Tsukuba Economics Working Papers
No. 2017-002

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Current Version: February 2017
(Forthcoming from International Review of Applied Economics)

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Is Racial Salary Discrimination Disappearing in the NBA? Evidence from Data during 1985–2015

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November 5, 2016

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[†]This work was supported by a financial grant from the Ministry of Education, Science, Sports and Culture(JSPS Kakenhi Grant Number 15K0351) and the faculty research fund

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Abstract

This study re-examines the racial salary gap of National Basketball Association players by constructing a long unbalanced panel covering the 1985–1986 to 2015–2016 seasons. Contrary to the results of previous studies, we find that non-white players are paid equally to white players with similar characteristics in the 1980s and 1990s, but that white players started to be paid about 20 percent more than non-white players in the last 10 years. Our results are robust to all specification checks, such as quantile regressions, controlling sample selection, different contract types, and player nationality. We find that neither employer preference nor income gap of white and black residents explains this increasing salary gap.

JEL Classification: C25

Keywords: racial discrimination, NBA, labor markets, salary discrimination

1 Introduction

The issue of whether discrimination in the labor market is disappearing has important policy implications. Because various external factors, such as globalization, taxes, and competition with other product markets, affect the degree of wage discrimination, it is important to know how wage discrimination changes over time.

In the literature of discrimination in labor markets pioneered by Becker (1971), researchers have used the data of professional sports athletes to analyze the issue of discrimination because of the availability of information on each player's productivity in a large number of dimensions (Kahn, 2000). Among studies that used information of professional sports athletes, studies that use information of players of the National Basketball Association (NBA) provide an interesting case for several reasons. First, in the previous studies that utilized the data in 1980s and 1990s, it is reported that in the 1980s, there was a white premium of the NBA's salary—the salary of a white player is higher than that of a non-white player with the same productivity (Kahn and Sherer, 1988; Koch and Vander Hill, 1988; Wallace, 1988; Brown et al., 1991).[1] However, several studies report that such a premium decreased or disappeared in the 1990s (Dey, 1997; Hamilton, 1997; Bodvarsson and Brastow, 1998; Gius and Johnson, 1998; Erick Eschker and Siegler, 2004; Hill, 2004; Groothuis and Hill, 2013).[2] Some studies report that in the 2000s, there was a negative white premium against white players (Yang and Lin, 2012; Groothuis and Hill, 2013). Thus, it is natural to examine

[1]For example, Kahn and Sherer (1988) finds a strong white (20 percent) premium controlling productivity and other covariates using the salary data in the 1985–1986 season.

[2]Hamilton (1997) finds evidence of racial pay differences only at the upper end of the 1994–1995 season of salary distribution. Hill (2004) shows that the importance of controlling the height or position. He argues that the white premium was the return of the height, not the racial gap. A study most closely related to the current study is Groothuis and Hill (2013). They use unbalanced panel data from 1990 to 2008 and control for the sample selection problem. They find that there was no white premium in their dataset.

whether this trend continues in more recent years and whether the white premium eventually disappeared.

Second, there is a discrepancy between anecdotal and empirical evidence regarding discrimination in the NBA. Although the previous literature suggests that the racial salary gap was disappearing in the 1990s and might even have been moving in the opposite direction in the 2000s (negative white premium against white players), there is anecdotal and empirical evidence of racial discrimination against non-white players in the NBA. For example, in April 2014, the owner of Los Angeles Clippers was banned from the NBA permanently and fined $2.5 million for his racial comments. Kanazawa and Funk (2001) finds that TV viewing is affected strongly by the ratio of white players in the team by examining the viewing data in the 1996–1997 season. Price and Wolfers (2010) shows that a referee prefers a player whose race is the same as that of the referee when he or she makes a decision on fouls. Such anecdotal or empirical evidence warrants further investigation of racial salary discrimination by using a longer dataset.

Third, the NBA experienced substantial globalization in the 2000s. In 2002, 2005, and 2006, the first pick in the draft was an international player.[3] The season's MVP during the 2004–2005, 2005–2006, and 2006–2007 seasons were international players.[4] In addition, broadcasting the NBA's games to countries outside the United States became common in those years. In the literature of labor economics, there is increasing interest whether globalization would lead to a decrease or increase of discrimination in the labor market (Berik et al., 2004; Black and Brainerd, 2004; Busse and Spielmann, 2006). The salary data of the NBA provide an interesting case for the study.

This study revisits the issue of the white premium of the salary of NBA players. We

[3]The first picks in the draft of 2002, 2005, and 2006 were Yao Ming (China), Andrew Bogut (Australia), and Andrea Bargnani (Germany), respectively.

[4]The MVP of the 2004–2005 season, the 2006–2006 season, and the 2006–2007 season were Steve Nash (South Africa), Steve Nash (South Africa), and Dirk Nowitzki (Germany), respectively.

contribute to the literature in two ways. First, we analyze a long period of unbalanced panel data of salaries and other indices of performance, which covers the 1985–1986 season to the 2015–2016 season for annual salaries and the 1984–1985 season to the 2014–2015 season for the indices of performance. Previous studies obtain different results on the white premium of salaries of NBA players as a result of using samples in different periods. By using a long period of unbalanced data, we can check how choosing particular sample periods affects the estimation results of the white premium. Second, we use a very extensive dimension of indices of performances to control player characteristics. Using such a large dimension of performance characteristics reduces the chance that estimates are biased due to unobserved characteristics. Third, we use several estimation methods, such as ordinary least square (OLS) estimation, quantile regression estimation, and sample selection estimation. In the NBA, there are a few superstar players whose salaries are substantially higher than those of other players. We control such an effect by using quantile regression estimation. Second, we apply sample selection estimation because, as noted by Groothuis and Hill (2013), signing a contract at period t can be an outcome of racial discrimination. Even if a non-white player and a white player were to have the same performance at season t-1, only a white player might be signed in season t. Due to such a potential sample selection problem, we estimate the white premium by using a Heckman two-step estimation. Furthermore, we conduct extensive robustness checks, such as regressions on the performance indices at period t-2 instead of t-1, restricting the sample to US-born players, and controlling the team fixed effect interacted with the time dummy. These additional checks show the robustness of our results.

We find that in the 1980s, non-white players were paid equally to white players. Second, consistent with the previous literature, which shows that the racial salary gap

was disappearing in the 1990s, we find that during the 1980s and 1990s, there was no white premium. However, in the 2000s, we find that the white premium becomes about 9 percent ($p < 0.05$) and in the 2010s, it reached about 20 percent ($p < 0.01$) in the various estimating methods. Our results show that the result of the previous literature that the racial salary gap is disappearing is quite temporary, and in fact, it increased in the late 2000s and, especially, in the 2010s.

Our results show an interesting contrast to the results of the previous literature, which shows a white premium in the mid-1980s but not in the 1990s and 2000s. We explain the difference between our results and those of the previous studies as follows. First, in relation to studies that use a dataset for the 1985–1986 season, we find that when we drop several control variables from our regression equation, which are not included in the previous studies, the magnitude of the coefficient and statistical significance becomes similar to the results of the previous studies. This suggests the importance of including those control variables in the estimation. Second, we show the pattern of the white coefficient by estimating the white premium for each year using the dataset between 1985 and 2015. We show that the white premium during 1990–2006 is very close to 0, which explains the difference between our results and that of Groothuis and Hill (2013).

Although we do not find the exact cause of the rise of salary gap, we examine two possible causes. First, we examine whether the race of the owner or the general manager (GM) of the team affects the white premium. We find that even if we control the race of owner and GM, the pattern of the white premium does not change at all. In addition, we examine the effect of income distribution of white and black residents. Again, we find that the pattern of the white premium does not change, even if we control the income distribution of residents in the team's state.

The organization of the rest of our paper is as follows. In Subsection 2.1, we discuss the data and how we construct the variables. In Subsection 2.2, we discuss empirical specifications. In the Subsection 2.3, we present the data description. In Section 3, we present the main results. In Section 4, we provide a brief conclusion.

2 Dataset and Empirical Specification

2.1 Dataset

This study obtains information on salaries and player productivity from several sources. For information on the annual salaries of players, we obtain information of the annual salaries from the ESPN salary-ranking website[5], NBA's reference website[6], and fans' website[7]. We check the consistency of the salary information among three sources and find that information on those three sources is consistent.[8] We collect demographic variables, such as nationality, height, weight, and birth year, from the reference website of NBA players[9]. In addition, we check the consistency of indices from these two sources and find that the information is consistent between these two sources. The salary data are available from the 1985–1986 to the 2015–2016 seasons, except for the 1986–1987 and 1989–1990 seasons.[10] The information on performance is available from the 1984–1985 to 2014–2015 seasons. The median income of black and white residents in each state and year is calculated from the CPS data available from the IPUMS CPS.[11]

[5] `http://espn.go.com/nba/salaries`

[6] `http://www.basketball-reference.com/players/`

[7] `https://www.eskimo.com/~pbender/`

[8] From 1999-2000 to 2015-2016 season, we use ESPN salary-ranking website for salary information. The ESPN website does not provide salary information before 1999-2000 season. From 1985-1986 to 1998-1999 season, we use `https://www.eskimo.com/~pbender/`.

[9] `http://www.basketball-reference.com/players/`

[10] For the 1986–1987 and 1989–1990 seasons, the NBA, player's union and individual teams refused to release salary information.

[11] `https://cps.ipums.org/cps/`

Some players are posted on the waiver list during the season after the contract is signed. When another team makes a claim on this waived player within 48 hours after he was posted on the waiver list, the contract is transferred to this new team and the new team needs to take full responsibility for the contract, including payment of the remaining salary. In most cases, however, no team lodges a claim within 48 hours to this posted player. In this case, the player obtains free agency. In this case, a new team can make an offer to this player with the minimum salary that is determined by the NBA. In our dataset, about 5 percent of observations experience these kinds of transfers during the season. It is natural to assume that the characteristics of those waived players are different from non-waived players. Thus, we exclude those waived players from our dataset. To check the sensitivity of our regression result due to the exclusion of those waived players, we conduct robustness checks by including those players and re-estimating the equation. Our robustness checks show that the result does not change, even if we include those players.

The following outlines our construction of variables. For the dummy variable indicating whether a player is selected in an All-Star game, we set the All-Star dummy variable to 1 if a player is selected in the All-Star game at least once in the past three seasons. For the number of draft picks, we develop 9 dummy variables indicating whether a player is picked in the 1st–5th pick, 6th–10th pick, 11th–15th pick, 16th–20th pick, etc. Players whose numbers of draft picks are more than or equal to the 41st or who were not drafted at all are defined as one group.[12]

[12]Initially, we control the effect of the draft pick number by linear and quadratic function of the draft pick number. However, we find that the non-linear effect of the draft pick number is not well-captured by the quadratic function. Thus, we devise nine dummies for the draft numbers.

2.2 Empirical Specification

The main regression equation that we utilize in this study is as follows:

$$\ln S_{ijt} = \beta_0 + \gamma White_i + \beta_1 X_{1,ij,t-1} + \alpha_j + \alpha_t + \varepsilon_{ijt} \tag{1}$$

where i is an index of individual, t is the index of the season, and j is the index of the current team. We define the year t to year t+1 season as season t. S_{ijt} is the annual salary of the player i in the season t who belongs to the team j. $White_i$ is a dummy variable that takes 1 if a player is white and takes 0 otherwise. α_j is the team's fixed effect. α_t is the time fixed effect. ε_{ijt} is the error term. $X_{ij,t-1}$ is a vector of player i's performance in season t-1. Because of the potential endogenous effect from the amount of salary at season t to performance at season t, we regress the performance at season t-1 instead of the performance at season t. Since it is possible that a player's salary is determined by performance a few years before season t, we conduct a robustness check by replacing $X_{1,ij,t-1}$ with $X_{1,ij,t-k}$ where $k = 2$ or 3.

The coefficient of our main interest is γ, which measures by what percentage the annual salary increases when the race of a player is white, controlling the productivity of this player and the characteristics of the team he belongs to.

Since we use panel data, ε_{ijt} can be serially correlated for the same i. We apply various estimation methods, such as OLS, quantile regression estimation, and the Heckman two-step estimation method, with the assumption that the error term is clustered at the player's level. We do not use the random effect model of the panel data. The random effect model is more efficient than the OLS with the clustering robust standard error if it is correctly specified. However, once misspecified, the random effect model

generates an inconsistent estimate of the standard error.[13]

In the NBA, the salaries of several players are substantially higher than those of others. It is known that estimates by OLS are affected substantially by outliers. To check whether our results are affected by outliers, we regress (1) by the quantile regression method at several quantiles.

Another issue of estimating equation (1) is the potential non-randomness of the dataset. In the presence of racial discrimination, the observation of salary data at season t might not be equally selected between non-white and white players, even if the performance at season t-1 is the same for non-white and white players. In such a case, running OLS can introduce bias for estimating γ. To solve such non-random sampling, we apply Heckman's two-step estimation. To estimate Heckman's two-step estimation, it is important to have some excluded variables that enter the selection equation but do not enter the salary equation. For such excluded variables, we use dummy variables that indicate the team to which a player belonged at season t-1.

2.3 Data Description

Table 1 and Table 2 provide the summary statistics of the variables used in our regression. We have 9822 observations and 1856 players. Among the observations, 24 percent are white players and 13 percent are foreign players. We classify the positions of players into three categories—center, guard, and forward. About 40 percent of the observations is guard, another 40 percent is forward, and 20 percent is center. We control for age, age squared, experience, and experience squared.[14] The analysis

[13]Since the random effect model is a particular type of the generalized least square (GLS) estimation, the standard criticism of the GLS also applies to the random effect model. For the standard criticism applying the GLS model, see subsection 1.6 of Hayashi (2000).

[14]Our robustness check shows that including experience squared is important. See our discussion in Table 7.

of the sample selection model suggests the importance of the inclusion of age.[15] The average age is 27 years and the average experience is 5.5 years. The previous study (Hill, 2004) shows the importance of controlling the height or position.[16] Table 2 lists the 16 indices of performance variables used in our regressions. Table 2 shows that many indices are different between non-white and white players. Table 2 suggests that if those indices affect the level of salary of a player, we need to include those variables as control variables to estimate the effect of the race of a player.

Figure 1 shows that ratio of white players during 1985–2015. The ratio is initially around 25 percent. After 1990, it starts to decline to around 20 percent. After the mid-2000s it starts to rise to between 25 and 30 percent. Figure 1 suggests that the ratios of white and non-white players are not constant across periods and that the white premium might not be time invariant.

3 Empirical Results

Table 3 shows our main regression results.[17] The row White displays the estimated coefficient of the white dummy in the regression equation. In the regression equation, the dependent variable is the logarithm of the annual salary at season t. The explanatory variables are the white dummy, foreign player dummy, performance indices listed in Table 2 at season t-1, age, age squared, experience, experience squared, two position dummies, height, weight, team dummy at season t, nine dummy variables to control draft pick numbers, and a dummy indicating the selection in an All-Star game in the

[15]The analysis of the sample selection model shows that age is a significant variable in the first-stage selection equation but experience is not. On the other hand, in the second-stage salary equation, experience is significant but age is not. This suggests that age is an important variable to control sample selection when the OLS or quantile regression is applied.

[16]See the discussion in footnote 2.

[17]The estimated coefficients and their standard errors of all control variables of the OLS estimation are provided on Table A1 in appendix A.

past three seasons.[18][19] For calculating the standard error, we assume that the error term is clustered at the player's level and apply the clustering robust standard error. The first block of Table 3 shows the results of OLS. The first, second, third, fourth, and fifth columns show the estimated coefficients of the white dummy, numbers of observations, and R squared when all observations, observations in the 1980s, observation in the 1990s, observations in the 2000s, and observations in the 2010s are used for the estimation, respectively.

The first block of Table 3 shows that in the 1980s and 1990s, non-white players are as equally paid as white players with similar characteristics. The estimated coefficient of the white player dummy using the 1980s and 1990s samples is economically very small and statistically insignificant. In the 2000s and 2010s, however, the white premium becomes significant economically and statistically. In the 2000s, the white premium becomes about 10 percent ($p < 0.05$). In the 2010s, the white premium becomes more than 20 percent ($p < 0.01$).

The second, third and fourth blocks show the results of 50 percent, 25 percent, and 75 percent quantile regression estimation.[20] The dependent variable and explanatory variables are the same as in the OLS case. The result of the 50 percentile quantile regression result shows that even with the quantile regression, the pattern of the white premium does not change—in the 1980s and 1990s, there was no white premium, but in the 2000s, the white premium began to emerge and, in the 2010s, it reached nearly 20 percent. The third fourth blocks show that the results of 25 percent and 75 percent quantile regression, respectively, are very similar to those of the 50 percent quantile

[18]In the data section, it is explained how the nine dummy variables for draft number pick are constructed,

[19]Our robustness check in the next section shows the importance of including experience squared.

