University of Massachusetts Boston
ScholarWorks at UMass Boston

Gerontology Institute Publications | Gerontology Institute

11-1-2002

Employee Preferences as a Factor in Pension Participation by Minority Workers

Yung-Ping Chen
University of Massachusetts Boston, ypchen@comcast.net

Thomas D. Leavitt

Follow this and additional works at: http://scholarworks.umb.edu/gerontologyinstitute_pubs

Part of the Human Resources Management Commons, Labor Relations Commons, and the Race and Ethnicity Commons

Recommended Citation
Chen, Yung-Ping and Leavitt, Thomas D., "Employee Preferences as a Factor in Pension Participation by Minority Workers" (2002). *Gerontology Institute Publications.* Paper 11.
http://scholarworks.umb.edu/gerontologyinstitute_pubs/11

This Research Report is brought to you for free and open access by the Gerontology Institute at ScholarWorks at UMass Boston. It has been accepted for inclusion in Gerontology Institute Publications by an authorized administrator of ScholarWorks at UMass Boston. For more information, please contact library.uasc@umb.edu.

EMPLOYEE PREFERENCES AS A FACTOR IN PENSION PARTICIPATION BY MINORITY WORKERS

Yung-Ping Chen, Ph.D.

Thomas D. Leavitt, M.A.

November 2002

Gerontology Institute
University of Massachusetts Boston
100 Morrissey Blvd.
Boston, MA 02125-3393
Ph. (617) 287-7326
Fax (617) 287-7080
bing.chen@umb.edu

Report under Contract No. 41USC252C3 to the U.S. Department of Labor. We are grateful to the Gerontology Institute at the University of Massachusetts Boston for a grant that financed the revision.

TABLE OF CONTENTS

Executive Summary i

I. Introduction 1

II. Descriptive Analysis 2

III. Multivariate Analysis 7

IV. Conclusion 13

Tables T-1

Figures F-1

Appendix A A-1

EXECUTIVE SUMMARY

This project was designed to shed light on the widening gap between white and minority pension coverage during recent years. The hypothesis under investigation is that the divergence in white/minority coverage may be due in part to differences in the rates at which white and minority workers are choosing to participate in voluntary salary reduction plans. The availability of such plans has increased explosively in the past decade or so.

We examined the issue of race/ethnicity and voluntary salary reduction plans using both descriptive and multivariate analyses. The descriptive analysis showed clearly that, compared to blacks and Hispanics, whites were much more likely to be in places of employment with salary reduction plans and also more likely to participate in those plans. In 1988, 29.7 percent of white workers were offered salary reduction plans, compared to 23.4 percent of black workers and 15.5 percent of Hispanic workers. This gap grew between 1988 and 1993. In 1993, 41.3 percent of white workers, compared to 31.9 percent of black workers and 21.5 percent of Hispanic workers, were offered salary reduction plans. Similar patterns existed in salary reduction plan participation rates and uptake rates (the percentage of workers choosing to participate in salary reduction plans).

Multivariate analysis showed that in 1988 job and personal characteristics could explain a significant portion of the difference between black and white participation as well as between Hispanic and white participation in salary reduction plans. By 1993, however, the differences between Hispanic and white participation could not be satisfactorily explained by job and personal characteristics.

The research question is whether the impact of voluntary salary reduction plans on the growing race/ethnicity gap is due to differences in minority and white access to these plans or to other factors that make these plans more, or less, attractive to whites and minorities. Black and Hispanic uptake rates (the percentage of workers choosing to participate in available salary reduction plans) in 1988 (47.4 percent and 51.6 percent, respectively) were substantially lower than the white uptake rate (61.3 percent). The gap in uptake rates grew between 1988 and 1993, because the minority increase was less than the white increase (5.1 percentage points and 6.0 percentage points for black and Hispanic workers, respectively, compared to 7.9 percentage points for white workers). This suggests that there are factors that make salary reduction plans less attractive to minorities. To test this assertion, we examined uptake rates in a multivariate framework with personal characteristics and with “affordability” variables designed to measure the ability of workers to afford the loss of current income that comes with salary reduction plan participation. Hispanic uptake rates were not demonstrably different from white uptake rates after controlling for personal characteristics, but black uptake rates were significantly different from white uptake rates in 1993. The affordability variables had no measurable effect on uptake rates.

To sum up, voluntary salary reduction plans appear to have contributed to the growing pension coverage gap between whites and minorities. Differences in job and personal characteristics, as far as we can determine, cannot explain 1993 white/minority differences in salary reduction plan participation or the 1993 white/black difference in uptake rates. Variables

designed to measure the affordability of salary reduction plans also failed to explain the white/minority differences. It is conceivable that other explanatory variables or more finely specified variables would further explain white/minority differences, but it seems likely that there are other factors, possibly including attitudes toward current income versus retirement security, that make voluntary contributory plans less attractive to minority workers. A different research strategy may be needed to enhance our understanding of white/minority differences in participation in voluntary salary reduction plans.

I. Introduction

Our recent work, examining differential pension coverage for white, black, and Hispanic workers over the 1979-1993 period, documented that white and minority coverage rates appear to be diverging.[1] This is a somewhat surprising finding, given that minority workers have reportedly been gaining in the labor market, a trend that would make their job characteristic profiles more similar to white job characteristic profiles. Presumably, more similar job characteristic profiles would lead to more similar pension coverage rates.

However, since 1980, there has been tremendous growth in salary reduction plans (sometimes called salary deferral plans), the increasing use of which might help to explain the divergence in white and minority coverage rates. So-called salary reduction plans have become rather popular. As the name suggests, participation in such a plan involves the reduction of pre-tax salary by a specified amount or percentage; often the employee contribution is matched by some level of employer contribution. Contributions are invested in individual accounts for each participant. These plans, which include 401(k) and 403(b) plans, flourished in the 1980s and continued to grow rapidly in the 1990s. Salary reduction plans are fundamentally different from other pension plans in that participation is voluntary. Thus, salary reduction plan availability is

---

[1]All pension plan types, including salary reduction plans, were included in coverage rates. The study was entitled "Minority Access to Employer Pensions: A Statistical Analysis with Policy Recommendations." (Research project funded by a grant from the AARP Andrus Foundation, 1996)

Below are the 1988 and 1993 pension coverage (i.e., participation) percentages for age 21-61 nonagricultural private wage and salary workers. These figures have been revised since completing the above paper.

	1988	1993
Whites	49.5	51.4
Blacks	42.6	41.8
Hispanics	30.1	29.7

not the same as plan participation.[2] Participation in such plans may depend on a worker's relative preference for current income or retirement security, as well as other factors.

This paper will describe levels of salary reduction plan availability and participation for various race/ethnic subgroups in 1988 and 1993. Multivariate analysis will be used to examine the extent to which salary reduction plan trends can be explained by white/minority differences in job and worker characteristics.

II. Descriptive Analysis

The descriptive analysis examines race/ethnicity differences in the proportions of workers who are offered salary reduction plans, who participate in salary reduction plans, and who choose to participate in salary reduction plans (hereafter called the uptake rate) in 1988 and 1993. Data for 1988 and 1993 come from the May 1988 and April 1993 Current Population Surveys. Both surveys contain employee benefits supplements with questions and answers on pension coverage, including salary reduction plans. The analysis universe is age 21-61 nonagricultural private wage and salary workers.[3]

Salary Reduction Plan Availability

In 1988, 29.7 percent of white workers were offered salary reduction plans, compared to 23.4 percent of black workers and 15.5 percent of Hispanic workers (Table 1 and Figure 1). The gap between the white and minority salary reduction plan availability widened substantially during the 1988-1993 period. By 1993, availability of salary reduction plans for white workers increased 11.6 percentage points, while black and Hispanic availability increased 8.5 percentage points and 6.0 percentage points, respectively.

---

[2]Throughout this text, we use three terms referring to salary reduction plans. The availability rate = the percentage of workers offered a salary reduction plan. The participation rate = the percentage of workers participating in salary reduction plans. The uptake rate = the percentage of workers choosing to participate in available salary reduction plans. For any group, (availability rate) x (uptake rate) = (participation rate).

[3]The steps taken to create our 1988 and 1993 analysis universes are described in Appendix A.

Certain patterns of salary reduction plan availability are similar for each race/ethnicity group (Table 1). Availability increases with earnings. Full-time workers consistently have a higher availability rate than part-time workers. White-collar workers are more likely than blue collar workers to work at jobs offering salary reduction plans, while service workers are the least likely of all workers to have such plans available to them. Married workers are more likely than single workers to work at jobs with salary reduction plans. Plan availability generally increases with age.

The increasing gap in salary reduction plan availability between minority and white workers of various types can be seen clearly in Figures 2 and 3. White males and females had higher 1988 availability rates than their minority counterparts; the 1988-1993 increases for whites were higher than the minority increases -- although the black male percentage point increase was almost as large as the white male increase. Similarly, 1988 availability rates for white married and single workers were higher than any of the minority availability rates in that year, and the white-minority gap increased for both married and single workers in the 1988-1993 period.

Participation

The white salary reduction plan participation rate (the percentage of workers in salary reduction plans) in 1988 was substantially higher for whites (18.2 percent) than for blacks (11.1 percent) and Hispanics (8.0 percent) (Table 2). This participation rate gap increased significantly between 1988 and 1993 (Figure 4); the white percentage-point increase (10.4) during this period was approximately twice the percentage-point increase for blacks (5.6) and Hispanics (4.4).

The increasing white vs. minority participation rate gap has been particularly noteworthy for some population subgroups. For example, the white male participation rate increased 10.9 percentage points, more than three times the increase for Hispanic males (2.9 percentage points) and the white female rate increased more than three times the black female rate (Figure 5). Similarly, the 1988-1993 percentage-rate increase for married whites was twice the increase for Hispanic married workers (11.1 vs. 5.2 percentage points); the increase for single white workers was more than three times the increase for single Hispanic workers (9.1 vs. 2.8 percentage points) (Figure 6).

A main hypothesis to be tested in this paper is that the widening race/ethnicity gap in pension coverage is due in some measure to differences in the rates at which whites and minorities choose to participate in voluntary salary reduction plans. In turn, these participation rates may be related to the "affordability" of salary reduction plan contributions for various population subgroups. We chose three variables to study the affordability issue. One variable is the number of children; we hypothesized that more children under age 18 was a proxy for a greater demand on current income and, therefore, diminished the ability to afford salary reduction plan contributions. A second variable was the number of workers in the family; here we hypothesized that having more workers provided a family more of a financial cushion that would permit them to contribute to salary reduction plans. Lastly, we examined the difference between an individual's earnings and his/her family income. Once again, we hypothesized that a greater gap between individual earnings and family income was more likely to provide the cushion that would permit salary reduction plan participation.[4]

The relationship between participation and the number of children under 18 in the family for the three race/ethnicity categories did not appear to result in any noteworthy tendency for those with more children to participate in salary reduction plans at a lower rate than those with fewer children (Table 2). The participation rate for those with three or more children in their family was close to the rate for those with two children for all race/ethnicity categories in both 1988 and 1993.

Participation rates for minority workers in families with two earners were higher than for minority workers in families with one earner (Table 2). For example, the 1988 participation rate for blacks in two-earner families was almost 40 percent higher than for blacks in one-earner families (13.5 vs. 9.7 percent). For 1993, the black two-earner family participation rate was

---

[4]Clearly, all these variables are open to alternative interpretations. For example, more children might be associated with a greater need for the family security that could come with a secure retirement. A larger number of workers in a family might be associated with the need for more current income rather than a cushion that permits discretionary retirement spending. A larger difference between individual earnings and family income might indicate a family that needs several incomes to achieve a desired level of current consumption rather than one which has the cushion that makes the retirement contribution affordable.

nearly 70 percent higher than the rate for one-earner families (22.2 vs. 13.2 percent). In contrast, white participation rates for workers in two-earner families were nearly identical to rates for workers in one-earner families in both 1988 and 1993. Interestingly, participation rates for workers in three or more worker families were lower than for workers in two-earner families.

