

Manager Race and the Race of New Hires

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Abstract: 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—i.e. 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.

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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 at this question. Stoll, Raphael and Holzer (2004), Carrington and Troske (1998), Turner (1997), and Bates (1994) 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 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 present study uses a new panel dataset 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 dataset is constructed from the personnel records of a large U.S. retail chain, and it tracks more than 100,000 employees at more than 700 stores for a period of thirty months. The crucial feature of this dataset 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 a different race from the managers they replace. This variation in manager race within stores allows us to estimate probit and multinomial logit regressions

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.

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

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 percent of the local population. In this sub-population, 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 percent, and the share of whites rises from 22 to 32 percent. By contrast, in locations where Hispanics are less than 30 percent of the local population, the hiring patterns of Hispanic and white managers are remarkably similar, and Hispanics account for about 10 percent 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 non-black and black managers in the relative rates at which blacks are dismissed and promoted, and this suggests 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 non-black 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.

I. 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 to 50 mostly part-time employees.

The managers in our analysis are the “store managers.” It is the store managers who are 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 percent of the stores have 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 thirty percent 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 percent 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 percent of employment spells end within a year. As a 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 Census, and are based on all Census tracts within a two-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 percent white,

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 end with transfers to other company stores; five percent end with leaves of absence; and the rest involve termination of employment with the company. Most terminations are voluntary, and the most common reasons are “found better job/prefer other work” (41 percent), “personal” (13 percent), “moving”, “dislike hours”, “limited career growth”, and “return to school”. Roughly 13 percent of manager terminations are 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.

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 Table 1 notes).

14.5 percent black, 13.2 percent Hispanic, and 10.2 percent Asian.

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

The estimation sample (summarized in the first two columns 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 the company's U.S. retail establishments (Table 2, columns 3 and 4) has more whites and fewer minorities than the restricted sample (frontline workers make up 67.5 percent of the wider sample vs. 60 percent 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 comes 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 percent of all U.S. jobs. Compared to the retail sector (Table 2, columns 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), and this company has a higher share of both female managers (79 vs. 50 percent) and female employees (73 vs. 66 percent).

Similar to other establishment data sets, our sample shows a strong correlation between the race of the hiring manager and the racial composition of new hires (Table 3). For example, the proportion of new hires that is black is 30.9 percent in stores with black managers, but only 18.5 percent in stores with

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/hr) retail jobs in 1999, the median employment spell was about 110 days, and 87 percent left their job within a year. These figures are based on estimates from the NLSY97.

white managers, 20.9 percent in stores with Hispanic managers, and 16.2 percent 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. And 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.

II. 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:

$$(1) \Pr(\text{white}_{ijt} = 1) = \varphi(b_0^w + \text{MgrBl}_{jt}b_B^w + \text{MgrHi}_{jt}b_H^w + \text{MgrAs}_{jt}b_A^w + S_jb_S^w + C_jb_C^w + M_t b_M^w).$$

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,

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.

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:

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

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

⁸ Measures of "community" demographics are constructed from the 1990 Census, and are based on all Census tracts within two miles of the center of each store's ZIP code.

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).

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 managers may choose simultaneously from among four possible race categories rather than choosing white vs. non-white, black vs. non-black, etc. 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.

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:

$$(3) \Pr(\text{race}_{ijt} = k) = \frac{\exp(b_0^k + MgrBl_{jt}b_B^k + MgrHi_{jt}b_H^k + MgrAs_{jt}b_A^k + M_t b_M^k + \alpha_j^k)}{\sum_{l=1}^4 \exp(b_0^l + MgrBl_{jt}b_B^l + MgrHi_{jt}b_H^l + MgrAs_{jt}b_A^l + M_t b_M^l + \alpha_j^l)}$$

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

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 paper, 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 non-white. The results were nearly identical.

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

III. Results

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

Tables 4a-4d 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 4a is a dummy variable equal to one if the new hire is white and zero otherwise. In Tables 4b-4d, 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 4a-4d, 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.