[20]The estimated coefficients and their standard errors of all control variables of the quantile regression model are provided in Tables B1, B2, and B3 of the supplemental appendix B.

regression. The results of the quantile regression suggest that the results of the OLS are not driven by outliers.

In Table 4, we conduct several robustness checks. In the first block of Table 4, we control the sample selection problem, as discussed in the empirical specification section. We use the Heckman two-step estimation to control the sample selection problem. The first-stage selection equation estimates the selection equation by using the sample of players who played at season t-1. The second-stage salary equation provides an estimation by using a sample with contracts at season t. The dependent variable of the selection equation is a dummy variable indicating that a player has a contract at season t. The dependent variable of the second-stage salary equation is the logarithm of annual salary. The explanatory variable of the salary equation is the same as that in the equation used in OLS and quantile regression estimation in Table 3. The explanatory variables in the selection equation are the same as the explanatory variables used in the salary equation except the team dummy. In the salary equation, we use the team dummy at season t, since the salary at season t is a dependent variable. By contrast, in the selection equation, we use the team dummy for a player having played at season t-1.[21] The result of the sample selection estimation shows that the pattern of the white premium is the same as that of the OLS estimation. This shows that in the 2010s, the white premium is 20 percent.

In Table A2, we display the estimated coefficient of all control variables in the sample selection model. Table A2 shows that in the selection equation, the white dummy is not significant when we assume that the coefficients are different in each decade.[22]. In addition, Table A2 shows that the effect of age is different in the selection

[21]Implementing the Heckman two-step estimation, it is important to find an excluded variable that enters the selection equation but is not included in the second-stage equation. The team dummy at t-1 is the excluded variable.

[22]This is consistent with Groothuis and Hill (2013)

equation and the salary equation. Although age is not significant in the salary equation, it is statistically significant in the selection equation. This suggests that when we do not apply a sample equation estimation method, such as OLS or quantile regression, it is important to include age to control the effect of selection indirectly.

As shown by Kahn and Shah (2005), the white premium can be quite sensitive to the type of contract, as discussed in the introduction. Players with experience of more than 3–5 years (depending on the initial contract) can become free agent players. On the other hand, the salaries of the drafted rookie players with less experience are determined by NBA's rules. Thus, there is no room for racial discrimination for each drafted rookie player if his years of experience number less than 3 years. This implies that the inclusion of rookie players with less experience could affect the white premium substantially, as demonstrated by Kahn and Shah (2005). In the second block of Table 4, we restrict the sample to players who have 5 years or more of experience. The dependent variable and explanatory variable are the same as in Table 3. The result of the second block shows that the result of OLS with all players continues to hold even in the restricted sample. This suggests that the type of contract does not affect the pattern of the white premium over time.[23]. The third block confirm this finding. More specifically, we restrict the sample to players who are drafted with early picks and whose experience is less than or equal to 3 years. The salaries of players whose draft pick number is low and whose experience is lower than or equal to 3 years are tightly controlled by NBA's rules. Thus, for those players, the white premium is not likely to exist. If we find a white premium, it indicates that we are picking up other effects. The third block of Table 4 estimates the white premium for those players. As the theory indicates, there is no white premium for those players.

[23]The estimated coefficients and their standard errors of all control variables of this model are provided in Table B4 in appendix B

In the fourth block, we restrict the sample to US-born players.[24] Since the NBA experienced a dramatic globalization in the 2000s, fully controlling for the birthplace of players seems to be important. The result of the fourth block of the Table 4 shows that controlling for foreign players fully does not affect the pattern of the white premium at all.[25]

Recently, Erick Eschker and Siegler (2004) and Motomura (2014) show that players who graduated from US colleges have some premium for their salaries. Thus, the white premium in the 2010s might have been due to the US college premium. To check such a possibility, in the fifth block of Table 4, we restrict the sample to players who graduated from US colleges. The result shows that even with this sample, the pattern of the white premium does not change at all.

In Table 5, we conduct additional robustness checks. In Table 3, we use the indices of the performances in the previous season to control the productivity of players. However, it is quite possible that the salary of the player at season t is affected by the performance at t-2 or t-3, not t-1. The first and second blocks of Table 5 show the coefficients of the white dummy when the indices of performance at season t-2 or t-3 are used as the control variables and the dependent variable is the log of salary at season t.[26] The first and second blocks are estimated by OLS. The third block is estimated by quantile regression. The first, second, and third blocks of Table 5 show

[24]In all the above regressions, we include the foreign player dummy as an explanatory variable. Thus, we control the birthplace of players to some degree. However, we do not make other variables interact fully with the foreign player dummy. Thus, we implicitly assume that the coefficient of other explanatory variables is the same between US-born and foreign players. If the effect of those control variables differ between foreign and US-born players, our estimate of the coefficient of the white dummy can be biased. To solve this problem, we restrict our sample to US-born players and apply the same regression equation, except for the foreign player dummy.

[25]The estimated coefficients and their standard errors of all control variables of this model are provided on Table B5 in appendix B.

[26]The estimated coefficients and their standard errors of all control variables are provided in Tables B6 and B7 in appendix B.

that the pattern of the white premium does not change from Table 3.

In the fourth block of Table 5, we control another sample selection issue. As discussed in the data section, we exclude players posted during the season. This is because often they are hired by the second team at the minimum salary. The fourth block of Table 5 shows the results of the regression when we include those players in the sample. The results of the fourth block Table 5 show that the results of Table 3 do not change even if those waived players are included.[27]

In all the abovementioned regressions, we include the team dummy to control the team's fixed effect. In the fifth block of Table 5, we include the interaction term of the team dummy and year dummy. The fifth block of Table 5 shows that the pattern of the white premium is not affected at all, even if we include the interaction of the team dummy and year dummy.

In Table 6, we drop several variables to conduct additional robustness checks. In the regressions employed in Tables 3, 4 and 5, we include some variables as control variables that can be affected by the presence of discrimination. For example, in the above regressions, we include the number of games played, the average minutes played per game, selection to the All-Star game and the number of draft picks. Those variables could be affected by the presence of discrimination itself. For example, the GM can have a preference for white players, and non-white players might play a smaller number of games, even if black and white players have potentially the same performance level. Fans can have preference for non-white or white players, which can affect selection to All-Star games. In such cases, those variables can be the outcome of discrimination, and controlling by the outcome variable can be very misleading for estimating the white

[27]The estimated coefficients and their standard errors of all control variables are provided on Table B8 in appendix B.

premium.[28]

In the first block of Table 6, we estimate equation (1), which was estimated in Table 3, by dropping the number of games played. The pattern of the estimated coefficient of the white dummy is the same as in Table 3. In the second block, we conduct the estimation by dropping the number of games played and the average minutes played. In the third block, we drop the number of games played, average minutes played, attendance to All-Star games, and nine dummy variables related to draft number picks. In the fourth block, we apply the sample selection estimation method to the sample used in the fourth block. All four blocks shows that the pattern of the white premium is very similar to the pattern of the white premium in Table 3.

3.1 Reconciling with Previous Results

One might ask the source of the difference between our results and those of previous studies. Several studies report the presence of a white premium in the 1980s. In addition, previous studies that use data in the 1990s and 2000s show that the white premium does not exist (Groothuis and Hill, 2013). To check for consistency, we run a regression separately for each year in Table 3 and plot the coefficients of the white dummy. Figure 2 shows the estimated coefficient of the white dummy for each year. Figure 2 shows that in the 1985–1986 season, the coefficient of the white dummy is positive but keeps declining and becomes almost 0 or sometime negative. In the late 2000s, it starts to increase. Our estimated coefficient that used the data of the 1985–1986 season alone is positive but statistically insignificant. To observe the differences of our estimated results and those of previous results that use the sample of the 1985–1986 season, we conduct several robustness checks in Table 7.

[28]For more on the dangers of controlling the outcome variable, see section 3.2.3 of Angrist Joshua and Pischke (2009).

Column (0) in Table 7 is taken from Kahn and Sherer (1988), who report that the coefficient of the white dummy is 20 percent and is statistically significant by using the 1985–1986 season sample. In column (1) of Table 7, we estimate the white dummy by using salary information in the 1985–1986 season as well as performance information in the 1984–1985 season in our dataset and by applying the same specification as Kahn and Sherer (1988). We find that the white premium is 15 percent and is statistically significant at the 10 percent level. In column (2), we add two variables to the specification of column (1): height and square of experience. When we add these two variables, the white premium becomes 10.5 percent and becomes statistically insignificant, even at the 10 percent level. For column (3), we estimate the white premium by replacing points per game with the number of field goals per game, the number of three-point shoots per game, and the number of free-throw shoots per game. When we include these three variables, we drop the number of points per game because of obvious multicollinearity. Column (3) shows that the estimated coefficient of the white premium is 11.7 percent and is statistically insignificant. In column (4), we add age, age squared, weight, the foreign dummy, and the All-Star dummy. In column (5), we add the nine draft rank dummies. In column (6), we use the same specification as that of Table 3. The results of columns (2)–(6) show that with all specifications, the estimated coefficient of the white dummy is not statistically significant. This suggests that the result of Kahn and Sherer (1988) is likely due to the lack of important control variables.[29]

Another previous study that shows a contrasting result is Groothuis and Hill (2013), who applies the sample selection model using the dataset covering 1990–2006 and shows there is no white premium and, in fact, there is a reverse white premium in some specifications. Figure 3 explains the source of the difference between our results and

[29]Hill (2004) makes a similar observation using 1985–1986 data.

those of Groothuis and Hill (2013). Figure 3 estimates the white premium by applying the sample selection model each year separately from 1990 to 2015. Figure 3 shows that until the mid-2000s, the white premium is quite low or sometimes negative. After the mid-2000s, the white premium started to emerge. Thus, it is not surprising that Groothuis and Hill (2013) did not find a statistically significant white premium. The white premium simply started to emerge after the mid-2000s. In Table 8, we reconcile this with the result of Groothuis and Hill (2013). Column (0) of Table 8 is taken from Groothuis and Hill (2013). It shows the estimated coefficient of the white dummy in the salary equation and exit equation.[30] Column (1) displays the estimated coefficient of the white dummy in the salary equation and the selection equation when the same control variables as those in Groothuis and Hill (2013) are applied and the sample in 1990–2006 in our data set is used. Column (2) displays the estimated coefficient of the white dummy in both the salary equation and the selection equation when the same specification as that in the first block of Table 4 is applied. Table 8 shows that we obtain a similar result using our own dataset.

3.2 Effects of Race of Owner, GM, and Income Gap on White Premium

One natural question is why the racial salary gap increased in the 2000s and 2010s. Although we find that the exact cause of this rising salary gap is beyond the scope of this study, we could exclude some possibilities. First, we examine whether the race of the owner or GM of the team affects the white premium. We find that even if we control the race of the owner and GM, the pattern of the white premium does not change at all. More specifically, we estimate equation (1) with the interaction term of the white dummy and the race dummy of the owner of GM. The race dummy of the owner or

[30] Groothuis and Hill (2013) use the exit equation instead of the selection equation for controlling the sample selection.

GM is equal to 0 if the race of the owner or GM is white and otherwise it is equal to 1. The idea of this regression is that the coefficient of the white dummy becomes bigger in the team in which the race of the owner or GM is white if the primary reason of the rise of the white premium derives from the racial preference of owners or GM. The first block of Table 9 shows the estimated coefficient of the white dummy of players when the race dummy of the owner and its interaction with the white dummy of players are included. The reported coefficient measures the white premium in the team in which the race of the owner of the team is white. The second block of Table 9 shows the estimated coefficients of the white dummy of players when the race dummy of GM and its interaction with the white dummy of players are included. The estimated coefficient of the white dummy measures the white premium in a team in which the race of the GM is white. The first and second blocks of Table 9 show that the pattern of the estimated coefficient of the white dummy does not change at all, even if we control the race of the owner or GM.

In the third block of Table 9, we control the relative median income of white residents over that of black residents in the state in which the team is located. If the white premium is a reflection of a consumer's willingness to pay for own race, then in an area in which the relative income of white is high, the white premium will become higher. After the mid-2000s, the median income gap between white and black increased according to the CPS data. In the third block, we estimated the following equation:

$$\begin{aligned} \ln S_{ijt} = \beta_0 + \gamma_0 White_i + \gamma_1 White_i \times (Gap_{jt} - \overline{Gap}) \\ + \gamma_2 \times (Gap_{jt} - \overline{Gap}) + \beta_1 X_{1,ij,t-1} + \gamma_j + \gamma_t + \varepsilon_{ijt} \end{aligned} \tag{2}$$

where Gap_{jt} is the ratio of median income of white residents to the median income of black residents at time t in the state in which team j is located. $\overline{Gap}$ is the sample average of Gap_{jt}. The idea of equation (2) is that white premium becomes higher in a state in which the median income of white residents is higher than that of black residents. The ratio of the median income of black and white residents is calculated from the CPS data. The third block of Table 9 shows that the pattern of the estimated coefficient of white dummy of players does not change even when we include the median income ratio of white residents and black residents and its interaction with the white dummy.

4 Conclusion

This study revisits the issue of a racial salary gap in the NBA using an unbalanced panel dataset that includes information on annual salary from the 1985–1986 season to the 2015–2016 season and performance information from the 1984–1985 season to the 2014–2015 season. In contrast to the result of previous studies, in which the racial salary gap disappears in the 1990s and early 2000s, we find that the racial salary gap starts to emerge in the 2000s and reaches about 20 percent in the 2010s. The results are quite robust to many specifications, including OLS, quantile regression, sample selection estimation, and restricting the sample to several sub-samples.

Although we demonstrated that there is a racial salary gap between non-white and white players in the 2000s, especially in the 2010s, we need to be careful about the interpretation of the results. The presence of a salary gap might be caused by factors other than discrimination. During the 2000s and 2010s, there were several external changes in the NBA, such as the globalization of teams, the introduction of luxury taxes, and minor leagues. Thus, the rise of the salary gap from the mid-2000s could

be the effect of other factors than discrimination.

To find the cause of the rising racial salary gap, we examined whether the race of owners and GMs or the income gap of white and black fans affects the white premium. We found that those factors did not affect the white premium at all. Thus, the cause of the rising racial salary gap is unknown and remains as a topic for future research.

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Table 1: Summary Statistics of White Players and Non-white Players

	All		White		Non-white		Difference of the mean of white and non-white players	
Variables	mean	s.d.	mean	s.d.	mean	s.d.		
Annual Salary ($1000)	3,514	4,078	3,362	3,767	3,563	4,173	-201.2**	(95.83)
Foreign Dummy	0.128	0.334	0.327	0.469	0.0639	0.245	0.263***	(0.00739)
Age	26.98	4.007	27.07	3.775	26.95	4.079	0.120	(0.0942)
Experience	5.505	3.754	5.150	3.509	5.620	3.822	-0.471***	(0.0881)
Weight (lb)	218.0	27.96	227.1	27.86	215.1	27.36	11.97***	(0.646)
Height (inch)	79.13	3.727	80.64	3.731	78.64	3.594	1.996***	(0.0853)
Guard Dummy	0.382	0.486	0.285	0.452	0.413	0.492	-0.127***	(0.0113)
Forward Dummy	0.413	0.492	0.352	0.478	0.433	0.496	-0.0811***	(0.0115)
Center Dummy	0.205	0.404	0.363	0.481	0.154	0.361	0.209***	(0.00925)
Number of Draft Pick ≤40	0.651	0.477	0.650	0.477	0.652	0.476	-0.00121	(0.0112)
Selected in All-Star Game at least once in the past 3 seasons	0.104	0.305	0.0827	0.275	0.110	0.313	-0.0277***	(0.00716)
N	n=9822		n=2394		n=7428			

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2: Summary Statistics of White Players and Non-white Players (2)

