

# Voting for the National Baseball Hall of Fame: The Effect of Race on Election Date\*

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## **Abstract**

*This paper extends recent research on the effects of race on voting for the National Baseball Hall of Fame. Specifically, this paper examines whether a player's race affects his date of election. If the election process exhibits biases against minority-race players, then these players may be required to wait longer for election. The results show no evidence of racial discrimination against players who are either black or born in a Latin American country. In addition, no evidence is found that players who are both black and born in a Latin American country are less likely to be elected than other players in any year. Analysis of actual election dates and predicted election dates indicates that American-born white players are less likely to be elected than other players. The results validate past research indicating that discrimination does not negatively affect a minority player's ability to enter the Hall of Fame. (JEL Codes: L83, J71, C41)*

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## **I. Introduction**

The Baseball Writers Association of America (Writers Association) and the Baseball Hall of Fame Committee on Baseball Veterans (Veterans Committee) vote on the most significant performance-related award in Major League Baseball (MLB), induction into the National Baseball Hall of Fame (the Hall). This paper examines whether a retired player's race affects his probability of entering the Hall. Specifically, this study tests for an effect of a player's race on the number of years it takes for him to be elected. The availability of detailed measures of player performance in MLB allow for the isolation of an effect of a player's race on the time he must wait to enter the Hall. If the Writers Association or the Veterans Committee have biases against minority-race players, then these players may be less likely to receive the required number of votes in any given year; thus, racial bias may necessitate a player waiting longer to enter the Hall.

Each year, the Writers Association and the Veterans Committee choose among eligible retired MLB players to induct into the Hall. Five years after a player retires, he is eligible for election to the Hall by the Writers Association. If the Writers Association does not elect a player, he is eligible for election by the Veterans Committee after being retired for 23 years. Since induction into the Hall may provide a retired player greater recognition and possibly greater earning power, racial bias in voting can significantly affect the post-career lives of these players. In addition, if voters have race-based preferences, they may indirectly affect the preferences of fans and, therefore, be a source of any customer discrimination in MLB.

Unlike many other industries, available data on player productivity in the sports industry have allowed researchers to investigate the effect of race on labor market outcomes such as salaries and hiring. Kahn and Sherer (1988) and Koch and Vander Hill (1988) find that white players in the National Basketball Association (NBA) are paid significantly more than equally-

skilled black players. Using more recent data, Hamilton (1997) finds that the premium paid to white NBA players is most notable at the upper end of the salary distribution. Using National Football League (NFL) data, Kahn (1992) finds no evidence of statistically significant salary discrimination. Several studies have also investigated race-based salary differentials in MLB. Kahn (1991) reviews these studies and finds little evidence of significant salary discrimination. Singell (1991) shows that black ex-players are less likely to be hired as coaches in MLB than their white counterparts. Brown, Spiro, and Keenan (1991) and Burdekin and Idson (1991) show that players are sorted to NBA teams partially based on their race.

Following Becker (1971), economists generally think of discrimination as emanating from one of three sources: employers, employees, or customers. Most evidence points to customers as the primary source of any salary and hiring discrimination in the sports industry. For example, if white customers are willing to pay more to see white athletes and the majority of fans are white, then teams with race-neutral preferences may respond by paying white players more than non-white players or by preferentially hiring white players. Results using NFL data imply that white players earn higher salaries in largely white metropolitan areas, while non-white players earn higher salaries in largely non-white areas (Kahn, 1992). Evidence from MLB suggests that teams with more black players have lower attendance and revenue (Gwartney and Haworth, 1974; Scully, 1973; Sommers and Quinton, 1982). Anderson and La Croix (1991), Gabriel et al. (1995, 1999), and Nardinelli and Simon (1990) examine the market for baseball cards and find evidence that baseball card purchasers discriminate against both Latin American and black players in favor of Anglo players. Kahn and Sherer (1988) show that NBA teams with more black players have lower attendance. Furthermore, Brown and Jewell (1994, 1995) show that fans of college basketball teams pay a premium to see white players.

Race-based discrimination in voting on performance-related awards has received relatively little attention from researchers. Hanssen and Anderson (1999) study the behavior of fan voting on the starters for the MLB All-Star Game each year. If fans are willing to pay more to see players of their own race, then they may also be more likely to vote for players of their own race as All-Stars. The authors find that white players tend to receive more votes than equally-qualified black players, although the vote differential has narrowed over time. This result is important to player compensation since many baseball players have incentive clauses in their contracts tied to performance-related awards. In addition, performance-related awards give a player national recognition, which can lead to greater compensation through endorsements.

Findlay and Reid (1997) are the first to examine whether the Writers Association exhibits racial bias in voting for the National Baseball Hall of Fame. The authors are concerned with the effect of race on the number of votes a player receives on a given ballot. The authors find limited evidence that black and Latin American players are treated differently than white players in voting. In particular, there is some evidence that Latin American players receive fewer votes than white players, though this voting discrimination seems to have diminished over time. Alternatively, black players are shown to receive favorable treatment in voting, but this result is inconsistent across specifications. Desser et al. (1999) also study the effect of race on voting for the Hall. The authors find that both Latin American and black players receive fewer votes than equally-qualified white players. However, these results are only marginally significant and of relatively small magnitude. According to the authors, the estimated effect of discrimination is too small to significantly alter the racial composition of the Hall.

Jewell et al. (2000) also examine the effects of race on Writers Association voting for the

Hall. The authors find limited evidence that retired players who were born in Latin American countries receive fewer votes on their first ballot; however, the results are sensitive to the specification chosen. In addition, their study finds little evidence of bias among voters against black players. However, the authors show that discrimination in voting may exist against players who are both black and Latin American. Furthermore, the results show that race does not seem to affect whether a player actually receives enough votes to get into the Hall on his first ballot. Instead, it appears that any discrimination in voting is concentrated among those players who would not have received enough votes to enter the Hall based solely on their career statistics.