The higher participation rates for minorities in two-earner families relative to one-earner families are open to several interpretations. As noted above, one interpretation is that the extra earner in the family makes the salary reduction plan contribution more affordable by providing a financial cushion that permits voluntary participation in a salary reduction plan. The lower participation rates for workers in three or more worker families argues against this interpretation, but three or more worker families may be special in other ways; for example, they may tend to be low income families that need multiple incomes to make ends meet.[5]

Uptake Rates

There are also substantial differences between whites and minorities in the rate at which workers opt to participate in available plans (Table 3). In 1988, 61.3 percent of white workers in jobs offering salary reduction plans chose to participate. This compared to 51.6 percent of Hispanic workers and 47.4 percent of black workers. As with availability and participation rates, the gap among whites, blacks, and Hispanics grew in the 1988-1993 period (Figure 7). Uptake rates increased 7.9 percentage points for white workers, compared to a 5.1 percentage-point increase for black workers and a 6.0 percentage-point increase for Hispanic workers.

Looking at race/ethnicity together with gender (Figure 8) and marital status (Figure 9), it is clear that 1988-1993 minority increases in uptake rates were unevenly distributed compared to white increases. For example, the black male increase was approximately four times greater than the increase for black females (8.2 vs. 1.9 percentage points), while the increase for Hispanic females was more than twice the increase for Hispanic males (9.6 vs. 3.9 percentage points). The percentage-point increase for black single workers was almost six times the increase for black

---

[5]Ideally, we would try to examine the relationship between salary reduction plan participation and both number of workers and family income by doing cross-tabulations that used all three variables. However, this strategy is limited by small cell sizes.

married workers (8.3 vs. 1.4 percentage points). Uptake rates for married Hispanic workers increased markedly (10.9 percentage points), while rates for single Hispanic workers actually decreased 2.6 percentage points. In contrast, 1988-1993 uptake rate increases were similar for white male, white female, white married, and white single workers.

With respect to the affordability variables, the uptake patterns are, not surprisingly, similar to the participation patterns. For whites, uptake rates were similar for families with one, two, and three earners in both 1988 and 1993. In contrast, black uptake rates were substantially higher for workers in two-earner families than for workers in one-earner and three-or-more-earner families in both 1988 and 1993. Black and Hispanic uptake rates for three-or-more- earner families were substantially lower than for families with fewer workers in both 1988 and 1993, while white uptake rates for three or more earner families were quite similar to uptake rates for workers in families with fewer workers.[6]

White uptake rates varied only slightly with the number of children under age 18 living at home. Black uptake rates generally increased with the number of children, although the 1993 rate for workers in families with three or more children was much lower than the rate for workers in families with two children. For Hispanic workers, uptake rates did not move in a consistent pattern with increasing numbers of children.

Uptake rates for white workers with family income at least twice the level of their individual earnings were substantially smaller than for lower family income/individual earnings categories. This suggests that these high-ratio individuals tended to be in the lower earnings categories where uptake rates were lower. The same pattern existed for blacks and Hispanics in 1993. However, the peak uptake rate for blacks was for workers in the 111-150 percent ratio category (60.9 percent), while for Hispanics the peak was in the ≤110 percent category (74.8 percent).

The next section uses multivariate analysis to examine whether 1988 and 1993 white/minority differences in salary reduction plan participation and uptake rates can be

---

[6]Due to a small sample size, estimates for Hispanic uptake rates in 1988 are not reliable.

explained by differences in job and other characteristics. We estimate what black and Hispanic participation and uptake rates would be if we control for differences in job and other characteristics.

III. Multivariate Analysis

The preceding descriptive analysis clearly documents that black and Hispanic salary reduction plan participation and uptake rates were consistently lower than white rates in both 1988 and 1993. In this section, we use logistic regression (logit) analysis to assess whether white/minority differences can be explained by differences in job characteristics, personal characteristics, and variables that attempt to measure a worker's ability to afford salary reduction plan contributions.

Logit analysis is an appropriate and frequently used technique where the dependent variable has only two possible outcomes, which can be designated as 0 (the event does not occur) and 1 (the event occurs). Like other regression models, the independent variable coefficients (β) indicate the effect of the variable on the outcome: positive coefficients increase the probability of the event occurring and negative coefficients decrease the probability. One of the advantages of logit is that the antilogs of the β are odds ratios that can be interpreted.[7] If an odds ratio for a particular independent variable is greater than one, it indicates that the probability of an event (e.g., salary reduction plan participation) is greater for someone with the characteristic than for someone without the characteristic after controlling for other independent variables. Where a characteristic is represented by a series of dummy variables, an odds ratio greater than one indicates that the probability of an event occurring is greater for those with a particular value for the characteristic than for those in a "reference group" for this characteristic. The reference group for a particular variable includes those represented by the dummy variable not specified in

---

[7]One must be careful about the interpretation of odds-ratios. The odds-ratio associated with a particular variable is the ratio of the odds of an event occurring if one has the characteristic divided by the odds of the event occurring if one does not have the characteristic. This is not the same as the ratio of probabilities. An example will illustrate the difference. If males have a coverage rate of 60%, the odds of a male being covered are 60/40=3/2. If females have a coverage rate of 40%, the odds of a female being covered are 40/60=2/3. The ratio of these odds is (3÷2)/(2÷3)=9/4=2.25. The ratio of probabilities is 60/40=3/2=1.5.

the model. For example, in our models race is represented by three dummy variables for whites, blacks, and Hispanics. The white dummy variable is not specified in the model. This means that the odds ratios associated with the black and Hispanic dummy variables compare the odds for black and Hispanic workers to the odds for white workers.

Participation Rates

In the first set of models described below, the dependent variable is salary reduction plan participation. Independent variables include job characteristics (industry, occupation, union status, firm size, full-time/part-time status, and earnings in 1988 dollars), personal characteristic variables (gender, race, age, marital status, education), and affordability variables (ratio between family income and individual earnings, number of children under 18, and number of workers in the family). All model characteristics except for union status, full-time/part-time status, gender, and marital status are represented by a series of dummy variables. Complete descriptions of the variables are shown in Table 4.

The dataset had to be constrained in several ways. First, some individuals had zero or missing earnings data when other variables indicated that they were, in fact, working. Since earnings is one of our independent variables, we dropped workers with zero earnings from our analysis dataset. Also, we had a number of individuals whose family income was listed as less than individual earnings.[8] Since the ratio of family income to individual earnings is one of our affordability independent variables, individuals with family income totaling less than individual earnings were dropped from the analysis dataset. Finally, we focused on whites, blacks, and Hispanics in our models. Workers in the "other" race/ethnicity category were excluded from the analysis dataset.

---

[8]Family income is a categorical variable. We assumed that family income was the midpoint of each category. For example, those in the $15,000-$19,999 category were assigned a family income of $17,500. If individuals with family income in this category had individual earnings greater than $17,500, individual earnings were assumed to equal family income. The highest category of family income is $75,000 and above. Individuals with earnings above $75,000 were assumed to have earnings equal to family income. For individuals with earnings below $75,000 and family income above $75,000, family income was assumed to be $75,000. For such individuals, calculated family income/individual earnings ratios are somewhat higher than they should be.

Logit analyses of large datasets are typically done on unweighted data, because even slight differences can be deemed statistically significant when there are millions of individuals in the model. Consequently, all of our multivariate models are done on unweighted data. This has the potential to introduce substantial bias if there are great differences in weighting for different individuals. In this case, however, unweighted tabulations of salary reduction plan participation and uptake rates are reasonably close to weighted tabulations.[9]

Participation rate logits were done for three sets of independent variables for both 1988 and 1993 data. The first set of models related participation to race and job characteristics (industry, occupation, union/status, full-time/part-time status, firm size, and earnings). The second set of models included personal characteristic variables in addition to job characteristics (age, gender, marital status, and education). The third set contained variables designed to measure an individual's ability to afford salary reduction plan deductions (the ratio of family income to individual earnings, the number of children under 18, and the number of workers in the family).

Using only race and job characteristics as independent variables (Table 5), the Hispanic participation rate in 1988 was significantly different (at the 95 percent level) the white rate, while the black and white participation rates were not significantly different. The black and Hispanic odds ratios of 0.8524 and 0.7232, respectively, indicate that even after controlling for job characteristics, black and Hispanic participation rates were lower than white participation rates. Other findings from this logit are: (1) unionized workers had a significantly lower participation rate after controlling for race and job characteristics than nonunionized workers; (2) part-time workers had a significantly lower participation rate than full-time workers; (3) service and blue collar workers had significantly lower participation rates than white collar workers; (4) all firm size categories larger than "less than 25 employees" had higher participation rates than small firms; and (5) participation rates increased with earnings.

---

[9]For the restricted, unweighted sample, 1988 participation rates for whites, blacks and Hispanics are 17.9, 11.3, and 8.0, respectively, compared to 18.2, 11.1, and 8.0 for weighted numbers. Unweighted and (weighted) 1993 participation rates are 29.5 (28.6), 18.7 (16.7), and 13.4 (12.4). Unweighted and (weighted) 1988 uptake rates are 62.3 (61.3), 50.4 (48.5), 51.4 (50.0). Unweighted and (weighted) 1993 uptake rates are 69.8 (69.2), 54.6 (52.5), and 58.2 (57.6).

When personal characteristic variables were added to the above model (Table 6), the difference between 1988 Hispanic and white participation rates was no longer statistically significant. Interestingly, the participation rate differences between male and female workers and between married and single workers were not statistically significant. Both age and education differences were statistically significant, with participation rates increasing with age and education (with the exception of the difference between workers age 25-34 and workers age 35-44).

Lastly, a third model adds three sets of dummy variables aimed at gauging an individual's ability to afford salary reduction plan contributions (Table 7). These variables appear to add little if anything to the explanatory power of the variables in the previous two models. White/minority differences in participation rates continued to be statistically insignificant. After controlling for differences in race/ethnicity, job characteristics, and personal characteristics, there were no statistically significant differences in the categories of number of children under 18, number of workers in the family, and the ratio of family income to individual earnings. In other words, these variables did not appear to have any influence on participation rates. Results from the 1993 models are similar to results for the 1988 models with three important exceptions (Tables 8, 9, and 10). After controlling for race, job characteristics, and personal characteristics, the male participation rate in 1993 is significantly (at the 95 percent level) higher than female rate, while in 1988 there was no significant difference (Tables 6 and 9). Similarly, in 1993, age (except for the age 21-24 group) appeared to have little effect on participation rates, while in 1988 older workers had a higher participation rate after controlling for other factors. Most importantly, *minority participation rates are significantly lower than the white participation rate after controlling for job and personal characteristics*. This is a change from 1988, when there were no significant differences between minority and white rates. This indicates that, particularly for blacks, there is a growing gap between white and minority participation rates that cannot be explained by differences in job and personal characteristics.

We can convert the logit odds ratios described above to predicted participation rates, controlling for race and other characteristics, for black and Hispanic workers.[10] Predicted and observed black and Hispanic participation rates are shown in Table 11. Controlling for job characteristics raised the 1988 observed black participation rate of 11.3 to a predicted rate of 15.7. The Hispanic observed rate of 8.0 was raised to 13.6. Adding personal characteristics variables raised the black and Hispanic rates to 16.3 percent and 14.7 percent, respectively. Affordability variables had almost no impact on predicted participation rates. The 1993 observed black participation rate of 18.7 percent was raised to 21.8 percent by taking account of job characteristics, while the observed Hispanic rate of 13.4 percent was raised to 19.8 percent. Adding other control variables raised the black and Hispanic rates to 22.0 percent and 21.5 percent, respectively.

