hispanic neighborhood, replacing a Hispanic manager with a white manager would result in the replacement of roughly four out of 24 Hispanic employees with white employees. This is equivalent to a 17% decline in the number of Hispanics and a 45% increase in the number of whites in the store.

V. Robustness Tests

A. Linear Probability Model without Sample Restriction

Our estimation sample is restricted to stores that hire at least one new employee from each of the four main race groups. This sample restriction allows us to estimate all probit models using the same sample of stores and is also necessary to estimate the multinomial logit model with store fixed effects. However, this restriction could introduce sample selection bias. By eliminating stores in which there is no change in the hiring probability for at least one race group, we may be dropping many stores in which a change in manager race has zero impact on hiring patterns.

To examine the implications of the sample selection, we use a linear probability model to estimate all of the binomial choice equations on both the restricted and full samples. The results (reported in appendix table A1) are similar for both samples and are substantively similar to the probit results.²⁴ This similarity suggests that our sample restriction does not have a significant effect on our estimates.

B. Tests for the Exogeneity of Changes in Manager Race

Our analysis has ruled out differences across workplaces and differential trends in population demographics as sources of the observed differences in hiring patterns between black and nonblack managers. However, we have not explicitly ruled out the possibility that some centrally determined

²⁴ Still, we must remember that the results for both samples are identified off of stores with consecutive managers of different races and that this may affect the generalizability of our results. For example, our estimates may not accurately predict the effect of replacing a white manager with a black manager in stores where a black manager is never observed.

personnel policy is somehow responsible. In this section, we consider two ways in which “company policy” could explain our findings.

First, one could imagine that the company periodically reviews store-level data and decides on a target racial composition for each store’s workforce. For example, to serve an increasingly black customer base, the company might decide to increase the presence of blacks in the store both by appointing a black manager and by directing that manager to hire more black employees. In this case, the relationship between manager race and the race of new hires could be driven by personnel policies specific to our company.

One testable implication of a policy of placing black managers in designated “black stores” is that there should be some permanence to the changes in manager race. In other words, new black managers should tend to be followed by black managers. To test this hypothesis, we compare two sets of stores: (1) those in which the first observed manager is black and is replaced by a white manager and (2) those in which the first manager is white and is replaced by a black manager. In the first set of stores, the probability that a third manager is observed within the sample period is 59%, and the conditional probability that this third manager is black is 13%. In the second set of stores, the probabilities are 57% that there is a third manager and 11% that this manager is black. These latter probabilities are not significantly different from those of the first set (see appendix table A2). Hence stores where a black manager replaces a white manager are no more likely than stores where the reverse is true either to keep that black manager or to receive another black manager.

A second way in which company policy could explain our results is that the company’s choice of a new manager may be influenced by the hiring patterns of the previous manager. As mentioned earlier, the patterns in figure 1A and B raise this concern because they suggest that nonblack managers who hire increasingly more whites (fig. 1A) and fewer blacks (fig. 1B) over a 4-month period are more likely to be replaced by black managers. To be sure, the existence of a policy whereby black managers are employed to help reverse declines in black employment would not undermine our conclusion that manager race matters; indeed, such a policy would suggest that the company exploits the “manager race effect” to shape employment demographics. Still, such a policy would mean that the company deliberately fosters the changes in hiring patterns that we observe.

To investigate this possibility more formally, we estimate probit models predicting the probability that a new manager is a given race. In particular, we examine the effects of three covariates on the race of the new manager: (1) changes in hiring patterns over the preceding 6-month period, (2) changes in employment demographics over the same 6-month period, and (3) the ratio of employment share to local population share of each race

group during the 6-month period.²⁵ We control for the race of the departing manager, and we interact all of the variables that measure hiring and employment trends with dummy variables indicating the departing manager's race.

The results of these regressions are shown in appendix table A3. In all regressions, preceding hiring and employment patterns have small effects on the race of the new manager, and none of the effects is statistically different from zero.²⁶ These results support the conclusion that, in stores where manager changes are observed, the race of the new manager is reasonably independent of any recent patterns in hiring or employment demographics.²⁷ In sum, we conclude that it is very unlikely that our findings result from deliberate company policy to manipulate the demographic composition of their workplaces.