	All		White		Non-white		Difference of the mean between white and non-white players	
Performance Indices	mean	s.d.	mean	s.d.	mean	s.d.		
Number of games the athlete played in the season.	59.74	21.99	57.36	22.32	60.51	21.83	-3.153***	(0.516)
Average minutes the athlete played in one game	22.66	9.959	20.04	9.717	23.50	9.890	-3.465***	(0.231)
Average number of successful field goals in one game	3.520	2.263	2.924	1.997	3.712	2.311	-0.788***	(0.0526)
Probability of successful field goals	0.447	0.0757	0.448	0.0796	0.447	0.0744	0.000714	(0.00178)
Average number of three-point shoots in one game	0.458	0.612	0.425	0.598	0.469	0.616	-0.0435***	(0.0144)
Probability of successful three-point shoots	0.222	0.178	0.218	0.192	0.223	0.174	-0.00489	(0.00419)
Average number of free-throw shoots in one game	1.805	1.483	1.454	1.240	1.919	1.537	-0.464***	(0.0345)
Probability of successful free throw	0.719	0.150	0.719	0.162	0.720	0.146	-0.000318	(0.00352)
Average number of defensive rebounds taken in one game	1.175	0.903	1.108	0.850	1.197	0.918	-0.0897***	(0.0212)
Average number of defensive rebounds taken in one game	2.821	1.832	2.673	1.772	2.868	1.848	-0.196***	(0.0430)
Average number of assists in one game	2.077	1.966	1.788	1.966	2.170	1.957	-0.382***	(0.0460)
Average number of turn-overs in one game	1.381	0.814	1.174	0.744	1.448	0.825	-0.274***	(0.0189)
Average number of steals in one game	0.742	0.485	0.587	0.422	0.792	0.494	-0.205***	(0.0112)
Average number of blocks in one game	0.481	0.551	0.462	0.525	0.487	0.559	-0.0249*	(0.0129)
Averag scores in one game	9.303	6.081	7.727	5.345	9.811	6.216	-0.115***	(0.0188)
Average number of fouls	2.097	0.803	2.009	0.821	2.125	0.795	-2.084***	(0.141)
Contribution to the team	10.42	6.328	9.273	6.060	10.78	6.368	-1.511***	(0.148)
Assist percentage	13.47	9.524	12.35	9.464	13.83	9.516	-1.483***	(0.223)
Turn-over percentage	12.77	4.744	13.14	5.209	12.65	4.577	0.486***	(0.111)
True shooting percentage	36.31	24.01	36.85	24.21	36.13	23.94	0.714	(0.564)
Usage percentage	19.10	5.093	17.91	4.921	19.49	5.088	-1.580***	(0.119)
Offensive rebound percentage	6.197	4.219	6.649	4.146	6.051	4.232	0.598***	(0.0990)
Defensive rebound percentage	14.17	5.974	15.18	5.946	13.84	5.947	1.339***	(0.140)
N	n=9822		n=2394		n=7428			

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Estimated Coefficients of White Dummy in OLS and Quantile Regressions

Dependent variable		ln (annual salary)				
		(1)	(2)	(3)	(4)	(5)
Estimation Method		all	1980s	1990s	2000s	2010s
OLS	White	0.0817***	0.0636	-0.0411	0.113**	0.244***
		(0.0294)	(0.0539)	(0.0452)	(0.0452)	(0.0521)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.681	0.751	0.617	0.603	0.570
Quantile Regression (50%)	White	0.0436	0.0598	-0.103**	0.130***	0.186***
		(0.0297)	(0.0789)	(0.0480)	(0.0477)	(0.0616)
	N	9822	745	3203	3650	2224
	R-squared	0.676	0.737	0.606	0.594	0.556
Quantile Regression (25%)	White	0.0900***	0.0251	-0.0310	0.149***	0.192***
		(0.0287)	(0.0743)	(0.0562)	(0.0500)	(0.0686)
	N	9822	745	3203	3650	2224
	R-squared	0.674	0.729	0.604	0.587	0.549
Quantile Regression (75%)	White	0.0282	-0.00582	-0.0751	0.0848*	0.173***
		(0.0322)	(0.0563)	(0.0508)	(0.0444)	(0.0621)
	N	9822	745	3203	3650	2224
	R-squared	0.665	0.721	0.588	0.582	0.534

Notes: The dependent variable of the regression equation is the logarithm of the annual salary at season t. The explanary variables are white dummy, foreign player dummy, position dummy to control positions (guard, center, forward), age, age squared, experience, experience squared, year dummy, height, weight, team dummy at season t, attendance of All-Star game in the past 3 seasons dummy, draft-ranking dummy and all perfomance indices at season t-1 listed in Table 2. The regression equation is estimated by using the unbalanced panel data covering salary information from the 1985–86 season to the 2015–16 season. The row "white" shows the estimated coefficient of the white dummy in different specificatons. Clustering robust standard errors are presented in parentheses and the error term is clustered at the player's level in all specifications. Columns (1), (2), (3), (4), and (5) show the esimated coefficients of the white dummy, its standard error, the number of observations, and R^2 when we use all observations, observations in the 1980s, observations in the 1990s, observations in the 2000s, and observations in the 2010s, respectively. The first, second, third, and fourth blocks display the results of OLS, the 50 percentile quantile regression, the 25 percentile quantile regresion, and the 75 percentile qunatile regression, respectively.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Estimated Coefficient of White Dummy in the Sample Selection Model and in the Restricted Samples

Dependent variable		ln (annual salary)				
		(1)	(2)	(3)	(4)	(5)
Specifications		all	1980s	1990s	2000s	2010s
Heckman two-step estimation	White	0.0654**	0.0507	-0.0635	0.112**	0.207***
		(0.0297)	(0.0566)	(0.0433)	(0.0451)	(0.0494)
	Mill's ratio	-0.748***	-0.238*	-0.775***	-0.419**	-0.899***
		(0.112)	(0.128)	(0.148)	(0.163)	(0.166)
	N	12302	1422	3867	4307	2706
OLS: Restricted sample (Expereince≥5_)	White	0.103***	0.0527	-0.0183	0.168**	0.280***
		(0.0383)	(0.0757)	(0.0561)	(0.0666)	(0.0717)
	N	5,171	360	1,670	1,940	1,201
	R-squared	0.669	0.748	0.584	0.516	0.514
OLS: Restricted sample (draft pick≤20 & Experience ≤3)	White	-0.00211	0.0873	-0.0411	0.0599	0.0187
		(0.0317)	(0.132)	(0.0679)	(0.0543)	(0.0605)
	N	1,396	140	465	455	336
	R-squared	0.830	0.878	0.754	0.669	0.692
OLS:Restricted sample (US-born only)	White	0.0552	0.0669	-0.0449	0.129**	0.204***
		(0.0342)	(0.0568)	(0.0483)	(0.0538)	(0.0630)
	N	8,565	715	2,988	3,089	1,773
	R-squared	0.685	0.748	0.611	0.600	0.583
OLS: Restricted sample (Graduated from US college)	White	0.0504	0.0605	-0.0631	0.114**	0.197***
		(0.0322)	(0.0544)	(0.0456)	(0.0502)	(0.0583)
	N	8,742	740	3,125	3,089	1,788
	R-squared	0.679	0.749	0.620	0.588	0.583

Notes: Clustering robust standard errors in parentheses and the error term is clustered at the player's level in all specifications. In the first block, the Heckman two-step estimation is applied to control the endogeneity of having a contract in season t given that a player played at season t-1. Players who played in season t-1 but who did not have a contract in season t are included in the first-stage selection equation. The row "Mill's ratio" displays the estimated coefficients of the inverse Mill's ratio. The standard error is calculated by using the bootstrap. In the second-stage salary equation, the explanatory variables are the the same as ones used in Table 3. In the first-stage selection equation, the explanatory variable is the same as that in the second-stage salary equation except the team dummy. The team dummy at season t is replaced by the team dummy at season t-1. In the second, third, fourth, and fifth blocks, the sample is restricted to players who have 5 or more years of experience at the NBA, players whose salaries are tightly determined by the NBA rule (players whose experince is less than or equal to 3 years and whose draft pick number is less than or equal to 20), US-born players, and players who graduated from US colleges, respectively. The explanatory variable in the second, third, fourth and fifth blocks are the same as those used in Table 3.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Estimated Coefficient of White Dummy with Other Controls or in the Restricting Sample

Dependent variable		ln (annual salary)				
		(1)	(2)	(3)	(4)	(5)
Specifications		all	1980s	1990s	2000s	2010s
OLS: controlling the performance at t-2	White	0.0841**	0.0177	-0.0316	0.120**	0.258***
		(0.0330)	(0.0762)	(0.0494)	(0.0490)	(0.0618)
	N	8,248	429	2,754	3,172	1,893
	R-squared	0.637	0.715	0.583	0.553	0.514
OLS: controlling the performance at t-3	White	0.0808**	0.0162	-0.0579	0.110**	0.300***
		(0.0361)	(0.0820)	(0.0555)	(0.0542)	(0.0747)
	N	7,135	360	2,397	2,750	1,628
	R-squared	0.614	0.737	0.549	0.510	0.461
Quantile Regression: controlling the performance at t-2	White	0.0274	0.0263	-0.0601	0.0892*	0.202**
		(0.0333)	(0.116)	(0.0604)	(0.0475)	(0.0803)
	N	8,248	429	2,754	3,172	1,893
	R-squared	0.629	0.693	0.572	0.544	0.497
OLS: including players who experienced multiple teams at season t	White	0.0739**	0.0636	-0.0353	0.0937**	0.232***
		(0.0296)	(0.0539)	(0.0449)	(0.0452)	(0.0539)
	N	10,091	745	3,265	3,773	2,308
	R-squared	0.674	0.751	0.613	0.597	0.567
OLS:Adding year dummy ×team dummy	White	0.0803***	0.0605	-0.0468	0.106**	0.235***
		(0.0293)	(0.0541)	(0.0454)	(0.0453)	(0.0526)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.707	0.766	0.646	0.628	0.601

Notes: Clustering robust standard errors in parentheses and the error term is clustered at the player's level in all specifications. The dependent variable and control variables are the same as those in Table 3, except the performance variables at t-1. In the first and second blocks, the performance variables at t-1 are replaced by the performance variables at t-2 and t-3. The row "white" dispalys the estimated coefficients of the white dummy. In the fourth block, players who experienced multiple teams are added to the sample. For such players, the total salary in season t is used as the dependent variable. The team that gave the highest salary during season t is classified as the team for such players. In the fourth block, the interaction term of year dummy and team dummy is added as an additional control variable.

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Other Robustness Checks (Dropping some variables)

Dependent variable		ln (annual salary)				
		(1)	(2)	(3)	(4)	(5)
Specifications		all	1980s	1990s	2000s	2010s
OLS: Drop games						
	White	0.0808***	0.0625	-0.0457	0.113**	0.244***
		(0.0295)	(0.0539)	(0.0454)	(0.0451)	(0.0523)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.681	0.751	0.615	0.602	0.570
OLS: Drop games played and average minutes played						
	White	0.0691**	0.0551	-0.0627	0.104**	0.234***
		(0.0298)	(0.0539)	(0.0468)	(0.0455)	(0.0530)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.677	0.749	0.609	0.600	0.564
OLS: Drop games played, Minutes Played, All star dummy and draft number dummy						
	White	0.0732**	0.0562	-0.0629	0.101**	0.255***
		(0.0322)	(0.0547)	(0.0497)	(0.0466)	(0.0623)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.655	0.715	0.586	0.571	0.494
Sample slection model: the same variables as above						
	White	0.0586*	0.0398	-0.0778	0.0995**	0.216***
		(0.0338)	(0.0565)	(0.0477)	(0.0465)	(0.0619)
	N	12302	1422	3867	4307	2706

Notes: Clustering robust standard errors are in parentheses and the error term is clustered at the player's level in all specifications. The explanatory variables in the first block are the explanatory variables used in Table 3 except the number of games played. In the second block, the average minutes played is dropped in addition to the number of games played as the explanatory variable. In the third block, in addition to those variables, the All-Star attendance dummy is dropped. From the fourth block, the draft rank dummy variables are dropped additionally. In the first to fourth blocks, OLS is applied. In the fifth block, the Heckman selection model is applied when the number of games played, the average minutes played, All-Star attendance dummy, and draft rank dummies are dropped from the explanatory variables.

*** p<0.01, ** p<0.05, * p<0.1

Table 7 : Reconciliation with the results of Kahn and Sherer (1988)

Dependent variable	ln (annual salary)						
	(0)	(1)	(2)	(3)	(4)	(5)	(6)
White	0.207***	0.141*	0.105	0.117	0.0776	0.0865	0.108
	(0.068)	(0.0796)	(0.0788)	(0.0799)	(0.0686)	(0.0713)	(0.0815)
Experience	0.03***	0.0632***	0.108***	0.107***	0.118**	0.109*	0.132**
	(0.011)	(0.0119)	(0.0343)	(0.0334)	(0.0457)	(0.0479)	(0.0520)
Experience squared			-0.00354	-0.00338	0.00262	0.00229	0.000722
			(0.00276)	(0.00263)	(0.00390)	(0.00341)	(0.00362)
Height			0.0332	0.0301	0.0107	0.0126	-0.000758
			(0.0238)	(0.0245)	(0.0193)	(0.0184)	(0.0204)
Points per game	0.0558***	0.0411***	0.0427***				
	(0.011)	(0.00847)	(0.00887)				
Field goal				0.121***	0.0826***	0.0850***	-0.0841
				(0.0305)	(0.0315)	(0.0300)	(0.114)
Three-point shoots				-0.214	-0.0736	0.0647	0.0362
				(0.224)	(0.202)	(0.222)	(0.265)
Free throw				-0.00245	-0.0363	-0.0399	-0.101
				(0.0375)	(0.0338)	(0.0345)	(0.0885)
Age					0.384*	0.404*	0.353
					(0.220)	(0.195)	(0.200)
Age squared					-0.00858**	-0.00888**	-0.00794*
					(0.00423)	(0.00363)	(0.00375)
Weight					0.00679***	0.00678***	0.00629**
					(0.00256)	(0.00253)	(0.00274)
Selected in All-Star games					0.241**	0.235**	0.231*
					(0.118)	(0.113)	(0.124)

Foreign dummy						0.0000293	0.0310
						(0.124)	(0.140)
Three-point success probability						-0.295	-0.310
						(0.196)	(0.203)
Constant	10.378**	11.37***	8.747***	8.987***	4.786	4.240	5.999*
	(0.463)	(0.316)	(1.622)	(1.636)	(3.014)	(3.094)	(3.350)
Draft rank dummy	No	No	No	No	Yes	Yes	Yes
Current team dumm	No	No	No	No	No	Yes	Yes
Other performance variables	No	No	No	No	No	No	Yes
Observations	226	241	241	241	241	241	241
R-squared	0.723	0.664	0.670	0.674	0.766	0.809	0.815

Notes: Robust standard errors are parentheses. Column (0) is copied from the OLS result of Kahn and Sherer (the first column of Table 1). Columns (1)–(6) are estimated using salary information in the 1985–1986 season and performance information in the 1984–1985 season in our dataset. The following variables are used in columns (1)–(6) in addition to the above listed variables: the number of games played, the average minutes played, the position dummy (center and forward), free throw success probability, field goal success probability, the number of offensive rebounds, the number of defensive rebounds, assits, steals, blocks, and personal fouls. These are used as explanatory variables in all specifications. In column (6), contribution to the team, assist percentage, turn-over percentage, true shooting percentage, usage percentage, offensive rebound percentage, defensive rebound percentage, and turn-over are used as additional explanatory variables.

* p<0.1 ** p<0.05 *** p<0.01

Table 8: Reconciliation with the results of Groothuis and Hill (2013)

	(0)	(1)	(2)
Wage equation			
Dependent variable	ln (annual salary)		
White dummy	-0.087	-0.0295	0.0197
	(0.04)	(0.0354)	(0.0355)
Selection equation			
Dependent variable	exit dummy	contract dummy	
White dummy	-0.023	0.0796	0.0893
	(0.060)		
Inverse Mill's Ratio	-0.43	-0.286***	-0.390***
	(0.018)	(0.0276)	(0.0185)
N	6530	7312	7312

Standard errors in parentheses. For column (0), the number is taken from Hill and Gooldhill. In column (0), the exit dummy is 1 if the player played at season t-1 but did not have a contract at the season t and otherwise it is equal to 0. For columns (1) and (2), a contract dummy is equal to 1 if a player played at season t-1 and had a contract at t. For columns (1) and (2), we use the sample of the 1990–2006 season in our data for estimation. For the second-stage salary equation, foreign player dummy, height, points per season, rebounds per season, blocks per season, assists per season, draft number, draft number squared, experience, experience squared, and inverse Mill's ratio are used as explanatory variables in addition to the white dummy. In the selection equation of column (0), fourth order polynomial of experience, body mass index, points per season, rebounds per season, draft number, and draft number squared are used as additional explanatory variables. In column (1), the same specification as column (1) is applied. In column (2), the same specification of the first block of Table 4 is applied to the sample covering 1990–2006.

