

ECONOMIC DISCRIMINATION IN PROFESSIONAL SPORTS

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INTRODUCTION

On September 1, 1971, baseball fans witnessed a truly historic event when Pittsburgh fielded an all black team against Philadelphia. The impact of that event was lost on both spectators and commentators, who were more concerned with the outcome of the game than with the racial composition of the teams. The fielding of an all black team without racial incident stood in sharp contrast to the shock waves caused by Jackie Robinson's entry into baseball a quarter century earlier. Many have argued that over these last twenty-five years sports achieved the elusive goal of racial equality that seems to have escaped society as a whole. Yet, today, many inside and outside of the sports world claim that race discrimination continues to pervade sports.

For the casual observer of professional sports it is difficult to believe that race discrimination remains a serious problem inside sports. Evidence would seem to suggest the contrary. Currently, while 11.1 per cent of the United States population is black, about a quarter of all major league baseball players, a third of all pro football players and two-thirds of all pro basketball players are black. Moreover, black players appear to earn more than white players in these sports. For example, *Ebony* reported that seventy per cent of the major league players earning \$100,000 or more were black.¹ "But Negro athletes do not agree. . . . [they] say they are underpaid [and] shunted into certain stereotyped positions"² Researchers have offered some empirical evidence to support this view. In this paper, the evidence accumulated to date will be presented. The broad conclusion derived is that race discrimination in professional team sports exists to a degree at least equal to that found in the larger society.

I

BLACK ATHLETES IN PROFESSIONAL TEAM SPORTS

It is a truism that blacks have made substantial progress in the post World War II decades in filling player ranks in professional team sports. Table I catalogues the progress made in the hiring of black players.³ In major league baseball, from the time of the fielding of Robinson through the early 1950's, the hiring policy with regard to Negro players is best described as having been very cautious. By the

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¹ *EBONY*, June, 1970, at 128-30.

² Olsen, *The Cruel Deception*, *SPORTS ILLUSTRATED*, July 1, 1968, at 12, 15.

³ In the other major professional team sport, hockey, blacks have just recently broken in and are not represented in any significant numbers.

TABLE I
RACIAL COMPOSITION OF PROFESSIONAL TEAMS

YEAR	Black Players as a Per Cent of Total		
	Major League Baseball ¹	Professional Basketball (NBA) ²	Professional Football ³
1954	7.5	4.6	—
1958	12.5	11.8	—
1962	17.0	30.4	16.0 ⁴
1966	24.0	50.9	25.1
1970	24.5	54.3	33.7

¹Source: EBONY, various years.

²Source: Yetman & Eitzen, *Unequal Opportunity for Equal Ability: Black Americans in Basketball* (mimeo, 1972).

³Source: EBONY, various years.

⁴Figure is for 1963.

1953 season, a trend in the hiring of black players was established. In 1954, about 7.5 per cent of the players were black. By 1966, when the upward trend terminated, nearly a quarter of major league baseball was black. Since that time, the racial composition in the sport appears to have stabilized.

Professional basketball made the most dramatic strides in fielding black players. In 1954, no more than 4.6 per cent of the National Basketball Association (NBA) players were black. By 1962, the percentage had risen to 30.4, and a real acceleration occurred with the origin of the American Basketball Association (ABA). As of 1970, 54.3 per cent of the NBA and 57.3 per cent of the ABA players were black. There is little question that the increased demand for players caused by the formation of the new basketball league increased the opportunity for black players in pro basketball.

The pattern in professional football was similar. Like other professional team sports, football teams were cautious about hiring black players. In 1946, the National Football League (NFL) hired its first black players, when Kenny Washington and Woody Strode were signed by the Los Angeles Rams. By 1951, only 3.3 per cent of the players in the NFL were black. A trend in the hiring of black football players was established and the formation of the American Football League (AFL), which increased the demand for players as a whole, accelerated that movement. By 1966, 25 per cent of the players in pro football were black. This percentage had risen to 33.7 by 1970.

How is the trend in the hiring of black players in professional sports explained? One possibility is that there has been a real diminution of racial prejudice both inside and outside of sports, which has made possible the presence of a substantial number of black players on teams. Undoubtedly, the intensity of race prejudice has become attenuated. More likely, the economics of acquiring ball players played the substantial role in the growth of blacks in sports. Teams could acquire talented black players at less initial cost, and the players could be paid less for equivalent performance over their playing careers. Major league baseball in its bonus payments pro-

vides a good example, although in general the same is true in other sports. From the period 1958-69, major league baseball paid \$63 million in bonuses for players, or an average of \$281,000 per team per year. In the peak bonus year, 1961, the year of the first major league expansion, the average team spent \$470,000 in bonuses, or an amount in excess of its payroll for the average 25 man roster!⁴ With rising bonus costs, major league baseball could not afford economically to ignore the stock of talented black ball players, who were available at significantly lower initial prices. Pascal and Rapping showed that of the players appearing in the 1968 *Baseball Register*, 20.7 per cent of the whites, but only 8.6 per cent of the black players, had received bonuses in excess of \$20,000 in the year that they entered baseball.⁵ Black players of tremendous stature were signed for incredibly small bonuses. "In the same period that . . . Mike McCormick got a \$60,000 bonus, a Negro named Orlando Cepeda was signing for \$500. Giant owner Horace Stoneham paid \$350 for Jim Ray Hart's signature, \$500 for Willie McCovey, \$500 for Felipe Alou, and \$4,000 for Juan Marichal."⁶

II

POSITIONAL SEGREGATION IN PROFESSIONAL TEAM SPORTS⁷

The over-all increase in the presence of blacks in professional team sports cannot be construed as a general widening of their opportunities. This is so, except for basketball, because blacks have advanced numerically only in certain positions within sports. Table II, presents a breakdown by position of black players in major league baseball and in professional football.

