Preliminary

Race in the Academy: Recent Trends

by

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Abstract

This paper examines changes in the relative pay and representation of racial minorities among college and university professors in the United States over about the last 30 years of the last century. The racial composition of the professoriate changed significantly over that period–the percentage of professors of minority racial groups grew from about 3 percent to about 10 percent of all faculty. The fastest-growing racial group was the Asian-Pacific Islander group. While the black proportion also grew rapidly, the representation of blacks in the professorial ranks is still much smaller than their representation among the population generally. Racial differences in pay are small among all racial groups, except that black professors receive a modest, but statistically significant, premium. This is perhaps evidence that universities and colleges are bidding for scarce black faculty in an effort to increase diversity.

I. Introduction

While much has been written about the place of women in the academic labor market, surprisingly little appears in print on the issue of race, in spite of the fact that many of the concerns about the representation and pay of women apply equally to racial minorities. For example, one concern that has often been expressed is that women do not become scientists or engineers because they have few "role models," and that segregation of women may discourage talented female students from studying fields such as engineering or business.[1] Similarly, a report from the mid-1990's on black representation among graduating Ph.D.'s bemoaned the lack of black men among the group, and suggested that it was especially important to "recruit and retain top black scholars at a time when campus populations are becoming increasingly diverse."[2] Perhaps it is similar concerns that have led to public programs, such as the National Science Foundation's Minority Graduate Fellowships, that encourage minority men and women to obtain advanced degrees.

The purpose of this paper is to examine the changes that have taken place in the racial composition of the academic labor force over the past thirty years, and to examine patterns of pay among the difference racial groups. In fact, while there have been substantial changes in the number of minority faculty on US campuses, certain minority groups remain significantly under-represented. In particular, the proportion of college and university professors who are black is much smaller than the black proportion of the population. The small pool of potential black professors leads to an interesting phenomenon: black salaries are bid up by universities competing to achieve affirmative action goals. In this paper I document the "affirmative action" premium for black professors, although it does not seem to apply to other minority groups.

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[1] This issue was studied by Canes and Rosen (1995).

[2] This quote is from Manegold (1994). Like concerns were addressed in Ehrenberg and Rothstein (1994), who examined, among other things, whether black representation among faculty improved the academic success of young men.

II. Data

This analysis is based on a number of large, national surveys of university and college professors in the United States. The earliest data I have analyzed comes from the Carnegie Commission National Survey of Higher Education: Faculty Study, 1969. The survey was completed in the spring of 1969 with a sample of 60,028 respondents. About 48,000 provided complete responses for purposes of this analysis. Another set of early data comes from *Teaching Faculty in Academe, 1972-73.* This was a large survey conducted by the American Council of Education (ACE). The sample was drawn using a stratified random selection of US institutions of higher education and included 301 universities, colleges and community colleges. Faculty from the selected institutions were then surveyed. About 53,000 responded to the survey. The analysis here uses about 45,000 who reported a teaching department. Some of these may not have been active teaching faculty at the time of the survey. Details of this sample can be found in Bayer (1981).

I also analyze data from two waves of the Higher Education Research Institute at the University of California, Los Angeles (HERI). The HERI surveys did not attempt to obtain directly a random sample of US institutions. Basically, institutions across the country were invited to participate in each wave of the study. For example, for the 1989 survey, faculty at 432 institutions were surveyed. In this analysis, I analyze employees of any of these institutions who spent at least part of their time teaching undergraduate or graduate college students. Details of the sample are available in Astin, Korn and Dey (1991). (However, that report presents analysis for only undergraduate faculty, a narrower sample than used here.) HERI conducts their faculty survey every three years. For this study I have analyzed data from the 1989-90 and 1995-96 surveys.

The last source of data is the Faculty Retirement Survey (FRS). The target sample for the FRS was US colleges and universities that participate in the TIAA/CREFF retirement system. The sampling scheme is described in some detail in Ashenfelter and Card (2000). This survey

consists of merged administrative records on all faculty at over 100 universities in the United States. Of the surveyed schools, only 59 provided information for their entire faculty population. (The others provided data only for older faculty.) Furthermore, for purposes here I have restricted analysis to those institutions that provided data on sex, race, service at the particular school, and date of highest degree, and which reported for 1987 and/or 1996. (The sampling scheme elicited information for the academic years 1986 through 1997, although some schools were not able to provide data for all of those years.)

III. Racial Composition of the Academic Labor Force

Table 1 presents the proportional representation of each race group in the samples that I have analyzed. The most glaring fact of these tables is the extremely small number of blacks among professors. In 1970, about 11 percent of the US population was black, but barely one percent of professors! Among the elite universities, shown in the lower portion of the table, the fraction was much smaller, still.

The smallest minority group is the American Indian group, with typically less than ½ of one percent of the professoriate in most of the samples analyzed here. (This would probably be the largest group in the "other race" category in the Carnegie 1969 survey.) However, American Indians also represent a very small proportion of the US population (0.6 percent in 1980 to 0.9 percent in 2000), and the numbers are so small in these samples that it is very difficult to make statistical judgements about their representation.