We can also calculate the percentage of the gap between observed white and minority participation rates that is explained by various sets of variables (Figure 10). The percentage of the black/white gap explained by various sets of variables is only slightly lower than the percentage of the Hispanic/white gap explained in 1988. However, in 1993 the explanatory value of specified factors for blacks and Hispanics is quite different. Only 29 percent of the

---

[10]Using the results from Table 5, the calculated odds ratio for blacks, controlling for race and job characteristics=

$$\frac{\text{the predicted odds of black participation}}{\text{the odds of white participation}} = 0.8524$$

$$\text{which is equal to} \quad \frac{\dfrac{x}{(1-x)}}{\text{the odds of white participation}} = 0.8524$$

where x = the probability of black participation. We know that the participation probability for whites in this dataset is 0.179. Therefore, the white odds ratio is $\frac{0.179}{0.821} = 0.218$. Thus,

$$\left(\frac{\frac{x}{1-x}}{0.218}\right) = 0.8524$$

Then,

$$\frac{x}{(1-x)} = 0.8524 \times 0.218 = 0.18582$$

and

$$x = .18582 - 0.18582\,x$$

$$1.18582\,x = 0.18582$$

$$x = 15.7$$

white/black gap is explained by differences in job characteristics, compared to 40 percent of the white/Hispanic gap. Thirty-one percent of the white/black gap is explained by differences in job and personal characteristics, compared to 50 percent of the white/Hispanic difference.

This finding suggests that by 1993 lower participation rates of Hispanic workers compared to white workers are more attributable to different job and personal characteristics than are the lower participation rates of black workers. In other words, there are some additional factors disproportionately affecting black participation that we have not accounted for in our models.

Uptake Rates

Logit analysis was also done for uptake rates, the percentage of workers deciding to participate in available salary reduction plans. Unlike the analysis of participation rate reported earlier, job characteristics were not included as independent variables. The participation rate depends on both the availability of a salary reduction plan, which is related to job characteristics, and the decision to accept the offered plan, which is more related to workers' considerations reflecting their personal characteristics. The uptake rate, on the other hand, is the sum of many individual decisions that are primarily related to individual characteristics, for example, stage in life, family considerations, ability to afford plan contributions, and preference for current consumption or future security.[11]

Uptake rate logits were done for two sets of independent variables for both 1988 and 1993 data. The first set of models related participation to race and other personal characteristics (age, gender, marital status, and education). The second set of models included affordability variables (number of children under 18, number of workers in family, ratio between family income and individual earnings), in addition to personal characteristics.

---

[11]It is possible to envision some effect of job characteristics on the uptake rates. Some jobs obviously have more generous salary reduction plans than other jobs, and workers are presumably more likely to choose to participate in generous plans than in less generous plans. To the extent that plan generosity is related to industry, occupation, union status, and other job characteristics, job characteristics may have an impact on uptake rate. However, we chose to isolate the effects of personal characteristics and affordability variables.

Using only race and personal characteristics as independent variables, the differences between minority and white uptake rates in 1988 were not statistically significant at the 95% level after controlling for the independent variables (Table 12). In other words, *observed differences between minority and white uptake rates in 1998 can be explained by differences in personal characteristics*. Adding the affordability variables does not change this result (Table 13). According to our analysis of 1993 data, however, the situation changed for black workers (Tables 14 and 15). Black workers had a significantly lower probability of participating in available salary reduction plans than white workers after controlling for personal characteristics.

As with participation rates, we can convert the logit odds ratios described above to predicted uptake rates, controlling for race and other characteristics, for black and Hispanic workers. Predicted and observed black and Hispanic uptake rates are shown in Table 16. Controlling for personal characteristics raised the 1988 observed black participation rate of 48.5 to a predicted rate of 56.1. The Hispanic observed rate of 50.0 was raised to 56.0. There was no additional explanatory power in the affordability variables that we used. The 1993 observed black uptake rate of 54.6 percent was raised to 58.4 percent, while the observed Hispanic rate of 58.2 percent was raised to 64.4 percent. Again, affordability variables had no impact on predicted uptake rates.

We can calculate the percentage of the gap between observed white and minority uptake rates that is explained by personal characteristics (Figure 11). Most noticeable was the sharp drop between 1988 and 1993 in the percentage of the white/black gap explained by personal characteristics (59 percent to 25 percent). During the same period, the percentage of the white/Hispanic gap explained by personal characteristics stayed the same (49 percent). The finding regarding black workers is consistent with the earlier finding that 1993 (but not 1988) black participation in salary reduction plans was significantly different from white participation after controlling for job and personal characteristics. *There appear to be some factors not taken account of in our models that would have affected black workers disproportionately*.

IV. Conclusion

This project was designed to shed light on the widening gap between white and minority pension coverage during recent years. The hypothesis underlying the project is that the

divergence in white/minority coverage may be due in part to differences in the rates at which white and minority workers were choosing to participate in voluntary salary reduction plans. The availability of such voluntary plans had increased explosively in the past decade.

We examined the issue of race/ethnicity and voluntary salary reduction plans using both descriptive and multivariate analyses. The descriptive analysis showed clearly that, compared to blacks and Hispanics, whites were much more likely to be in places of employment with salary reduction plans and also more likely to participate in plans available to them. Moreover, the gap between white and minority salary reduction plan availability and participation grew rapidly in the 1988-1993 period, indicating that at least part of the growing pension coverage gap may be attributed to salary reduction plans. Multivariate analysis showed that, after controlling for job and personal characteristics, 1988 black and white participation in salary reduction plans could not be distinguished. By 1993, however, the difference between black and white participation could not be explained by differences in job and personal characteristics. There is a similar trend for Hispanic participation.

The research question is whether the impact of voluntary salary reduction plans on the growing race/ethnicity gap is due to differences in minority and white access to these plans or to other factors that make these plans more or less attractive to whites and minorities. Black and Hispanic uptake rates in 1988 were substantially lower than white uptake rates and the minority increase in uptake rates in the 1988-1993 period was less than the white increase, which suggests that there are factors that make salary reduction plans less attractive to minorities. We examined uptake rates in a multivariate framework with personal characteristics and with "affordability" variables designed to measure the ability of workers to afford the loss of current income that comes with salary reduction plan participation. Hispanic uptake rates in both 1988 and 1993 were not demonstrably different from white uptake rates after controlling for personal characteristics, but black uptake rates were significantly different from white uptake rates in 1993. The affordability variables had no measurable effect on uptake rates.

To sum up, voluntary salary reduction plans appear to have contributed to the growing pension coverage gap between whites and minorities. Differences in job and personal characteristics, as far as we can determine, cannot by themselves explain the white/minority

differences in salary reduction plan participation or the white/black difference in uptake rates that exist in 1993. Variables designed to measure the affordability of salary reduction plans also failed to explain the white/minority differences. It is possible that other explanatory variables or more finely specified variables would further explain white/minority differences, but it seems likely that there are other factors, possibly including attitudes toward current income versus retirement security, that make voluntary contributory plans less attractive to minority workers. It appears that a different research strategy may well be needed to enhance our understanding of white/minority differences in participation in voluntary salary reduction plans.

Table 1: Percent of Workers Offered Salary Reduction Plans, by Race/Ethnicity and Various Other Characteristics: 1988 and 1993

	1988			1993		
	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
All Workers	29.7	23.4	15.5	41.3	31.9	21.5
Gender						
Male	31.8	21.4	15.9	43.6	32.7	19.6
Female	27.2	25.5	14.9	38.6	31.1	24.3
Age						
21-24	19.0	19.6	17.0	26.0	16.4	16.6
25-34	29.5	24.2	15.1	41.0	32.2	23.8
35-44	33.4	28.2	14.4	44.8	36.9	21.3
45-54	33.0	19.2	22.1	45.8	30.9	22.2
55-61	28.8	–[1]	–[1]	39.8	37.9	–[1]
Marital Status						
Married	31.7	24.7	16.9	43.5	36.0	22.1
Single	26.0	22.2	13.3	37.2	28.5	20.5
Occupation						
White Collar	35.8	34.8	20.4	47.8	44.8	33.2
Blue Collar	24.2	19.3	13.4	35.5	26.4	16.4
Service	9.0	11.5	10.7	17.6	14.4	10.5
Full-time/Part-time Status						
Full-time	32.4	25.6	17.0	44.1	35.2	22.2
Part-time	11.4	–[1]	–[1]	27.9	17.3	18.4
Earnings						
Less than $15,000	15.3	13.4	9.4	23.5	19.1	13.1
$15,000-$29,999	32.2	32.0	21.6	46.1	45.9	29.6
$30,000-$44,999	46.9	45.8	41.9	61.9	58.0	49.9
$45,000+	50.3	69.7	–[1]	67.7	73.4	45.0

[1]A weighted cell size of less than 75,000 was considered insufficient for a reliable estimate.

Table 2: Salary Reduction Plan Participation Rates, by Race/Ethnicity and Various Other Characteristics: 1988 and 1993

	1988			1993		
	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
All Workers	18.2	11.1	8.0	28.6	16.7	12.4
Gender						
Male	20.8	10.3	8.9	31.7	18.4	11.8
Female	15.0	11.9	6.7	24.9	15.1	13.3
Age						
21-24	6.5	–[1]	–[1]	10.7	6.5	3.9
25-34	16.9	12.1	8.6	26.9	14.5	14.3
35-44	20.5	14.4	7.6	32.5	19.1	12.2
45-54	24.3	11.9	12.3	35.3	22.6	14.4
55-61	21.7	–[1]	–[1]	29.5	24.0	15.9
Marital Status						
Married	20.3	13.5	9.2	31.4	20.0	14.4
Single	14.3	9.0	6.1	23.4	13.8	8.9
Number of Earners						
1	19.2	9.7	–[1]	29.0	13.2	13.1
2	18.6	13.5	11.6	30.2	22.2	15.5
3+	16.4	12.1	–[1]	24.4	10.4	6.0
Number of Children						
0	17.1	8.2	–[1]	27.1	16.2	12.5
1	19.0	10.4	9.4	29.2	16.0	11.7
2	17.2	12.6	9.2	31.7	22.7	12.6
3+	18.6	13.6	6.5	30.7	12.0	12.6
Ratio of family income to worker earnings[2]						
≤110%	22.5	10.8	–[1]	29.7	28.0	28.8
111-150%	22.8	13.2	10.9	24.0	28.1	28.3
151-200%	21.8	13.1	15.2	28.2	16.1	17.7
200%+	12.5	10.5	8.3	18.1	27.9	25.2
Occupation						
White Collar	22.5	16.9	11.6	34.3	25.1	21.8
Blue Collar	14.2	9.2	7.5	23.0	13.8	8.2
Service	3.8	–[1]	–[1]	8.9	4.2	3.4
Full-time/Part-time Status						
Full-time	20.3	12.7	9.1	31.0	19.2	13.1
Part-time	3.8	–[1]	–[1]	16.9	6.2	9.0
Earnings (1988 dollars)						
Less than $15,000	6.1	5.2	3.0	11.0	6.9	5.3
$15,000-$29,999	19.4	16.7	12.1	31.9	27.0	17.1
$30,000-$44,999	32.1	23.7	26.3	49.8	35.6	42.9
$45,000+	39.8	37.8	12.3	59.0	59.6	37.3

[1] A weighted cell size of less than 75,000 was considered insufficient for a reliable estimate.

[2] Family income is coded in ranges in the CPS (e.g., $7,500-$9,999, $10,000-$12,499). We used the midpoint of these ranges in calculating these ratios. Because family income is topcoded at $75,000 (i.e., all family incomes above $75,000 are coded as $75,000+), it is not possible to calculate an accurate ratio between family income and individual earnings for those in the upper family income category. We made two assumptions. First, for those with both family income and individual earnings above $75,000, we assumed that family income equals individual earnings. Second, for those with earnings below $75,000 and family income above $75,000, we assumed that family income equals $75,000. This has the effect of producing lower than actual ratios for some workers with high family income.