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,

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 zero to one.

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 (columns 2 and 3) and unobserved differences across time (column 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 4a-4d 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 4a, column 5), the Hispanic and Asian manager effects are very small and not significantly different from zero. And in the equations predicting that a new hire is Hispanic (Table 4c, column 5) or Asian (Table 4d, column 5), none of the manager race effects are significantly different from zero at a five percent 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 non-black 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 4a, 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 non-black managers in the same store. Second, the coefficients in Table 4b, column 5 indicate that the probability a new hire is black is between 3.5 and 4.0 percentage points lower under non-black managers than it is under black managers. In both cases, the estimated differences between black managers and each non-black group are significant at a one percent level of confidence, and the estimated differences among non-black managers are statistically insignificant.

We would stress three points about the fixed-effects estimates. First, the main finding is that all non-black managers hire more whites and fewer blacks than do black managers. Second, hiring patterns on average are similar among all non-black manager groups; i.e., 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 non-black 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 4d, 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 percent 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 over-estimate the causal effect of manager race on hiring patterns. The specification in column 6 of Tables 4a-4d 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.

Figures 1a and 1b provide additional evidence that the estimates of the relationship between manager and employee race are not driven by trends in store demographics, and provide some insight as to why the column 6 estimates are larger in magnitude than those in column 5. These figures show trends in the white share of new hires (Figure 1a) and the black share of new hires (Figure 1b) before and after a

change in manager.¹⁴ Trends are shown for three cases: 1) a non-black manager is replaced by a black manager; 2) a black manager is replaced by a non-black manager; and 3) a non-black manager is replaced by a non-black 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 with the previous trend, rather than in a continuation of the current trend. Hence Figures 1a and 1b clearly show that manager race is not simply following the same trends as the race of new hires.

However, the graphs do raise another concern. It appears that non-black managers who hire increasingly more whites (Fig. 1a) and fewer blacks (Fig. 1b) over a four-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 non-black 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 (Section IV.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 5 and 6, and facilitate the comparison of hiring patterns across all four manager race groups. First, Table 5 shows the coefficients of the model (columns 1-6), and Wald tests assessing the overall similarity in hiring patterns between managers of different races (column 7). This table again shows that there are no significant differences in the hiring patterns of the three non-black groups of managers (white, Hispanic, and Asian). Moreover, it confirms that the hiring choices of each non-black group differ significantly from those of black managers. Specifically, the differences between non-black 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 (column 1).

¹⁴ The figures are based on all stores where we observe two consecutive managers for at least four months each.

Next, Table 6 presents the predicted hiring probabilities for each manager race group.¹⁵

Differences among the three non-black 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 And black managers differ very little from the three non-black groups in the shares of Hispanics and Asians hired. Once again, the differences that stand out are those between non-black managers and black managers in the shares of blacks and whites hired. The estimates imply that when any non-black manager replaces a black manager in a typical store, the share of new hires that is black falls 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 non-black 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

Non-Black vs. Black Managers in the South.—We ask whether the differences between non-black 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 (1990-2000) reveals that in non-Southern states, 3.0 percent of blacks and 11.4 percent of whites favored laws against interracial marriage, but in the South, 5.7 percent of blacks and 23.0 percent of whites

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 9 and 13 percent levels.

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

avored such laws.¹⁸ Also, Kuklinkski, Cobb, and Gilens (1997) estimate that while 10 percent of non-southern whites react negatively to the idea of living next door to a black family, 42 percent of southern whites react negatively. And Dee (2005) finds that in the South, but not in other regions of the U.S., a student is more likely to be seen as disruptive 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 sub-samples.¹⁹ The regressions estimate the probability (1) that a new hire is white, and (2) that a new hire is black. Table 7 shows the results. The tendency of non-black managers to hire more whites and fewer blacks than black managers is particularly strong in the South, and the differences between Southern and non-Southern states are substantial.