VI. Why Does Manager Race Affect Hiring Patterns?

The behavior of either managers or job seekers could explain why a manager's race might affect the racial composition of new hires. First, managers may use racially segregated social networks when recruiting applicants. Second, if manager-employee similarity improves employee productivity, managers may hire racially similar employees for efficiency reasons. Finally, both managers and employees may engage in taste-based discrimination. These explanations are not mutually exclusive, and it is difficult to distinguish among them empirically. Here we present further analysis that explores each of them. We focus on our main finding that black managers hire more blacks and fewer whites than do all nonblack managers.

A. Segregated Hiring Networks

If managers use their own social networks to recruit employees and if social networks tend to be segregated by race and ethnicity, then these networks may lead managers to hire employees of the same racial or ethnic

²⁵ The sample we analyze includes all changes in management occurring at least 6 months after the beginning of our sample period (i.e., from August 1, 1996, through July 30, 1998). We chose to focus on changes over 6 months rather than changes over longer periods in order to have a sufficiently large sample of new managers.

²⁶ For example, the largest of these estimates suggests that a 20% increase in the white employment share under a white manager (e.g., from 50% white to 60% white) would reduce the probability that the next manager is white by less than 2 percentage points.

²⁷ Additional analysis, using hazard models, showed that there is also no significant relationship between changes in employment demographics and the timing of managerial exits. These results provide further support for the conclusion that manager changes are exogenous to hiring patterns.

group.²⁸ To test for managerial hiring networks, we assume that there is some congruence between social networks and residential proximity, and we ask whether managers tend to hire employees who live near them.²⁹ We calculate the approximate distance between manager and employee residences using data on residential zip codes.

We perform this test using stores that have at least one change in management and that have two managers (call them Manager 1 and Manager 2) who reside in different zip codes.³⁰ For all employees in these stores that were hired either by Manager 1 or by Manager 2, we construct the following variable: Relative distance from Manager 1 = Distance between residential zip codes of employee and Manager 1 / Distance between residential zip codes of employee and Manager 2.³¹ We then regress the log of this variable on a dummy variable that is equal to one if the employee was hired by Manager 1 and equal to zero if the employee was hired by Manager 2. The results (table 12, col. 1) indicate that the relative distance to Manager 1 is 1.6% smaller if the employee was hired by Manager 1. In other words,

²⁸ This company has a strict formal policy that forbids managers from hiring their friends or acquaintances. Nevertheless, previous studies have argued that informal networks play an important role in hiring (e.g., Granovetter 1995; Holzer 1996; Bayer et al. 2008), that such networks tend to be segregated by race (Marsden 1987), that employees tend to refer similar others (e.g., Fernandez et al. 2000; Mouw 2002), and that minorities tend to lack access to hiring networks (Peterson, Saporta, and Seidel 2000; Moss and Tilly 2001).

²⁹ To be sure, much of the literature on hiring networks emphasizes the networks of employees rather than those of managers. Employee referrals alone cannot cause manager race to be correlated with hiring patterns, but if there is some tendency for managers to hire same-race employees, then same-race employee referrals could amplify this tendency. To test this, we estimated fixed effects models similar to those in col. 5 of tables 4–7 but including as a regressor the share of employees of race k at the time a new hire is made. The results indicated a negative relationship between the current share of employees of race k and the probability that the new hire is of race k . This is the opposite of what would be expected if same-race employee referrals were an important determinant of hiring patterns in our data.

³⁰ Approximately 95% of the manager changes in our data involve two managers from different zip codes. For stores that have more than two managers from different zip codes, we restrict attention to the two managers with the largest number of hires. We also exclude from our analysis the roughly 25% of all managers and a small number of employees who have recently transferred from a zip code that is more than 100 miles from the store in question, since these individuals are less likely to have formed social networks with their neighbors. (We are grateful to a referee for making this suggestion.)

³¹ Distance is measured in miles and is estimated using the longitude and latitude at the centroid of each zip code. The physical distance in miles between longitude x_1 , latitude y_1 and longitude x_2 , latitude y_2 is calculated as $\{[69.1 \times (x_1 - x_2)]^2 + [53 \times (y_1 - y_2)]^2\}^{1/2}$. In cases where the employee and manager share a zip code (roughly 4% of the sample), we assign a distance of 1 mile. The average distance between the zip codes of an employee and a given manager is roughly 16 miles.