Table 3: Salary Reduction Uptake Rates, by Race/Ethnicity and Various Other Characteristics: 1988 and 1993 (Percent of individuals offered salary reduction plans)

	1988			1993		
	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
All workers	61.3	47.4	51.6	69.2	52.5	57.6
Gender						
Male	65.4	48.1	56.0	72.7	56.3	59.9
Female	55.1	46.7	45.0	64.5	48.6	54.6
Age						
21-24	34.2	13.3	37.6	41.4	39.5	23.6
25-34	57.3	50.0	57.0	65.5	45.0	60.0
35-44	61.4	51.1	52.3	72.6	51.9	57.4
45-54	73.6	62.0	55.7	77.1	73.3	64.6
55-61	75.3	–[1]	–[1]	74.1	63.1	–[1]
Marital Status						
Married	64.0	54.7	54.4	72.2	56.1	65.3
Single	55.0	40.5	45.9	62.7	48.8	43.3
Number of Earners						
1	65.3	44.5	–[1]	71.4	49.0	63.8
2	60.0	53.4	55.8	70.8	62.4	60.3
3+	65.3	45.0	–[1]	67.4	33.3	38.2
Number of Children						
0	56.3	41.2	–[1]	67.4	49.7	57.3
1	65.1	46.2	47.7	71.3	50.9	55.1
2	60.6	49.2	61.3	71.3	65.6	55.8
3+	59.8	52.5	45.5	72.3	47.6	64.6
Ratio of family income to individual earnings[2]						
≤110%	65.6	43.0	–[1]	76.0	54.7	74.8
111-150%	64.8	56.4	54.8	76.2	60.9	58.9
151-200%	62.3	49.6	63.1	70.5	54.9	58.1
200%+	54.8	47.7	47.2	59.6	44.9	37.2
Occupation						
White Collar	62.8	48.6	56.9	71.8	56.0	65.8
Blue Collar	58.7	47.7	56.0	64.9	52.3	50.1
Service	42.2	41.7	14.0	50.8	28.8	32.5
Full-time/Part-time Status						
Full-time	62.7	49.6	53.5	70.3	54.4	59.2
Part-time	33.0	30.7	–[1]	60.7	35.8	48.8
Earnings						
Less than $15,000	39.9	38.8	31.9	46.9	36.1	40.6
$15,000-$29,999	60.2	52.2	56.0	69.2	58.8	57.8
$30,000-$44,999	68.4	51.7	62.8	80.5	61.4	85.9
$45,000 or more	79.1	54.2	–[1]	87.2	81.2	–[1]

[1] A weighted cell size of less than 75,000 was considered insufficient for a reliable estimate.

[2] Family income is coded in ranges in the CPS (e.g., $7,500-$9,999, $10,000-$12,499). We used the midpoint of these ranges in calculating these ratios. Because family income is topcoded at $75,000 (i.e., all family incomes above $75,000 are coded as $75,000+), it is not possible to calculate an accurate ratio between family income and individual earnings for those in the upper family income category. We made two assumptions. First, for those with both family income and individual earnings above $75,000, we assumed that family income equals individual earnings. Second, for those with earnings below $75,000 and family income above $75,000, we assumed that family income equals $75,000. This has the effect of producing lower than actual ratios for some workers with high family income.

Table 4: Multivariate Analysis Variables

Variable Name	Description	Values
Job Characteristics		
IND1	Mining	1 if in group; 0 otherwise
IND2	Construction	1 if in group; 0 otherwise
IND3*	Manufacturing	1 if in group; 0 otherwise
IND4	Transportation/Communications/Utilities	1 if in group; 0 otherwise
IND5	Trade	1 if in group; 0 otherwise
IND6	Finance/Insurance/Real Estate	1 if in group; 0 otherwise
IND7	Services	1 if in group; 0 otherwise
OCCUP1*	White collar	1 if in group; 0 otherwise
OCCUP2	Blue collar	1 if in group; 0 otherwise
OCCUP3	Service	1 if in group; 0 otherwise
SIZE1*	Firm size less than 25 employees	1 if in group; 0 otherwise
SIZE2	Firm size 25-99 employees	1 if in group; 0 otherwise
SIZE3	Firm size 100-499 employees	1 if in group; 0 otherwise
SIZE4	Firm size 500-999 employees	1 if in group; 0 otherwise
SIZE5	Firm size more than 1000 employees	1 if in group; 0 otherwise
PARTIME	Full-time/Part-time status	1 if part-time; 0 if full-time
UNION	Unionized status	1 if in union job; 0 otherwise
EARNING1*	Earnings less than $15,000 (1988 dollars)	1 if in group; 0 otherwise
EARNING2	Earnings $15,000-$29,999 (1988 dollars)	1 if in group; 0 otherwise
EARNING3	Earnings $30,000-$44,999 (1988 dollars)	1 if in group; 0 otherwise
EARNING4	Earnings $45,000+ (1988 dollars)	1 if in group; 0 otherwise
Personal Characteristics		
RACECAT1*	White	1 if in group; 0 otherwise
RACECAT2	Black	1 if in group; 0 otherwise
RACECAT3	Hispanic	1 if in group; 0 otherwise
MALE	Gender	1 male; 0 female
AGECAT1*	Age 21-24	1 if in group; 0 otherwise
AGECAT2	Age 25-34	1 if in group; 0 otherwise

Variable Name	Description	Values
AGECAT3	Age 35-44	1 if in group; 0 otherwise
AGECAT4	Age 45-54	1 if in group; 0 otherwise
AGECAT5	Age 55-61	1 if in group; 0 otherwise
MARRIED	Marital Status	1 married; 0 single
ED1	Grade 8 or less	1 if in group; 0 otherwise
ED2	Some high school	1 if in group; 0 otherwise
ED3*	High school graduate	1 if in group; 0 otherwise
ED4	Some college	1 if in group; 0 otherwise
ED5	4-year college graduate	1 if in group; 0 otherwise
ED6	Post graduate	1 if in group; 0 otherwise
Measures of ability to forego current income		
LEVEL1*	Ratio of family income to worker earnings=1.10 or lower	1 if in group; 0 otherwise
LEVEL2	Ratio of family income to worker earnings=1.10-1.49	1 if in group; 0 otherwise
LEVEL3	Ratio of family income to worker earnings=1.50-1.99	1 if in group; 0 otherwise
LEVEL4	Ratio of family income to worker earnings=2 or higher	1 if in group; 0 otherwise
CHILD0*	No children under 18	1 if in group; 0 otherwise
CHILD1	One child under 18	1 if in group; 0 otherwise
CHILD2	Two children under 18	1 if in group; 0 otherwise
CHILD3	Three or more children under 18	1 if in group; 0 otherwise
EARNER1*	One earner in family	1 if in group; 0 otherwise
EARNER2	Two earners in family	1 if in group; 0 otherwise
EARNER3	Three or more earners in the family	1 if in group; 0 otherwise

* The reference category for this group of dummy variables. This category is not specified in the models. Derived odds ratios for the other dummy variables in this group relate the odds of participation (or uptake) for people in other categories to the odds for the reference category.

Table 5: Salary Reduction Plan Participation Logit Model Estimated for 1988 Job Characteristics (N=12,064)

	∃	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.1596	.1664		0.8524
Hispanic	-0.3240	.0424	T	0.7232
Unionized	-0.5062	.0000	T	0.6028
Mining	0.1579	.4836		1.1711
Construction	-0.6337	.0000	T	0.5306
Transportation/Communications/Utilities	0.0447	.6213		1.0457
Trade	-0.5167	.0000	T	0.5965
Finance/Insurance/Real Estate	0.2014	.0316	T	1.2231
Services	-0.3630	.0000	T	0.6956
Blue Collar	-0.5013	.0000	T	0.6057
Service	-0.6999	.0000	T	0.4966
Firm size 25-99	0.3158	.0246	T	1.3713
Firm size 100-499	0.6691	.0000	T	1.9526
Firm size 500-999	0.8218	.0000	T	2.1746
Firm size 1000+	1.2036	.0000	T	3.3320
Part-time	-0.8656	.0000	T	0.4208
Earnings $15,000-$29,999 (1988 dollars)	0.9733	.0000	T	2.6467
Earnings $30,000-$44,999 (1988 dollars)	1.4596	.0000	T	4.3040
Earnings $45,000+ (1988 dollars)	1.7647	.0000	T	5.8396
Constant	-2.4880	.0000		

Table 6: Salary Reduction Plan Participation Logit Model Estimated for 1988 Job Characteristics and Personal Characteristics (N=12,064)

	∃	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.1114	.3402		0.8946
Hispanic	-0.2382	.1408		0.7881
Unionized	-0.5025	.0000	T	0.6050
Mining	0.1837	.4208		1.2016
Construction	-0.5653	.0003	T	0.5682
Transportation/Communications/Utilities	0.0738	.4188		1.0766
Trade	-0.4527	.0000	T	0.6359
Finance/Insurance/Real Estate	0.2131	.0248	T	1.2375
Services	-0.4164	.0000	T	0.6594
Blue Collar	-0.3382	.0000	T	0.7131
Service	-0.5958	.0001	T	0.5511
Firm size 25-99	0.3132	.0266	T	1.3677
Firm size 100-499	0.6778	.0000	T	1.9695
Firm size 500-999	0.8358	.0000	T	2.3067
Firm size 1000+	1.2123	.0000	T	3.3611
Part-time	-0.9338	.0000	T	0.3930
Earnings $15,000-$29,999 (1988 dollars)	0.8732	.0000	T	2.3947
Earnings $30,000-$44,999 (1988 dollars)	1.2606	.0000	T	3.5277
Earnings $45,000+ (1988 dollars)	1.4794	.0000	T	4.3902
Age 21-24	-0.5511	.0000	T	0.5763
Age 25-34	-0.0520	.4344		0.9493
Age 45-54	0.2852	.0002	T	1.3300
Age 55-61	0.3616	.0005	T	1.4356
Married	0.1260	.0502		1.1342
Male	-0.1112	.0879		0.8947
8th grade or less	-0.3802	.0652		0.6837
Some high school	-0.2580	.0423	T	0.7726
Some college	0.1862	.0077	T	1.2047
College graduate	0.3054	.0002	T	1.3571
Postgraduate	0.4665	.0000	T	1.5944
Constant	-2.6251	.0000		

Table 7: Salary Reduction Plan Participation Logit Model Estimated for 1988 Job Charactersitics, Personal Characteristics, and Affordability Variables (N=12,064)

	β	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.1067	.3615		0.8988
Hispanic	-0.2302	.1551		0.7943
Unionized	-0.5018	.0000	T	0.6054
Mining	0.1912	.4029		1.2107
Construction	-0.5675	.0003	T	0.5670
Transportation/Communications/Utilities	0.0751	.4112		1.0779
Trade	-0.4504	.0000	T	0.6373
Finance/Insurance/Real Estate	0.2106	.0267	T	1.2344
Services	-0.4194	.0000	T	0.6575
Blue Collar	-0.3323	.0000	T	0.7173
Service	-0.5921	.0001	T	0.5532
Firm size 25-99	0.3105	.0280	T	1.3641
Firm size 100-499	0.6790	.0000	T	1.9720
Firm size 500-999	0.8336	.0000	T	2.3015
Firm size 1000+	1.2139	.0000	T	3.3664
Part-time	-0.9383	.0000	T	0.3913
Earnings $15,000-$29,999 (1988 dollars)	0.8961	.0000	T	2.4499
Earnings $30,000-$44,999 (1988 dollars)	1.3110	.0000	T	3.7099
Earnings $45,000+ (1988 dollars)	1.5580	.0000	T	4.7492
Age 21-24	-0.5582	.0000	T	0.5722
Age 25-34	-0.0566	.4016		0.9450
Age 45-54	0.2642	.0011	T	1.3024
Age 55-61	0.3420	.0022	T	1.4077
Married	0.1859	.0400	T	1.2043
Male	-0.0881	.1918		0.9156
8th grade or less	-0.3703	.0727	T	0.6905
Some high school	-0.2521	.0474	T	0.7772
Some college	0.1833	.0089	T	1.2011
College graduate	0.2952	.0004	T	1.3434
Postgraduate	0.4544	.0000	T	1.5752
Family income/individual earnings=1.10-1.49	0.0067	.9373		1.0067
Family income/individual earnings=1.50-1.99	0.0860	.3830		1.0898
Family income/individual earnings=2+	0.1256	.2186		1.1338