In 1968, 22 per cent of the players in baseball were black. However, on one extreme, 53 per cent of the outfielders and 40 per cent of the first baseman were black, a clear over-representation, while on the other extreme only 9 per cent of the pitchers, 12 per cent of the catchers, and 14 per cent of the third baseman were black, a clear under-representation. Moreover, this positional segregation has not changed appreciably in the last decade. In 1960, 6.7 per cent of the pitching staff was black. In 1971, the percentage rose to 9.6. In 1960, 14.4 per cent of the infield was black. In 1971, 19.6 per cent of the infield was composed of black players. The trend in the hiring of blacks in baseball is explained primarily by the tremendous growth of their numbers in the outfield. In 1960, 32.5 per cent of the outfielders were black, but in 1971, this figure rose to 61.7 per cent. Blacks have made it in baseball as outfielders. Other playing opportunities appear closed.

In professional football there is an even wider positional dispersion among black

⁴ Scully, *Discrimination: The Case of Baseball*, in GOVERNMENT AND THE SPORTS BUSINESS (R. Noll ed., Brookings Institution, forthcoming).

⁵ Pascal & Rapping, *The Economics of Racial Discrimination in Organized Baseball*, in RACIAL DISCRIMINATION IN ECONOMIC LIFE 136 (A. Pascal ed. 1972).

⁶ Olsen, *The Black Athlete*, SPORTS ILLUSTRATED, July 22, 1968, at 28, 39.

⁷ For a more complete analysis of segregation by position in baseball and for a discussion of its causes, see Scully, *supra* note 4.

TABLE II
POSITIONAL DISTRIBUTION OF BLACK PLAYERS IN MAJOR LEAGUE BASEBALL
AND PROFESSIONAL FOOTBALL

Major League Baseball ¹		Professional Football ²	
Position	Per cent Black	Position	Per cent Black
Outfield.....	53	Defensive Backs	66
1st.....	40	Running Backs	57
2nd.....	30	Wide Receivers	48
SS.....	26	Defensive Tackles and Defensive Ends	36
Utility Infield.....	19	Offensive Tackles and Tight Ends	27
3rd.....	14	Linebackers	15
Catcher.....	12	Offensive Guards	10
Pitcher.....	9	Offensive Centers	3
		Kicking Specialists	2
		Quarterbacks	1
Total.....	22	Total	37

¹Source: Pascal & Rapping, *The Economics of Racial Discrimination in Organized Baseball*, in *RACIAL DISCRIMINATION IN ECONOMIC LIFE* 147 (A. Pascal ed. 1972).

²Source: 1971 FOOTBALL REGISTER.

athletes. While constituting 37 per cent of all pro football players in the 1971 season, blacks were greatly over-represented as defensive backs, running backs, and wide receivers. Two-thirds of all pro defensive backs are black. Since 1967 when blacks constituted 30.0 per cent of all pro football players, the gains made were predominantly in these positions. Of the gains made, about two-thirds were in these positions. The most dramatic increase in positional representation of blacks was in the wide receiver slot. In 1967, there were 21 black wide receivers. By the 1971 season, 58 wide receivers were black. On the other hand, blacks have been obviously under-represented as quarterbacks, kicking specialists, centers, guards, and linebackers. Of these positions blacks have advanced in numbers only in the linebacker slot. Between 1967 and 1971 the number of black linebackers about doubled. Other positions where blacks are making progress in being more substantially represented are in the defensive tackle and defensive end slots.⁸

A number of hypotheses have been advanced to explain the positional segregation observable in baseball and football. Rosenblatt suggested that blacks have been primarily outfielders in professional baseball because the position involves little decision-making and opportunity for leadership. Infielders have leadership and decision-making responsibilities, and because of prejudice, there is a reluctance to assign black players such roles. In the role of pitcher there is a face-to-face confrontation, largely controlled by the pitcher, where racial conflict could be initiated.⁹ Loy and McElvogue argued that the proportion of blacks in positions in baseball and football

⁸In professional basketball, there is little evidence of segregation by position. Since there are so many blacks in the sport and so few positions over which to distribute them, such a finding is of no surprise.

⁹Rosenblatt, *Negroes in Baseball: The Failure of Success*, 4 *TRANSACTION*, Sept., 1967, at 51-53.

was inversely related to the degree of centrality of the position (for example, center, quarterback, and so forth are central roles).¹⁰ Blacks are excluded from these positions largely because of role identification and socialization. Pascal and Rapping suggested two alternative hypotheses. If pitchers and catchers and, also, infielders, require more coaching and if the managerial and coaching staff prefer not to coach blacks, such players will suffer a disadvantage. Alternatively, black outfielders are the most visible to black youths, and they may cluster in that position.¹¹ Finally, I have suggested elsewhere that in the case of baseball, the distribution of public and quasi-public recreation goods may help explain positional segregation. In urban areas residential segregation patterns exclude blacks from quality playing surfaces and coaching (Little League, Babe Ruth League, and so forth) both necessary to the development of pitching and fielding skills. In the rural areas the pattern of segregation and its remnants similarly excludes black youth from such opportunities.¹² I must say that I do not find this explanation very satisfactory, since it is inconsistent with the superior performance of black infielders and pitchers who are (were) on major league teams. Furthermore, the positional segregation in professional football is correlated with the pattern in college football. On the whole, while none of these explanations is entirely satisfactory, the proposition that positional segregation is best explained by prejudice-induced role playing seems the most reasonable. In short, blacks are running backs and outfielders because they are excluded from central, decision-making, leadership roles.

III

EVIDENCE OF ENTRY BARRIERS IN PROFESSIONAL SPORTS

Rosenblatt was the first to observe a performance differential between black and white players in professional sports, when he reported a twenty point differential in batting averages favoring blacks in major league baseball over the period 1957-65. Because blacks tend to predominate in the outfield and outfielders historically have out-hit other players, a portion of the observed racial batting average differential might be explained by the positional distribution of black players. Pascal and Rapping in their study of organized baseball calculated specific racial performance differentials by position. Their calculations are reproduced in Table III.