Table 12
OLS Estimates of Employee's Relative Physical Distance
from Manager 1

	(1)	(2)
Employee was hired by Manager 1	-.016* (.007)	-.015* (.007)
Employee is same race as Manager 1		-.069** (.019)
Employee is same race as Manager 2		.072** (.018)

NOTE.—Dependent variable = $\ln(\text{Distance between residential zip codes of employee and Manager 1}) / (\text{Distance between residential zip codes of employee and Manager 2})$, where Manager 1 and Manager 2 are the two managers at each store who have the largest number of hires and who live in different zip codes. Estimation sample is all stores with at least two managers who live in different zip codes. Regressions include store fixed effects. Parentheses contain robust standard errors, adjusted for clustering on store. $N > 50,000$ new hires, > 600 stores.

* Significant at the 5% level.

** Significant at the 1% level.

employees tend to live slightly closer to the managers that hired them. The effect is small, but the estimate is statistically significant.

Of course, the tendency of managers to hire individuals who live closer by could result from a combination of racial preferences and residential segregation. For example, black managers may tend to hire their neighbors because they prefer hiring blacks (who tend also to be their neighbors) rather than because networking leads black managers to hire their neighbors (who tend also to be black). To address this issue, we estimate regressions that control for an employee's racial similarity to Manager 1 and to Manager 2. The results (table 12, col. 2) do in fact indicate that employees tend to live closer to managers who share their race or ethnicity. However, even after taking racial similarity into account, a significantly greater proximity to one's hiring manager remains. This suggests that the greater proximity is caused by the use of networks and not solely by racial biases in hiring.

B. Discrimination by Managers: Evidence from Dismissals and Promotions

Two types of managerial discrimination could explain why managers hire more employees from their own race group or fewer from certain other race groups. One is a form of "statistical" discrimination—managers may rationally expect to reap efficiency gains from having same-race employees (Phelps 1972; Arrow 1973; Aigner and Cain 1977).³² The other is "taste-

³² Such efficiency gains could result from racially correlated preferences for workplace public goods (Epstein 1992), reduced costs of communication and mentoring (Lang 1986; Athey, Avery, and Zemsky 2000), or fewer disagreements over performance evaluations (MacLeod 2003). Evidence consistent with some of these hypotheses is found in the organizational behavior literature. Typical findings are that subordinates whose manager is of a different race have lower job satisfaction (Wesolowski and

based” discrimination—managers may select own-race employees to indulge their personal preferences (Becker 1971). We do not have data on applicants and cannot directly test whether hiring outcomes are affected by either type of managerial discrimination. But we do have data on dismissals and promotions, and we can use these posthire outcomes to gain insight into whether managerial discrimination may affect hiring outcomes.

If either type of managerial discrimination explains why black managers hire more blacks and fewer whites, then we might expect that the motives for such discrimination would also affect posthire personnel decisions made by managers and would be reflected in outcomes such as dismissals and promotions. In short, if either type of managerial discrimination explains why black managers hire more blacks, then we might see that black managers dismiss blacks relatively less often and promote them more often. And if either type of managerial discrimination explains why black managers hire fewer whites, then we might see that black managers dismiss whites more often and promote them less often.³³ Our analysis, therefore, looks at the effect of having a black manager on the relative dismissal and promotion rates of black and white employees.

We estimate Cox proportional hazard models that express dismissal and promotion rates as a function of employee race indicators, manager race indicators, and the interactions of the black manager indicators with the black employee and white employee indicators.³⁴ The results (table 13) indicate that black employees have significantly better relative outcomes

Mossholder 1997), that white subordinates with black supervisors report high role ambiguity and role conflict (Tsui and O'Reilly 1989), that same-race mentoring relationships last longer and provide more psychosocial support than do cross-race relationships (Thomas 1990), and that employees receive higher performance ratings from same-race supervisors (Stauffer and Buckley 2005).