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Estimated Coefficients of White Dummy in Other Specifications

Dependent variable		ln (annual salary)				
		(1)	(2)	(3)	(4)	(5)
Specifications		all	1980s	1990s	2000s	2010s
OLS: Adding owner's race dummy and its interaction with the white dummy						
	White	0.0802***	0.0596	-0.0451	0.111**	0.250***
		(0.0297)	(0.0548)	(0.0460)	(0.0458)	(0.0532)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.682	0.751	0.617	0.603	0.570
OLS: Adding GM's race dummy and its interaction with the white dummy						
	White	0.0658**	0.0550	-0.0544	0.0917*	0.220***
		(0.0303)	(0.0583)	(0.0475)	(0.0487)	(0.0551)
	N	9,822	745	3,203	3,650	2,224
	R-squared	0.682	0.752	0.617	0.603	0.571
OLS: Adding relative income and its interaction with the white dummy						
	White	0.0905***	0.0655	-0.0258	0.113**	0.238***
		(0.0309)	(0.0559)	(0.0498)	(0.0458)	(0.0531)
	N	9,470	736	3,080	3,505	2,149
	R-squared	0.684	0.756	0.622	0.605	0.573

Notes: Clustering robust standard errors in parentheses and the error term is clustered at the player's level in all specifications. The explanatory variables in the first block are the explanatory variables used in Table 3, the owner's race dummy, and its interaction with the white dummy of the player. The owner's race dummy is equal to 1 if the race of the owner is non-white, and 0 otherwise. In the second block, the explanatory variables are those used in Table 3: the GM's race dummy and its interaction with the white dummy of the player. The GM's race dummy is equal to 1 if the race of the GM is non-white, and 0 otherwise. Thus, in the first and second blocks, the coefficient of the white dummy shows the white premium in a team in which the owner or the GM's race is white. In the third block, the explanatory variables are the explanatory variables used in Table 3: the relative median income of white residents over black residents in the state where the team is located and its interaction with the white dummy of the player.

*** p<0.01, ** p<0.05, * p<0.1

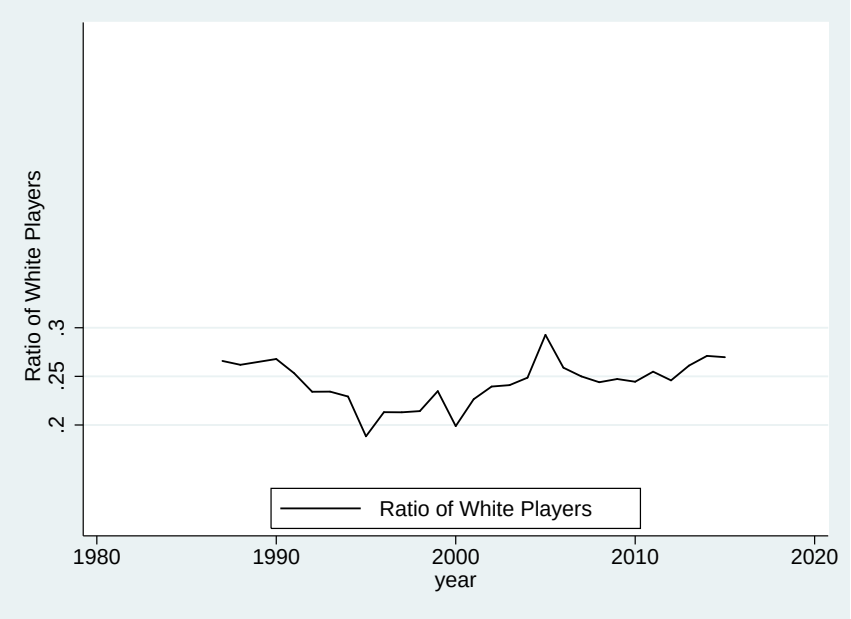

Figure 1: The ratio of white players during 1985–2016.

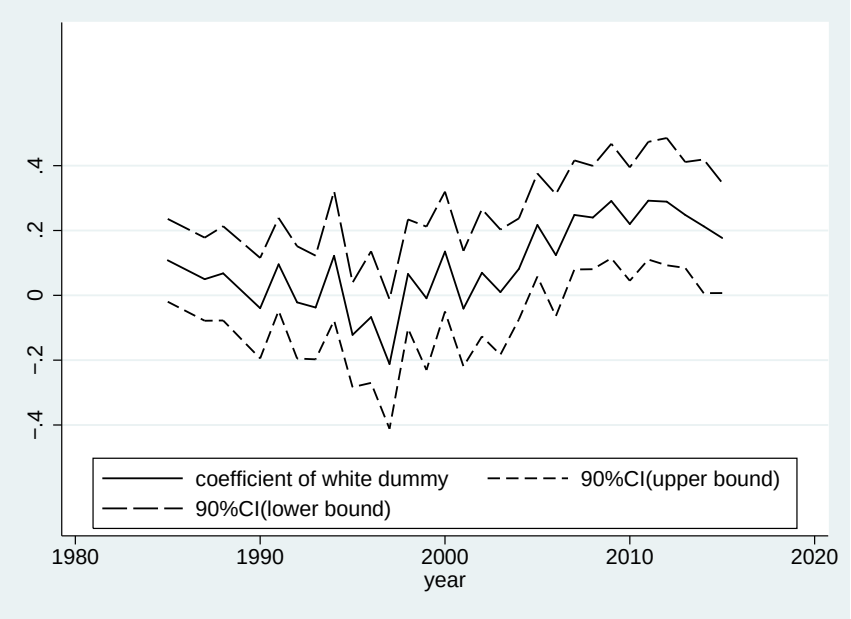

Figure 2: Coefficients of white dummy and its 90% confidence intervals. The estimated coefficient of the white dummy is plotted when the equation used in Table 3 is applied for each year separately.

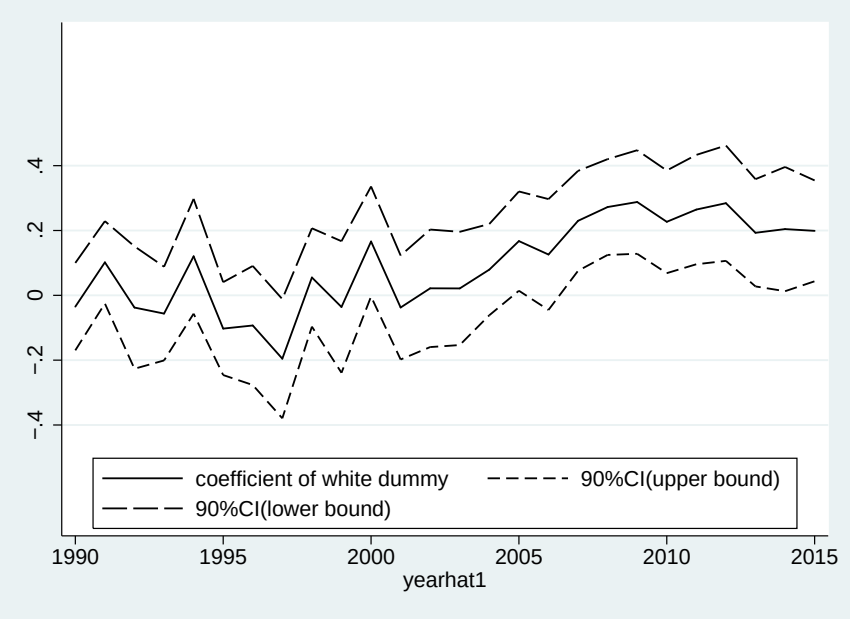

Figure 3: Coefficients of white dummy and its 90% confidence intervals in the sample selection model. The estimated coefficient of the white dummy is plotted when the equation used in the first block of Table 4 is applied separately for each year.

Appendix A

Table A1: Estimated Coefficients in the OLS Model

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White dummy	0.0817***	0.0636	-0.0411	0.113**	0.244***
	(0.0294)	(0.0539)	(0.0452)	(0.0452)	(0.0521)
Foreign dummy	0.165***	0.164*	0.134*	0.123**	0.269***
	(0.0372)	(0.0990)	(0.0749)	(0.0521)	(0.0547)
Age	0.0403	0.0285	-0.0613	-0.0285	0.0544
	(0.0485)	(0.149)	(0.0882)	(0.0603)	(0.0844)
Age squared	-0.00147	-0.00166	0.000314	6.29e-05	-0.00234
	(0.000925)	(0.00279)	(0.00165)	(0.00114)	(0.00154)
Experience	0.255***	0.0996***	0.171***	0.335***	0.339***
	(0.0157)	(0.0333)	(0.0268)	(0.0234)	(0.0292)
Experience squared	-0.0106***	0.00138	-0.00713***	-0.0161***	-0.0133***
	(0.00118)	(0.00266)	(0.00191)	(0.00169)	(0.00197)
Weight	0.000751	0.00154	-0.00189	0.000641	0.00368**
	(0.000741)	(0.00153)	(0.00122)	(0.00106)	(0.00152)
Height	0.0105	0.00103	0.0500***	0.000543	-0.0175
	(0.00701)	(0.0136)	(0.0103)	(0.0105)	(0.0135)
Forward Dummy	-0.0353	0.0430	-0.0553	0.00967	-0.0784
	(0.0378)	(0.0827)	(0.0580)	(0.0618)	(0.0741)
Center Dummy	-0.0145	0.188	0.0346	0.0863	-0.178*
	(0.0580)	(0.118)	(0.0879)	(0.0940)	(0.107)
Number of the games played	0.00217***	0.00104	0.00304***	0.00147*	0.00155
	(0.000529)	(0.00113)	(0.000889)	(0.000810)	(0.00118)
Average minutes	0.0345***	0.0241**	0.0382***	0.0276***	0.0427***
	(0.00521)	(0.0117)	(0.00779)	(0.00767)	(0.0102)
Field goals per game	-0.0274	-0.00132	0.0289	-0.0677	-0.0481
	(0.0308)	(0.0665)	(0.0450)	(0.0468)	(0.0683)
Field goal success probability	0.130	0.879*	0.632	-0.254	0.252
	(0.263)	(0.465)	(0.400)	(0.569)	(0.970)
Three point shoots per game	0.0324	0.0321	0.0330	0.0406	-0.0415
	(0.0268)	(0.0840)	(0.0427)	(0.0430)	(0.0602)
Three point success probability	-0.150**	-0.175	-0.187*	-0.0419	-0.171
	(0.0602)	(0.133)	(0.102)	(0.0971)	(0.140)
Free throw per game	0.00673	-0.0261	0.0678**	-0.0132	-0.0405
	(0.0203)	(0.0462)	(0.0325)	(0.0284)	(0.0403)
Free throw success probability	0.0215	0.298	0.407**	-0.212*	0.110
	(0.0880)	(0.225)	(0.167)	(0.117)	(0.166)
Offensive rebound per game	0.0567*	0.00157	0.0758*	0.0696	-0.0676
	(0.0319)	(0.0881)	(0.0452)	(0.0491)	(0.0730)
Defensive rebound per game	0.0112	0.0197	0.0948*	-0.0236	-0.0482
	(0.0284)	(0.0628)	(0.0509)	(0.0417)	(0.0530)
Assists per game	0.0333	0.0431	0.0846**	0.0293	0.000580

	(0.0241)	(0.0627)	(0.0348)	(0.0404)	(0.0553)
Turn-over per game	0.0675	0.135	-0.0632	0.0361	0.0502
	(0.0439)	(0.105)	(0.0794)	(0.0648)	(0.106)
Steals per game	-0.0131	-0.0917	0.00286	0.00725	0.0754
	(0.0378)	(0.0710)	(0.0597)	(0.0604)	(0.0733)
Blocks per game	0.145***	0.0776	0.170***	0.0936**	0.0595
	(0.0314)	(0.0572)	(0.0536)	(0.0458)	(0.0707)
Personal fouls per game	0.00608	-0.0354	0.00724	0.0463	-0.0339
	(0.0216)	(0.0369)	(0.0336)	(0.0316)	(0.0426)
Contribution to the team	-0.0169	0.00344	-0.0630**	0.0218	0.0155
	(0.0176)	(0.0420)	(0.0299)	(0.0254)	(0.0388)
Assist percentage	-0.00429	-0.00812	0.00670	-0.0106**	-0.0126*
	(0.00312)	(0.00812)	(0.00413)	(0.00528)	(0.00646)
Turn-over percentage	-0.00205	-0.0118	0.000364	-0.00270	0.00282
	(0.00333)	(0.00769)	(0.00627)	(0.00498)	(0.00695)
True shooting percentage	0.00238	-0.656	0.00819	0.00135	-0.00238
	(0.00279)	(0.398)	(0.00566)	(0.00610)	(0.0102)
Usage percentage	0.0193***	0.0219*	0.0144**	0.0261***	0.0189*
	(0.00517)	(0.0117)	(0.00656)	(0.00697)	(0.0105)
Offensive rebound percentage	0.00311	0.00596	0.00369	-9.58e-05	0.0120
	(0.00450)	(0.0211)	(0.00693)	(0.00761)	(0.00747)
Defensive rebound percentage	-0.00296	0.000431	-0.00437	-0.00630	0.000854
	(0.00452)	(0.00931)	(0.00921)	(0.00654)	(0.00665)
Selected in All Star Games at least once in the last three seasons	0.471***	0.119*	0.178***	0.486***	0.932***
	(0.0472)	(0.0686)	(0.0475)	(0.0588)	(0.0898)
1 ≤number of draft pick ≤5	0.466***	0.485***	0.470***	0.457***	0.466***
	(0.0384)	(0.0671)	(0.0609)	(0.0603)	(0.0799)
6 ≤number of draft pick ≤10	0.332***	0.296***	0.330***	0.340***	0.346***
	(0.0363)	(0.0643)	(0.0531)	(0.0611)	(0.0710)
11 ≤number of draft pick ≤15	0.265***	0.235***	0.260***	0.324***	0.232***
	(0.0350)	(0.0726)	(0.0521)	(0.0560)	(0.0695)
16 ≤number of draft pick ≤20	0.148***	0.160**	0.223***	0.152***	0.128*
	(0.0381)	(0.0627)	(0.0574)	(0.0576)	(0.0728)
21 ≤number of draft pick ≤25	0.132***	0.108	0.267***	0.0580	0.0759
	(0.0381)	(0.0917)	(0.0584)	(0.0575)	(0.0708)
26 ≤number of draft pick ≤30	0.104**	0.0348	0.183***	0.0705	0.0979
	(0.0442)	(0.0808)	(0.0583)	(0.0589)	(0.0914)
31 ≤number of draft pick ≤35	-0.0127	0.0540	-0.141	0.0642	0.154
	(0.0700)	(0.107)	(0.110)	(0.109)	(0.123)
36 ≤number of draft pick ≤40	-0.0609	0.0264	-0.123	0.0111	-0.0864
	(0.0599)	(0.0909)	(0.0909)	(0.0914)	(0.101)
Constant	9.051***	10.43***	8.434***	12.78***	12.89***
	(0.872)	(2.268)	(1.433)	(1.178)	(1.520)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes

N	9,822	745	3,203	3,650	2,224
R-squared	0.681	0.751	0.617	0.603	0.570

Notes: Clustering robust standard errors in parenthes. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table A2: Estimated Coefficients in the Heckman Two Step Estimation

Second stage equation					
dependent variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White dummy	0.0654**	0.0507	-0.0635	0.112**	0.207***
	(0.0297)	(0.0566)	(0.0433)	(0.0451)	(0.0494)
Foreign dummy	0.161***	0.129	0.157**	0.122**	0.244***
	(0.0388)	(0.111)	(0.0754)	(0.0562)	(0.0558)
Age	0.0370	0.0417	-0.0886	-0.0299	0.0825
	(0.0484)	(0.152)	(0.105)	(0.0579)	(0.0866)
Age squared	-0.00108	-0.00196	0.00119	0.000275	-0.00243
	(0.000948)	(0.00290)	(0.00198)	(0.00108)	(0.00159)
Experience	0.262***	0.103***	0.194***	0.334***	0.343***
	(0.0136)	(0.0337)	(0.0255)	(0.0202)	(0.0333)
Experience squared	-0.0112***	0.00144	-0.00908***	-0.0160***	-0.0135***
	(0.00113)	(0.00289)	(0.00198)	(0.00148)	(0.00210)
Weight	0.000504	0.00188	-0.00184	0.000581	0.00174
	(0.000691)	(0.00167)	(0.00122)	(0.00112)	(0.00168)
Height	0.0101	0.00199	0.0466***	-0.000258	-0.00867
	(0.00705)	(0.0154)	(0.00984)	(0.00944)	(0.0135)
Forward Dummy	-0.0254	0.0348	-0.0576	0.0121	-0.0355
	(0.0408)	(0.0877)	(0.0710)	(0.0635)	(0.0835)
Center Dummy	-0.0319	0.151	-0.0295	0.0808	-0.106
	(0.0598)	(0.136)	(0.103)	(0.0917)	(0.118)
Number of the games played	-0.00133**	0.000267	-0.00108	-0.000206	-0.00298**
	(0.000663)	(0.00140)	(0.000924)	(0.00102)	(0.00126)
Average minutes	0.0233***	0.0254*	0.0270***	0.0205**	0.0276**
	(0.00543)	(0.0134)	(0.00880)	(0.00804)	(0.0111)
Field goals per game	0.00709	0.00214	0.0579	-0.0589	0.0146
	(0.0335)	(0.0697)	(0.0438)	(0.0465)	(0.0766)
Field goal success probability	-0.0158	1.138	0.355	-0.138	0.234
	(0.294)	(1.012)	(0.421)	(0.645)	(0.960)
Three point shoots per game	0.0397	0.0725	0.0225	0.0558	-0.0328
	(0.0276)	(0.103)	(0.0438)	(0.0426)	(0.0643)
Three point success probability	-0.125*	-0.189	-0.143	-0.0177	-0.141
	(0.0645)	(0.136)	(0.104)	(0.113)	(0.130)
Free throw per game	0.0283	-0.0271	0.0840***	0.000989	-0.00459
	(0.0179)	(0.0488)	(0.0297)	(0.0310)	(0.0451)
Free throw success probability	-0.0196	0.282	0.391**	-0.204*	0.0266
	(0.0920)	(0.276)	(0.182)	(0.114)	(0.169)
Offensive rebound per game	0.0668**	0.0320	0.110*	0.0815*	-0.0510
	(0.0338)	(0.0915)	(0.0618)	(0.0448)	(0.0830)
Defensive rebound per game	0.0379	0.0152	0.0971*	-0.0133	-0.0278
	(0.0280)	(0.0696)	(0.0570)	(0.0415)	(0.0571)
Assists per game	0.0400	0.0369	0.0935**	0.0253	0.0302
	(0.0255)	(0.0698)	(0.0364)	(0.0399)	(0.0580)
Turn-over per game	0.0771*	0.132	-0.0669	0.0640	0.0561
	(0.0416)	(0.101)	(0.0794)	(0.0674)	(0.105)
Steals per game	-0.00844	-0.0635	0.000490	0.000102	0.0356
	(0.0368)	(0.0676)	(0.0545)	(0.0618)	(0.0697)
Blocks per game	0.152***	0.0868	0.187***	0.0806*	0.106
	(0.0297)	(0.0596)	(0.0513)	(0.0436)	(0.0766)
Personal fouls per game	-0.0137	-0.0370	-0.0123	0.0345	-0.0679
	(0.0248)	(0.0403)	(0.0362)	(0.0319)	(0.0425)