This study continues the economic literature on race and performance-related awards in the sports industry. This paper concentrates on the length of time it takes to get into the Hall. The results indicate that minority-race players will actually have shorter waiting periods than equally-qualified white players, which contradicts the hypothesis that race negatively affects entry date. Similar to past research on the effect of race on the number of votes, this study finds that although race has a statistically significant effect on election outcomes, race does not seem to affect the composition of the National Baseball Hall of Fame.

## **II. Data and Methodology**

The data for this study consist of 300 players who first appeared on the Writers Association ballot over the years 1962 to 2000. The initial year 1962 is chosen since this is the first year a player of African ancestry, Jackie Robinson, was eligible for election. The data include only non-pitchers since the statistics of field players and pitchers are difficult to compare. The sample includes all field players who were on ballots from 1962 to 2000, with the exception of players who received zero votes for the years 1962, 1964, and 1966 since these names were

unavailable. Pete Rose is excluded from the sample; Rose was on the ballot first in 1992, when he received 42 votes (9.74 percent). He never received votes commensurate with his on-the-field accomplishments, possibly due to his gambling and legal problems. He is currently on MLB's ineligible list and is not eligible for Hall voting. In addition, Roberto Clemente is excluded from the sample since he was elected to the Hall in a 1973 special election, shortly after his death in 1972 while still an active player. Voting rules and dates of election are collected from the Hall's web page ([baseballhalloffame.org](http://baseballhalloffame.org)). Players who were on each ballot are found in *The Dallas Morning News*, *The New York Times*, *USA Today*, *The Boston Globe*, and the *Total Baseball* web page ([totalbaseball.com](http://totalbaseball.com)), an online version of the official encyclopedia of MLB. Player statistics are collected from the *Total Baseball* web page.

Retired players are first eligible to be elected to the Hall by the Writers Association. To be eligible, a player must have the following characteristics. First, he must have played in MLB for at least ten seasons. Second, he must have been retired for at least five years. Third, he must have been an active player within 20 years of election. Fourth, he must be placed on the ballot. According to current election rules, an ex-player can be placed on the ballot in one of two ways: (1) by being nominated by two of the six members of the Writers Association Screening Committee (in the first year he is eligible) or (2) by receiving five percent of the vote in the preceding election (in years after his initial year of eligibility). Players who are placed on the ballot each year must be named on 75 percent of the ballots returned by the voters to enter the Hall. Voters must have been active as baseball writers and members of the Writers Association for at least ten years. Although the actual number is a closely guarded secret, there are over 500 voting members in the Writers Association. The voting is anonymous, and the number and composition of voters varies each year. There is no limit on the number of players that can be

elected by the Writers Association in any year. However, the largest number of players elected in one year is five, the number chosen in the initial election of 1936; these players were Ty Cobb, Walter Johnson, Christy Matthewson, Babe Ruth, and Honus Wagner.

Players who are not elected by the Writers Association are eligible for election by the Veterans Committee. To be eligible, a player must have the following characteristics. First, he must have played in MLB for at least ten seasons. Second, he must have been retired for at least 23 years. Third, he must have received a minimum number of votes in a Writers Association election (the smaller of 60% of the votes or 100 total votes). Thus, a player must have been on at least one Writers Association ballot to be eligible for election by the Veterans Committee.<sup>1</sup> The Veterans Committee is appointed by the Board of Directors of the Baseball Hall of Fame and consists of 15 members who are either elected members of the Hall or connected to MLB in some capacity. The Veterans Committee uses a similar 75 percent figure for induction and is authorized to elect only one player each year. The Veterans Committee can also elect executives, managers, and umpires each year. There are also special elections for ex-Negro League players and players from the 19<sup>th</sup> century.

According to Hall election rules, “voting should be based upon the player’s record, playing ability, integrity, sportsmanship, character, and contributions to the team(s) on which the player played.” In evaluating a player, each voter attaches some subjective importance to these factors and then decides whether a player is worthy of being inducted into the Hall. Since subjective measures such as integrity, sportsmanship, and character are difficult to measure, it is

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<sup>1</sup> Current election rules are discussed to give the reader a feel for the procedure. The rules for voting eligibility have changed periodically since 1962; most changes are designed to streamline the process and reduce the number of players on any ballot. This presents some problems when estimating the effect of time on Hall election. This study assumes that after a player is first on the ballot, he is eligible for Writer Association voting for 15 years then is eligible for Veterans Committee election indefinitely, after a three year waiting period. Although this is a

assumed that each voter casts a vote for each player based on that player's career performance statistics and other noteworthy accomplishments. In addition, a voter may be partially influenced by the player's race. Let  $i$  represent voters and  $j$  represent players. Equation (1) shows voter  $i$ 's evaluation of player  $j$  at time  $t$ ,  $EVAL_{ijt}$ , as a continuous function of the career statistics and accomplishments of player  $j$  ( $STATS_j$ ) and the race of player  $j$  ( $RACE_j$ ):

$$(1) \quad EVAL_{ijt} = \mathcal{E}(RACE_j, STATS_j)$$

where  $\mathcal{E}$  can be additive, multiplicative, etc. A binary response (yes or no) for each voter,  $VOTE_{ijt}$ , is chosen based on the following rule:

$$(2) \quad \begin{aligned} VOTE_{ijt} &= 1 \text{ if } EVAL_{ijt} \geq HOF_{it} \text{ and} \\ VOTE_{ijt} &= 0 \text{ if } EVAL_{ijt} < HOF_{it}, \end{aligned}$$

where  $HOF_{it}$  is voter  $i$ 's evaluation of the minimum level needed for entry into the Hall at time  $t$ .