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

Again, we use a graphical analysis to confirm that these estimates are not driven by demographic trends. Figures 2a and 2b show trends in the white share and black share of new hires for the sub-sample of Southern stores, and compare these trends for the cases where a non-black manager is replaced by a black manager to the cases where the order is reversed. Just as in the full-sample graphs, the introduction

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

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 non-Southern stores. On average nationally, when a non-black manager replaces a black manager, the share of new hires that is white rises from 53.1 to 57.5 percent, and the share that is black falls from 19.1 to 15.4 percent. This amounts to an 8 percent increase in white employment, and a 19 percent decline in black employment.

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 vs. 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 sub-sample of stores where the population share of Hispanics in the community is at least 30 percent.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 sub-sample are white, we focus only on the differences between Hispanic and white managers.

The results of this analysis are shown in Table 8. In locations where Hispanics are less than 30 percent of the population, the hiring patterns of Hispanic and white managers are remarkably similar, and Hispanics account for roughly 10 percent of new hires on average. However, in stores where the local community is at least 30 percent 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 replaced by a white manager in one of these stores, the share of new hires that is Hispanic falls

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

²² For ease of exposition, we report results for this sub-sample 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 suggests that the effect of manager ethnicity increases as the share of Hispanics in the community increases. Hence, our choice of 30 percent 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 cutpoints.

²³ This sub-sample of stores is only a small fraction (roughly seven percent) 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.

roughly from 59 to 48 percent, and the share that is white rises from 22 to 32 percent. This represents a 17 percent decline in Hispanic employment, and a 45 percent increase in white employment.

Figures 3a and 3b show the graphical analysis of trends in hiring patterns for stores where the local community is at least 30 percent 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 non-black manager in a non-Southern 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 7 suggest that when a black manager is replaced by a non-black manager, the employment share of blacks in non-Southern stores falls roughly from 16.9 percent to 14.4 percent within a year, and the share of whites rises from 54.4 percent to 57.1 percent. In a store of 40 employees, this change amounts to going from roughly 7 blacks and 22 whites to 6 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 seekers—and especially black job seekers. Indeed, the change amounts to a proportional decline of 15 percent 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 non-black manager would result in the replacement of three to four black employees with white employees. This amounts to a 28 percent decline in black employment, and a 17 percent 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 percent decline in the number of Hispanics, and a 45 percent increase in the number of whites in the store.

IV. 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 non-black managers. However, we have not explicitly ruled out the possibility that some centrally determined 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

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.

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 percent, and the conditional probability that this third manager is black is 13 percent. In the second set of stores, the probabilities are 57 percent that there is a third manager and 11 percent that this manager is black. These latter probabilities are not significantly different from those of the first set (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 Figures 1a and 1b raise this concern because they suggest that non-black managers who hire increasingly more whites (Fig. 1a) and fewer blacks (Fig. 1b) over a four-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 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 six-month period, (2) changes in employment demographics over the same six-month period, and (3) the ratio of employment share to local population share of each race group during the six-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.

V. 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 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

²⁵ The sample we analyze includes all changes in management occurring at least six months after the beginning of our sample period (i.e. August 1, 1996 – July 30, 1998). We chose to focus on changes over six 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 percent increase in the white employment share under a white manager (e.g., from 50 percent white to 60 percent white) would reduce the probability that the next manager is white by less than two 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.

all non-black managers.