What is evident from the Pascal and Rapping study is that blacks consistently out-perform whites position by position. Furthermore, there is a rough inverse correlation between the percentage of blacks represented in the position and the size of the batting average difference. For example, in the position of catcher, where there was only 12 per cent black representation, the batting average differential was 32 points, while in the outfield, which was 57 per cent black, the difference in batting averages

¹⁰ Loy & McElvogue, Racial Segregation in American Sports (Paper Presented at a Seminar Sponsored by the International Committee for the Sociology of Sport, Macolin, Switzerland, Sept. 7-13, 1969).

¹¹ Pascal & Rapping, *supra* note 5, at 147-48.

¹² Scully, *supra* note 4.

TABLE III
 RACIAL PERFORMANCE DIFFERENTIALS IN MAJOR LEAGUE BASEBALL, 1967¹

Position	Average Performance ²			Black/White Ratio
	Black	White	Difference ³	
Outfield.....	267	255	12**	104.7
Catcher.....	260	228	32**	114.3
1st and 3rd.....	272	253	19**	107.5
2nd and Short.....	245	244	1	100.4
Pitchers.....	10.2	7.5	2.7**	136.0

¹Source: Pascal & Rapping, *The Economics of Racial Discrimination in Organized Baseball*, in *RACIAL DISCRIMINATION IN ECONOMIC LIFE* 138 (A. Pascal ed. 1972).

²For non-pitchers the performance measure is lifetime batting average. For pitchers performance is measured by lifetime games won per season.

³*** } one-tailed significance at { .05
 ** } .01

was 12 points. One might object that batting averages and games won per season are only one aspect of hitter and pitcher performance. However, blacks perform as well or better in all other offensive and defensive measures of performance. Furthermore, Pascal and Rapping, and Scully have shown that hitter performance as measured by lifetime batting or slugging averages and games won or pitcher strike out-to walk ratios are the most significant factors associated with the variance of player salaries.

Measuring player performance in football is more difficult and tenuous, partly because the outcome of the game depends much more on group rather than individual performance and partly because in most instances only offensive performance statistics are published. For example, to measure defensive tackle performance, data on the number of tackles would be required. Such data is not readily available, although teams do keep such records. What data is available for tackles are such measures as fumbles recovered, interceptions, and touchdowns, which measure only a minor part of performance in this position. For defensive ends, the percentage of completed passes against the pass defender would be a suitable measure of performance, but it is not available. To determine the extent of racial differences in performance, therefore, only two positions are examined where blacks are significantly represented and reasonable measures of performance exist. Various measures of player performance for running backs and wide receivers are presented in Table IV.

The performance differential favors black players in all instances. One popular measure of performance, average yards gained, reveals that black running backs gain a little over one-half of a yard per carry more than white running backs and black wide receivers gain nearly two yards more per pass reception than white wide receivers. The differential is even wider in the case of touchdowns. Black running backs score 1.8 more touchdowns per season on average than do whites. This means that black running backs score nearly twice as often as white running backs. Among wide receivers the differential is not quite as large, but blacks are more frequent scorers by

TABLE IV
 RACIAL PERFORMANCE DIFFERENTIALS BETWEEN RUNNING BACKS AND
 WIDE RECEIVERS IN PROFESSIONAL FOOTBALL, 1971¹

Performance Measure	Average Performance			Black/White Ratio
	Black	White	Difference ²	
<i>Running Backs</i>				
Average Yards Rushing	3.86	3.29	.57**	117.3
Rushing Attempts/Season	92.07	59.19	32.88***	155.5
Rushing TD's/Season	2.70	1.34	1.36***	201.5
Average Yards Per Pass Completion..	8.94	8.54	.40	104.7
Pass Completions/Season	15.24	10.84	4.40**	140.6
Pass Completion TD's/Season83	.46	.37***	180.4
Total Plays/Season	107.31	70.01	37.30***	153.3
Total Yards Gained/Season	507.36	328.42	178.94***	154.5
Total TD's/Season	3.55	1.81	1.74***	196.1
<i>Wide Receivers</i>				
Average Yards Per Pass Completion..	15.23	13.42	1.81	113.5
Pass Completions/Season	23.16	15.42	7.74***	150.2
TD's/Season	2.99	1.68	1.31***	178.0

¹Source: Calculated on the basis of data contained in the 1971 FOOTBALL REGISTER, published by The Sporting News.

²For significance levels, see note 3 in Table III.

a factor of 1.78 than are whites. Another racial differential emerges from these measures. Black players, at least in part because they are better players, are used much more intensively than white players. Among running backs, blacks will have about 33 more rushing attempts per season, a differential of about 56 per cent over white running backs, and they will have 4.4 more pass receptions per season, a 41 per cent differential. Among wide receivers blacks will complete nearly 8 more passes per season, a differential of some 50 per cent in comparison to white wide receivers.

In professional basketball there is less clear evidence of an entry barrier: Norman Yetman and Stan Eitzen in their study of discrimination in basketball studied black-white scoring averages in the NBA for the 1969-70 playing season and found a difference of 2.9 points per game favoring the black players (blacks = 12.2, whites = 9.3).¹³ No statistical tests were performed to determine if the difference in the means was significant. Furthermore, objections can be raised that average points per game, although a popular measure of performance, does not fully measure performance. Rebounds and assists are an important aspect of player performance. Moreover, the intensity of play may be better measured by performance per minute of play rather than per game. Basketball by its nature is an extraordinarily fast game with very rapid scoring. Unless the scoring gap in a game is rather wide, there can be little relaxation per minute of play rather than per game.

Table V presents various measures of player performance in the ABA and in the NBA. Three dimensions of scoring are calculated. In the ABA, black players have

¹³ Yetman & Eitzen, *Unequal Opportunity for Equal Ability: Black Americans in Basketball* (mimeo, 1972).