Asian and Pacific Islanders constitute the fastest growing racial minority in the United States over the past 30 years. In the 1980 Census, they made up about 1.6 percent of the population, in 1990 about 3 percent and in 2000 about 4.1 percent. Their relative representation in the academic labor market has increased even more rapidly, however, from about 1.6 percent to about 7 percent between 1969 and 1996–an exponential growth rate of 5¼ percent, compared to a growth rate of the relative population of about 4.7 percent. It also appears that Asian

representation among the professoriate has been somewhat larger than in the general population over this entire time period, but especially in the later years.

IV. Relative Pay

This section examines the pay differentials of minorities. Tables 2 and 3 present results of regression analysis of salary differentials. These tables report the coefficient estimate for a dummy variable of the relevant race group in a regression where the dependent variable is the natural logarithm of salary. The coefficients can be interpreted roughly as the percentage difference in salaries between individuals of the specified race group and whites. Four models are estimated. Model I, the "base" model controls only for length of contract (8/9 month versus 11/12 month), sex and race. Model II adds to Model I controls for human capital characteristics–type of highest degree, years of experience (or years since highest degree), years of seniority with current employer. Model III adds teaching field, and Model IV includes measures of publications, when those are available.

A. Blacks

Table 2 summarizes the analysis of all colleges and universities. In the 1969 survey, for black professors, the average difference in pay was about 10 percent. However, much of that could be explained by the fact that they tend to have less human capital and teach in fields that have lower pay. Also, it appears that black professors have few publications. The unexplained differential is less than 3 percent, which is small relative to estimates from the general labor market.

The gross pay gap varies quite a bit across the different samples, but in all cases the analysis indicates the blacks earn less. However, except for the 1969 survey, after controlling for human capital variables and teaching field, generally black professors are not paid less than white professors. In fact, these data show that black professors actually make more than white

professors, and the differences are statistically significant. These estimates suggest that the black premium is around 5 percent of pay, once productivity related characteristics are controlled for.

The top panel of Table 3 reports the analysis of faculty at top research universities. Here a similar pattern appears, although in some cases (particularly for the 1972 ACE survey and the 1995 HERI survey) the black premium is much larger. These results suggest a premium of close to 10 percent. However, the FRS data are consistent with no differential, although it is not possible to include publication activity due to the nature of the FRS surveys.

B. Asian and Pacific Islanders

The pay pattern for Asian professors is quite different. Generally, the gross average differences between Asians and whites are small, or they favor Asians. (The 1969 survey is the only case that shows large penalty for this group.) However, the pattern of the estimates suggest that Asian professors tend to be employed in fields that have relatively high pay, and that their publication records are stronger than whites. The rather large premium received in the HERI surveys can be mostly explained by the teaching field and publication record variables. Both of the FRS surveys show little difference in pay between Asian and white professors, once teaching field is accounted for. In large research universities, the Asian/White difference is even smaller. (Although results from the early surveys suggest discrimination against Asians.)

V. Segregation by Field

The analysis in the previous section has demonstrated that teaching field has an important impact on the relative pay of both blacks and Asians. The differences in the distribution across different fields are dramatic. Figure 1 shows these distributions for Asians, blacks and whites. (This is the order of the bars in the graphs–the light gray represents Asians, dark gray black, and the white bar represents whites.) There are two very obvious differences–blacks are greatly over represented in field 6 (Social Science except Economics), and Asians are greatly over

represented in field 10 (Engineering).

This segregation by field is also readily apparent by examining the distribution of earned doctorate degrees in the United States. Ehrenberg (1992, Table 4.5) reported the fields of new doctorates awarded to US citizens in 1988. For that period, 46 percent of doctorates earned by blacks were in education, compared to 22 percent for whites and 13 percent for Asians. Also, 23 percent of all doctorates earned by Asians were in Engineering, compared to 7.4 percent for whites and only 2.4 percent for blacks.

This pattern has not changed much over the decade that followed Ehrenberg's analysis. For US citizens for the 1997-97 school year, 36 percent of black doctorates were awarded in education, compared to 17 percent for whites and 7 percent for Asians. About nineteen percent of Asian doctorates were awarded in engineering, compared to 4 percent of black doctorates and 8 percent of white doctorates. (These facts come from Table 272 of the *Digest of Educational Statistic*, 2001.) However, these statistics do not tell the complete story, since the racial composition of those who are not US citizens are not reported. About a quarter of doctorates awarded in 1997-98 went to non-citizens, and the representation of black among that group is very small, while Asians make up a large part of the non-citizen student body in doctoral programs. Thus, it appears that the manifest segregation seen in the academic labor market is likely to persist for some time to come.