For a player to enter the Hall, he must have 75 percent of the vote. The Hall does not make data available on individual voters, just on the number of votes each player receives. Thus, player  $j$  will enter the Hall at time  $t$  if and only if:

$$(3) \quad \sum_{j=1}^{N_t} VOTE_{ijt} \geq .75N_t,$$

where  $N_t$  equals the number of voters at time  $t$ . The probability of player  $j$  being elected to the Hall at time  $t$  is:

$$(4) \quad P_{jt} = \text{prob} \left( \sum_{j=1}^{N_t} VOTE_{ijt} \geq .75N_t \right).$$

Notice that  $P_{jt}$  is a conditional probability; that is, the probability of player  $j$  being elected is conditional on him being in the sample at time  $t$ . If  $P_{jt}$  is independent of the time, then we could simply run a probit or logit estimation with the dependent variable equal to one if a player ever

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simplification, this assumption puts all players on an even footing. However, note that the 75 percent figure for

makes it into the Hall. However, if time were not a factor, we would expect to see most, if not all, future Hall-of-Famers voted in on their first ballot. Of the 39 players in the sample elected to the Hall, only 21 (54 percent) were elected in their first year of eligibility. Not all players who have the statistics needed to enter the Hall are able to get in on their first ballot; clearly, the probability of getting enough votes to enter the Hall of Fame is a function of time.

There may be many reasons why  $P_{jt}$  is affected by time. For instance, some voters may believe that entry on the first ballot is a special honor that should only be given to the most exceptional candidates. That is, average Hall-caliber players will eventually get into the Hall, and the probability increases after the first ballot. Also, the composition of eligible players varies from year-to-year. Thus, the competition for votes is not constant over time. Specifically, in Writers Association elections, voters can vote for up to 10 players. As the number of MLB players increases with time, it may be more difficult for a player to be among the top retired players. However, this is only the case if there is a binding constraint on the voters. Next, as noted above, the composition of voters can, and does, change each year. Furthermore, time has a way of reducing any animosity the voters may have for certain players. As an example, Orlando Cepeda was convicted on illegal drug charges in 1978, and this drug conviction obviously affected his ability to obtain votes; however, the Veterans Committee found him contrite enough to elect him in 1999. Finally, race-based voting discrimination may result in voters making minority players wait longer to enter the Hall than white players. Equation (1) assumes that  $EV_{AL_{ijt}}$  is affected by race;  $HOF_{it}$  can also be influenced by race if voters hold minority-race players to a higher standard, which may decrease over time. If race is a factor in voting, then race may partially determine how long a player must wait to enter the Hall.

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induction has been consistent from 1962 to 2000. For a complete history of Hall voting rules, see Deane (1996).

If  $P_{jt}$  is influenced by time, then it is necessary to use an estimation methodology that utilizes the time pattern of the data. Essentially, this study attempts to estimate conditional probabilities of exit from the sample of potential Hall inductees (i.e., conditional probabilities of Hall election). Of primary concern is the duration of time between initial eligibility and eventual election. Models using this type of duration data (sometimes called survival-time data) are often estimated using the hazard function approach (Kiefer, 1988; Greene, 2000, pp. 937-950). This technique estimates the probability that an event occurs (i.e., election to the Hall) given that the event has not yet occurred. This conditional probability is called the hazard rate or hazard function. Assume the probability distribution of Hall voting durations is  $F(t)$ . Thus,  $F(t)$  is the probability that a player is elected to the Hall prior to time  $t$ . The corresponding density function is  $f(t) = dF(t)/dt$ . The hazard function ( $\lambda$ ) is given by:

$$(5) \quad \lambda = f(t)/(1 - F(t)).$$

Allowing the hazard function to vary over individual players (due to the determinants of  $EVAl_{ijt}$  and  $HOF_{it}$ ) results in equation (6):

$$(6) \quad \lambda_j = P_{jt} = f(t, RACE_j, STATS_j)/(1 - F(t, RACE_j, STATS_j)).$$

Notice that the hazard function is equal to  $P_{jt}$ , the probability of interest in this study.

Parametric estimation of the hazard function necessitates specification of  $F(t)$ . The statistical model in this study utilizes the Weibull distribution, which is widely used in duration research (Lancaster, 1990, p. 36). The hazard function estimated from the Weibull distribution can be increasing over time (called positive duration dependence) or decreasing over time (negative duration dependence). This characteristic of the Weibull hazard function is particularly relevant in the case of Hall induction. Recall that 54 percent of Hall-of-Famers in the sample were elected on the first ballot. These players on average have more homer runs, more runs

batted in, more hits, and more seasons played than players who were elected after their first ballot. Thus, for a given level of statistics, the probability that a player is elected must be increasing or players would never be elected after their first ballot. It is expected that the estimated hazard function will exhibit positive duration dependence, implying that the probability of receiving enough votes to enter the Hall increases in each successive election.

Using the Weibull distribution, the hazard function becomes (Amemiya, 1985, p. 445):

$$(7) \quad \lambda_j = \rho t^{\rho-1} \exp(\alpha + \beta'RACE_j + \gamma'STATS_j),$$

where  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\rho$  are parameters to be estimated. The shape parameter,  $\rho$ , is the estimate of duration dependence; the sign of  $\rho$  is expected to be positive. The parameters of equation (7) are estimated using maximum-likelihood techniques described in Kalbfleisch and Prentice (1980).<sup>2</sup>

The vector  $RACE_j$  contains measures of a player's race. The variable *BLACK* equals one if a player's skin tone is perceived as "black" regardless of country of birth. The variable *LATIN* is equal to one for a player who was born in a Latin American country. However, *BLACK* and *LATIN* are not mutually exclusive, i.e., a player can be both black and born in a Latin American country. Therefore, an interaction variable, *BLACK\*LATIN*, captures the effect of players who are both black and Latin American. If raced-based discrimination is present, then minority players may be required to wait longer to enter the Hall. Baseball cards pictured in Slocum and Foley (1990) are used to categorize the black players. Place of birth is from *Total Baseball*.<sup>3</sup>

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<sup>2</sup> Censoring is unavoidable in most duration data. The statistical model in this paper adjusts for the fact that some duration spells are not completely observed, i.e., not all players are elected to the Hall during the observation period. In addition, the hazard rate is constrained to be zero in the three-year waiting period between votes by the Writers Association and Veterans Committee.