TABLE V
 RACIAL PERFORMANCE DIFFERENTIALS IN PROFESSIONAL BASKETBALL,
 1971-72 SEASON¹

Performance Measure	Average Performance			Black/White Ratio
	Black	White	Difference ²	
<i>American Basketball Association</i>				
Games Played/Season.....	61.70	54.89	6.81	112.4
Mins Played/Season.....	1646.02	1437.87	208.15	114.5
Average Mins Per Game.....	23.54	21.29	2.25	110.6
Field Goal Percentage.....	.457	.437	.20	104.6
Free Throw Percentage.....	.709	.678	.31	104.6
Total Points/Season.....	772.30	670.89	101.41	115.1
Points Per Game.....	10.97	9.55	1.42	114.9
Points Per Minute.....	.45	.40	.05**	112.5
Total Rebounds.....	378.19	280.71	97.48**	134.7
Rebounds Per Game.....	5.48	4.09	1.39**	134.0
Rebounds Per Minute.....	.24	.19	.05***	126.3
Total Assists.....	138.22	143.27	-5.05	96.5
Assists Per Game.....	1.93	2.13	-.20	90.6
Assists Per Minute.....	.08	.09	-.01	88.9
Personal Fouls.....	175.78	146.84	28.94**	119.7
Personal Fouls Per Game.....	2.64	2.29	.35**	115.3
Personal Fouls Per Minute.....	.13	.12	.01	108.3
<i>National Basketball Association</i>				
Games Played/Season.....	59.02	64.44	-5.42**	91.6
Mins Played/Season.....	1538.50	1547.54	-9.04	99.4
Average Mins Per Game.....	22.89	21.95	.94	104.3
Field Goal Percentage.....	.429	.434	-.005	98.8
Free Throw Percentage.....	.707	.740	-.033**	95.5
Total Points/Season.....	717.31	681.81	35.50	105.2
Points Per Game.....	10.61	9.46	1.15	112.2
Points Per Minute.....	.44	.41	.03**	107.3
Total Rebounds.....	333.75	314.90	18.85	106.0
Rebounds Per Game.....	4.86	4.40	.46	110.5
Rebounds Per Minute.....	.208	.205	.003	101.5
Total Assists.....	151.07	162.17	-11.10	93.2
Assists Per Game.....	2.21	2.32	-.11	95.3
Assists Per Minute.....	.09	.10	-.01	90.0
Personal Fouls.....	148.21	156.45	-8.24	94.7
Personal Fouls Per Game.....	2.28	2.26	.02	100.9
Personal Fouls Per Minute.....	.118	.116	.002	101.7

¹Based on calculations from data contained in the 1972-73 ABA GUIDE and NBA GUIDE, published by The Sporting News.

²For significance levels, see Table III.

higher field goal and free throw percentages, but the difference is not significant. In the NBA, whites have higher field goal and free throw percentages. In the NBA, the racial difference in the field goal percentage is not significant, but the difference in the free throw percentage is significant, at the 5 per cent level. Considering points scored, black players out-perform white players in total points per season (101.4 points in the ABA, 35.5 points in the NBA), points per game (1.42 points in the ABA, 1.15 points in the NBA), and points per minute (.05 points in the ABA, .03 points in the NBA), but only the difference in points per minute of play is significant at conventional statistical levels. If points per minute of play is accepted as

the best measure of performance, then blacks significantly out-perform whites by about 12.5 per cent in the ABA and 7.3 per cent in the NBA.

In rebounds, blacks likewise excel over whites, but the difference is significant only in the ABA. In the ABA, black players will have 97.5 more rebounds per season (.14 per game and .05 per minute). The racial difference in rebounds, although positive, is much smaller in the NBA. In both the ABA and in the NBA, white players have more assists, with the gap widest in the NBA. These differences are not statistically significant.

In the case of football, it was found that black players were used more intensively. The results for basketball do not reveal such a pattern. In the ABA, black players will be in 6.8 more games than whites, an insignificant difference. In the NBA, blacks will be in 5.4 fewer games, a significant difference. Black players average more total minutes of play in the ABA (208.2 minutes), but less in the NBA (9.0 minutes less), but in neither case is the difference significant.

What can be concluded from the existence of racial performance differentials? The most likely reason for the racial performance differential is the existence of a racial entry barrier. That is, blacks have to be better in order to make and stay on professional teams. If we assume that the distribution of ability is racially invariant, there will exist some minimum level of skill necessary to obtain professional status. In the face of discrimination the required minimum level of skill for blacks will be higher than that for whites and an average performance differential would emerge.

Two other competing hypotheses about the racial performance differential other than discriminatory hiring and promotion practices have been advanced. First, there may be racial differences (in the means or in the variances) in the distribution of playing skills. Second, it has been suggested that "endemic societal wage discrimination in most callings and lesser discrimination in . . . [sport] may result in a systematic difference in the ability distributions of black and white . . . players through the process of occupational choice."¹⁴

Many seem to believe that blacks are more genetically endowed with athletic (physiological) skills than whites. It is known, for example, that Negro and Caucasian skeletons have somewhat different properties. At birth, holding pre-natal environment constant, blacks and whites differ in body weight.¹⁵ Furthermore, black motor skill development proceeds more quickly during the early period of childhood.¹⁶ Yet, for the genetic argument to be given serious consideration more than isolated and tenuously connected associations is required. We require that (1) the array of particular playing skills be isolated, (2) the within group differences in the endowment of these skills be shown to be due to genetic factors, and (3) the endowment of these particular skills vary by race. These inquiries have not been done

¹⁴ Pascal & Rapping, *supra* note 5, at 141.

¹⁵ Jensen, *How Much Can We Boost IQ and Scholastic Achievement?*, 39 HARV. EDUC. REV. 1, 87 (1969).

¹⁶ *Id.* at 86-87.

and until such an investigation is undertaken, arguments concerning genetic differences must be viewed as speculative.

The second hypothesis has been suggested by Pascal and Rapping. If there is discrimination in non-sports occupations, the relative incomes of blacks will be higher in the sport than outside. If the initial distribution of baseball playing skills is racially invariant, will the alteration in labor supply by race induced by the income differential result simultaneously in the appearance of relatively large numbers of black players with *higher* average ability?