Contribution to the team	-0.0326*	-0.0112	-0.0735**	0.0190	-0.00667
	(0.0187)	(0.0441)	(0.0298)	(0.0260)	(0.0434)
Assist percentage	-0.00333	-0.00515	0.00570	-0.0103**	-0.0126**
	(0.00341)	(0.00904)	(0.00443)	(0.00519)	(0.00622)
Turn-over percentage	-0.00186	-0.0127	0.00365	-0.00359	-0.000317
	(0.00351)	(0.00849)	(0.00658)	(0.00535)	(0.00664)
True shooting percentage	0.00385	-0.624	0.0102	-0.000556	-0.00201
	(0.00337)	(0.859)	(0.00628)	(0.00689)	(0.0106)
Usage percentage	0.0138**	0.0193*	0.00961	0.0223***	0.0133
	(0.00568)	(0.0115)	(0.00687)	(0.00763)	(0.0103)
Offensive rebound percentage	0.00190	0.00188	-0.000219	-0.00241	0.00633
	(0.00550)	(0.0185)	(0.0129)	(0.00668)	(0.0102)
Defensive rebound percentage	-0.00491	0.00338	-0.00477	-0.00703	0.00201
	(0.00406)	(0.0106)	(0.0112)	(0.00676)	(0.00792)
Selected in All Star Games at least once in the last three seasons	0.386***	0.220***	0.170***	0.440***	0.722***
	(0.0418)	(0.0755)	(0.0485)	(0.0696)	(0.0974)
1 ≤number of draft pick ≤5	0.448***	0.475***	0.471***	0.444***	0.439***
	(0.0410)	(0.0774)	(0.0520)	(0.0649)	(0.0764)
6 ≤number of draft pick ≤10	0.300***	0.291***	0.315***	0.326***	0.276***
	(0.0369)	(0.0685)	(0.0589)	(0.0622)	(0.0788)
11 ≤number of draft pick ≤15	0.207***	0.220***	0.173***	0.304***	0.146**
	(0.0344)	(0.0703)	(0.0559)	(0.0567)	(0.0734)
16 ≤number of draft pick ≤20	0.113***	0.139**	0.167***	0.141**	0.0977
	(0.0373)	(0.0619)	(0.0574)	(0.0608)	(0.0846)
21 ≤number of draft pick ≤25	0.103***	0.106	0.210***	0.0473	0.0713
	(0.0355)	(0.0936)	(0.0570)	(0.0534)	(0.0891)
26 ≤number of draft pick ≤30	0.0842*	0.0145	0.169**	0.0498	0.108
	(0.0457)	(0.102)	(0.0721)	(0.0706)	(0.0977)
31 ≤number of draft pick ≤35	0.00159	0.0297	-0.0882	0.0550	0.210*
	(0.0690)	(0.103)	(0.122)	(0.107)	(0.117)
36 ≤number of draft pick ≤40	-0.0434	0.0301	-0.0924	0.00959	-0.0612
	(0.0615)	(0.117)	(0.0985)	(0.0868)	(0.108)
Inverse Mill's Ratio	-0.748***	-0.238*	-0.775***	-0.419**	-0.899***
	(0.112)	(0.128)	(0.148)	(0.163)	(0.166)
Constant	9.587***	10.16***	10.11***	13.43***	12.95***
	(0.929)	(2.371)	(1.669)	(1.083)	(1.370)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy at t	Yes	Yes	Yes	Yes	Yes
	Selection equation				
dependent variable	dummy variable indicating selection				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White dummy	0.0909*	0.488	0.112	0.0460	0.103
	(0.0549)	(0.409)	(0.0801)	(0.0915)	(0.121)
Foreign dummy	-0.0237	0.246	-0.146	-0.0193	0.0528
	(0.0585)	(3.137)	(0.156)	(0.0930)	(0.102)
Age	-0.224***	-1.250	-0.0958	-0.237**	-0.289*
	(0.0642)	(1.300)	(0.185)	(0.120)	(0.164)
Age squared	0.00251**	0.0252	0.000197	0.00255	0.00367
	(0.00113)	(0.0244)	(0.00324)	(0.00219)	(0.00292)
Experience	-0.00258	0.146	-0.0804	0.0305	0.0164
	(0.0195)	(0.294)	(0.0524)	(0.0361)	(0.0488)
Experience squared	-0.000517	-0.0324	0.00527	-0.00265	-0.00217
	(0.00133)	(0.0242)	(0.00332)	(0.00251)	(0.00308)

Weight	0.00238*	0.00404	0.000664	0.000629	0.00673**
	(0.00127)	(0.0105)	(0.00301)	(0.00270)	(0.00322)
Height	-0.00438	-0.0640	0.0150	0.00273	-0.0301
	(0.0134)	(0.107)	(0.0262)	(0.0208)	(0.0266)
Forward Dummy	-0.0620	0.110	-0.0121	0.0165	-0.162
	(0.0849)	(0.612)	(0.127)	(0.124)	(0.154)
Center Dummy	0.0733	0.778	0.225	0.0827	-0.149
	(0.116)	(1.025)	(0.198)	(0.175)	(0.260)
Number of the games played	0.0132***	0.0185**	0.0136***	0.0118***	0.0147***
	(0.000956)	(0.00765)	(0.00150)	(0.00150)	(0.00225)
Average minutes	0.0343***	-0.0165	0.0320*	0.0347**	0.0394*
	(0.0113)	(0.134)	(0.0167)	(0.0173)	(0.0224)
Field goals per game	-0.126*	-0.219	-0.0933	0.0328	-0.282*
	(0.0683)	(0.877)	(0.0936)	(0.110)	(0.149)
Field goal success probability	-0.351	-6.086	0.0529	-1.282	-0.0406
	(0.288)	(6.138)	(0.525)	(1.104)	(1.267)
Three point shoots per game	-0.0290	-0.544	0.0150	-0.0605	0.00259
	(0.0659)	(0.981)	(0.121)	(0.128)	(0.138)
Three point success probability	-0.195*	-0.0477	-0.330**	-0.191	-0.0197
	(0.110)	(1.273)	(0.157)	(0.193)	(0.284)
Free throw per game	-0.122***	0.214	-0.109	-0.127	-0.151
	(0.0454)	(0.542)	(0.0766)	(0.0823)	(0.0967)
Free throw success probability	-0.0527	-0.586	-0.0230	-0.177	0.0809
	(0.106)	(1.361)	(0.221)	(0.203)	(0.232)
Offensive rebound per game	0.00861	-0.923	-0.0812	0.0733	0.150
	(0.0769)	(1.181)	(0.135)	(0.171)	(0.173)
Defensive rebound per game	-0.136**	0.437	-0.0404	-0.126	-0.153
	(0.0586)	(1.045)	(0.103)	(0.0978)	(0.131)
Assists per game	-0.0425	-0.0441	-0.0190	0.0413	-0.112
	(0.0533)	(0.801)	(0.0985)	(0.0741)	(0.118)
Turn-over per game	-0.0560	-0.838	0.0146	-0.242*	0.0461
	(0.101)	(1.139)	(0.178)	(0.136)	(0.219)
Steals per game	0.0461	-0.438	0.0613	0.0798	0.218
	(0.0804)	(0.706)	(0.134)	(0.156)	(0.178)
Blocks per game	0.0478	0.315	0.00285	0.257*	-0.267
	(0.0863)	(0.975)	(0.126)	(0.150)	(0.190)
Personal fouls per game	0.0811**	0.356	0.0531	0.0800	0.103
	(0.0403)	(0.277)	(0.0761)	(0.0657)	(0.0919)
Contribution to the team	0.107***	0.341	0.0927	0.0445	0.140*
	(0.0359)	(0.539)	(0.0609)	(0.0584)	(0.0828)
Assist percentage	-0.00402	-0.0203	-0.000966	-0.000995	-0.00836
	(0.00369)	(0.0690)	(0.00635)	(0.00637)	(0.00761)
Turn-over percentage	0.00128	0.0422	-0.00835	0.00880	0.00682
	(0.00405)	(0.0497)	(0.00864)	(0.00611)	(0.0110)
True shooting percentage	-0.000444	-1.103	-0.00148	0.0131	-0.00717
	(0.00335)	(7.563)	(0.00672)	(0.0127)	(0.0143)
Usage percentage	0.0158***	0.0838	0.0137*	0.0165*	0.0187
	(0.00577)	(0.0948)	(0.00767)	(0.0100)	(0.0165)
Offensive rebound percentage	-0.00423	0.0857	-0.00510	-0.000421	-0.00876
	(0.00689)	(0.127)	(0.0104)	(0.0156)	(0.0171)
Defensive rebound percentage	0.00357	-0.125	0.00383	0.00438	-0.00469
	(0.00516)	(0.0988)	(0.0101)	(0.00758)	(0.00984)
Selected in All Star Games at least once in the last three seasons	0.603***	0.723	0.0864	0.471*	1.280
	(0.129)	(2.409)	(0.162)	(0.272)	(0.785)

1 ≤number of draft pick ≤5	0.121	0.0154	0.0405	0.0746	0.203
	(0.0792)	(0.624)	(0.151)	(0.133)	(0.163)
6 ≤number of draft pick ≤10	0.195**	0.0319	0.101	0.203	0.389**
	(0.0833)	(0.440)	(0.130)	(0.128)	(0.151)
11 ≤number of draft pick ≤15	0.314***	0.454	0.559***	0.140	0.293**
	(0.0660)	(0.628)	(0.137)	(0.118)	(0.145)
16 ≤number of draft pick ≤20	0.168***	0.589	0.224*	0.107	0.135
	(0.0620)	(0.557)	(0.114)	(0.131)	(0.181)
21 ≤number of draft pick ≤25	0.0954	0.0950	0.215	0.0640	0.0214
	(0.0890)	(0.429)	(0.131)	(0.169)	(0.124)
26 ≤number of draft pick ≤30	0.0666	0.696	0.0484	0.183	-0.113
	(0.0620)	(2.022)	(0.121)	(0.133)	(0.178)
31 ≤number of draft pick ≤35	-0.0496	0.729	-0.158	0.0290	-0.168
	(0.0793)	(1.594)	(0.141)	(0.167)	(0.188)
36 ≤number of draft pick ≤40	-0.0848	0.0724	-0.158	-0.0255	-0.112
	(0.0986)	(1.822)	(0.144)	(0.155)	(0.182)
Team dummy at t-1	YES	YES	YES	YES	YES
Year dummy	YES	YES	YES	YES	YES
N	12302	1422	3867	4307	2706

Notes: Clustering robust standard errors are presetned in parenthes. The error term is clustered as player's level. The standard error is calculated based on clustered bootstrap.

*** p<0.01, ** p<0.05, * p<0.1

Appendix B

Appendix B is for the purpose of refereeing, not for publication. It will be put on the journal's website and author's website.

Table B1: Estimated Coefficients of Important Variables in the 50 % Quantile Regression Model

dependent variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White dummy	0.0436	0.0598	-0.103**	0.130***	0.186***
	(0.0297)	(0.0789)	(0.0480)	(0.0477)	(0.0616)
Foreign dummy	0.123***	0.167	0.0334	0.0459	0.277***
	(0.0394)	(0.113)	(0.0910)	(0.0530)	(0.0698)
Age	0.0934	0.129	0.0427	-0.0299	0.113
	(0.0591)	(0.264)	(0.111)	(0.0660)	(0.103)
Age squared	-0.00248**	-0.00313	-0.00153	0.0000896	-0.00337*
	(0.00113)	(0.00516)	(0.00218)	(0.00129)	(0.00196)
Experience	0.266***	0.0606	0.160***	0.361***	0.333***
	(0.0189)	(0.0663)	(0.0351)	(0.0284)	(0.0289)
Experience squared	-0.0110***	0.00353	-0.00596**	-0.0178***	-0.0128***
	(0.00153)	(0.00612)	(0.00270)	(0.00242)	(0.00235)
Weight	0.00133	0.000176	-0.000639	0.000954	0.00474**
	(0.000821)	(0.00270)	(0.00140)	(0.00131)	(0.00187)
Height	0.0123*	0.00619	0.0478***	0.0114	-0.0357**
	(0.00696)	(0.0250)	(0.0113)	(0.0114)	(0.0150)
Forward Dummy	-0.00837	0.0262	-0.0987	0.00224	0.0657
	(0.0401)	(0.110)	(0.0671)	(0.0736)	(0.0912)
Center Dummy	0.000807	0.193	0.0320	0.00219	-0.0158
	(0.0572)	(0.161)	(0.0964)	(0.111)	(0.147)
Number of the games played	0.00161***	0.00117	0.00282***	0.000727	0.000556
	(0.000513)	(0.00148)	(0.00108)	(0.000817)	(0.00124)
Average minutes	0.0423***	0.0194	0.0400***	0.0404***	0.0537***
	(0.00561)	(0.0165)	(0.00862)	(0.00860)	(0.0117)
Field goals per game	-0.0633**	-0.00881	-0.0302	-0.110**	-0.127
	(0.0261)	(0.107)	(0.0582)	(0.0473)	(0.0866)
Field goal success probability	-0.317	0.637	0.577	0.118	0.928
	(0.253)	(0.675)	(0.549)	(0.771)	(1.397)
Three point shoots per game	0.0112	-0.0191	0.00250	0.00302	-0.0602
	(0.0274)	(0.178)	(0.0500)	(0.0458)	(0.0844)
Three point success probability	-0.171**	-0.237	-0.0832	-0.120	-0.152
	(0.0712)	(0.159)	(0.114)	(0.124)	(0.149)
Free throw per game	-0.00990	-0.0582	0.0521	-0.0337	-0.0687
	(0.0189)	(0.0902)	(0.0429)	(0.0307)	(0.0473)
Free throw success probability	-0.0800	0.160	0.278	-0.106	0.143
	(0.0834)	(0.395)	(0.179)	(0.125)	(0.154)
Offensive rebound per game	0.0155	-0.0199	0.0230	0.0738	-0.178**
	(0.0255)	(0.137)	(0.0470)	(0.0450)	(0.0718)