	β	Significance	Difference Significant at 95% level	Odds Ratio
One child under 18	-0.1141	.3304		0.8922
Two children under 18	-0.1000	.4257		0.9049
Three or more children under 18	-0.1519	.2275		0.8591
Two earners in family	-0.0386	.5949		0.9622
Three or more earners in family	-0.0050	.9583		0.9950
Constant	-2.6406	.0000		

Table 8: Salary Reduction Plan Participation Logit Model Estimated for 1993 Job Characteristics (N=12644)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.4045	.0001	Y	0.6673
Hispanic	-0.5305	.0000	Y	0.5883
Unionized	-0.5334	.0000	Y	0.5866
Mining	0.1364	.4784		1.1461
Construction	-0.7853	.0000	Y	0.4560
Transportation/Communications/Utilities	-0.1416	.0952		0.8680
Trade	-0.6870	.0000	Y	0.5031
Finance/Insurance/Real Estate	-0.0932	.2840		0.9110
Services	-0.6392	.0000	Y	0.5277
Blue Collar	-0.4076	.0000	Y	0.6652
Service	-0.7114	.0000	Y	0.4910
Firm size 25-99	0.5438	.0000	Y	1.7226
Firm size 100-499	1.1537	.0000	Y	3.1698
Firm size 500-999	1.1763	.0000	Y	3.2422
Firm size 1000+	1.3912	.0000	Y	4.0197
Part-time	-0.2391	.0006	Y	0.7874
Earnings $15,000-$29,999 (1988 dollars)	1.1242	.0000	Y	3.0777
Earnings $30,000-$44,999 (1988 dollars)	1.8063	.0000	Y	6.0880
Earnings $45,000+ (1988 dollars)	2.0901	.0000	Y	8.0858
Constant	-2.0780	.0000		

Table 9: Salary Reduction Plan Participation Logit Model Estimated for 1993 Job Characteristics and Personal Characteristics (N=12644)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.3948	.0001	Y	0.6738
Hispanic	-0.4280	.0005	Y	0.6518
Unionized	-0.5313	.0000	Y	0.5878
Mining	0.1583	.4146		1.1715
Construction	-0.7453	.0000	Y	0.4746
Transportation/Communications/Utilities	-0.1522	.0746		0.8588
Trade	-0.6602	.0000	Y	0.5168
Finance/Insurance/Real Estate	-0.1273	.1472		0.8805
Services	-0.6826	.0000	Y	0.5053
Blue Collar	-0.2641	.0001	Y	0.7679
Service	-0.6146	.0000	Y	0.5409
Firm size 25-99	0.5482	.0000	Y	1.7301
Firm size 100-499	1.1510	.0000	Y	3.1614
Firm size 500-999	1.1655	.0000	Y	3.2076
Firm size 1000+	1.3810	.0000	Y	3.9790
Part-time	-0.2696	.0001	Y	0.7637
Earnings $15,000-$29,999 (1988 dollars)	1.0451	.0000	Y	2.8436
Earnings $30,000-$44,999 (1988 dollars)	1.6775	.0000	Y	5.3523
Earnings $45,000+ (1988 dollars)	1.9574	.0000	Y	7.0812
Age 21-24	-0.5088	.0000	Y	0.6012
Age 25-34	-0.0864	.1358		0.9172
Age 45-54	0.0330	.6067		1.0336
Age 55-61	0.0711	.4344		1.0737
Married	-0.0748	.1552		0.9280
Male	0.1424	.0098	Y	1.1530
8th grade or less	-0.7055	.0017	Y	0.4939
Some high school	-0.2671	.0227	Y	0.7656
Some college	0.0862	.1390		1.0900
College graduate	0.2943	.0000	Y	1.3421
Postgraduate	0.0729	.4832		1.0756
Constant	-2.1648	.0000		

Table 10: Salary Reduction Plan Participation Logit Model Estimated for 1993 Job Characteristics, Personal Characteristics, and Affordability Variables (N=12644)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.3957	.0001	Y	0.6732
Hispanic	-0.4296	.0004	Y	0.6507
Unionized	-0.5290	.0000	Y	0.5892
Mining	0.1357	.4853		1.1453
Construction	-0.7436	.0000	Y	0.4754
Transportation/Communications/Utilities	-0.1504	.0787		0.8604
Trade	-0.6596	.0000	Y	0.5170
Finance/Insurance/Real Estate	-0.1277	.1463		0.8801
Services	-0.6833	.0000	Y	0.5049
Blue Collar	-0.2677	.0001	Y	0.7652
Service	-0.6168	.0000	Y	0.5397
Firm size 25-99	0.5462	.0000	Y	1.7266
Firm size 100-499	1.1448	.0000	Y	3.1417
Firm size 500-999	1.1608	.0000	Y	3.1924
Firm size 1000+	1.3798	.0000	Y	3.9743
Part-time	-0.2707	.0001	Y	0.7628
Earnings $15,000-$29,999 (1988 dollars)	1.0307	.0000	Y	2.8030
Earnings $30,000-$44,999 (1988 dollars)	1.6462	.0000	Y	5.1872
Earnings $45,000+ (1988 dollars)	1.9133	.0000	Y	6.7756
Age 21-24	-0.4674	.0000	Y	0.6266
Age 25-34	-0.0907	.1209		0.9133
Age 45-54	0.0816	.2337		1.0851
Age 55-61	0.1290	.1854		1.1377
Married	-0.0597	.4178		0.9420
Male	0.1551	.0060	Y	1.1678
8th grade or less	-0.7002	.0019	Y	0.4965
Some high school	-0.2659	.0234	Y	0.7665
Some college	0.0887	.1286		1.0928
College graduate	0.2972	.0000	Y	1.3461
Postgraduate	0.0702	.5011		1.0727
Family income/individual earnings=1.10-1.49	-0.0201	.7687		0.9801
Family income/individual earnings=1.50-1.99	-0.0827	.3038		0.9206
Family income/individual earnings=2+	-0.0786	.3361		0.9244
One child under 18	-0.0944	.3187		0.9100
Two children under 18	-0.0777	.4465		0.9253
Three or more children under 18	0.0074	.9418		1.0074
Two earners in family	0.1222	.0490	Y	1.1300
Three or more earners in family	-0.0619	.4854		0.9399

Constant	-2.1606	.0000

Table 11: Predicted Black and Hispanic Participation Rates, Controlling for Race and Other Factors: 1988 and 1993

	1988		1993	
	Black	Hispanic	Black	Hispanic
Observed participation[1]	11.3	8.0	18.7	13.4
Predicted participation, controlling for job characteristics	15.7	13.6	21.8	19.8
Predicted participation, controlling for job characteristics and personal variables	16.3	14.7	22.0	21.5
Predicted participation, controlling for job characteristics, personal characteristics, and affordability variables	16.4	14.8	22.0	21.5
Observed white participation[1]	17.9	17.9	29.5	29.5

[1] These are observed participation rates for the unweighted sample.

Table 12: Salary Reduction Plan Uptake Logit Model Estimated for 1988 Personal Characteristics (N=3,491)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.2123	.1434		0.8088
Hispanic	-0.2176	.3077		0.8045
Age 21-24	-1.0446	.0000	Y	0.3518
Age 25-34	-0.1857	.0316	Y	0.8305
Age 45-54	0.4819	.0000	Y	1.6192
Age 55-61	0.6138	.0001	Y	1.8474
Married	0.1035	.2193		1.1090
Male	0.3635	.0000	Y	1.4383
8th grade or less	0.1788	.5960		1.1958
Some high school	-0.2858	.0970		0.7514
Some college	0.1460	.1073		1.1572
College graduate	0.4040	.0001	Y	1.4978
Postgraduate	0.3937	.0015	Y	1.4824
Constant	0.0816	.0000		

Table 13: Salary Reduction Plan Uptake Logit Model Estimated for 1988 Personal Characteristics, and Affordability Variables (N=3,491)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.2146	.1416		0.8069
Hispanic	-0.1834	-.3921		0.8324
Age 21-24	-1.0178	.0000	Y	0.3614
Age 25-34	-0.1599	.0695		0.8522
Age 45-54	0.3996	.0006	Y	1.4912
Age 55-61	0.5523	.0012	Y	1.7372
Married	0.2535	.0330	Y	1.2885
Male	0.2669	.0009	Y	1.3059
8th grade or less	0.2084	.5367	Y	1.2318
Some high school	-0.2827	.1025		0.7537
Some college	0.1436	.1147		1.1544
College graduate	0.3810	.0003	Y	1.4638
Postgraduate	0.3829	.0022	Y	1.4665
Family income/individual earnings=1.10-1.49	-0.0418	.7229		0.9591
Family income/individual earnings=1.50-1.99	-0.1178	.3722		0.8889
Family income/individual earnings=2+	-0.2974	.0187	Y	0.7428
One child under 18	-0.0747	.6285		0.9280
Two children under 18	-0.0410	.8035		0.9598
Three or more children under 18	-0.2108	.1995		0.8099
Two earners in family	-0.0587	.5589		0.9430
Three or more earners in family	0.2561	.0638		1.2919
Constant	0.2703	.0000		

Table 14: Salary Reduction Plan Uptake Logit Model Estimated for 1993 Personal Characteristics (N=5130)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.4990	.0001	Y	0.6071
Hispanic	-0.2447	.1375		0.7829
Age 21-24	-1.1019	.0000	Y	0.3322
Age 25-34	-0.3635	.0000	Y	0.6953
Age 45-54	0.2126	.0200	Y	1.2369
Age 55-61	0.2213	.0933		1.2476
Married	-0.2345	.0007	Y	0.7910
Male	-0.3651	.0000	Y	0.6941
8th grade or less	-1.0019	.0004	Y	0.3672
Some high school	-0.5192	.0007	Y	0.5950
Some college	0.1289	.0938		1.1376
College graduate	0.4995	.0000	Y	1.6478
Postgraduate	0.4010	.0017	Y	1.4933
Constant	1.6626	.0000		

Table 15: Salary Reduction Plan Uptake Logit Model Estimated for 1993 Personal Characteristics, and Affordability Variables (N=5130)

	ß	Significance	Difference Significant at 95% level	Odds Ratio
Black	-0.5256	.0000	Y	0.5912
Hispanic	-0.2642	.1131		0.7679
Age 21-24	-0.8769	.0000	Y	0.4161
Age 25-34	-0.3190	.0000	Y	0.7269
Age 45-54	0.2451	.0118	Y	1.2778
Age 55-61	0.2520	.0724		1.2866
Married	-0.2318	.0181	Y	0.7931
Male	-0.1585	.0211	Y	0.8534
8th grade or less	-0.9711	.0007	Y	0.3787
Some high school	-0.4935	.0014	Y	0.6105
Some college	0.1223	.1154		1.1301
College graduate	0.4630	.0000	Y	1.5889
Postgraduate	0.3003	.0206	Y	1.3503
Family income/individual earnings=1.10-1.49	-0.0733	.4386		0.9294
Family income/individual earnings=1.50-1.99	-0.2963	.0058	Y	0.7435
Family income/individual earnings=2+	-0.7201	.0000	Y	0.4867
One child under 18	0.1206	.3382		1.1281
Two children under 18	0.1224	.3602		1.1302
Three or more children under 18	0.1312	.3261		1.1402
Two earners in family	0.1609	.0647		1.1746
Three or more earners in family	-0.0054	.9648	Y	0.9946
Constant	1.4607	.0000		

Table 16: Predicted Black and Hispanic Uptake Rates, Controlling for Race and Other Factors: 1988 and 1993

	1988		1993	
	Black	Hispanic	Black	Hispanic
Observed uptake rate [1]	48.5	50.0	54.6	58.2
Predicted uptake rate, controlling for personal characteristics	56.1	56.0	58.4	64.4
Predicted uptake rate, controlling for personal characteristics and affordability variables	56.0	56.8	57.8	64.0
Observed white uptake rate[1]	61.3	61.3	69.8	69.8

[1] These are observed uptake rates for the unweighted sample.