Pascal and Rapping argue that while sports would attract a higher percentage of above average blacks, mediocre black players would be attracted also by the wage differential and the net effect on racial ability distributions would be unclear.¹⁷ The existence of racial income differentials does not ensure a uniform impact on supply. The supply of players of both races at any given ability level is determined by the elasticity *at that level*. Over some range of ability, the supply of black players will be more elastic than that of whites and generally relatively more black players will be represented. However, the income differential between sports and other occupations widens as we move up the ability levels. At the higher levels of ability this differential is so large as to make the "stars" of both races perfectly inelastic with respect to salary. Since ability distributions are assumed invariant by race, we should observe relatively the same number of "stars" of both races playing in the sport.

IV

EVIDENCE OF SALARY DISCRIMINATION AGAINST BLACK ATHLETES

Not only do black athletes claim that they have to be better to make and stay on professional teams, but they say they are paid less for their performance. Measured by average racial salary differentials, there is no evidence to support such a charge. In Table VI, it can be readily seen that on the average black players earn more in every position in major league baseball. The differential is as large as \$21,500 for pitchers to as small as \$9,100 for outfielders.¹⁸

TABLE VI
AVERAGE RACIAL SALARY DIFFERENTIALS IN MAJOR LEAGUE BASEBALL, 1968-69¹

Position	Black	White	Difference
Outfield.....	\$66,000	\$56,900	\$9,100
Infield.....	\$53,100	\$40,800	\$12,300
Pitchers.....	\$59,900	\$38,400	\$21,500

¹Calculations based on a non-random sample of 148 major league baseball players during 1968 and 1969 seasons. See Scully, *Discrimination: The Case of Baseball*, in *GOVERNMENT AND THE SPORTS BUSINESS*, (R. Noll ed., Brookings Institution, forthcoming) for a description of the data.

However, where racial performance differentials exist, differences in average salaries do not reveal anything about salary discrimination. To determine if dis-

¹⁷ Pascal & Rapping, *supra* note 5, at 141-42.

¹⁸ For a description of the data and its characteristics, see Scully *supra* note 4.

TABLE VII
RACIAL SALARY EQUATIONS FOR MAJOR LEAGUERS BY POSITION¹

Category	Constant	Productivity Effect, \overline{SA} , \overline{BA} or \overline{PP}	Experience Effect, R or M	\overline{BA} Dummy	Percent of Total Innings Pitched \overline{IP}	$\overline{R^2}$ df
White Outfielders	7.1982	.0077 \overline{SA} (3.52)***	.0312 R (0.74)	.4451 $D_{\overline{BA}}$ (2.13)**		.7567 16
Black Outfielders	7.9349	.0051 SA (4.34)***	.0622 R (3.71)***	.5870 $D_{\overline{BA}}$ (4.00)***		.8589 19
White Infielders	6.6399	.0134 \overline{BA} (5.71)***	.0612 M (3.32)***			.7870 32
Black Infielders	6.9707	.0107 \overline{BA} (3.88)***	.1049 M (5.21)***			.7962 12
White Pitchers	8.6280	.3254 \overline{PP} (3.24)***	.0782 M (5.98)***		.0483 \overline{IP} (2.74)***	.6757 33
Black Pitchers	7.1025	.2675 \overline{PP} (1.72)	.1525 M (4.72)***		.1251 \overline{IP} (3.17)***	.9245 7

¹For significance levels, see Table III. t-values in parentheses.

crimination is present, salary must be related to performance and separate relationships calculated and compared along racial lines. In my previous study on discrimination in baseball, I estimated racial salary equations for outfielders, infielders, and pitchers. The justification for the specification is to be found in that study and will not be discussed here. The equations are presented in Table VII. For outfielders the specification was that the variance in salaries was associated with the variance in lifetime slugging averages, \overline{SA} , years as a regular player, R, and a batting average dummy variable, $D_{\overline{BA}}$.¹⁹ For infielders, salary was a function of lifetime batting average, \overline{BA} , and years in the majors, M. For pitchers, salary was viewed as being determined by lifetime power pitching, \overline{PP} , which is the ratio of strike-outs to walks, lifetime percentage of innings pitched, \overline{IP} , and years in the majors. The variables were chosen after a complete study of all factors associated with player salary variation. The specification was semi-logarithmic to take into account the fact that star players receive more in salary than performance would warrant. This is due to the fact that star players attract fans and, hence, have higher contributions to team revenue over and above their contribution to winning.²⁰

¹⁹ The slugging average is defined as the number of bases advanced divided by total at bats. Years as a regular is defined as the number of seasons the hitter had 100 at bats. The batting average dummy variable takes on the value of one for hitters with below average lifetime slugging averages but above average lifetime batting averages and zero for all others. This variable adjusts for above average, non-slugging hitters.

²⁰ The relationship between winning and team revenue is established empirically at a latter point in the text.

There are a number of important features of the regression results in Table VII. First, from 68 to 92 per cent of the variation in player salaries is associated with the variance in the performance measures. That indicates that a solid model of salary determination has been specified. All of the coefficients except two are statistically significant at conventional levels. More importantly, the coefficients of performance