<sup>3</sup> *LATIN* includes two players born in the Virgin Islands (Jose Morales and Horace Clark); categorizing these two players as non-Latin does not significantly change the results presented in this paper. Rod Carew is categorized as non-Latin, since he was born in the Panama Canal Zone, which was an American Protectorate at the time of his birth. The model is also estimated categorizing Carew as Latin. This estimation results in larger coefficients on *LATIN* and *BLACK\*LATIN*. Several other models are estimated with some players categorized differently than reported in this paper. The coefficients on race do not change significantly in any re-estimation. Moreover, the implications of the

The vector  $STATS_j$  contains player  $j$ 's career performance measures: number of seasons played ( $SEASONS$ ), number of runs scored, ( $RUNS$ ), batting average ( $BATTING$ ), number of home runs ( $HOMERS$ ), number of runs batted in ( $RBIS$ ), and number of stolen bases ( $STEALS$ ). The career performance measures are expected to positively affect a voter's evaluation of each player, an increase in any of these measures raising the probability of any writer voting for a player. The vector  $STATS_j$  also contains other information about player  $j$ 's career. World Series championship appearances ( $WORLD$ ) are included to measure the effect of team quality on voting. A dummy variable is included for players who spent at least 10 percent of their careers in both the National and American leagues ( $BOTH$ ). Spending time in both leagues may increase a player's visibility and, thus, his number of votes received. Alternatively, writers who value loyalty to a single team may perceive players who play in both leagues negatively. Dummy variables are also included for primary fielding position during a player's career ( $FIRST$ ,  $SECOND$ ,  $THIRD$ ,  $SHORT$ ,  $CATCHER$ ). Fielding position measures control for visibility effects, with outfield being the excluded category.

$STATS_j$  also includes dummy variables for the decade in which player  $j$  was first eligible for election ( $SEVENTIES$ ,  $EIGHTIES$ ,  $NINETIES$ ). Past research indicates that the standards for entering the Hall have increased over time. These decade dummies control for the effect of increasing standards, with the 1960's being the excluded category. Squared terms for all relevant performance measures are also included (e.g.,  $SEASONS^2$ ) to control for any non-linearity in the effects of these variables. Finally, Findlay and Reid (1997) and Dessler et al. (1999) include performance-related awards (i.e., Most valuable Player Awards won, number of appearances in All-Star games, etc.) as explanatory variables. A performance-related award normally results

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results do not change. All of these estimates are available from the author. A complete listing of the racial

from a voting process, which may be affected by discriminatory preferences of voters, and including performance-related awards as explanatory variables may bias the estimation results. Thus, no measures of performance-related awards are included in this study.<sup>4</sup> Summary statistics for the entire sample are provided in Table One.<sup>5</sup>

{INSERT TABLE ONE}

### III. Results

Table Two reports estimates of equation (7).<sup>6</sup> The coefficients are interpreted as the percentage change in the log of election date given a one-unit change in the explanatory variable. Thus, a negative coefficient implies an earlier election date, and a positive coefficient implies a later election date. The sample only includes players who were eventually placed on the ballot; therefore, these results are effectively conditional on a player surviving the nomination process. Dessler et al. (1999) examine the effect of race on the nomination process. The authors find limited evidence that Latin American and black players are less likely to be placed on the ballot in any year. This result is extremely small and sensitive to the chosen specification. Thus, it does not appear that race has much effect on ballot composition.

{INSERT TABLE TWO}

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categorization of players is given in the appendix.

<sup>4</sup> Players who play in larger media markets may have more visibility and thus may have a higher probability of being elected. Several estimations are attempted that include dummy variables for players who played in large cities (i.e., New York, Chicago, Philadelphia, Boston, and Los Angeles). These variables are all found to be insignificant, and the results are not reported here. In addition, it could be argued that a player will get more votes if he is better than his peers. To test for such an effect, the number of batting titles, home run titles, rbi titles, run titles, and stolen base titles a player won during his career are included as regressors. All these peer-effect measures are shown to be insignificant and are not included in the regressions reported here. These regressions are available from the author.

<sup>5</sup> The coefficients on the position and decade dummies are not reported in this paper for the sake of brevity. These results are available from the author.

<sup>6</sup> Models are also estimated using Cox's proportional hazard model. The results are similar to those reported in Table Two. These estimates are available from the author.

Column A of Table Two reports hazard function estimates employing only *BLACK* and *LATIN* as measures of race, while the estimates reported in the Column B also include *BLACK\*LATIN*. The negative coefficient on *BLACK* in Column A implies that black players have earlier election dates (by more than 100 percent) than non-black players, holding all else constant. The coefficient on *BLACK* is also negative in Column B. This result contradicts the hypothesis that race-based discrimination forces black players to wait longer to enter the Hall. The coefficient on *LATIN* is positive and insignificant in Column A, but it becomes negative and significant in Column B. Clearly, these results indicate that race does not limit access to the Hall for players who are either black or born in a Latin American country.

However, Column B of Table Two reports that the coefficient on *BLACK\*LATIN* is positive, indicating the possibility that players who are both black and born in a Latin American country have later election dates, i.e., voting discrimination may exist against black players who were born in Latin America. A closer look at the marginal effect challenges this interpretation. Since a Latin American-born black player is *BLACK*, *LATIN*, and *BLACK\*LATIN*, all three coefficients must be summed to get the marginal effect. Specifically, a Latin American-born black player will have an earlier election date associated with being *BLACK* and *LATIN* ( $-1.300 + -2.987 = -4.287$ ) and a later election date associated with being *BLACK\*LATIN* (3.555).<sup>7</sup> The result is that these players have over 70 percent earlier election dates than players who are neither black nor Latin American nor both. Thus, the results indicate that a minority-race player will

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<sup>7</sup> An alternative would be to have four, mutually-exclusive race categories, *BLACK*, *LATIN*, *BLACKLATIN*, and *WHITE*. Estimates using such categories produces results numerically identical to those reported here.

actually have a greater probability of election to the Hall than a non-minority, holding everything else constant.<sup>8</sup>

The size and significance of the coefficients on the performance variables remain largely the same in both columns of Table Two. The performance variables are expected, *a priori*, to have negative first derivatives (better performance leads to earlier election) and positive second derivatives (decreasing marginal impact of better performance). However, the coefficients on number of seasons played, number of homers, and number of steals are opposite of what is expected. This result brings into question the use of squared terms in the estimation.<sup>9</sup> Looking at the marginal effects, the results show that players with more than 18 seasons see a positive effect of additional years played (this holds for 49 players in the sample), players with more than 440 home runs have a positive effect of more home runs (16 players), and players with more than 590 stolen bases see a positive effect with more steals (6 players).