Figure 1

Percent of Workers[1] Offered Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity

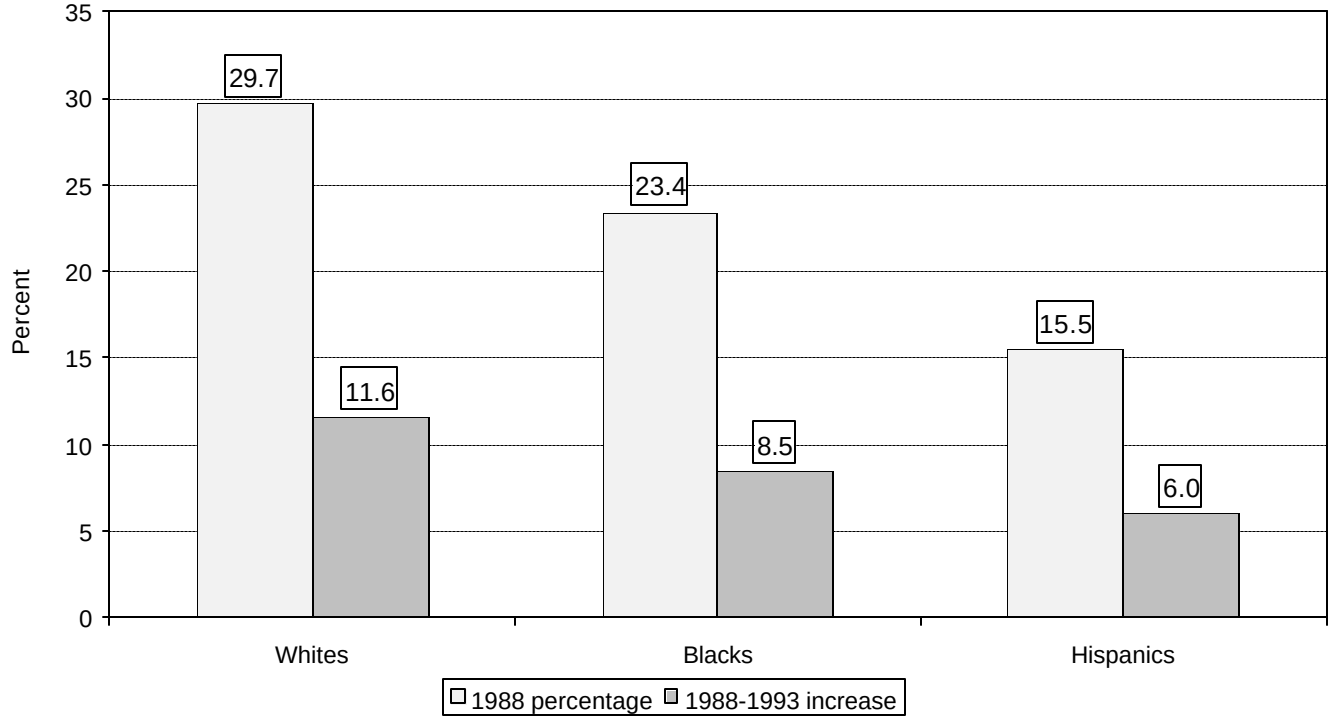
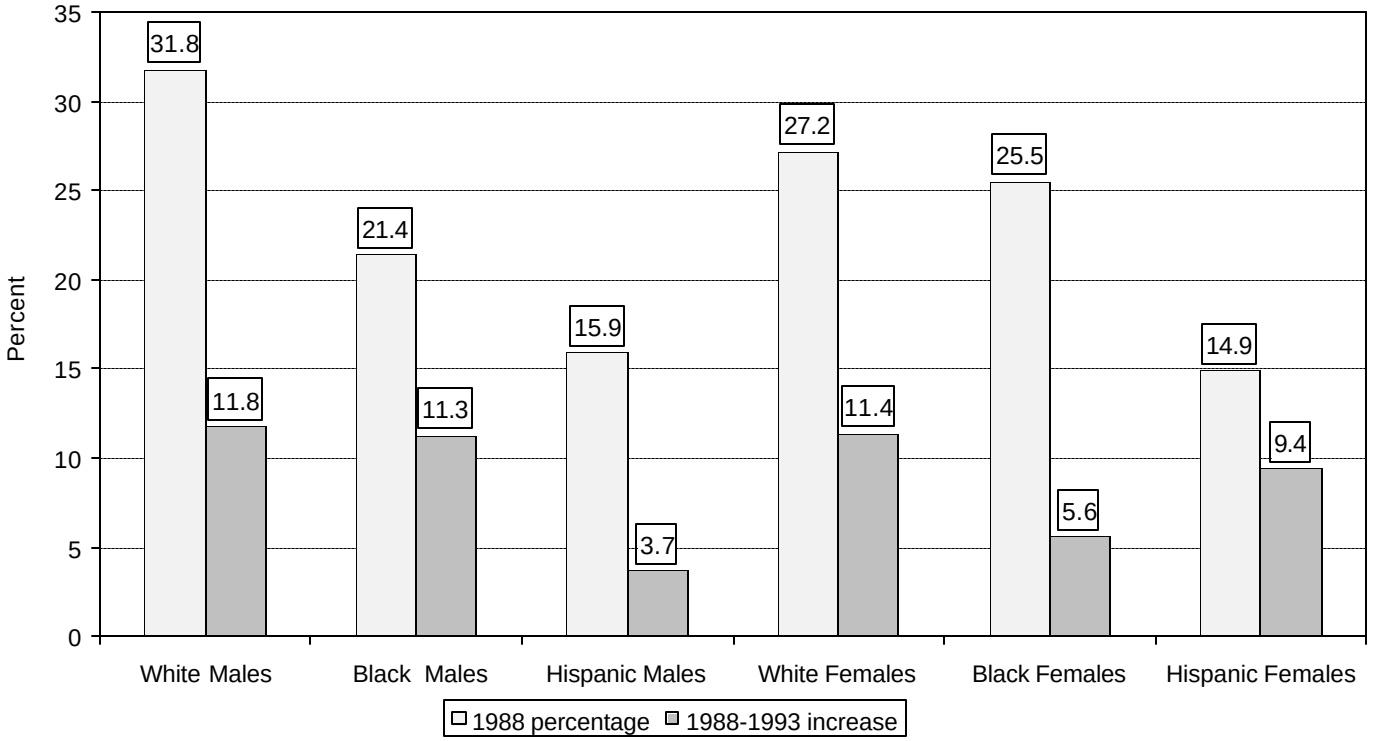


Figure 2

Percent of Workers[1] Offered Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity and Gender



[1]Age 21-61, private nonagricultural wage and salary workers

Figure 3

Percent of Workers[1] Offered Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity and Marital Status

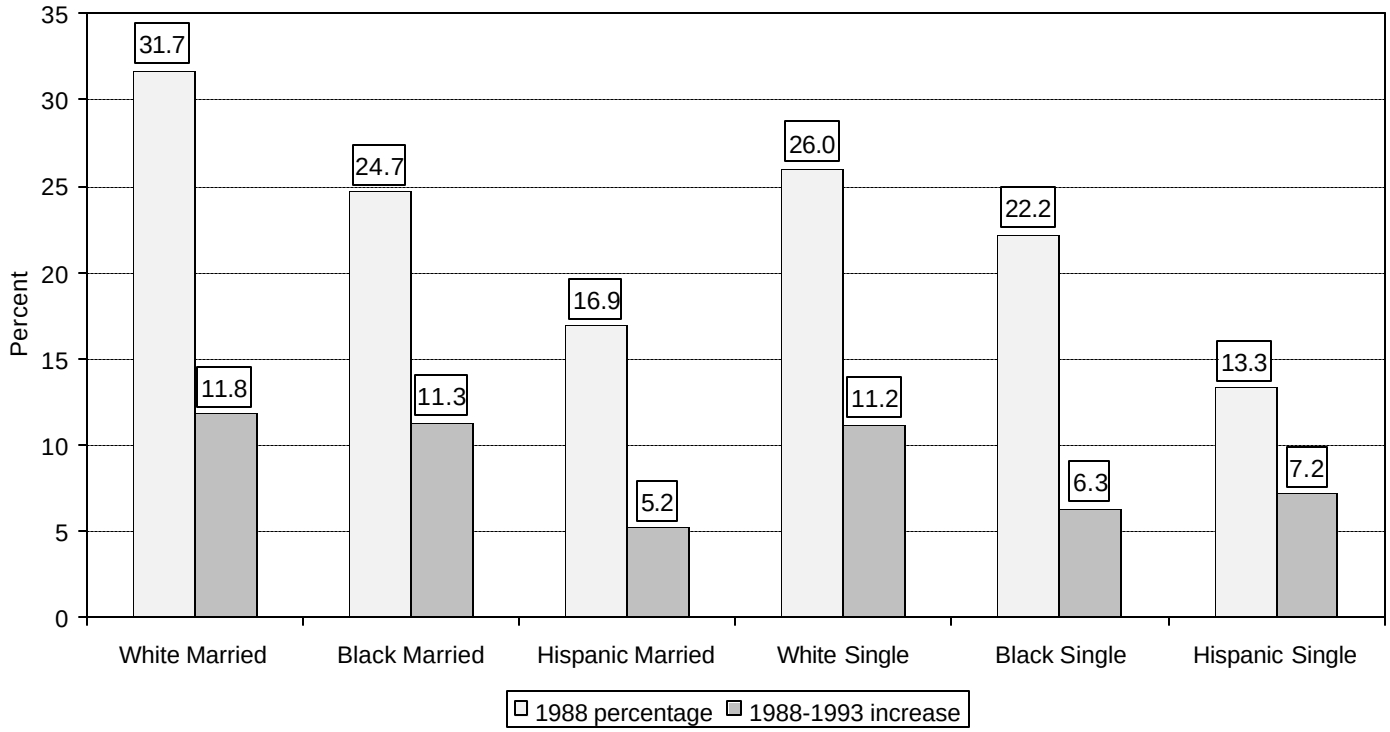
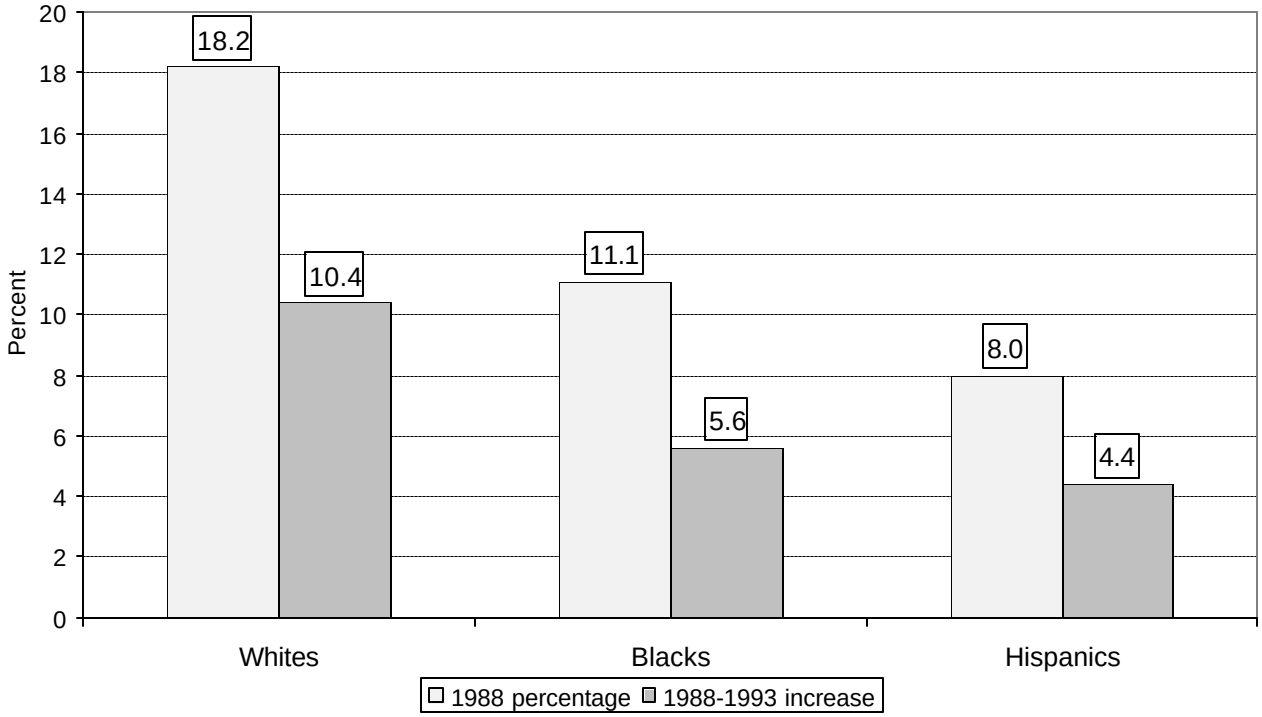