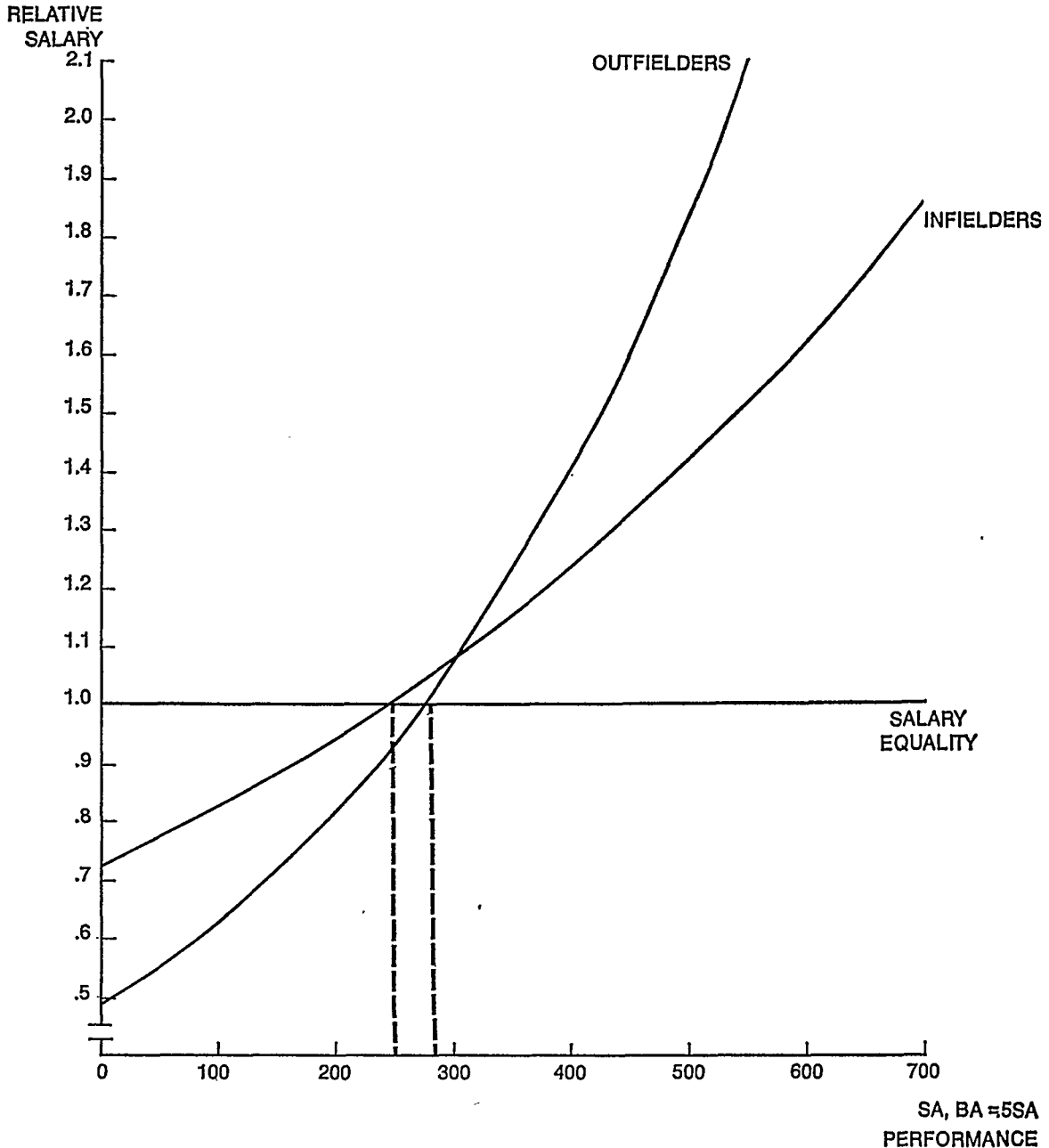


FIGURE I
 WHITE BASEBALL PLAYERS' SALARIES RELATIVE TO BLACK SALARIES
 AS MEASURED BY PERFORMANCE

on salary for both outfielders and infielders are higher for white players than for blacks. The difference in those coefficients is statistically significant. What this means in terms of performance adjusted racial salary differentials is more clearly revealed in Figure 1. Relative salary differentials were computed by setting all of the effects except the performance variable to zero, calculating the predicted white and black salaries for various magnitudes of the performance measure and dividing the predicted white by the predicted black salary.²¹ When the ratio of predicted white-black salaries equals unity, salary equality is achieved. The figure reveals that above lifetime slugging averages of about 275, clearly below major league standards, white outfielder salaries are relatively higher than those of black outfielders. Among star players, say, slugging averages around 525, the performance of white outfielders yields nearly twice the salary as it does for blacks. Among infielders, the relative differential is not as large, although substantial salary discrimination is present, particularly among the star players. Note, also, that white infielders earn more than blacks over the entire performance range in baseball. That is, a batting average of 120, where predicted salary equality occurs, is well below major league performance standards.²²

The second set of coefficients in Table VII, those relating years in the majors or years as a regular to salary, indicate that black players incrementally earn more in salary over time than do white players. There are a number of possible explanations for this phenomenon. First, R and M may measure other dimensions of player performance, with blacks earning more for these characteristics than whites. Another possibility is that the variables capture some aspect of the entry barrier; that is, blacks have to consistently out-perform whites to stay in the game. Alternatively, racial entry barriers may have been stiffer for the older black ball players than they are today. To a degree, this interpretation can be verified. Among outfielders with 11 or more years in the majors, the black-white batting average differential is 29 points. This racial performance difference declines consistently the fewer the number of years in the majors for both groups of outfielders.²³

However, on the basis of more recent research I am now satisfied that the differential in the increase in salary over time favoring black players is explained by the racial difference in the profile of their batting averages over their careers. After experimentation for the best fitting functional form for the shape of player batting averages over career length, batting average equations for black and white outfielders up through the 1971 season were estimated. The results were:

$$BA_{\text{Blacks}} = 110.6 + 12.48 NL - 1.50 \text{ Rank} + .52 \overline{BA}$$

(6.00)*** (3.69)*** (2.74)*** (7.73)***

²¹ Setting the values of the other variables to some other nominal value, say the average, would alter the magnitude of the relative salary differential but would not alter the overall conclusions.

²² Since the coefficient of performance on salary for black pitchers is not significant at an acceptable level, it would be inappropriate to draw inferences from the results. The paucity of observations on black pitchers makes comparisons difficult.

²³ See Scully, *supra* note 4.

$$+ 12.52 \text{ Log } M, R^2 = .31, \text{ DF} = 409. \\ (454)^{***}$$

$$\text{BA}_{\text{whites}} = 3.6 + .06 \text{ NL} + .34 \text{ Rank} + .92 \overline{\text{BA}} \\ (.16) \quad (.02) \quad (.56) \quad (11.18)^{***}$$

$$+ 7.05 \text{ Log } M, R^2 = .34, \text{ DF} = 320. \\ (2.23)^{**}$$

In the equations, BA is the annual batting average for the outfielder, NL is equal to 1, if the player was in the National League, Rank is the order of finish of the team on which the outfielder played, $\overline{\text{BA}}$ is the player's career batting average, and Log M is the log of the corresponding chronological year to the player's season batting average. The justification for the variables is as follows. The NL dummy variable captures a league batting average differential. Rank adjusts for the possible effect of team externalities on player hitting performance. Good teams may raise the batting averages of certain players on the team. $\overline{\text{BA}}$ adjusts for the mean differential in hitting performance among players. In all, there were 414 observations for black outfielders and 325 observations for white outfielders.