A. Hiring Networks and Neighborhoods

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 group.²⁸ To test for managerial hiring networks, we assume 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

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., Bayer et al., 2008; Holzer, 1996; Granovetter, 1995); that such networks tend to be segregated by race (Marsden, 1987); that employees tend to refer similar others (e.g. Fernandez et al., 2000; Muow, 2002); and that minorities tend to lack access to hiring networks (Petersen et al., 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 column 5 of Tables 4a-4d, 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 percent 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 percent 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 four percent of the sample), we assign a distance of one mile. The average distance between the ZIP codes of an employee and a given manager is roughly sixteen miles.

zero if the employee was hired by manager 2. The results (Table 9, column 1) indicate the relative distance to manager 1 is 1.6 percent smaller if the employee was hired by manager 1. In other words, 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 9, column 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 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 (Arrow, 1973; Phelps, 1972; and Aigner and Cain, 1977).³² The other is “taste-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

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 a different race have lower job satisfaction (Wesolowski and 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).

can use these post-hire 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 post-hire 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 10) indicate that black employees have significantly better relative outcomes under black managers than under non-black managers. The dismissal rate of blacks relative to Hispanics and Asians is 20 percent lower under black managers, and their relative promotion rate is 88 percent higher. On the other hand, we find that the outcomes of whites relative to Hispanics and Asians are no worse under black managers. In fact, the

³³ To take 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 non-black managers. And 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 non-black 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 non-black managers. And 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 post-hire employment outcomes.

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. On the other hand, 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 post-hire outcomes suggests 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 non-blacks 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 post-hire 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 post-hire outcomes of blacks under black and non-black managers, then again there are two interpretations: (1) black managers prefer black employees over non-black employees, or (2) non-black managers prefer non-black 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

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 example, managerial prejudice may lead non-black 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 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 Verbover (2005).

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 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 performance. 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 11 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 (column 1), a comparison of the two interaction coefficients indicates slightly higher sales under black managers (compared to non-black managers) when there are more blacks employees and fewer whites. While this could indicate an efficiency motive for black managers to hire more blacks and fewer whites or for non-blacks to do the opposite, the effect is small and not statistically significant.^{38,39} In the turnover regression (column 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

³⁷ In particular, audit studies by Turner et al. (1991) and Bendick et al. (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 is no data on manager traits or there is not enough variation.

³⁸ Specifically, the difference in the two coefficients implies that when there is a five percentage point increase in the black share of employment that is offset by a decline in white employment, sales are .25 percent 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 percent black, etc. revealed no significant nonlinear effects.

³⁹ 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 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.

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 12 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 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

⁴⁰ Monthly turnover, defined as the number of exits in one 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 x white employment share interaction suggests that a five percentage point increase in the white share of employment causes turnover to increase by 0.0018, or 1.3 percent.

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

quit rate of whites is 15 percent higher under new black managers than under new non-black 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 for working 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

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 non-black employees, and/or (2) non-black managers prefer non-black employees over black employees.

More generally, we would like to make two points. First, we considered three reasons why a

⁴² The social-psychology literature offers multiple theories for why white employees may prefer not to work for non-white managers, including theories of similarity attraction, social identity, and status. Distinguishing among these theories is beyond the scope of the current paper, but 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 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.

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 these explanations may all play a role in hiring.

Indeed, these "explanations" are not mutually exclusive, and 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 non-black managers, this could cause or reinforce lower productivity among blacks (MacLeod, 2003). And when non-black managers observe this pattern of lower productivity, they might statistically discriminate against blacks 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 eighteen percent of all U.S. jobs), this is nevertheless a case study. And several characteristics of our sample could affect the relative importance of either managerial or employee discrimination. Two examples: First, the sample period (1996-1998) was a time of historically low unemployment in the U.S. 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 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 youths are less likely to discriminate on the basis of race.⁴⁴

VI. Conclusion

As the U.S. labor force grows more diverse, it is important to understand how race and ethnicity

⁴⁴ Studies by Kenney and Wissoker (1994) and Yinger (1986) suggest that women discriminate less than men. The 1990-2000 General Social Survey found that respondents under 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).

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. But 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 dataset 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 non-black managers—i.e., whites, Hispanics, and Asians—hire more whites and fewer blacks than do black managers. What’s more, these differences between non-black 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 percent 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 some form of managerial discrimination may help explain why non-black and black managers hire blacks at different rates. Finally, an analysis of employee quit rates suggests black managers may hire fewer white employees because of discrimination by white job-seekers against black managers.

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