Players with more World Series appearances are shown to have earlier election dates. From Column B, another World Series appearance leads to a 12 percent earlier election. Most of the players in the sample were probably instrumental in their teams' success; however, these results imply that even a marginal player will receive greater exposure from participating in the World Series. Players who spent at least 10 percent of their careers in both leagues seem to have later election dates, implying that these players are seen by voters as "journeymen" or perhaps even "hired guns." The shape coefficient  $\rho$  is fitted as  $\ln \rho$  in the estimation and is reported as

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<sup>8</sup> To test whether the Writers Association and the Veterans Committee treat players differently in voting, the performance variables can be interacted with a dummy if the player is eligible for Veterans Committee voting. An estimation is attempted including these interactions; the results indicate that the Veterans Committee's standards are not significantly different from the Writers Association's standards, especially with regard to race. However, there is limited evidence that the Veterans Committee gives more credit for stolen bases than the Writers Association. This estimation is available from the author.

such. The results imply that  $\rho$  is greater than one in Columns A and B of Table Two, 2.27 and 2.61 respectively. As expected, the probability that any player receives enough votes to enter the Hall is increasing over time, all else constant.

#### IV. Sample Predictions

The results reported in Table Two do not clearly show the quantitative effects of race-based voting on election outcomes. Evidence is found that race actually increases the probability of Hall election for players who are black or Latin American or both. To examine the quantitative effects of race, it is necessary to determine whether race actually affects the date of election. To accomplish this, a player's predicted date of election is computed, under the assumption that race affects voting (using the estimates presented in Table Three, Column B). This prediction is then compared to one in which race is assumed to have no effect on voting, i.e., assuming voting occurs based only on a player's statistics. These predictions are obtained by re-estimating the model in Table Two, dropping all race variables.<sup>10</sup> For players voted into the Hall, the predictions are compared to the actual entry date to see whether race-based voting limits access to the Hall. For players who have not been elected, these predictions are compared to the last election year (2000) to see whether race-based voting has denied any player access to the Hall. Table Three presents the predicted outcomes for those players who were actually elected. Predictions for all other players are available from the author.

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<sup>9</sup> The squared terms are jointly significant. The chi-square statistic from Column B is 52.85 with critical value 18.48 at  $\alpha = .01$ . Another hazard model is estimated without the squared terms; the results show that when all performance variables enter only linearly, the coefficients on *SEASONS*, *HOMERS*, and *STEALS* are positive.

<sup>10</sup> The model estimated without the race variables is not reported here; it is available from the author. A likelihood ratio test shows that including the race variables improves the goodness-of-fit: The chi-square statistic is 21.18 with critical value 11.34 at  $\alpha = .01$ .

{INSERT TABLE THREE}

The first predicted election dates given in Table Three assume that race does impact Hall voting. The predicted election dates suggest that minority-race players are not adversely affected in Hall voting. There are only three players elected after their predicted election dates, and these players are all American-born whites (Kiner, Mathews, and Reese). This is not surprising given the results in Table Two. Only one player, Jim Rice (not listed in Table Three), has a predicted election date before 2000 but is not currently in the Hall; based on the estimates of the current Hall voting process, he should have been elected in 1999. Since Rice is black, this may suggest discrimination in his case; however, this is extremely limited evidence of voting discrimination.

The next set of predicted election dates assumes that voters consider only player statistics, i.e., Hall voting is race neutral. Turning first to the *BLACK\*LATIN* players, only Orlando Cepeda and Tony Perez have been elected to the Hall: Cepeda waited 19 years for election and Perez waited 8 years. The predictions show that based on their statistics alone, these players were elected at the time they deserved. Of the 37 players in the sample elected to the Hall who are not *BLACK\*LATIN* players, 19 have been elected sooner than predicted. No *BLACK* or *LATIN* players were elected later than predicted, further strengthening the results from Tables Two. These early elections range from one year early for several players, to 105 years early for Roy Campanella (who is black). Some players (Fisk, Killebrew, Kiner, Mathews, Reese, and Snider) were elected later than predicted. It should be noted that all of these players are American-born whites. Clearly, minority racial status has not adversely affected the players who were elected during the period 1962 to 2000. When examining the predicted election dates of non-Hall-of-Famers under the assumption that race does not matter, one player is found, Ron Santo (American-born white), with a predicted election date before 2000: Santo has a predicted election

date of 1998. We note that without race, Jim Rice has a predicted election date of 2001.

## **V. Conclusion**

This paper extends recent research on the effects of race on player induction into the National Baseball Hall of Fame. No evidence of racial discrimination in the duration of Hall voting is found against minority-race players. In fact, statistical evidence shows that minority-race players are more likely to enter the Hall in any year than other players. Moreover, analysis of actual election dates and predicted election dates indicates that some American-born white players have to wait longer to get into the Hall. The one exception is Jim Rice, but, given the lack of evidence of discrimination, one would expect him to be elected in the near future. These outcomes suggest that black and Latin American players are seen as “better” than other players. Perhaps this is because these players had to be better to make it in largely white, professional baseball, at least in the years after integration.<sup>11</sup> One could speculate that discrimination exists at MLB’s entry point; specifically, minority players have to be better than others to play professionally in the US. The results presented in this paper agree with past research on voting for the Hall: Race-based voting discrimination has not had a perceptible effect on the composition of the National Baseball Hall of Fame.