The results for Log M indicate that over their careers, blacks increment their batting averages 12.5 points per year, while whites increase their hitting by 7.1 points. Converted to elasticities about the mean, this indicates that black outfielder batting averages rise about 7.5 per cent per year, while those of whites rise 4.1 per cent. Now, observe from Table VII that the comparative differential in salary increases over time between black and white outfielders is on the same order of magnitude as the comparative differential in percentage increases in their batting averages. The conclusion drawn is that black salaries in baseball rise faster than those of whites because their performance over their careers rises faster than that of white players.

In any case, the fact that black player salaries rise faster than those of white players does not mean that blacks can realistically expect convergence of their performance adjusted salaries to the level of those obtained by whites. This fact is clearly revealed in Figure 2. The lines (solid for outfielders, dashed for infielders) are obtained by a similar procedure as those obtained in Figure 1, except that now performance is held constant at high, average, and low levels, and M or R is varied. The results show that the average black outfielder ($\overline{\text{SA}} = 450$) can expect convergence in salary to that of the average white after 15 years as a regular. Since baseball players average about 7 years in the big leagues, most blacks will not experience such convergence in salary. For the average black infielder, ($\text{BA} = 260$), full racial equality of predicted salary will occur after 8 years. Thus, it would appear that while black players can expect some amelioration of the racial salary differential over time, they will earn less than whites for equivalent performance over their entire careers.

We have concluded that blacks receive less for their performance than white players in major league baseball. Because salary data is not available for professional

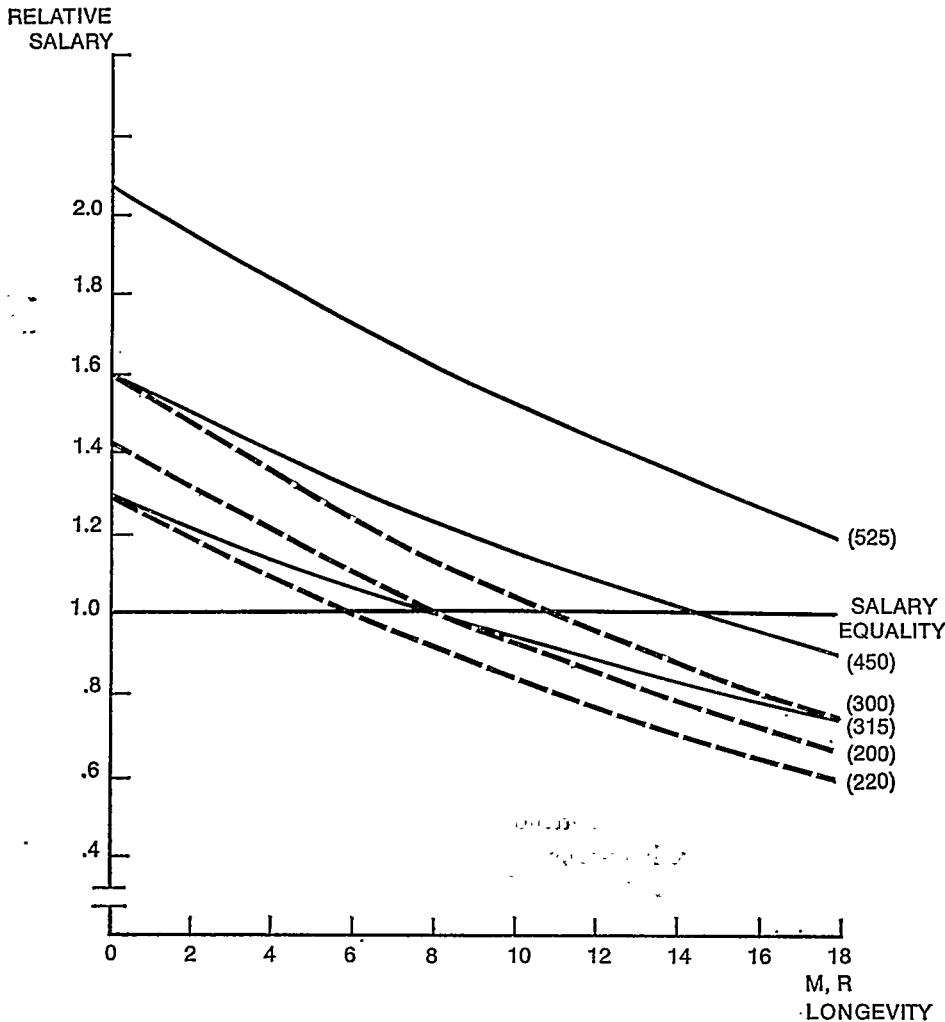


FIGURE 2
WHITE PLAYERS' SALARIES RELATIVE TO BLACK SALARIES
AS A FUNCTION OF LONGEVITY

football and basketball we cannot extend the inquiry into these sports. The fact that salary discrimination exists in major league baseball and entry barriers are present in all sports suggests that salary discrimination may be a feature of all professional team sports. Due to the time constraint of publication I have not been able to see Robert Mogrell's study on racial salary differentials in football. In a short report appearing in the *Wall Street Journal*, it was stated that he found no significant difference in black-white bonuses and starting salaries. However, he found that white veteran players earned more than blacks, but the difference was not significant.²⁴ Without careful adjustments for position and performance, as I have done for baseball, such a conclusion would be unwarranted. Our results in Table III show blacks

²⁴ Wall Street Journal, May 1, 1973, at 1, col. 5.

out-performing whites by a substantial margin in football. If average black-white salaries are equal in football as reported, then the performance differential would point strongly to racial inequality in performance adjusted salaries.