³³ Consider each possibility. If there is an efficiency motive for blacks to hire more blacks, then as evidence of this particular efficiency (that black employees are more productive working for black managers), we might see that black managers dismiss blacks less often and promote them more often than nonblack managers. Also, if there is an efficiency motive for blacks to hire fewer whites, then we might see blacks dismiss whites more often and promote them less often. Likewise, if the personal tastes of either black or nonblack managers explain why black managers hire more blacks, then such tastes might also result in black managers dismissing blacks less often and promoting them more often than nonblack managers. Furthermore, if the personal tastes of managers explain why black managers hire fewer whites, then such tastes might also result in black managers dismissing whites more often and promoting them less often.

³⁴ To control for unobservable differences across store locations, the hazard models are stratified by store. Additional controls include employee gender, manager gender, employee part-time vs. full-time status, employee age and age squared, manager age, and a variable indicating whether the manager is new (i.e., not the manager who hired the employee). For a fuller explanation of the model and estimation strategy and for a more detailed set of results, see Giuliano, Levine, and Leonard (2009), which uses the same data set used here to analyze own-race bias in posthire employment outcomes.

Table 13
Effects of Manager-Employee Racial Matches on Rates of Employee Dismissal and Promotion

	Dismissal (1)	Promotion (2)
Manager is black	1.128 (.120)	1.034 (.264)
Manager is Hispanic	1.152 (.084)	1.049 (.141)
Manager is Asian	1.135 (.104)	1.327 (.237)
Employee is black	2.325** (.064)	.462** (.041)
Employee is Hispanic	1.427** (.049)	.744** (.066)
Employee is Asian	1.069 (.048)	.595** (.069)
Black manager × Black employee	.808* (.087)	1.880* (.607)
Black manager × White employee	.962 (.0114)	1.302 (.364)
Test of hypothesis: (Black manager × Black employee) = (Black manager × White employee)	$\chi^2 = 3.43^+$ $p = .064$	$\chi^2 = 2.12$ $p = .146$

NOTE.—Hazard ratios from Cox proportional hazard models, stratified by store. Model of promotions is also stratified by 12 age categories. Additional controls include dummy variables indicating employee gender, manager gender, and employee part-time status, employee age and age squared (at time of hire), manager age, and a dummy variable indicating whether the manager is new (i.e., not the manager who hired the employee). Robust standard errors in parentheses, adjusted for clustering on employee.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

under black managers than under nonblack managers. The dismissal rate of blacks relative to Hispanics and Asians is 20% lower under black managers, and their relative promotion rate is 88% higher. However, we find that the outcomes of whites relative to Hispanics and Asians are no worse under black managers. In fact, the estimated effect on the white promotion rate (though not significant) suggests that whites do relatively well with black managers.

In sum, the finding that black employees have relatively favorable post-hire outcomes under black managers suggests that managerial discrimination may help explain why black managers hire relatively more blacks. However, the finding that white employees do no worse under black managers does not support managerial discrimination as an explanation for why black managers hire fewer whites.

Two further points are important for clarity. First, while our analysis of posthire outcomes suggests that managerial discrimination may help explain why black managers hire more blacks, it cannot tell us whether such discrimination is statistical or taste based. Black managers might treat

black employees relatively favorably either because of differences in performance (i.e., blacks perform better relative to nonblacks under black managers) or because of taste-based bias (i.e., blacks are treated more favorably by black managers despite similar performance under all managers). Hence, the favorable posthire outcomes of blacks with black managers would be consistent with the managerial motives for either statistical or taste-based discrimination in hiring.³⁵

Second, if taste-based discrimination explains the differences in the posthire outcomes of blacks under black and nonblack managers, then again there are two interpretations: (1) black managers prefer black employees over nonblack employees or (2) nonblack managers prefer nonblack employees over black employees.³⁶ These two taste-based possibilities are both plausible and are not mutually exclusive. To be sure, the latter interpretation is consistent with the findings of several audit studies and other experiments that have found evidence of discrimination against black job seekers.³⁷ But either possibility could explain why black managers hire more blacks.