As a final point, the results from this paper are useful in predicting which players will be elected to the Hall in the future, under the simplifying assumption that voters continue to vote as they have in the past.<sup>12</sup> Using the estimates from Table Two, Column B, the following

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<sup>11</sup> Fort and Maxcy (2000) suggest that MLB raided the Negro Leagues, taking their best talent, which was often Hall-of-Fame-caliber. The results in this paper may be picking up on the fact that black players after integration were the best talent available.

<sup>12</sup> The field players (hitters) listed by the Hall as being eligible in the next five years are: in 2001, Kirk Gibson, John Kruk, Candy Maldonado, Don Mattingly, Kirby Puckett, Andy Van Slyke, Lou Whitaker, and Dave Winfield; in

predictions are obtained, concentrating on those players predicted to be elected by the Writers Association. In 2002, Kirby Puckett will be elected on his second ballot. In 2005, Wade Boggs will be elected on his first ballot, and Paul Molitor will be elected on his second ballot. In 2006, Lou Whitaker will be elected on his sixth ballot. In 2007, Eddie Murray will be elected on his fifth ballot, and Dave Winfield will be elected on his seventh ballot. Finally, in 2011, Andre Dawson will be elected on his tenth ballot. These predictions may be a bit optimistic if the standards for entering the Hall are increasing over time or if voters change their behavior in other ways.

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2002, Andre Dawson, Ozzie Smith, and Alan Trammell; in 2003, Eddie Murray and Ryne Sandberg; in 2004, Joe Carter, Lenny Dykstra, Paul Molitor, Tom Pagnozzi, Terry Pendleton, and Juan Samuel; in 2005, Wade Boggs, Chili Davis, Jeff King, Willie McGee, Tim Lincecum, and Terry Steinbach. Note that these players must be placed on the ballot to be eligible.

**TABLE ONE**  
Summary Statistics  
(N = 300)

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>BLACK</i>	0.340	0.475	0	1
<i>LATIN</i>	0.110	0.313	0	1
<i>BLACK*LATIN</i>	0.087	0.282	0	1
<i>SEASONS</i>	15.45	3.345	10	24
<i>SEASONS<sup>2</sup></i>	249.7	106.6	100	576
<i>RUNS</i>	811.8	371.7	54	2174
<i>RUNS<sup>2</sup>/1000</i>	796.7	714.0	2.916	4726
<i>BATTING</i>	0.269	0.021	0.193	0.344
<i>BATTING<sup>2</sup></i>	0.073	0.011	0.037	0.118
<i>HOMERS</i>	175.5	135.4	6	755
<i>HOMERS<sup>2</sup>/1000</i>	49.08	73.85	0.036	570.0
<i>RBIS</i>	790.4	399.8	66	2297
<i>RBIS<sup>2</sup>/1000</i>	784.1	766.3	4.356	5276
<i>STEALS</i>	100.1	126.6	0	938
<i>STEALS<sup>2</sup>/1000</i>	26.00	79.15	0	879.8
<i>WORLD</i>	1.947	2.018	0	12
<i>BOTH</i>	0.377	0.485	0	1
<i>FIRST<sup>a</sup></i>	0.137	0.344	0	1
<i>SECOND<sup>a</sup></i>	0.110	0.313	0	1
<i>THIRD<sup>a</sup></i>	0.127	0.333	0	1
<i>SHORT<sup>a</sup></i>	0.093	0.291	0	1
<i>CATCHER<sup>a</sup></i>	0.127	0.333	0	1
<i>SEVENTIES<sup>a</sup></i>	0.200	0.401	0	1
<i>EIGHTIES<sup>a</sup></i>	0.327	0.470	0	1
<i>NINETIES<sup>a</sup></i>	0.303	0.461	0	1

<sup>a</sup> These variables are included in all estimates reported in this paper but are not reported for the sake of brevity.

**TABLE TWO**  
Weibull Hazard Model Results  
(Standard Errors in Parentheses)

	<b>A</b>	<b>B</b>
<i>Constant</i>	6.750 (31.95)	25.23 (28.46)
<i>BLACK</i>	-1.099** (0.562)	-1.300** (0.392)
<i>LATIN</i>	0.285 (0.621)	-2.987*** (1.025)
<i>BLACK*LATIN</i>		3.555*** (0.719)
<i>SEASONS</i>	2.382*** (0.395)	2.446*** (0.313)
<i>SEASONS</i> <sup>2</sup>	-0.064*** (0.012)	-0.065*** (0.009)
<i>RUNS</i>	-0.024*** (0.007)	-0.025*** (0.006)
<i>RUNS</i> <sup>2</sup> /1000	0.007*** (0.003)	0.007*** (0.002)
<i>BATTING</i>	27.84 (195.7)	-89.09 (176.3)
<i>BATTING</i> <sup>2</sup>	-90.37 (320.3)	104.9 (286.9)
<i>HOMERS</i>	0.018*** (0.004)	0.019*** (0.004)
<i>HOMERS</i> <sup>2</sup> /1000	0.021*** (0.004)	0.021*** (0.005)
<i>RBIS</i>	-0.014*** (0.004)	-0.016*** (0.005)
<i>RBIS</i> <sup>2</sup> /1000	0.004*** (0.002)	0.005*** (0.002)
<i>STEALS</i>	0.004 (0.003)	0.006* (0.003)
<i>STEALS</i> <sup>2</sup> /1000	-0.004** (0.002)	-0.005** (0.002)
<i>WORLD</i>	-0.115*** (0.039)	-0.120*** (0.035)
<i>BOTH</i>	1.491*** (0.297)	1.544*** (0.290)
ln $\rho$	0.821*** (0.183)	0.958*** (0.200)
log likelihood	-45.13	-39.05