Defensive rebound per game	-0.0165	0.0233	0.0522	-0.0666	-0.0564
	(0.0278)	(0.0983)	(0.0532)	(0.0462)	(0.0537)
Assists per game	0.0158	0.00779	0.0732*	-0.0155	-0.0591
	(0.0200)	(0.0788)	(0.0380)	(0.0420)	(0.0580)
Turn-over per game	0.0604	0.174	0.0444	0.0318	0.0728
	(0.0391)	(0.158)	(0.0855)	(0.0663)	(0.123)
Steals per game	-0.0932**	-0.103	-0.0591	-0.00948	-0.0119
	(0.0378)	(0.105)	(0.0767)	(0.0686)	(0.0820)
Blocks per game	0.118***	0.0182	0.117*	0.0735	0.0169
	(0.0301)	(0.0905)	(0.0681)	(0.0465)	(0.101)
Personal fouls per game	0.00882	-0.0379	0.0138	0.0217	-0.0196
	(0.0209)	(0.0469)	(0.0339)	(0.0372)	(0.0534)
Contribution to the team	0.00379	0.0257	-0.0375	0.0338	0.0502
	(0.0146)	(0.0738)	(0.0396)	(0.0268)	(0.0411)
Assist percentage	-0.00169	-0.00254	0.00230	-0.00212	-0.0101
	(0.00243)	(0.0132)	(0.00396)	(0.00617)	(0.00661)
Turn-over percentage	-0.00237	-0.0168	-0.00638	0.000480	-0.00127
	(0.00264)	(0.0116)	(0.00624)	(0.00511)	(0.00768)
True shooting percentage	0.00523*	-1.092*	0.0111**	-0.00331	-0.0111
	(0.00284)	(0.620)	(0.00556)	(0.00788)	(0.0142)
Usage percentage	0.0261***	0.0134	0.0166*	0.0357***	0.0288**
	(0.00533)	(0.0178)	(0.00936)	(0.00862)	(0.0119)
Offensive rebound percentage	0.00139	0.00584	0.00524	-0.00930	0.0143**
	(0.00262)	(0.0329)	(0.00461)	(0.00709)	(0.00634)
Defensive rebound percentage	0.00207	-0.000231	-0.00212	0.000982	-0.00237
	(0.00503)	(0.0158)	(0.00687)	(0.00830)	(0.00697)
Selected in All Star Games at least once in the last three seasons	0.396***	0.0989	0.136**	0.470***	0.798***
	(0.0489)	(0.0981)	(0.0645)	(0.0638)	(0.0971)
1 ≤number of draft pick ≤5	0.428***	0.522***	0.438***	0.433***	0.471***
	(0.0410)	(0.118)	(0.0654)	(0.0614)	(0.0909)
6 ≤number of draft pick ≤10	0.308***	0.368***	0.286***	0.348***	0.365***
	(0.0418)	(0.103)	(0.0592)	(0.0713)	(0.0875)
11 ≤number of draft pick ≤15	0.273***	0.295**	0.213***	0.313***	0.284***
	(0.0376)	(0.119)	(0.0606)	(0.0574)	(0.0927)
16 ≤number of draft pick ≤20	0.123***	0.184*	0.159**	0.181***	0.0414
	(0.0401)	(0.0948)	(0.0734)	(0.0618)	(0.104)
21 ≤number of draft pick ≤25	0.136***	0.135	0.220***	0.0214	0.0182
	(0.0363)	(0.0996)	(0.0647)	(0.0651)	(0.0916)
26 ≤number of draft pick ≤30	0.0939*	0.0974	0.160**	0.0896	0.0544
	(0.0504)	(0.0916)	(0.0739)	(0.0799)	(0.0902)
31 ≤number of draft pick ≤35	-0.0899	0.0482	-0.164*	-0.0269	-0.0307
	(0.0596)	(0.252)	(0.0992)	(0.116)	(0.174)
36 ≤number of draft pick ≤40	-0.160***	0.0771	-0.200	-0.119	-0.273***
	(0.0616)	(0.146)	(0.179)	(0.120)	(0.0956)
Constant	8.350***	9.441**	7.296***	11.98***	13.33***
	(0.954)	(4.211)	(1.765)	(1.258)	(1.654)

Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	9822	745	3203	3650	2224
R-squared	0.676	0.737	0.606	0.594	0.556

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B2: Estimated Coefficients of Important Variables in the 25 % Quantile Regression Model

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.0900***	0.0251	-0.0310	0.149***	0.192***
	(0.0287)	(0.0743)	(0.0562)	(0.0500)	(0.0686)
Foreign Dummy	0.116***	0.187*	0.167**	0.00552	0.196**
	(0.0416)	(0.112)	(0.0798)	(0.0576)	(0.0773)
Age	0.0472	0.227	-0.0139	-0.0420	-0.0571
	(0.0550)	(0.170)	(0.0846)	(0.0818)	(0.111)
Age squared	-0.00191*	-0.00516	-0.000673	0.0000781	-0.000582
	(0.00109)	(0.00321)	(0.00161)	(0.00160)	(0.00211)
Experience	0.258***	0.0419	0.167***	0.329***	0.356***
	(0.0170)	(0.0435)	(0.0303)	(0.0337)	(0.0400)
Experience squared	-0.0103***	0.00539	-0.00633***	-0.0160***	-0.0149***
	(0.00139)	(0.00336)	(0.00201)	(0.00258)	(0.00282)
Weight	-0.000283	0.00276	-0.000286	-0.00159	0.00264
	(0.000801)	(0.00218)	(0.00133)	(0.00121)	(0.00182)
Height	0.0104	0.00388	0.0330***	0.00993	-0.0189
	(0.00727)	(0.0205)	(0.0128)	(0.0127)	(0.0145)
Forward Dummy	-0.0361	-0.0706	-0.0560	-0.0105	0.0300
	(0.0357)	(0.108)	(0.0640)	(0.0717)	(0.0903)
Center Dummy	0.0162	0.0474	-0.00874	0.0982	-0.00577
	(0.0551)	(0.147)	(0.107)	(0.104)	(0.130)
Number of the games	0.00286***	0.00272*	0.00515***	0.00151	0.00276*
	(0.000642)	(0.00148)	(0.00126)	(0.00106)	(0.00145)
Average minutes	0.0322***	0.0173	0.0365***	0.0228**	0.0465***
	(0.00644)	(0.0159)	(0.0113)	(0.00901)	(0.0138)
Field goal	-0.0138	0.0265	0.0199	-0.0330	-0.112
	(0.0397)	(0.0608)	(0.0649)	(0.0620)	(0.0766)
Field goal success probability	0.157	0.328	0.642	0.248	-0.391
	(0.321)	(0.414)	(0.551)	(1.447)	(1.130)
Three point shoots	0.0379	0.0640	0.0806	0.101*	-0.137**
	(0.0375)	(0.174)	(0.0533)	(0.0603)	(0.0697)
Three point success probability	-0.116	-0.294	-0.0474	-0.0666	-0.0950
	(0.0788)	(0.236)	(0.102)	(0.0932)	(0.207)
Free throw	0.0114	-0.0230	0.0896**	0.00862	-0.0938*
	(0.0294)	(0.0501)	(0.0411)	(0.0392)	(0.0534)
Free throw success probability	0.0442	0.0383	0.264	-0.0742	0.139
	(0.130)	(0.237)	(0.205)	(0.251)	(0.279)
Offensive rebound	0.0500	-0.00140	0.0618	0.108*	-0.0913
	(0.0356)	(0.102)	(0.0453)	(0.0615)	(0.0828)
Defensive rebound	0.0380	0.0243	0.0809	0.0244	-0.0874
	(0.0310)	(0.0859)	(0.0595)	(0.0562)	(0.0650)
Assists	0.0431	0.0227	0.0839*	0.0689	-0.0266
	(0.0297)	(0.0731)	(0.0451)	(0.0502)	(0.0597)
Turn-over	0.0354	0.144	-0.0646	-0.0753	0.159
	(0.0626)	(0.126)	(0.107)	(0.0910)	(0.110)
Steals	-0.0333	-0.0739	-0.0249	0.0450	0.0167

	(0.0487)	(0.0852)	(0.0697)	(0.0645)	(0.0810)
Blocks	0.143***	-0.00801	0.166**	0.108*	-0.0638
	(0.0381)	(0.0724)	(0.0657)	(0.0576)	(0.0948)
Personal fouls	-0.00473	-0.0358	-0.00219	0.0590*	-0.0283
	(0.0264)	(0.0558)	(0.0371)	(0.0350)	(0.0565)
Contribution to the team	-0.0241	0.00993	-0.0547	-0.00718	0.0376
	(0.0228)	(0.0436)	(0.0363)	(0.0329)	(0.0405)
Assist percentage	-0.00384	-0.0114	0.00480	-0.00972	-0.0137*
	(0.00318)	(0.00961)	(0.00545)	(0.00677)	(0.00828)
Turn-over percentage	-0.00354	-0.00889	-0.00261	-0.0000715	-0.00484
	(0.00445)	(0.00855)	(0.00587)	(0.0106)	(0.0120)
True shooting percentage	0.00323	-0.439	0.000781	0.000129	0.00363
	(0.00343)	(0.570)	(0.00557)	(0.0137)	(0.0113)
Usage percentage	0.0184***	0.00517	0.00819	0.0290***	0.0285**
	(0.00619)	(0.0117)	(0.0146)	(0.00991)	(0.0125)
Offensive rebound percentage	0.00713***	-0.000687	0.0107**	0.00467	0.0120
	(0.00276)	(0.0178)	(0.00517)	(0.00993)	(0.0122)
Defensive rebound percentage	-0.00400	0.0000564	-0.00192	-0.0101	0.000878
	(0.00342)	(0.0132)	(0.00751)	(0.0106)	(0.0116)
Selected in All Star Games	0.445***	0.0273	0.144**	0.573***	1.061***
	(0.0603)	(0.110)	(0.0714)	(0.0800)	(0.116)
1 ≤number of draft pick ≤5	0.620***	0.631***	0.580***	0.626***	0.606***
	(0.0513)	(0.0908)	(0.0924)	(0.0751)	(0.127)
6 ≤number of draft pick ≤10	0.408***	0.396***	0.395***	0.445***	0.352**
	(0.0478)	(0.0973)	(0.0800)	(0.0799)	(0.145)
11 ≤number of draft pick ≤15	0.374***	0.242**	0.354***	0.468***	0.305***
	(0.0462)	(0.0982)	(0.0761)	(0.0892)	(0.114)
16 ≤number of draft pick ≤20	0.205***	0.286***	0.270***	0.238***	0.162
	(0.0475)	(0.0854)	(0.0803)	(0.0773)	(0.118)
21 ≤number of draft pick ≤25	0.207***	0.129	0.333***	0.165**	0.143
	(0.0498)	(0.131)	(0.0836)	(0.0783)	(0.115)
26 ≤number of draft pick ≤30	0.175***	0.0208	0.222**	0.122	0.121
	(0.0540)	(0.144)	(0.0940)	(0.103)	(0.129)
31 ≤number of draft pick ≤35	-0.0556	-0.0168	-0.160	0.0415	0.108
	(0.0553)	(0.124)	(0.115)	(0.125)	(0.110)
36 ≤number of draft pick ≤40	-0.0562	0.0341	-0.133	-0.00968	-0.180*
	(0.0568)	(0.116)	(0.0992)	(0.0788)	(0.103)
Constant	9.014***	7.823***	8.648***	12.46***	14.34***
	(0.945)	(2.866)	(1.672)	(1.495)	(1.723)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	9822	745	3203	3650	2224
R-squared	0.674	0.729	0.604	0.587	0.549

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.
*** p<0.01, ** p<0.05, * p<0.1

Table B3: Estimated Coefficients of the 75 % Quantile Regression Model

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White dummy	0.0282	-0.00582	-0.0751	0.0848*	0.173***
	(0.0322)	(0.0563)	(0.0508)	(0.0444)	(0.0621)
Foreign dummy	0.113***	0.101	0.0159	0.0931	0.272***
	(0.0406)	(0.157)	(0.121)	(0.0612)	(0.0627)
Age	0.143**	-0.132	0.0504	-0.00723	0.215**
	(0.0645)	(0.156)	(0.103)	(0.0554)	(0.102)
Age squared	-0.00299**	0.00159	-0.00150	-0.0000836	-0.00468***
	(0.00126)	(0.00277)	(0.00185)	(0.00104)	(0.00181)
Experience	0.225***	0.136***	0.134***	0.359***	0.306***
	(0.0194)	(0.0467)	(0.0316)	(0.0259)	(0.0404)
Experience squared	-0.00917***	-0.00222	-0.00485**	-0.0176***	-0.0120***
	(0.00155)	(0.00266)	(0.00201)	(0.00171)	(0.00254)
Weight	0.00148*	0.000619	-0.00136	0.00137	0.00428***
	(0.000884)	(0.00180)	(0.00144)	(0.00113)	(0.00155)
Height	0.0202**	0.00736	0.0558***	0.00600	-0.0173
	(0.00857)	(0.0159)	(0.0128)	(0.00966)	(0.0150)
Forward Dummy	-0.0705	0.0859	-0.110*	-0.00270	-0.0370
	(0.0444)	(0.102)	(0.0627)	(0.0644)	(0.0783)
Center Dummy	-0.0773	0.206	-0.0374	0.0428	-0.178
	(0.0640)	(0.149)	(0.0943)	(0.0932)	(0.124)
Number of the games played	-0.0000955	-0.000451	0.000184	-0.000454	-0.00119
	(0.000612)	(0.00132)	(0.00121)	(0.00106)	(0.00125)
Average minutes	0.0337***	0.0150	0.0358***	0.0351***	0.0257**
	(0.00647)	(0.0118)	(0.00919)	(0.00850)	(0.0123)
Field goals per game	-0.0420	0.0886	-0.0505	-0.104*	-0.0131
	(0.0406)	(0.0932)	(0.0503)	(0.0573)	(0.0843)
Field goal success probability	-0.343	1.500**	-0.188	0.351	1.295
	(0.418)	(0.634)	(0.468)	(0.368)	(1.253)
Three point shoots per game	-0.00262	0.0975	0.00467	-0.00391	0.0649
	(0.0337)	(0.109)	(0.0561)	(0.0400)	(0.0738)
Three point success probability	-0.183***	-0.114	-0.264**	-0.158	-0.0701
	(0.0693)	(0.149)	(0.104)	(0.120)	(0.175)
Free throw per game	-0.0137	0.0274	-0.00548	-0.0290	0.0620
	(0.0260)	(0.0676)	(0.0340)	(0.0333)	(0.0521)
Free throw success probability	-0.0131	0.536**	0.319**	0.0311	0.0466
	(0.118)	(0.273)	(0.157)	(0.140)	(0.128)
Offensive rebound per game	-0.0221	0.0896	0.0558	0.00598	-0.0455
	(0.0331)	(0.0899)	(0.0464)	(0.0476)	(0.0733)
Defensive rebound per game	-0.0259	0.0767	-0.0202	-0.0761*	0.0223
	(0.0395)	(0.0908)	(0.0505)	(0.0460)	(0.0679)
Assists per game	-0.0104	0.118	0.00876	-0.00844	-0.000881
	(0.0363)	(0.0770)	(0.0427)	(0.0390)	(0.0718)
Turn-over per game	0.122**	0.0424	0.0631	0.0452	0.0386
	(0.0603)	(0.116)	(0.0890)	(0.0797)	(0.116)
Steals per game	-0.0187	-0.0352	-0.0418	-0.0161	0.0598

	(0.0432)	(0.101)	(0.0697)	(0.0616)	(0.0892)
Blocks per game	0.107***	0.146*	0.117**	0.0519	0.144
	(0.0371)	(0.0816)	(0.0562)	(0.0521)	(0.0902)
Personal fouls per game	-0.00395	-0.0784	0.0210	0.0361	-0.0762*
	(0.0229)	(0.0488)	(0.0354)	(0.0309)	(0.0442)
Contribution to the team	0.0124	-0.0549	0.00714	0.0449	-0.00395
	(0.0230)	(0.0635)	(0.0273)	(0.0300)	(0.0468)
Assist percentage	-0.000897	-0.00752	0.00671	-0.00684	-0.00636
	(0.00536)	(0.00908)	(0.00626)	(0.00475)	(0.00635)
Turn-over percentage	-0.00442	-0.00640	-0.00585	-0.00266	0.000603
	(0.00482)	(0.0104)	(0.00859)	(0.00446)	(0.00718)
True shooting percentage	0.00281	-1.146***	0.0104*	-0.00923*	-0.0154
	(0.00375)	(0.435)	(0.00627)	(0.00557)	(0.0122)
Usage percentage	0.0168**	0.0140	0.0158*	0.0316***	0.000708
	(0.00687)	(0.0121)	(0.00958)	(0.0106)	(0.00997)
Offensive rebound percentage	0.00869*	-0.00272	-0.00448	-0.00888	0.00516
	(0.00504)	(0.0148)	(0.00419)	(0.00743)	(0.00524)
Defensive rebound percentage	0.00210	0.0103	0.00301	0.00533	-0.000732
	(0.00549)	(0.0107)	(0.00857)	(0.00481)	(0.00972)
Selected in All Star Games at least once in the last three seasons	0.327***	0.0716	0.168***	0.316***	0.594***
	(0.0443)	(0.0869)	(0.0580)	(0.0595)	(0.105)
1 ≤number of draft pick ≤5	0.339***	0.454***	0.334***	0.368***	0.517***
	(0.0439)	(0.0856)	(0.0615)	(0.0587)	(0.0786)
6 ≤number of draft pick ≤10	0.233***	0.391***	0.232***	0.254***	0.345***
	(0.0399)	(0.0745)	(0.0661)	(0.0557)	(0.0872)
11 ≤number of draft pick ≤15	0.140***	0.312***	0.141**	0.199***	0.130
	(0.0391)	(0.0573)	(0.0673)	(0.0613)	(0.0826)
16 ≤number of draft pick ≤20	0.0460	0.209**	0.0831	0.0505	0.0451
	(0.0439)	(0.0822)	(0.0580)	(0.0555)	(0.0973)
21 ≤number of draft pick ≤25	0.00325	0.146	0.102	-0.0582	-0.0526
	(0.0428)	(0.101)	(0.0639)	(0.0574)	(0.0722)
26 ≤number of draft pick ≤30	-0.00766	-0.00625	0.0241	-0.0450	-0.0613
	(0.0547)	(0.106)	(0.0688)	(0.0601)	(0.0988)
31 ≤number of draft pick ≤35	-0.0547	0.0499	-0.202*	0.00350	0.133
	(0.133)	(0.138)	(0.119)	(0.144)	(0.0869)
36 ≤number of draft pick ≤40	-0.0830	-0.0322	-0.253**	-0.0589	-0.248
	(0.0811)	(0.116)	(0.107)	(0.105)	(0.156)
Constant	7.414***	12.36***	7.436***	12.58***	11.64***
	(1.094)	(2.329)	(1.650)	(1.058)	(1.947)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	9822	745	3203	3650	2224
R-squared	0.665	0.721	0.588	0.582	0.534