C. Manager-Employee Racial Matches and Store-Level Performance Measures

The preceding analysis suggests that managerial discrimination may help explain our hiring results, but it cannot not tell us what type of discrimination may be at work—statistical and/or taste based. In this section, we investigate the statistical discrimination hypothesis further by looking for evidence that racial similarity or dissimilarity affects perfor-

³⁵ Note that, even with data on individual performance, it might be impossible to distinguish between these two because manager discrimination may cause lower employee productivity. As in MacLeod (2003), for instance, managerial prejudice may lead nonblack managers to be biased in their performance evaluations of blacks, and this could in turn result in lower effort and reduced productivity among blacks. Charles (2000) also argues that racial prejudice of managers can result in lower productivity among black employees, but he offers a different explanation—discriminatory sabotage.

³⁶ A more subtle point is that we also cannot distinguish between what Becker refers to as “nepotism” (e.g., promoting or hiring a favored individual who is not qualified) from discrimination (e.g., failing to promote or hire someone who is qualified out of prejudice). For an empirical analysis that addresses this distinction, see Fershtman, Gneezy, and Verboven (2005).

³⁷ In particular, audit studies by Turner, Fix, and Struyk (1991) and Bendick, Jackson, and Reinoso (1994) find that black research assistants posing as job applicants (“testers”) get fewer job offers than do white testers with similar qualifications who apply for the same jobs. In another experimental study, Bertrand and Mullainathan (2004) find that resumes with black-sounding names obtain fewer interview offers than identical resumes with white-sounding names. Most audit studies cannot analyze the role of manager race or preferences in such discrimination because either there are no data on manager traits or there is not enough variation.

Table 14
Effects of Manager-Employee Racial Matches on Store Monthly Sales and Turnover

	Sales (1)	Turnover (2)
Manager is black	.002 (.033)	-.033 ⁺ (.017)
Manager is Hispanic	-.017 ⁺ (.010)	.000 (.005)
Manager is Asian	-.024 ⁺ (.013)	.003 (.006)
% Employees who are black	.026 (.030)	.063* (.026)
% Employees who are Hispanic	.011 (.036)	.046 ⁺ (.028)
% Employees who are Asian	.106** (.033)	-.004 (.035)
Black manager × % Employees black	.019 (.059)	.034 (.029)
Black manager × % Employees white	-.032 (.041)	.036 ⁺ (.021)
Test of hypothesis: (Black manager × % Employees black) = (Black manager × % Employees white)	$\chi^2 = 1.04$ $p = .308$	$\chi^2 = .01$ $p = .939$

NOTE.—Dependent variables are log of monthly sales (col. 1) and monthly turnover rate (col. 2). Estimated coefficients are from least squares regressions with controls for manager age and sex, manager experience, a dummy indicating manager is “other” race, percentage hires who are “other,” a dummy indicating manager is an assistant manager, share of new hires with no company experience, total monthly employment, a dummy variable for each of the 30 months in the sample, a dummy variable for each store in the sample, and a trend variable for each store in the sample. Omitted manager race and employee race category are both white. Parentheses contain robust standard errors, adjusted for clustering on store. $N > 20,000$ store months.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

mance. We examine two store-level measures of performance—monthly sales and employee turnover. While our findings are consistent with motives for statistical discrimination, they are less than compelling.

Table 14 reports the results of linear fixed effects regressions of our two variables—sales and turnover—on manager race, employment shares of each race group, and the interactions of the black manager indicator with the employment shares of blacks and whites. In the sales regression (col. 1), a comparison of the two interaction coefficients indicates slightly higher sales under black managers (compared to nonblack managers) when there are more black employees and fewer white employees. While this could indicate an efficiency motive for black managers to hire more blacks and fewer whites or for nonblacks to do the opposite,³⁸ the effect is small

³⁸ Because employers who wish to indulge discriminatory tastes must either pay higher wages or hire less skilled employees (Becker 1971), the lack of a negative effect of manager-employee similarity on sales might be viewed as evidence that

and not statistically significant.³⁹ In the turnover regression (col. 2), the coefficient on the black manager-white employment share interaction is weakly significant ($p = .08$) and indicates slightly higher turnover under black managers when there are more white employees. While costs associated with higher turnover could help explain why black managers hire relatively fewer whites, the effect is again small.⁴⁰

D. Discrimination by Job Seekers: Evidence from Employee Quit Rates

If job seekers prefer to work for own-race managers or are biased against managers of certain other race groups, they may discriminate on the basis of these preferences when choosing where to work. While we cannot test directly for discriminatory sorting by job seekers, we can construct a test for such sorting by analyzing employee quit rates.