\*\*\* significant at 1% level  
\*\* significant at 5% level  
\* significant at 10% level

**TABLE THREE**

Predicted Outcomes For Elected Players  
(N = 39)

Name	<i>Black</i>	<i>Latin</i>	First Year Eligible	Year Elected	Predicted Election Year with Race	Predicted Election Year without Race
Hank Aaron	1	0	1982	1982	1982	1982
Luis Aparicio	0	1	1979	1984	1984	2003
Richie Ashburn	0	0	1968	1995	1999	1999
Ernie Banks	1	0	1977	1977	1981	1987
Johnny Bench	0	0	1989	1989	1994	1993
Yogi Berra	0	0	1971	1972	1972	1972
George Brett	0	0	1999	1999	2000	1999
Lou Brock	1	0	1985	1985	1985	1985
Roy Campanella	1	0	1964	1969	1992	2074
Rod Carew	1	0	1991	1991	1991	1991
Orlando Cepeda	1	1	1980	1999	2002	1999
Larry Doby	1	0	1966	1998	1999	2060
Carlton Fisk	0	0	1999	2000	2000	1999
Nellie Fox	0	0	1971	1997	2022	2004
Reggie Jackson	1	0	1993	1993	1995	1995
Al Kaline	0	0	1980	1980	1982	1981
George Kell	0	0	1964	1983	2038	2051
Harmon Killebrew	0	0	1981	1984	1984	1983
Ralph Kiner	0	0	1962	1975	1973	1973
Mickey Mantle	0	0	1974	1974	1974	1974
Eddie Mathews	0	0	1974	1978	1976	1977
Willie Mays	1	0	1979	1979	1979	1979
Willie McCovey	1	0	1986	1986	1986	1989
Joe Morgan	1	0	1990	1990	1990	1990
Stan Musial	0	0	1969	1969	1969	1969
Tony Perez	1	1	1992	2000	2000	2000
Pee Wee Reese	0	0	1964	1984	1981	1979
Brooks Robinson	0	0	1983	1983	1983	1984
Frank Robinson	1	0	1982	1982	1982	1983
Jackie Robinson	1	0	1962	1962	1962	1963
Mike Schmidt	0	0	1995	1995	2002	1998
Red Schoendienst	0	0	1969	1989	1992	1994
Enos Slaughter	0	0	1966	1985	1985	1985
Duke Snider	0	0	1970	1980	1984	1979
Willie Stargell	1	0	1988	1988	1988	1991
Billy Williams	1	0	1982	1987	1988	1992
Ted Williams	0	0	1966	1966	1966	1966
Carl Yastrzemski	0	0	1989	1989	1989	1989
Robin Yount	0	0	1999	1999	2003	2001

## APPENDIX

### Race Categories for All Players

Name	BLACK	LATIN	Name	BLACK	LATIN	Name	BLACK	LATIN
Hank Aaron	1	0	Leo Cardenas	1	1	Augie Galan	0	0
Bobby Adams	0	0	Rod Carew	1	0	Oscar Gamble	1	0
Dick Allen	1	0	Chico Carrasquel	0	1	Phil Garner	0	0
Felipe Alou	1	1	Gary Carter	0	0	Steve Garvey	0	0
Jay Alou	1	1	Rico Carty	1	1	Cesar Geronimo	1	1
Matty Alou	1	1	Paul Casanova	1	1	Jim Gosger	0	0
Luis Aparicio	0	1	Dave Cash	1	0	Dick Green	0	0
Richie Ashburn	0	0	Norm Cash	0	0	Bobby Grich	0	0
Bob Bailey	0	0	Phil Cavaretta	0	0	Ken Griffey	1	0
Bob Bailor	0	0	Cesar Cedeno	1	1	Dick Groat	0	0
Dusty Baker	1	0	Orlando Cepeda	1	1	Greg Gross	0	0
Sal Bando	0	0	Ron Cey	0	0	Jerry Grote	0	0
Ernie Banks	1	0	Chris Chambliss	1	0	Pedro Guerrero	1	1
Bob Barton	0	0	Jack Clark	0	0	Mike Hargrove	0	0
Don Baylor	1	0	Horace Clarke	1	1	Tommy Harper	1	0
Hank Bauer	0	0	Rocky Colavito	0	0	Toby Harrah	0	0
Glenn Beckert	0	0	Dave Concepcion	0	1	Bud Harrelson	0	0
Mark Belanger	0	0	Cecil Cooper	1	0	Jim Ray Hart	1	0
Buddy Bell	0	0	Walker Cooper	0	0	Grady Hatton	0	0
George Bell	1	1	Clint Courtney	0	0	Richie Hebner	0	0
Johnny Bench	0	0	Del Crandall	0	0	Jim Hegan	0	0
Yogi Berra	0	0	Terry Crowley	0	0	Tommy Helms	0	0
Ken Berry	0	0	Jose Cruz	0	1	Solly Hemus	0	0
Paul Blair	1	0	Alvin Dark	0	0	Dave Henderson	1	0
John Boccabella	0	0	Rich Dauer	0	0	George Hendrick	1	0
Bobby Bonds	1	0	Vic Davalillo	0	1	Keith Hernandez	0	0
Bob Boone	0	0	Tommy Davis	1	0	Jim Hickman	0	0
Larry Bowa	0	0	Doug DeCinces	0	0	Larry Hise	1	0
Clete Boyer	0	0	Joe DeMaestri	0	0	Gil Hodges	0	0
Ken Boyer	0	0	Rick Dempsey	0	0	Bob Horner	0	0
George Brett	0	0	Bucky Dent	0	0	Willie Horton	1	0
Rocky Bridges	0	0	Larry Doby	1	0	Frank House	0	0
John Briggs	1	0	Brian Downing	0	0	Elston Howard	1	0
Lou Brock	1	0	Walt Dropo	0	0	Frank Howard	0	0
Hubie Brooks	1	0	Johnny Edwards	0	0	Art Howe	0	0
Gates Brown	1	0	Del Ennis	0	0	Roy Howell	0	0
Larry Brown	0	0	Darrell Evans	0	0	Kent Hrbek	0	0
Bill Bruton	1	0	Dwight Evans	0	0	Randy Hundley	0	0
Bill Buckner	0	0	Ron Fairly	0	0	Ron Hunt	0	0
Al Bumbry	1	0	Joe Ferguson	0	0	Reggie Jackson	1	0
Smoky Burgess	0	0	Carlton Fisk	0	0	Sonny Jackson	1	0
Rick Burleson	0	0	Curt Flood	1	0	Jackie Jensen	0	0
Jeff Burroughs	0	0	George Foster	1	0	Alex Johnson	1	0
Johnny Callison	0	0	Nellie Fox	0	0	Dave Johnson	0	0
Roy Campanella	1	0	Bill Freehan	0	0	Deron Johnson	0	0
Bert Campaneris	1	1	Jim Fregosi	0	0	Cleon Jones	1	0
Chris Cannizzaro	0	0	Carl Furillo	0	0	Willie Jones	0	0
Jose Cardenal	1	1	Phil Gagliano	0	0	Mike Jorgensen	0	0