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B4: Estimated Coefficients with Restricted Sample (Experience≥5)

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.103***	0.0527	-0.0183	0.168**	0.280***
	(0.0383)	(0.0757)	(0.0561)	(0.0666)	(0.0717)
Foreign Dummy	0.0985**	-0.0549	-0.0812	0.0984	0.203***
	(0.0493)	(0.119)	(0.0842)	(0.0790)	(0.0732)
Age	0.123	0.146	0.278	0.0899	-0.0513
	(0.0987)	(0.332)	(0.208)	(0.129)	(0.150)
Age squared	-0.00312*	-0.00380	-0.00557	-0.00205	-0.00116
	(0.00169)	(0.00568)	(0.00338)	(0.00221)	(0.00254)
Experience	0.167***	0.0653	0.111	0.210***	0.211***
	(0.0359)	(0.107)	(0.0734)	(0.0541)	(0.0626)
Experience squared	-0.00530***	0.00315	-0.00240	-0.00871***	-0.00546*
	(0.00202)	(0.00593)	(0.00378)	(0.00308)	(0.00309)
Weight	0.000236	0.00441*	-0.00208	0.000375	0.00291
	(0.000946)	(0.00236)	(0.00174)	(0.00142)	(0.00205)
Height	0.0162*	0.0106	0.0456***	0.00574	-0.00933
	(0.00887)	(0.0215)	(0.0132)	(0.0139)	(0.0189)
Forward Dummy	-0.0471	-0.0377	-0.0497	-0.0402	-0.0590
	(0.0503)	(0.124)	(0.0729)	(0.0869)	(0.104)
Center Dummy	-0.00966	-0.0194	0.0826	-0.00387	-0.157
	(0.0763)	(0.171)	(0.110)	(0.134)	(0.144)
Number of the games	-0.000583	0.000678	0.000247	-0.000932	-0.00134
	(0.000748)	(0.00192)	(0.00125)	(0.00124)	(0.00142)
Average minutes	0.0481***	0.0179	0.0623***	0.0464***	0.0509***
	(0.00725)	(0.0195)	(0.0117)	(0.0110)	(0.0145)
Field goal	-0.0698	0.0982	-0.0460	-0.177***	0.0169
	(0.0429)	(0.114)	(0.0542)	(0.0635)	(0.0960)
Field goal success probability	0.0670	1.596*	0.710	0.284	-1.973
	(0.413)	(0.860)	(0.562)	(1.141)	(1.280)
Three point shoots	0.0193	0.102	0.0350	0.0248	-0.0900
	(0.0325)	(0.107)	(0.0568)	(0.0607)	(0.0787)
Three point success probability	-0.232***	-0.151	-0.474***	0.0379	-0.299*
	(0.0840)	(0.193)	(0.142)	(0.140)	(0.178)
Free throw	-0.00483	0.0149	0.0538	-0.0226	-0.0528
	(0.0244)	(0.0684)	(0.0379)	(0.0363)	(0.0510)
Free throw success probability	0.0174	0.185	0.196	-0.360	0.180
	(0.139)	(0.456)	(0.238)	(0.220)	(0.273)
Offensive rebound	-0.0112	0.0131	-0.0753	0.00693	-0.0459
	(0.0481)	(0.180)	(0.0836)	(0.0794)	(0.0955)
Defensive rebound	-0.0473	0.124	0.00188	-0.101	-0.0404
	(0.0349)	(0.113)	(0.0652)	(0.0649)	(0.0709)
Assists	-0.0247	0.187	-0.0523	-0.0351	-0.0244
	(0.0308)	(0.115)	(0.0454)	(0.0502)	(0.0806)
Turn-over	0.103*	0.0477	0.00923	0.0631	0.0544
	(0.0542)	(0.167)	(0.0894)	(0.0810)	(0.133)
Steals	-0.0451	-0.118	-0.0500	-0.0429	0.0653
	(0.0440)	(0.125)	(0.0745)	(0.0677)	(0.0967)
Blocks	0.113***	0.118	0.163**	0.0724	0.101

	(0.0383)	(0.0994)	(0.0637)	(0.0596)	(0.0958)
Personal fouls	0.0143	-0.0659	0.0302	0.0611	-0.0361
	(0.0258)	(0.0532)	(0.0361)	(0.0413)	(0.0564)
Contribution to the team	0.0180	-0.0606	-0.00953	0.0712**	0.00667
	(0.0227)	(0.0686)	(0.0335)	(0.0335)	(0.0525)
Assist percentage	0.00124	-0.0192	0.0233***	-0.00763	-0.00678
	(0.00475)	(0.0185)	(0.00868)	(0.00725)	(0.0107)
Turn-over percentage	-0.0100**	-0.00677	-0.00999	-0.0133*	0.00424
	(0.00503)	(0.0178)	(0.00782)	(0.00737)	(0.00991)
True shooting percentage	-0.00242	-0.234	-0.00712	-0.00717	0.0167
	(0.00436)	(0.743)	(0.00700)	(0.0120)	(0.0137)
Usage percentage	0.0163*	0.0142	0.00991	0.0426***	0.00323
	(0.00872)	(0.0235)	(0.00814)	(0.0121)	(0.0158)
Offensive rebound percentage	0.00756	0.0363	0.0222	0.00552	0.00942
	(0.00992)	(0.0499)	(0.0193)	(0.0175)	(0.0150)
Defensive rebound percentage	0.00737	-0.0133	0.00671	0.00420	0.00180
	(0.00694)	(0.0179)	(0.0152)	(0.0123)	(0.0122)
Selected in All Star Games	0.483***	0.206**	0.182***	0.462***	0.952***
	(0.0509)	(0.0845)	(0.0516)	(0.0636)	(0.0993)
1 ≤number of draft pick ≤5	0.259***	0.361***	0.308***	0.296***	0.178*
	(0.0448)	(0.0790)	(0.0699)	(0.0752)	(0.0948)
6 ≤number of draft pick ≤10	0.176***	0.131	0.151**	0.216***	0.208**
	(0.0486)	(0.0891)	(0.0705)	(0.0801)	(0.0966)
11 ≤number of draft pick ≤15	0.129***	0.257**	0.105	0.193**	-0.00162
	(0.0457)	(0.111)	(0.0773)	(0.0780)	(0.0980)
16 ≤number of draft pick ≤20	0.0278	0.213*	0.0681	0.108	-0.0427
	(0.0524)	(0.115)	(0.0824)	(0.0807)	(0.0989)
21 ≤number of draft pick ≤25	0.114**	0.130	0.236**	0.119	0.0348
	(0.0539)	(0.138)	(0.0925)	(0.0867)	(0.0941)
26 ≤number of draft pick ≤30	0.0889	0.0110	0.0860	0.164**	0.0380
	(0.0551)	(0.108)	(0.0800)	(0.0800)	(0.126)
31 ≤number of draft pick ≤35	0.0173	0.0507	-0.161	0.185	0.244
	(0.103)	(0.172)	(0.146)	(0.146)	(0.208)
36 ≤number of draft pick ≤40	-0.127	0.0882	-0.248*	-0.0176	-0.201
	(0.0829)	(0.104)	(0.145)	(0.134)	(0.133)
Constant	8.059***	7.398	4.058	11.09***	15.05***
	(1.574)	(5.135)	(2.978)	(2.130)	(2.535)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	5,171	360	1,670	1,940	1,201
R-squared	0.669	0.748	0.584	0.516	0.514

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B5: Estimated Coefficients with Restricted Sample (US-born Players)

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.0552	0.0669	-0.0449	0.129**	0.204***
	(0.0342)	(0.0568)	(0.0483)	(0.0538)	(0.0630)
Age	-0.0162	-0.0171	-0.0956	-0.0843	-0.00462
	(0.0580)	(0.156)	(0.0945)	(0.0694)	(0.101)
Age squared	-0.000717	-0.000822	0.000623	0.000891	-0.00176
	(0.00111)	(0.00292)	(0.00177)	(0.00131)	(0.00185)
Experience	0.276***	0.111***	0.203***	0.350***	0.379***
	(0.0179)	(0.0350)	(0.0283)	(0.0262)	(0.0341)
Experience squared	-0.0113***	0.000466	-0.00812***	-0.0167***	-0.0142***
	(0.00135)	(0.00278)	(0.00202)	(0.00186)	(0.00223)
Weight	0.000416	0.00133	-0.00195	1.63e-05	0.00301*
	(0.000816)	(0.00166)	(0.00132)	(0.00119)	(0.00170)
Height	0.0104	0.00276	0.0492***	0.00660	-0.0199
	(0.00766)	(0.0143)	(0.0111)	(0.0117)	(0.0149)
Forward Dummy	-0.0458	0.0289	-0.0450	-0.0155	-0.0842
	(0.0395)	(0.0852)	(0.0589)	(0.0668)	(0.0797)
Center Dummy	0.0128	0.165	0.0667	0.0984	-0.175
	(0.0613)	(0.121)	(0.0905)	(0.101)	(0.117)
Number of the games	0.00222***	0.00112	0.00298***	0.00154*	0.00111
	(0.000557)	(0.00118)	(0.000919)	(0.000884)	(0.00133)
Average minutes	0.0385***	0.0276**	0.0416***	0.0316***	0.0456***
	(0.00528)	(0.0121)	(0.00823)	(0.00791)	(0.0111)
Field goal	-0.0571*	-0.00386	-0.0185	-0.109**	-0.0346
	(0.0305)	(0.0681)	(0.0470)	(0.0533)	(0.0767)
Field goal success probability	0.0798	0.897*	0.594	0.107	-0.0741
	(0.293)	(0.472)	(0.434)	(0.742)	(1.082)
Three point shoots	0.0179	0.0288	0.0171	0.0672	-0.102
	(0.0282)	(0.0862)	(0.0438)	(0.0494)	(0.0662)
Three point success probability	-0.151**	-0.185	-0.177	-0.0655	-0.0929
	(0.0659)	(0.141)	(0.112)	(0.105)	(0.178)
Free throw	0.000869	-0.0186	0.0436	0.00181	-0.0526
	(0.0209)	(0.0468)	(0.0319)	(0.0311)	(0.0466)
Free throw success probability	-0.0344	0.311	0.347*	-0.285**	0.0727
	(0.0947)	(0.230)	(0.178)	(0.127)	(0.182)
Offensive rebound	0.0411	0.0174	0.0614	0.0888*	-0.0805
	(0.0337)	(0.0907)	(0.0478)	(0.0529)	(0.0832)
Defensive rebound	0.00457	0.0278	0.0933*	-0.0695	-0.0332
	(0.0302)	(0.0647)	(0.0518)	(0.0432)	(0.0571)
Assists	0.0256	0.0561	0.0758**	0.0180	-0.00891
	(0.0251)	(0.0633)	(0.0352)	(0.0432)	(0.0613)
Turn-over	0.0471	0.0843	-0.0678	0.0347	0.00493
	(0.0475)	(0.103)	(0.0817)	(0.0720)	(0.118)
Steals	-0.0344	-0.101	-0.0252	-0.0317	0.0894
	(0.0403)	(0.0727)	(0.0615)	(0.0650)	(0.0821)
Blocks	0.136***	0.0717	0.176***	0.0789	0.0352
	(0.0339)	(0.0579)	(0.0588)	(0.0493)	(0.0792)
Personal fouls	0.000528	-0.0397	0.00569	0.0441	-0.0513
	(0.0225)	(0.0384)	(0.0347)	(0.0343)	(0.0457)
Contribution to the team	-0.00414	-0.00224	-0.0448	0.0388	0.0168
	(0.0180)	(0.0423)	(0.0307)	(0.0281)	(0.0419)
Assist percentage	-0.00548	-0.00916	0.00649	-0.0115*	-0.0127*

	(0.00342)	(0.00832)	(0.00435)	(0.00601)	(0.00718)
Turn-over percentage	-0.00181	-0.0101	-0.00119	-0.00464	0.00636
	(0.00371)	(0.00790)	(0.00641)	(0.00609)	(0.00801)
True shooting percentage	0.00286	-0.634	0.00696	-0.00256	0.00162
	(0.00305)	(0.403)	(0.00608)	(0.00800)	(0.0110)
Usage percentage	0.0256***	0.0244**	0.0245***	0.0306***	0.0187
	(0.00517)	(0.0121)	(0.00760)	(0.00864)	(0.0125)
Offensive rebound percentage	0.00115	0.00635	0.00371	-0.00766	0.00953
	(0.00479)	(0.0218)	(0.00754)	(0.00819)	(0.00804)
Defensive rebound percentage	-0.00239	-0.000512	-0.00796	0.000278	-0.00107
	(0.00503)	(0.00981)	(0.00974)	(0.00702)	(0.00750)
Selected in All Star Games	0.466***	0.141*	0.179***	0.493***	0.954***
	(0.0486)	(0.0718)	(0.0503)	(0.0598)	(0.0965)
1 ≤number of draft pick ≤5	0.477***	0.505***	0.492***	0.449***	0.496***
	(0.0414)	(0.0663)	(0.0648)	(0.0641)	(0.0921)
6 ≤number of draft pick ≤10	0.353***	0.314***	0.363***	0.336***	0.373***
	(0.0381)	(0.0662)	(0.0557)	(0.0664)	(0.0775)
11 ≤number of draft pick ≤15	0.270***	0.243***	0.255***	0.326***	0.277***
	(0.0372)	(0.0740)	(0.0532)	(0.0628)	(0.0719)
16 ≤number of draft pick ≤20	0.173***	0.158**	0.233***	0.161**	0.241***
	(0.0403)	(0.0652)	(0.0597)	(0.0635)	(0.0728)
21 ≤number of draft pick ≤25	0.175***	0.111	0.283***	0.112*	0.149*
	(0.0391)	(0.0927)	(0.0593)	(0.0619)	(0.0764)
26 ≤number of draft pick ≤30	0.112**	0.0487	0.174***	0.0689	0.157
	(0.0478)	(0.0856)	(0.0593)	(0.0659)	(0.103)
31 ≤number of draft pick ≤35	-0.0349	0.0575	-0.112	0.00991	0.154
	(0.0723)	(0.112)	(0.116)	(0.119)	(0.129)
36 ≤number of draft pick ≤40	-0.0976	0.0325	-0.131	0.0213	-0.158
	(0.0667)	(0.0897)	(0.0948)	(0.115)	(0.100)
Constant	9.985***	10.85***	9.000***	13.28***	14.22***
	(0.990)	(2.386)	(1.540)	(1.319)	(1.759)
Observations	8,565	715	2,988	3,089	1,773
R-squared	0.685	0.748	0.611	0.600	0.583

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B6: Estimated Coefficients When Controlling the Performance at Season t-2