We exploit the fact that many employees in our sample receive new managers, and we compare the effect of manager-employee racial matches on the quit rates of employees who retain their hiring managers and employees who receive new managers. If job seekers who prefer own-race managers indulge these preferences when deciding where to work, then the racial match between employee and manager should have little effect on quit rates as long as employees keep the managers who hired them (i.e., the managers they chose to work for). In contrast, when employees get new managers, the discriminatory preferences of biased employees should lead to relatively large effects of racial matches on quit rates.

Table 15 shows the estimation results from a hazard model of quits.⁴¹ We focus on the differential effects of having a black manager for black and white employees, and the black manager effects are estimated separately

there is no taste-based discrimination. However, at this company, it is perhaps more likely that the skill level of frontline employees is not an important determinant of sales.

³⁹ Specifically, the difference in the two coefficients implies that, when there is a 5 percentage point increase in the black share of employment that is offset by a decline in white employment, sales are .25% higher under a black manager than a white. Regional analyses showed similar results even in southern stores. Further, variants of these models allowing for nonlinearities in the effects of increasing percentage black, etc., revealed no significant nonlinear effects.

⁴⁰ Monthly turnover, defined as the number of exits in 1 month divided by the average number of employees, has a mean value of 0.14 in our sample. Thus the coefficient of 0.036 on the Black manager \times White employment share interaction suggests that a 5 percentage point increase in the white share of employment causes turnover to increase by 0.0018, or 1.3%.

⁴¹ The model is similar to those estimated when analyzing dismissals and promotions. See Giuliano et al. (2009) for details and a more extensive analysis of racial biases in quit rates.

Table 15
Effects of Manager-Employee Racial Matches on Employee Quit Rates under Hiring Manager versus New Manager

	Hazard Ratio	$\chi^2(\text{Pr} > \chi^2)$
Black employee \times Black manager \times Hiring manager	.986 (.053)	.35 (.552)
Black employee \times Black manager \times New manager	1.041 (.093)	
White employee \times Black manager \times Hiring manager	1.011 (.056)	3.47* (.063)
White employee \times Black manager \times New manager	1.154* (.083)	

NOTE.—Hazard ratios from Cox proportional hazard models with control variables as in table 14, plus all interactions of manager race and employee race indicators with an indicator that the manager is new. Robust standard errors are in parentheses, adjusted for clustering on employee. The second column reports Wald test of equality for each pair of hazard ratios.

* Significant at the 5% level.

for employees who still have their hiring managers and for those who have new managers. We find evidence of discriminatory sorting by white job seekers but not by black job seekers. For employees with their hiring managers, we find small and statistically insignificant effects of manager race on the quit rates of both black and white employees. Among employees with new managers, the black quit rate is again unaffected by whether or not the manager is black. However, the quit rate of whites is 15% higher under new black managers than under new nonblack managers.

We interpret this increase in the white quit rate as evidence of discriminatory sorting by white job seekers. It implies that whites who dislike working for black managers often avoid working for black managers in the first place and that when such whites involuntarily find themselves working for a black manager, their quit rates increase substantially.⁴² Hence, we conclude that the reluctance of some white job seekers to take jobs with black managers may be at least partly responsible for our finding that black managers hire relatively low proportions of whites.⁴³

⁴² The social psychology literature offers multiple theories for why white employees may prefer not to work for nonwhite managers, including theories of similarity attraction, social identity, and status. Distinguishing among these theories is beyond the scope of the current article, but the matter is addressed in Giuliano et al. (2009).

⁴³ Interestingly, this result is also consistent with Stoll et al.'s (2004) finding that black hiring agents receive a larger proportion of job applications from blacks (and a smaller proportion from whites) than do white hiring agents. Stoll et al. interpret their result as suggesting that having blacks in visible positions of authority increases the rate at which blacks apply for jobs. They suggest that the presence of black managers may signal to potential black applicants that they are less likely to suffer from discrimination or a hostile environment. Our results are not inconsistent with such behavior by black job seekers. However, our analysis of quit rates suggests that the behavior of white job seekers is at least as relevant. We would thus stress

E. Discussion

We have focused on why black managers hire relatively more blacks and fewer whites. Our strongest finding helps explain why blacks hire fewer whites. An analysis of quit rates suggests that some whites prefer not to work with black managers and hence that discrimination by white job seekers may cause black managers to hire lower proportions of whites.