Figure 4

Percent of Workers[1] Participating in Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity



[1]Age 21-61, private nonagricultural wage and salary workers

Figure 5

Percent of Workers[1] Participating in Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity and Gender

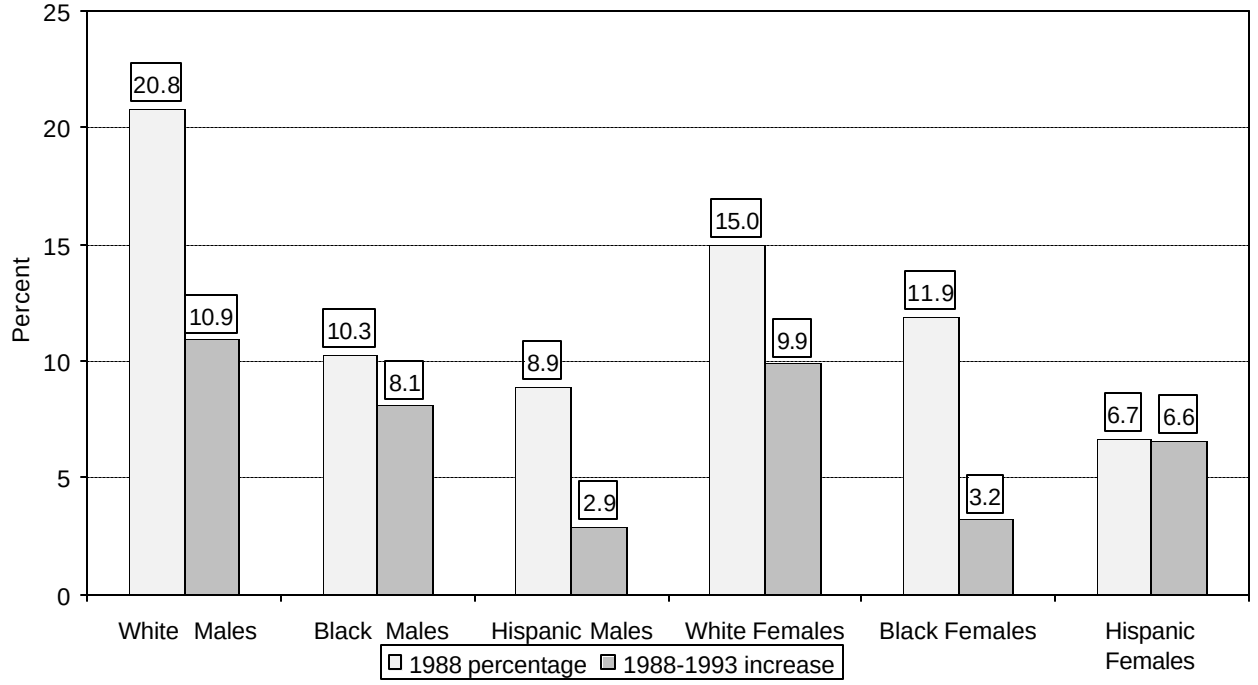
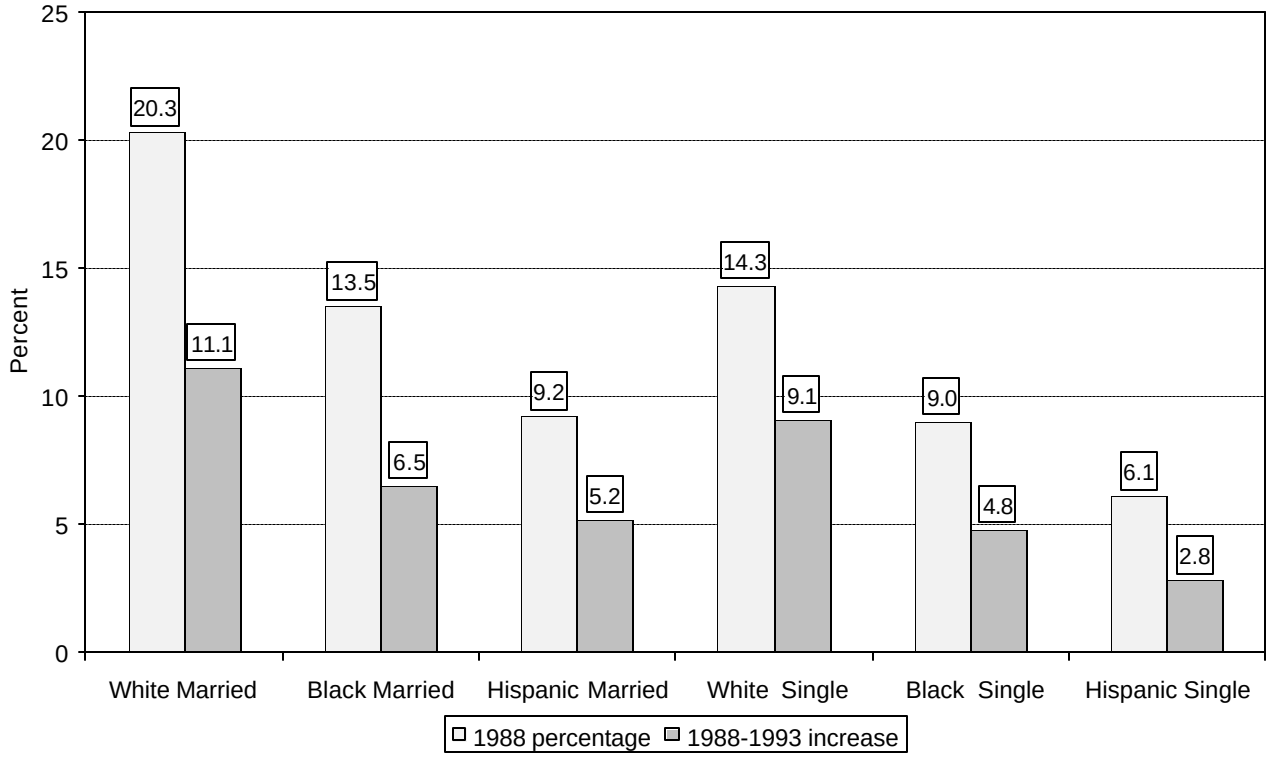


Figure 6

Percent of Workers[1] Participating in Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity and Marital Status



[1]Age 21-61, private nonagricultural wage and salary workers

Figure 7

Percent of Workers[1] Choosing to Participate in Available Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity

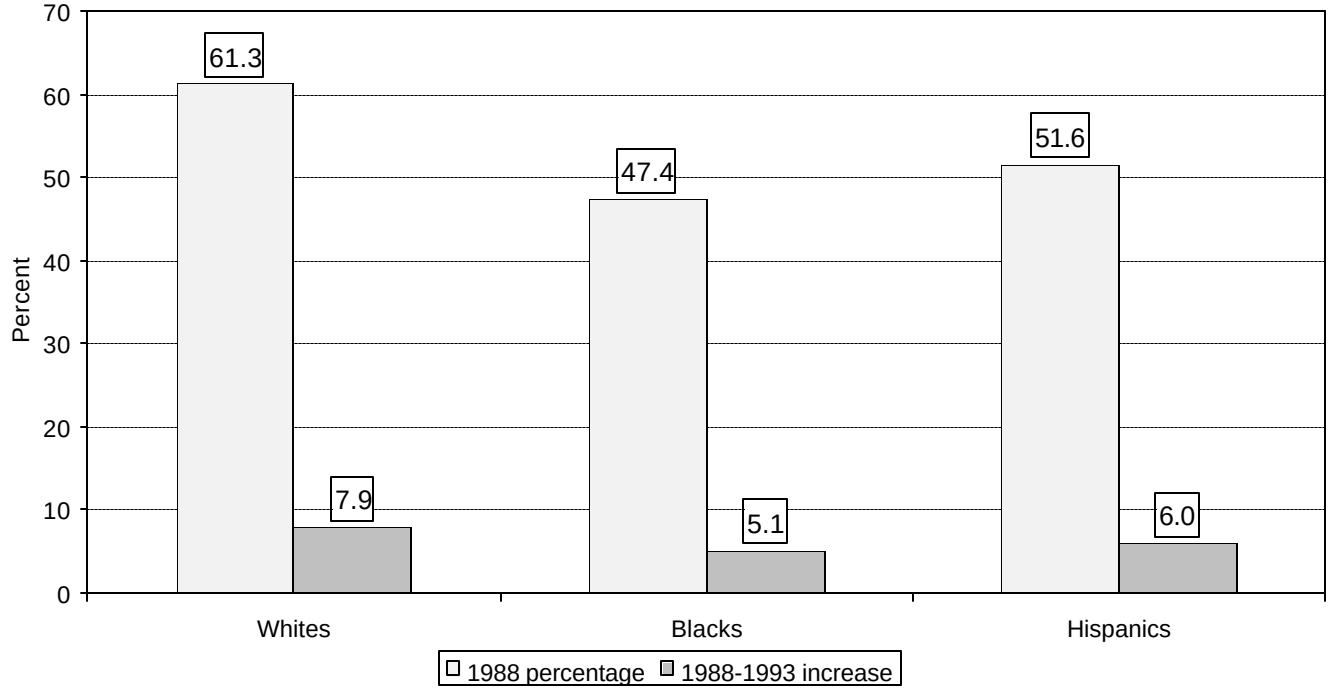
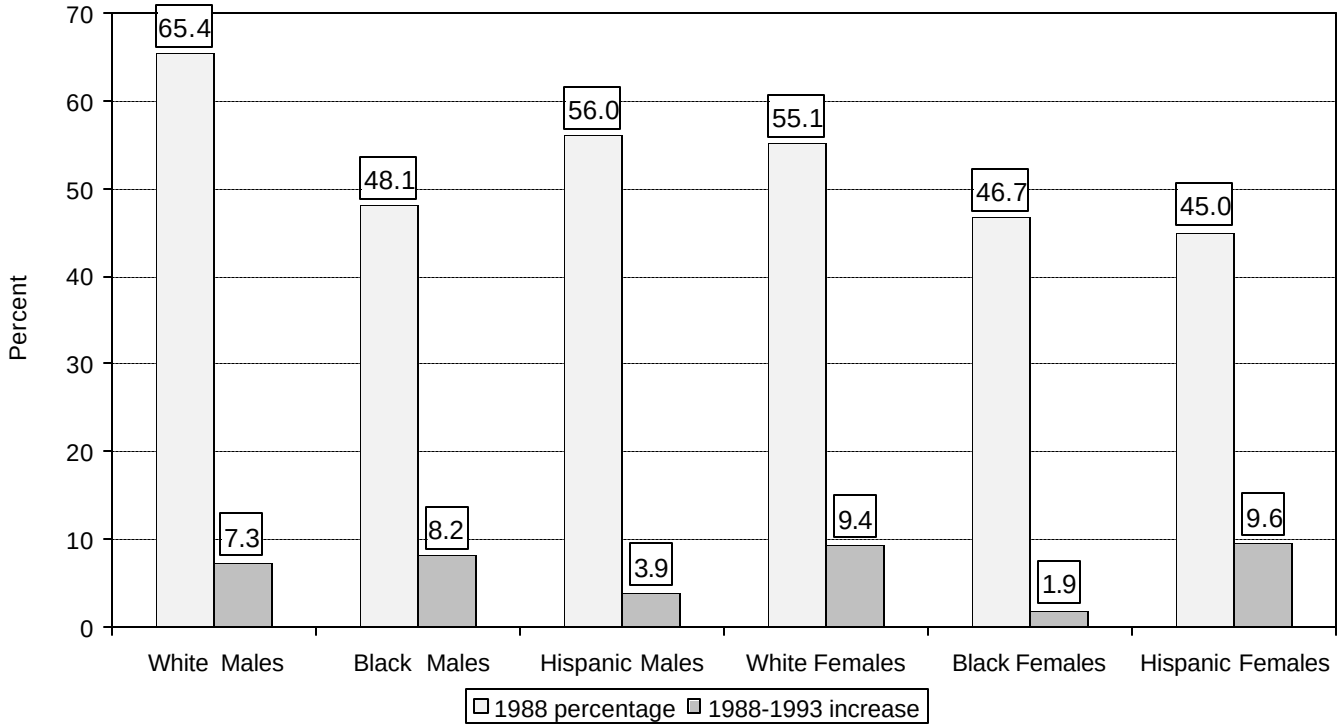