What is the source of the black-white salary differential in baseball? Owner-management, white players, and white fans each can contribute to the racial salary differential. A full treatment of how these three groups theoretically can cause salaries of blacks to be lower than those of whites is available in my previous study. Briefly, if owners and/or fans are prejudiced, then the demand for black ball players will be less than that for whites. Given equivalent racial elasticities of supply this will lead to a lower salary for blacks. In more technical terms, the marginal revenue products of black players will be less than that of whites. Since salary is a function of marginal revenue product, a proposition empirically verified in Table VII, black salaries will be lower. If white players obtain disutility from playing ball with blacks then their supply price will be higher than that of blacks. Given equivalent parameters for the racial demand functions for players, which would only exist in the absence of owner and/or fan discrimination, a salary differential unfavorable to blacks would emerge.

As an empirical problem, it would be difficult to identify significant owner-management and white player prejudice. Statements with racial overtones by these groups, while fairly common prior to the signing of Jackie Robinson, now are rarely made in public.²⁵ It is possible to some extent to document fan prejudice. I have devised two tests for fan prejudice. In my previous study on discrimination in baseball, I reported that approximately 2000 fewer fans attended home games in the National League in the 1967 season when a black pitched. This result was obtained by regressing the average home attendance of 57 starting pitchers against team dummy variables (to capture inter-team attendance variation), variations in the pitching schedule (double-headers, night games, and so forth), and race of the pitcher. The advantage of this approach is that pitchers are the only position in which players rotate on a schedule. The fact that starting pitchers are advertised and there is variation in the schedule permits variation in attendance by prejudiced fans.

As a second test, I estimated the relationship between team revenue (gate receipts plus the value of the television contract), the team win record, PCTWIN, the size of the standard metropolitan statistical area, SMSAPOP₇₀, an adjustment for stadiums located in poor areas, STADIUM, and the percentage of black players on the team, PCTBLK. All variables were for the 1968 and 1969 season combined.²⁶ The statistical results were:

$$\begin{aligned} \text{TEAM REVENUE} = & -447,617 + 9657 \text{ PCTWIN} \\ & (4.97)*** \\ & +.525 \text{ SMSAPOP}_{70} - 1,212,698 \text{ STADIUM} \\ & (4.14)*** \quad (3.65)*** \end{aligned}$$

²⁵ For documentation, see Scully, *supra* note 4.

²⁶ Justification for this specification is found in Scully, *Pay and Performance in Major League Baseball*, — AM. ECON. REV. — (1973).

$$-38,437 \text{ PCTBLK}, R^2 = .56, DF = 39.$$

$$(1.76)**$$

Thus, for each one per cent increase in black players, team revenues fall over \$38,000. Since adding one black player raises the percentage of blacks by 4 percentage points, an additional black player seems to cost teams revenue losses due to fan prejudice on the order of \$156,000. Such a differential is quite large, substantially more than the average performance adjusted salary differential between black and white players. However, it must be recognized that there is a wide differential between player pay and their contribution to team revenue. It is possible to measure crudely player contributions to team revenue. I have analyzed the determination of player marginal revenue products in a previous study.²⁷ Without going into detail, what was undertaken in that study was to link team slugging average to percentage of wins. Once the relationship between team slugging average and percentage of team wins was known, that coefficient when multiplied by the coefficient of team per cent win on team revenue gave an estimate of the revenue contribution of raising the team slugging average by one point. An average batter (SA = 450) will contribute something on the order of one-twelfth of the at bats per season or 37.5 (= .0833 x 450) to the team slugging average. From this information, player marginal revenue products can be calculated. It was found that an average hitter contributed about \$400,000 in revenues to teams located in average size (3.5 million) SMSA's with major league teams. In that study, it was also shown that an average hitter with the average number of years in the majors was paid about \$49,000. Therefore, average hitters received in salary about 12 per cent of their marginal revenue products. Multiplying this percentage by \$156,000, the estimated marginal revenue product differential between black and white ballplayers, suggests a racial salary differential on the order of \$18,700. Utilizing the regressions in Table VII for black and white outfielders, the predicted racial salary differential for hitters with slugging averages of 450 is \$15,100. Given the fact that the procedure for calculating the marginal revenue product is somewhat crude, the results appear reasonably consistent. A conclusion that the racial salary differential between blacks and whites in baseball is due to fan induced discrimination, which results in a marginal revenue product differential, seems reasonable.

CONCLUSION

Sports, in general, and professional sports in particular, play a larger than life role in the United States. Much of what occurs in sports is surrounded by myth. That men are judged solely by their merits, perhaps, is the most pervasive myth in sports. However, athletes are not judged solely by their performance. We have shown that black athletes are restricted to certain positions, that entry barriers exist, in that blacks must out-perform whites to make and to stay on teams, and that they are paid less for their performance.

²⁷ *Id.*

It is clear that blacks incur great risks in looking to sports as a vehicle for upward social mobility.

At the most, sports has led a few thousand Negroes into a better life while substituting a meaningless dream for hundreds of thousands of other Negroes. . . . For every Willie Mays or Bob Hayes there are countless Negroes who obviously had abundant will and determination to succeed, but who dedicated their childhoods and their energies to baseball gloves and shoulder pads. If there were other ways out and up, they were blinded to them by the success of a few sports celebrities. . . . This has been the major effect of sports on the Negro, and it overrides all others.²⁸

Finally, much of the literature on the economics of discrimination has struggled with the problem of measuring economic loss to minority groups from purely discriminatory behavior. The standard methodological tact is to control for earnings differentials due to quantitative and qualitative educational differentials and other socio-economic variables which affect earnings. The residual earnings differential is attributed to discrimination, with the caveat that such differentials might be reduced in magnitude or eliminated, if more clearly delineated productivity measures were specified. Unlike most other occupations, productivity measures are clearly defined in sports. Athletes are paid in relation to their readily measurable performance. That black athletes are paid less for their contributions and face entry barriers clearly reveals the mechanism of discrimination in operation. The fact that such discrimination continues to prevail in sports, which is such a publicly scrutinized industry, points to the subtlety that economic discrimination can take in the American economy.

²⁸ Olsen, *supra* note 2, at 16.