Name	BLACK	LATIN	Name	BLACK	LATIN	Name	BLACK	LATIN
Al Kaline	0	0	Willie Montanez	1	1	Mike Schmidt	0	0
George Kell	0	0	Wally Moon	0	0	Red Schoendienst	0	0
John Kennedy	0	0	Jose Morales	1	1	Tony Scott	1	0
Terry Kennedy	0	0	Joe Morgan	1	0	Roy Sievers	0	0
Don Kessinger	0	0	Manny Mota	1	1	Ted Simmons	0	0
Harmon Killebrew	0	0	Thurman Munson	0	0	Duke Sims	0	0
Ralph Kiner	0	0	Bobby Murcer	0	0	Ken Singleton	1	0
Dave Kingman	0	0	Dale Murphy	0	0	Enos Slaughter	0	0
Ted Kluszewski	0	0	Ivan Murrell	1	1	Roy Smalley	0	0
Ray Knight	0	0	Stan Musial	0	0	Lonnie Smith	1	0
Andy Kosco	0	0	Graig Nettles	0	0	Reggie Smith	1	0
Ed Kranepool	0	0	Ron Northey	0	0	Duke Snider	0	0
Harvey Kuenn	0	0	Jim Northrup	0	0	Chris Speier	0	0
Hal Lanier	0	0	Ben Oglivie	1	1	Jim Spencer	0	0
Carney Lansford	0	0	Tony Oliva	1	1	Mickey Stanley	0	0
Chet Lemon	1	0	Al Oliver	1	0	Willie Stargell	1	0
Jeffrey Leonard	1	0	Amos Otis	1	0	Rusty Staub	0	0
Whitey Lockman	0	0	Andy Pafko	0	0	John Stearns	0	0
Davey Lopes	0	0	Dave Parker	1	0	Champ Summers	0	0
John Lowenstein	0	0	Larry Parrish	0	0	Jim Sundberg	0	0
Greg Luzinski	0	0	Tony Perez	1	1	Garry Templeton	1	0
Fred Lynn	0	0	Rico Petrocelli	0	0	Gene Tenace	0	0
Garry Maddox	1	0	Lou Piniella	0	0	Gorman Thomas	0	0
Bill Madlock	1	0	Vada Pinson	1	0	Bobby Thomson	0	0
Mickey Mantle	0	0	Darrell Porter	0	0	Andre Thornton	1	0
Roger Maris	0	0	Boog Powell	0	0	Bobby Tolan	1	0
Billy Martin	0	0	Vic Power	1	1	Earl Torgeson	0	0
Eddie Mathews	0	0	Terry Puhl	0	0	Joe Torre	0	0
Gary Matthews	1	0	Doug Rader	0	0	Cesar Tovar	1	1
Dal Maxvill	0	0	Willie Randolph	1	0	Manny Trillo	1	1
Carlos May	1	0	Johnny Ray	1	0	Del Unser	0	0
Lee May	1	0	Rick Reichardt	0	0	Ellis Valentine	1	0
John Mayberry	1	0	Pee Wee Reese	0	0	Elmer Valo	0	0
Willie Mays	1	0	Ken Reitz	0	0	Mickey Vernon	0	0
Bill Mazeroski	0	0	Jerry Remy	0	0	Bill Virdon	0	0
Dick McAuliffe	0	0	Del Rice	0	0	Dixie Walker	0	0
Bake McBride	1	0	Jim Rice	1	0	Claudell Washington	1	0
Tim McCarver	0	0	Bobby Richardson	0	0	John Wathan	0	0
Willie McCovey	1	0	Jim Rivera	0	0	Bob Watson	1	0
Gil McDougald	0	0	Bill Robinson	1	0	Vic Wertz	0	0
Roy McMillan	0	0	Brooks Robinson	0	0	Wes Westrum	0	0
Ken McMullen	0	0	Frank Robinson	1	0	Frank White	1	0
Hal McRae	1	0	Jackie Robinson	1	0	Roy White	1	0
Bill Melton	0	0	Cookie Rojas	0	1	Billy Williams	1	0
Denis Menke	0	0	Joe Rudi	0	0	Ted Williams	0	0
Eddie Miksis	0	0	Bill Russell	0	0	Maury Wills	1	0
Felix Millan	0	1	Mike Ryan	0	0	Willie Wilson	1	0
Norm Miller	0	0	Manny Sanguillen	1	1	Jim Wynn	1	0
John Milner	1	0	Ron Santo	0	0	Carl Yastrzemski	0	0
Minnie Minoso	1	1	Hank Sauer	0	0	Steve Yeager	0	0
Rick Monday	0	0	Steve Sax	0	0	Robin Yount	0	0
Don Money	0	0	Paul Schaal	0	0	Richie Zisk	0	0

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