VI. Conclusions

This paper has examined several new data sources to analyze patterns of employment and pay among different racial groups in the professoriate. The analysis finds a few notable patterns. First, there are many fewer black professors than might be expected from the proportion of the US population. Although the representation of blacks has increased slightly, according to these estimates, the changes have been very slight compared to the gap that continues to exist. On the other hand, black professors apparently receive an "affirmative action" premium in salaries

(although that result varies quite a bit across the different surveys used here). Black professors apparently earn more than white professors in the same fields and with similar publication records. This is exactly the economic outcome that might be predicted if colleges attempt to have a "diverse" faculty when there are few black professors available. This is precisely what an executive of Brown University was talking about when quoted in the New York Times as saying that the dearth of black doctorates "sets up a competition that is really not healthy for anyone." [3]

The other large racial minority in the US, Asians and Pacific Islanders, actually appear to be somewhat over-represented in the academic labor market. This group of college professors has also been growing at a much faster rate than other racial groups. Although Asian professors tend to earn more than whites, the difference largely can be explained by the fields in which these professors teach, and in their publication records.

[3]See Manegold (1994).

References

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Table 1
Racial Composition of the Professoriate
Full Time Teaching Faculty

(Tables Show Percentage of All Faculty Having Specified Race)

A. All Universities and Colleges

Race Group	Carnegie 1969	ACE 1972	FRS 1987	HERI 1989	HERI 1995	FRS 1996
Asian/Pacific Islander	1.63	1.79	5.23	–	–	6.70
Black	1.16	1.48	1.73	2.75	2.24	2.61
American Indian	–	0.67	0.13	–	–	0.27
Other	0.27	–	–	–	–	--

B. Research-I Universities Only[4]

	Carnegie 1969	ACE 1972	FRS 1987	HERI 1989	HERI 1995	FRS 1996
Asian/Pacific Islander	2.06	2.19	5.72	--	6.36	7.03
Black	0.55	0.81	2.04	–	2.29	2.71
American Indian	–	0.55	0.01	--	0.67	0.29
Other	0.30	–	–	–	–	--

[4]Research-I universities as per the Carnegie classification scheme. Data for Carnegie 1969 survey are “High Quality” institutions, as the Carnegie classifications did not exist at that time.

Table 2
Regression Estimates of Race Differences in Log Salary
All Colleges and Universities

Model	Carnegie 1969	ACE 1972	FRS 1987	HERI 1989	HERI 1995	FRS 1996
			Blacks			
I - Base Differential	-.0947* (.0157)	-.0306 (.0173)	-0.0594* (.0177)	-.0889* (.010)	-.0342* (.014)	-.0452* (.0150)
II - + Human Capital	-.0536* (.0123)	.0211 (.0151)	-0.0059 (.0147)	-.0132* (.008)	.0389* (.012)	0.0113 (.0130)
III - + Field	-.0599* (.0120)	.0245 (.0149)	0.0221 (.0135)	-.0055* (.008)	.0450* (.011)	0.0302* (.0115)
IV - + Publications	-.0260* (.0113)	.0481* (.0145)	--	.0189* (.007)	.0698* (.011)	--
			Asian & Pacific Islanders			
I-Base	-.0407* (.0132)	-.0094 (.0157)	.0085 (.0104)	.0696* (.010)	.0621* (.0120)	-.0019 (.010)
II + Human Capital	-.0354* (.0104)	-.0165 (.0137)	0.0519* (.0086)	.0678* (.008)	.0761* (.0100)	.0584* (.008)
III + Field	-.0492* (.0102)	-.0244 (.0135)	0.0041 (.0080)	.0272* (.008)	.0449* (.0090)	0.0122 (.0074)
IV + Publications	-.0640* (.0096)	-.0379* (.0132)	--	.0142* (.0070)	.0325* (.0090)	--
Sample Size	47,377	35,054	16,323	39,444	35,785	15,771

Table 3
Regression Estimates of Race Differences in Log Salary
Research-I Universities Only

	Carnegie 1969	ACE 1972	FRS 1987	Heri 1995	FRS 1996
			Blacks		
I-Base	-0.1105* (0.0530)	-0.0465 (0.0394)	-0.0920 (.0236)	--	-0.09196 (0.02355)
II + Human Capital	0.0063 (0.0415)	0.0793* (0.0327)	-0.03336 0.01901	0.0436 (0.0350)	-0.0334 (.0190)
III + Field	-0.0084 0.0406	0.0800* 0.0323	0.00279 0.01736	-	0.0028 (.0174)
IV + Publications	0.0225 (0.0384)	0.1207* (0.0313)	--	0.0893 (0.0200)	
			Asian & Pacific Islander		
I - Base	-0.1064 (0.0277)	-0.0440 (0.0394)	0.0220 (.0143)	-	0.0220 (.0143)
II + Human Capital	-0.0717 (0.0217)	-0.0431 (0.0198)	0.0562 (.0116)	0.0555 (0.0170)	0.0562 (.0116)
III + Field	-0.0791 (0.0213)	-0.0591 (0.0190)	0.0153 (.0107)	0.0221 (0.0150)	0.0153 (.0107)
IV + Publications	-0.0903 (0.0202)	-0.0491* (0.0090)	--	0.0325 (0.0090)	--
Sample Size	11,032	12,297	7,935	9,875	5,960