But why do black managers hire blacks at especially high rates? Our findings suggest two reasons. An analysis of residential zip codes suggests a role for managerial hiring networks. Moreover, an analysis of dismissals and promotions suggests a role for managerial discrimination. With regard to managerial discrimination, two cautions apply. First, we cannot tell whether such discrimination may be statistical or taste based. Second, if the tastes of managers play a role, there are two possibilities: (1) black managers prefer black employees over nonblack employees and/or (2) nonblack managers prefer nonblack employees over black employees.

More generally, we would like to make two points. First, we considered three reasons why a manager's race may affect the racial composition of new hires: managers may use racially segregated hiring networks, managers may hire racially similar employees because of expected productivity gains from manager-employee similarity, and both managers and employees may engage in taste-based discrimination. Our analysis produced evidence consistent with each of these explanations, and we would stress that these explanations may all play a role in hiring.

Indeed, these "explanations" are not mutually exclusive, and they may even reinforce one another. For example, if black managers have difficulty recruiting due to discrimination from a mostly white applicant pool, this could lead black managers to rely more heavily on hiring networks. Or if, for example, taste-based discrimination results in biased evaluations of black employees by nonblack managers, this could cause or reinforce lower productivity among blacks (MacLeod 2003). Further, when nonblack managers observe this pattern of lower productivity, they might statistically discriminate against black applicants.

Second, we should acknowledge that, even though the studied employer is in many ways typical of the U.S. retail sector (which accounts for roughly 18% of all U.S. jobs), this is nevertheless a case study. Several characteristics of our sample could affect the relative importance of either managerial or employee discrimination. Consider two examples. First, the sample period (1996–98) was a time of historically low unemployment in the United States. Because it was difficult to find qualified workers during these years, manager discrimination may well have been less prevalent and employee discrimination more prevalent than during periods of higher

another possible reason for Stoll et al.'s results: having a black hiring agent decreases the rate at which white job seekers apply for and accept jobs.

unemployment. Second, racial attitudes could be affected by the relatively high share of women and the relative youth of both management and the workforce. Other studies have suggested that females and youth are less likely to discriminate on the basis of race.⁴⁴

VII. Conclusion

As the U.S. labor force grows more diverse, it is important to understand how race and ethnicity affect employment outcomes. Prior studies have examined whether the race or ethnicity of the hiring manager may affect the racial and ethnic composition of new hires. However, because these studies were unable to control for unobserved differences across workplaces and locations, it was hard for them to identify the role of manager race and ethnicity. Using a panel data set that permits us to control for such differences, this study provides new evidence that managers of different racial and ethnic groups exhibit systematically different hiring patterns.

First, we find that all nonblack managers—whites, Hispanics, and Asians—hire more whites and fewer blacks than do black managers. Moreover, these differences between nonblack and black managers are especially large in the South. Second, we find a significant difference in the hiring patterns of Hispanic and white managers in locations where Hispanics make up at least 30% of the population. In these areas, Hispanic managers hire more Hispanics and fewer whites than do white managers.

Additional analysis suggests that these results may be explained by several factors. First, we find evidence consistent with the use of managerial hiring networks in that managers tend to hire employees who live somewhat closer to them. Further, while we cannot distinguish between statistical and taste-based discrimination, an analysis of dismissal and promotion rates suggests that some form of managerial discrimination may help explain why nonblack and black managers hire blacks at different rates. Finally, an analysis of employee quit rates suggests that black managers may hire fewer white employees because of discrimination by white job seekers against black managers.

⁴⁴ Studies by Yinger (1986) and Kenney and Wissoker (1994) suggest that women discriminate less than men. The 1990–2000 GSS found that respondents under age 40 were significantly less likely than older respondents to favor laws against interracial marriage (author's calculation based on sample of 8,351 from surveys between 1990 and 2000).