Figure 8

Percent of Workers[1] Choosing to Participate in Available Salary Reduction Plans in 1988 and Percentage Point Increase Between 1988 and 1993, by Race/Ethnicity and Gender



[1]Age 21-61, private nonagricultural wage and salary workers

Figure 9

Percent of Workers[1] Choosing to Participate in Available Salary Reduction Plans in 1988 and Percentage Point Change Between 1988 and 1993, by Race/Ethnicity and Marital Status

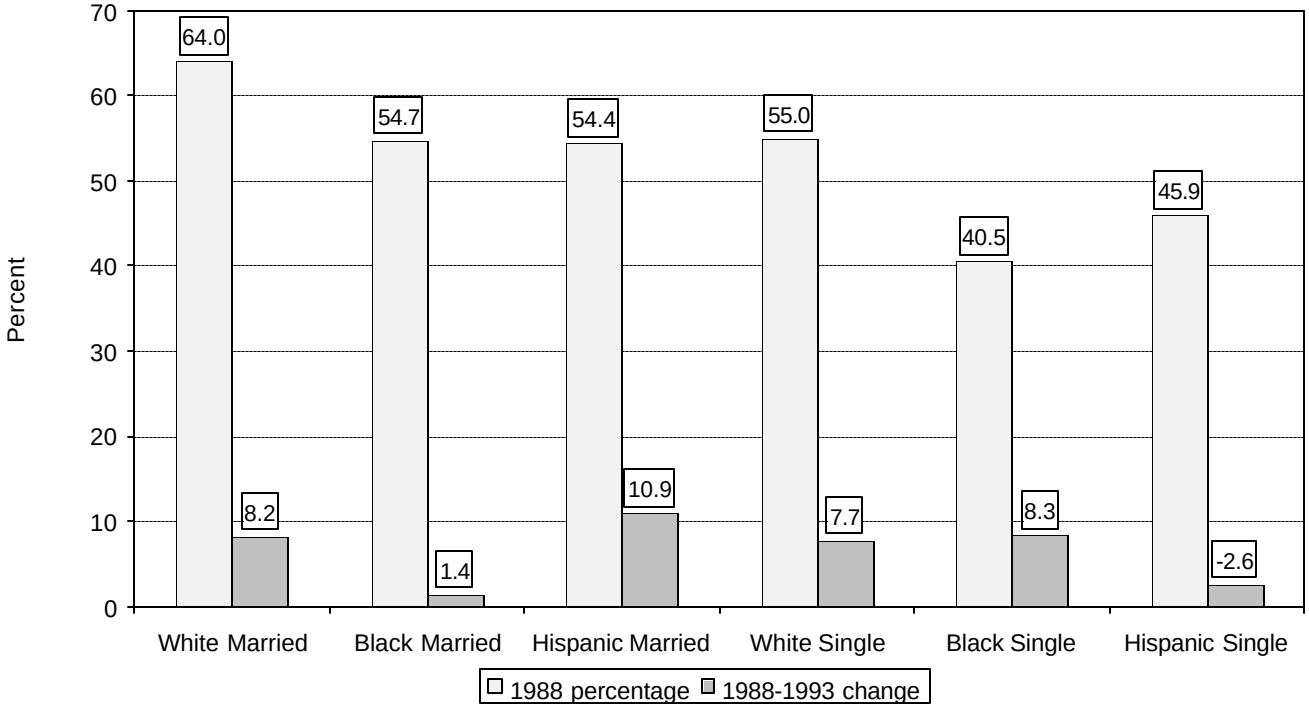
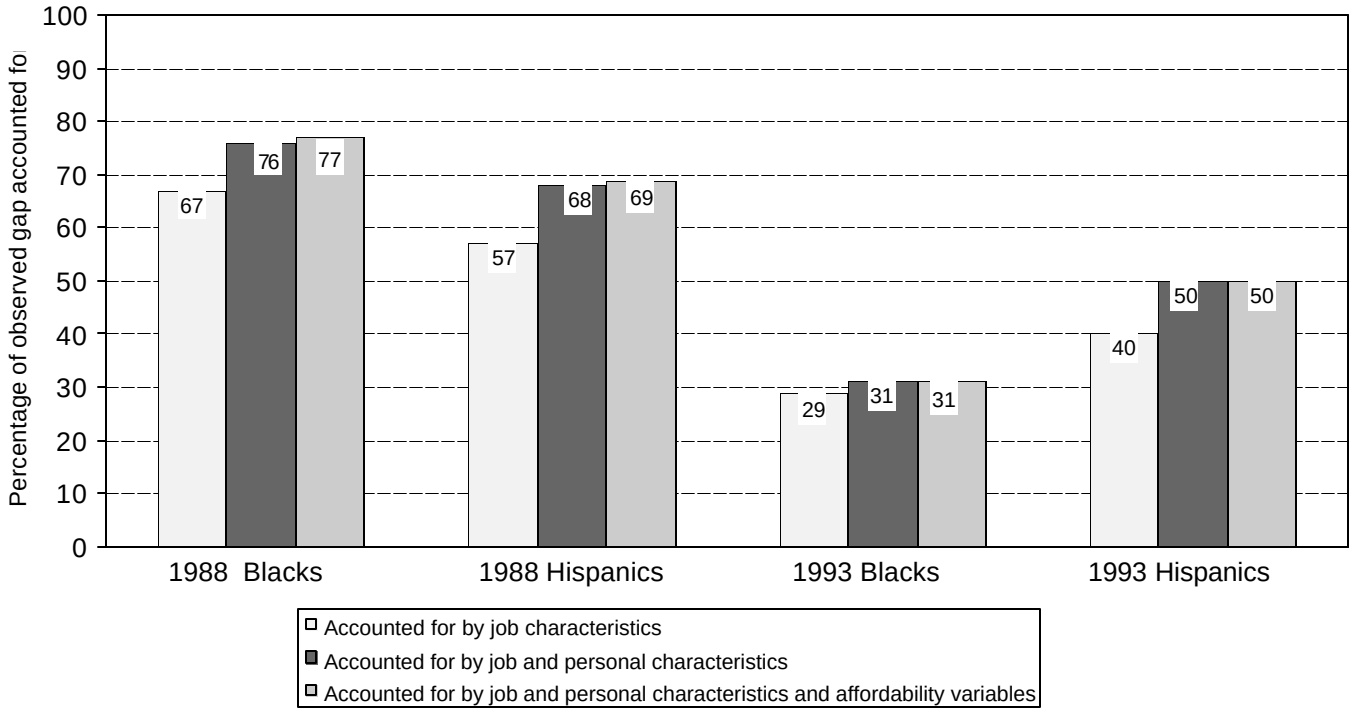


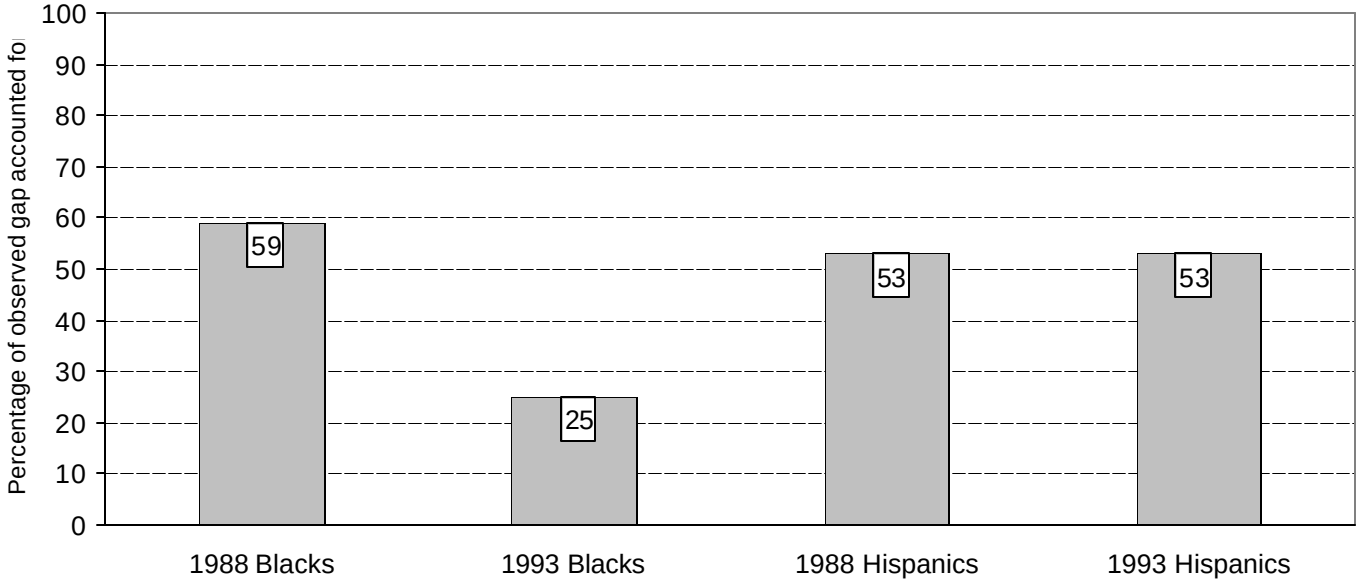
Figure 10

Predicted Percentage of Gap Between Observed Minority and White Participation Accounted for by Specified Variables



[1]Age 21-61, private nonagricultural wage and salary workers

Figure 11
Predicted Percentage of Gap Between Observed Minority and White
Uptake Rates Accounted for by Personal Characteristics



Appendix A

Construction of 1988 and 1993 Analysis Datasets

The May 1988 and April 1993 Current Population Survey datasets were adapted to reflect our focus on age 21-61 private, nonagricultural wage and salary workers. Since we were looking at employee benefit information, we needed to restrict our analysis datasets to individuals who were working and were asked supplementary questions. The steps that produced our analysis datasets are listed below.

<u>Steps for 1988</u>

Word 101, Character 2=1 (supplement eligible)
Word 101, Character 3=1,2,4 (takes out employees who work as "unincorporated, self-employed only")
Word 61, Character 3=1 (nonagricultural, private wage and salary worker flag)
Word 101, Character 4=1 (restricts to private only-used as a check on the above flag to ensure that private workers were selected)
Restrict to those age 21-61

<u>Steps for 1993</u>

A-S32B2=1 (supplement eligible)
A-INSTA=4 (complete supplement interview -- i.e., working)
A-NCAGPWS=1 (nonagricultural, private wage and salary worker flag)
Restrict to those age 21-61