Appendix

Table A1
Linear Probability Estimates of the Effect of Manager Race on the Probability That a New Hire Is a Given Race

	Dependent Variable = 1 If New Hire Is:			
	White	Black	Hispanic	Asian
A. Sample: Estimation Sample Used in Probit and Multinomial Logit Regressions				
Hiring manager is black	-.037** (.010)	.041** (.009)	-.004 (.007)	.002 (.005)
Hiring manager is Hispanic	-.006 (.010)	-.009 (.009)	.008 (.010)	.008 (.005)
Hiring manager is Asian	-.006 (.012)	-.013 (.013)	-.003 (.011)	.024 (.014)
B. Sample: All Retail Stores of the Employer				
Hiring manager is black	-.043** (.008)	.045** (.007)	-.001 (.005)	.000 (.004)
Hiring manager is Hispanic	-.005 (.008)	-.007 (.008)	.007 (.008)	.007 (.005)
Hiring manager is Asian	-.001 (.009)	-.013 (.009)	-.003 (.008)	.021 (.010)

NOTE.—All regressions include store fixed effects and dummy variables for each of the 30 months in the sample. Parentheses contain robust standard errors, adjusted for clustering on store.

** Significant at the 1% level.

Table A2
Race of Third Manager Following White-to-Black or Black-to-White Manager Sequence

	Pr (Third Manager Is Observed within Sample Period)	Pr (Third Manager Is Black)	Pr (Third Manager Is White)
Black manager followed by white manager	.590	.130	.869
White manager followed by black manager	.568	.110	.833
Difference	.021	.019	.036
<i>p</i> -value from test of hypothesis that difference = 0	.822	.812	.693

NOTE.—Estimation sample consists of 135 stores in which the first two observed managers are a white manager followed by a black manager or vice versa. The probabilities reported in cols. 2 and 3 are conditional on observing a third manager.

Table A3
Probit Estimates of the Effect of Employee Demographics on the
Probability That a New Manager Is a Given Race

	(1)	(2)	(3)
Dependent Variable: Pr (New Manager Is White)			
Old manager white	.132** (.038)	.184** (.038)	.121 (.079)
% Change in % white hires	-.010 (.031)		
% Change in % white hires × Old manager white	.004 (.033)		
% Change in % white employment		-.047 (.083)	
% Change in % white employment × Old manager white		-.042 (.102)	
% White hires / % White local population			.026 (.060)
% White hires / % White local population × Old manager white			-.024 (.066)
Dependent Variable: Pr (New Manager Is Black)			
Old manager black	.015 (.048)	.016 (.044)	.025 (.064)
% Change in % black hires	.003 (.005)		
% Change in % black hires × Old manager black	-.009 (.030)		
% Change in % black employment		-.006 (.013)	
% Change in % black employment × Old manager black		.014 (.030)	
% Black hires / % Black local population			.001 (.001)
% Black hires / % Black local population × Old manager black			-.016 (.020)
Dependent Variable: Pr (New Manager Is Hispanic)			
Old manager Hispanic	.203** (.073)	.129* (.053)	.092 (.061)
% Change in % Hispanic hires	-.004 (.012)		
% Change in % Hispanic hires × Old manager Hispanic	.099 (.055)		
% Change in % Hispanic employment		-.004 (.017)	
% Change in % Hispanic employment × Old manager Hispanic		-.018 (.057)	
% Hispanic hires / % Hispanic local population			-.003 (.002)
% Hispanic hires / % Hispanic local population × Old manager Hispanic			-.004 (.009)

Table A3 (Continued)

	(1)	(2)	(3)
	Dependent Variable: Pr (New Manager Is Asian)		
Old manager Asian	-.024 (.036)	.001 (.041)	-.013 (.031)
% Change in % Asian hires	.005 (.004)		
% Change in % Asian hires × Old manager Asian	.030 (.029)		
% Change in % Asian employment		.014 (.008)	
% Change in % Asian employment × Old manager Asian		-.002 (.031)	
% Asian hires / % Asian local population			.000 (.001)
% Asian hires / % Asian local population × Old manager Asian			.006 (.006)

NOTE.— $N > 700$ for col. 1; $N > 1,000$ for cols. 2 and 3. Sample includes all changes in management occurring between August 1, 1996, and July 30, 1998. All changes are changes from 6 months prior to the manager change. Additional control variables include 30 dummies indicating the month in which the manager change occurred.

* Significant at the 5% level.

** Significant at the 1% level.

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