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.0841**	0.0177	-0.0316	0.120**	0.258***
	(0.0330)	(0.0762)	(0.0494)	(0.0490)	(0.0618)
Foreign Dummy	0.144***	-0.0245	0.145*	0.0895	0.237***
	(0.0415)	(0.137)	(0.0784)	(0.0592)	(0.0621)
Age	0.0800	0.0931	-0.0671	-0.00292	0.172
	(0.0546)	(0.250)	(0.101)	(0.0664)	(0.106)
Age squared	-0.00243**	-0.00244	0.000113	-0.000504	-0.00505***
	(0.00104)	(0.00476)	(0.00189)	(0.00125)	(0.00195)
Experience	0.197***	0.0160	0.129***	0.252***	0.284***
	(0.0175)	(0.0522)	(0.0297)	(0.0262)	(0.0345)
Experience squared	-0.00831***	0.00412	-0.00540**	-0.0131***	-0.0101***
	(0.00132)	(0.00463)	(0.00211)	(0.00196)	(0.00241)
Weight	0.00130	0.00394*	-0.00188	0.000376	0.00548***
	(0.000800)	(0.00231)	(0.00126)	(0.00117)	(0.00157)
Height	0.00847	-0.0223	0.0393***	0.00635	-0.0274*
	(0.00772)	(0.0179)	(0.0110)	(0.0109)	(0.0166)
Forward Dummy	-0.0292	0.0893	-0.0449	0.0283	-0.103
	(0.0419)	(0.110)	(0.0596)	(0.0667)	(0.0909)
Center Dummy	0.00998	0.263*	0.0664	0.0933	-0.181
	(0.0643)	(0.156)	(0.0896)	(0.102)	(0.134)
Number of the games	0.00248***	0.000759	0.00281**	0.00232**	0.00147
	(0.000645)	(0.00155)	(0.00113)	(0.00105)	(0.00127)
Average minutes	0.0432***	0.0270*	0.0455***	0.0367***	0.0437***
	(0.00564)	(0.0155)	(0.00790)	(0.00904)	(0.0101)
Field goal	-0.0865***	0.122	-0.0740	-0.109**	-0.0486
	(0.0311)	(0.0939)	(0.0480)	(0.0546)	(0.0708)
Field goal success probability	-0.502	-3.741	-0.0640	-0.478	-1.579
	(0.343)	(2.786)	(0.369)	(0.989)	(1.300)
Three point shoots	-0.0334	-0.221	-0.0384	0.00908	-0.187**
	(0.0303)	(0.170)	(0.0449)	(0.0574)	(0.0750)
Three point success probability	-0.0532	0.0852	-0.110	-0.00378	-0.0564
	(0.0643)	(0.171)	(0.103)	(0.110)	(0.158)
Free throw	-0.00873	-0.0107	0.0318	-0.0227	-0.0509
	(0.0213)	(0.0663)	(0.0344)	(0.0386)	(0.0441)
Free throw success probability	-0.151	-0.344	0.0668	-0.197	-0.0770
	(0.110)	(0.475)	(0.252)	(0.165)	(0.168)
Offensive rebound	-0.0204	-0.0343	-0.0553	0.0172	-0.112
	(0.0410)	(0.129)	(0.0752)	(0.0715)	(0.0816)
Defensive rebound	-0.0327	0.0879	-0.00924	-0.0750	-0.0468
	(0.0299)	(0.0893)	(0.0519)	(0.0548)	(0.0588)
Assists	-0.000777	0.123	0.0220	0.00516	-0.0252
	(0.0264)	(0.0949)	(0.0413)	(0.0478)	(0.0575)
Turn-over	0.0443	0.0327	-0.0267	0.0258	-0.0468
	(0.0451)	(0.160)	(0.0726)	(0.0917)	(0.105)
Steals	-0.0533	-0.0120	-0.0850	-0.0311	0.0551
	(0.0385)	(0.0885)	(0.0573)	(0.0647)	(0.0803)
Blocks	0.116***	0.195**	0.0799	0.106**	0.0828
	(0.0319)	(0.0810)	(0.0509)	(0.0521)	(0.0831)
Personal fouls	0.0210	-0.0593	0.0430	0.0360	-0.0164
	(0.0218)	(0.0497)	(0.0310)	(0.0363)	(0.0493)
Contribution to the team	0.0231	-0.0723	0.0227	0.0534	0.0403

	(0.0191)	(0.0578)	(0.0299)	(0.0364)	(0.0425)
Assist percentage	5.96e-05	-0.0107	0.00539	-0.00324	-0.00588
	(0.00324)	(0.0134)	(0.00598)	(0.00457)	(0.00591)
Turn-over percentage	-0.00366	-0.00523	-0.00590	-0.00365	0.00662
	(0.00380)	(0.0151)	(0.00602)	(0.00708)	(0.00743)
True shooting percentage	0.00606*	5.287*	0.0106	0.00152	0.0127
	(0.00338)	(2.789)	(0.00829)	(0.00972)	(0.0130)
Usage percentage	0.0264***	0.0198	0.0217**	0.0350***	0.0165*
	(0.00502)	(0.0190)	(0.00862)	(0.00768)	(0.00976)
Offensive rebound percentage	0.0155**	0.0168	0.0216	0.0139	0.0149*
	(0.00691)	(0.0328)	(0.0174)	(0.0131)	(0.00766)
Defensive rebound percentage	-0.00133	0.00998	0.00202	0.00141	-0.00730
	(0.00536)	(0.0145)	(0.0102)	(0.00879)	(0.00824)
Selected in All Star Games	0.478***	0.256***	0.160***	0.422***	0.955***
	(0.0503)	(0.0832)	(0.0467)	(0.0633)	(0.0891)
1 ≤number of draft pick ≤5	0.354***	0.362***	0.389***	0.293***	0.349***
	(0.0395)	(0.0923)	(0.0625)	(0.0603)	(0.0810)
6 ≤number of draft pick ≤10	0.247***	0.248***	0.253***	0.232***	0.254***
	(0.0388)	(0.0896)	(0.0536)	(0.0637)	(0.0834)
11 ≤number of draft pick ≤15	0.189***	0.200**	0.193***	0.230***	0.0958
	(0.0385)	(0.0948)	(0.0541)	(0.0614)	(0.0792)
16 ≤number of draft pick ≤20	0.0805*	0.102	0.148**	0.0827	0.0481
	(0.0419)	(0.0784)	(0.0583)	(0.0641)	(0.0849)
21 ≤number of draft pick ≤25	0.0790*	0.0807	0.173**	0.00487	-0.0120
	(0.0446)	(0.126)	(0.0727)	(0.0709)	(0.0833)
26 ≤number of draft pick ≤30	0.0690	0.0259	0.167**	0.0460	-0.0178
	(0.0507)	(0.128)	(0.0651)	(0.0657)	(0.114)
31 ≤number of draft pick ≤35	0.00293	0.169	-0.188*	0.111	0.188
	(0.0864)	(0.153)	(0.113)	(0.142)	(0.162)
36 ≤number of draft pick ≤40	-0.0989	-0.0854	-0.157	0.0455	-0.217
	(0.0745)	(0.150)	(0.108)	(0.0950)	(0.153)
Constant	9.258***	10.53***	9.982***	12.14***	12.59***
	(0.973)	(3.698)	(1.618)	(1.269)	(1.871)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	8,248	429	2,754	3,172	1,893
R-squared	0.637	0.715	0.583	0.553	0.514

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B7: Estimated Coefficients When Controlling the Performance at Season t-3

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.0808**	0.0162	-0.0579	0.110**	0.300***
	(0.0361)	(0.0820)	(0.0555)	(0.0542)	(0.0747)
Foreign Dummy	0.168***	-0.141	0.179**	0.108	0.252***
	(0.0452)	(0.136)	(0.0850)	(0.0655)	(0.0728)
Age	0.00326	0.304	-0.110	-0.0905	0.0860
	(0.0589)	(0.347)	(0.128)	(0.0712)	(0.122)
Age squared	-0.00129	-0.00660	0.000666	0.000893	-0.00390*
	(0.00112)	(0.00672)	(0.00238)	(0.00133)	(0.00225)
Experience	0.137***	-0.0429	0.0717**	0.189***	0.194***
	(0.0191)	(0.0649)	(0.0348)	(0.0293)	(0.0385)
Experience squared	-0.00604***	0.00832	-0.00302	-0.0113***	-0.00542**
	(0.00141)	(0.00658)	(0.00246)	(0.00218)	(0.00269)
Weight	-4.68e-05	0.00111	-0.00358**	-7.40e-05	0.00299
	(0.000918)	(0.00237)	(0.00157)	(0.00131)	(0.00183)
Height	0.00907	-0.00508	0.0373***	0.01000	-0.0299*
	(0.00862)	(0.0183)	(0.0120)	(0.0126)	(0.0180)
Forward Dummy	0.00341	0.0347	0.0687	0.0107	-0.0166
	(0.0480)	(0.120)	(0.0701)	(0.0757)	(0.104)
Center Dummy	0.0389	0.199	0.176	0.0748	-0.0967
	(0.0735)	(0.167)	(0.109)	(0.117)	(0.150)
Number of the games	0.00257***	-0.00156	0.00542***	0.00152	0.000142
	(0.000713)	(0.00190)	(0.00131)	(0.000925)	(0.00160)
Average minutes	0.0325***	0.0341*	0.0368***	0.0279***	0.0266*
	(0.00647)	(0.0184)	(0.0101)	(0.00910)	(0.0137)
Field goal	-0.0461	0.0852	-0.0241	0.00698	-0.0635
	(0.0360)	(0.120)	(0.0580)	(0.0588)	(0.0952)
Field goal success probability	0.151	-8.499***	1.374***	-2.045**	-1.107
	(0.360)	(3.161)	(0.481)	(0.975)	(1.452)
Three point shoots	0.00772	-0.407**	0.0170	-0.0258	-0.139*
	(0.0320)	(0.198)	(0.0519)	(0.0570)	(0.0827)
Three point success probability	-0.105	-0.164	-0.124	-0.0632	-0.163
	(0.0727)	(0.159)	(0.129)	(0.119)	(0.185)
Free throw	0.00917	-0.168**	0.0696	-0.0349	-0.0508
	(0.0237)	(0.0809)	(0.0423)	(0.0341)	(0.0518)
Free throw success probability	-0.139	-0.657	-0.149	-0.210	-0.181
	(0.143)	(0.522)	(0.350)	(0.211)	(0.199)
Offensive rebound	-0.00328	0.124	0.0218	-0.00441	-0.0964
	(0.0517)	(0.144)	(0.0735)	(0.0651)	(0.109)
Defensive rebound	0.00689	-0.0688	0.0631	-0.0248	-0.0425
	(0.0355)	(0.0937)	(0.0607)	(0.0488)	(0.0771)
Assists	0.0248	0.0680	0.0827*	0.0360	-0.000956
	(0.0288)	(0.111)	(0.0485)	(0.0444)	(0.0761)
Turn-over	0.0322	0.0597	-0.0756	0.00102	-0.0358
	(0.0505)	(0.155)	(0.0910)	(0.0915)	(0.120)
Steals	-0.0341	-0.0107	-0.0754	0.0452	0.103
	(0.0409)	(0.111)	(0.0662)	(0.0672)	(0.0855)
Blocks	0.122***	0.116	0.128**	0.109**	0.0627

	(0.0350)	(0.0982)	(0.0555)	(0.0529)	(0.0953)
Personal fouls	0.0202	-0.0895	0.0150	0.0237	0.0370
	(0.0242)	(0.0582)	(0.0402)	(0.0361)	(0.0549)
Contribution to the team	0.0124	-9.52e-05	-0.0221	0.0234	0.0700
	(0.0202)	(0.0693)	(0.0365)	(0.0331)	(0.0506)
Assist percentage	-0.00150	-0.0130	0.00254	-0.00148	-0.0136
	(0.00403)	(0.0161)	(0.00677)	(0.00524)	(0.00982)
Turn-over percentage	-0.00181	-0.00289	-0.00149	0.00113	0.00218
	(0.00518)	(0.0140)	(0.00804)	(0.00924)	(0.0102)
True shooting percentage	0.00495	11.12***	0.0260**	0.0244**	0.00839
	(0.00383)	(3.373)	(0.0127)	(0.0105)	(0.0156)
Usage percentage	0.0180***	0.0220	0.0204**	0.0218**	0.00991
	(0.00625)	(0.0225)	(0.0103)	(0.00924)	(0.0135)
Offensive rebound percentage	0.0172	-0.0292	0.00353	0.0332***	0.0212
	(0.0108)	(0.0317)	(0.0167)	(0.0124)	(0.0187)
Defensive rebound percentage	-0.00864	0.0350*	-0.00251	-0.00248	-0.0224*
	(0.00792)	(0.0191)	(0.0123)	(0.0103)	(0.0118)
Selected in All Star Games	0.494***	0.260***	0.230***	0.407***	0.982***
	(0.0505)	(0.0763)	(0.0545)	(0.0623)	(0.0899)
1 ≤number of draft pick ≤5	0.288***	0.277***	0.349***	0.219***	0.264***
	(0.0434)	(0.0996)	(0.0680)	(0.0651)	(0.0895)
6 ≤number of draft pick ≤10	0.211***	0.197**	0.206***	0.181**	0.227**
	(0.0438)	(0.0918)	(0.0625)	(0.0713)	(0.0902)
11 ≤number of draft pick ≤15	0.186***	0.184*	0.217***	0.227***	0.0449
	(0.0443)	(0.104)	(0.0640)	(0.0716)	(0.0922)
16 ≤number of draft pick ≤20	0.0766*	0.0733	0.123*	0.0896	0.0315
	(0.0464)	(0.0947)	(0.0680)	(0.0741)	(0.0932)
21 ≤number of draft pick ≤25	0.125**	0.104	0.210**	0.0382	0.0260
	(0.0528)	(0.123)	(0.0922)	(0.0823)	(0.0982)
26 ≤number of draft pick ≤30	0.0990*	0.0477	0.147*	0.0926	0.0391
	(0.0566)	(0.100)	(0.0779)	(0.0736)	(0.136)
31 ≤number of draft pick ≤35	0.0560	0.0830	-0.143	0.116	0.328*
	(0.0907)	(0.135)	(0.121)	(0.146)	(0.185)
36 ≤number of draft pick ≤40	-0.101	-0.0656	-0.176	0.0663	-0.244
	(0.0783)	(0.219)	(0.117)	(0.102)	(0.169)
constant	10.79***	6.747	11.07***	13.11***	15.68***
	(1.056)	(4.665)	(1.889)	(1.373)	(2.069)
Year dummy	Yes	Yes	Yes	Yes	Yes
Team dummy	Yes	Yes	Yes	Yes	Yes
Observations	7,135	360	2,397	2,750	1,628
R-squared	0.614	0.737	0.549	0.510	0.461

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1

Table B8: Estimated Coefficients with Restricted Sample (including players who experience multiple team in one season)

dependnet variable	ln (annual salary)				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	all	1980s	1990s	2000s	2010s
White Dummy	0.0739**	0.0636	-0.0353	0.0937**	0.232***
	(0.0296)	(0.0539)	(0.0449)	(0.0452)	(0.0539)
Foreign Dummy	0.173***	0.164*	0.136*	0.131**	0.288***
	(0.0380)	(0.0990)	(0.0753)	(0.0522)	(0.0559)
Age	0.0410	0.0285	-0.0637	-0.0280	0.0455
	(0.0480)	(0.149)	(0.0870)	(0.0601)	(0.0840)
Age squared	-0.00148	-0.00166	0.000360	5.15e-05	-0.00215
	(0.000911)	(0.00279)	(0.00162)	(0.00113)	(0.00153)
Experience	0.256***	0.0996***	0.173***	0.335***	0.338***
	(0.0155)	(0.0333)	(0.0264)	(0.0232)	(0.0287)
Experience squared	-0.0105***	0.00138	-0.00722***	-0.0158***	-0.0132***
	(0.00114)	(0.00266)	(0.00184)	(0.00165)	(0.00190)
Weight	0.00110	0.00154	-0.00184	0.000858	0.00465***
	(0.000749)	(0.00153)	(0.00122)	(0.00108)	(0.00153)
Height	0.0104	0.00103	0.0512***	0.00328	-0.0242*
	(0.00703)	(0.0136)	(0.0104)	(0.0104)	(0.0137)
Forward Dummy	-0.0411	0.0430	-0.0700	-0.00829	-0.0555
	(0.0386)	(0.0827)	(0.0581)	(0.0614)	(0.0767)
Center Dummy	-0.0237	0.188	0.00190	0.0749	-0.156
	(0.0595)	(0.118)	(0.0889)	(0.0928)	(0.111)
Number of the games	0.00213***	0.00104	0.00300***	0.00158*	0.00127
	(0.000532)	(0.00113)	(0.000876)	(0.000808)	(0.00118)
Average minutes	0.0361***	0.0241**	0.0396***	0.0265***	0.0489***
	(0.00523)	(0.0117)	(0.00777)	(0.00763)	(0.0102)
Field goal	-0.0301	-0.00132	0.0270	-0.0705	-0.0712
	(0.0307)	(0.0665)	(0.0444)	(0.0461)	(0.0679)
Field goal success probability	0.128	0.879*	0.655*	-0.189	0.537
	(0.262)	(0.465)	(0.396)	(0.578)	(1.000)
Three point shoots	0.0348	0.0321	0.0258	0.0520	-0.0318
	(0.0267)	(0.0840)	(0.0420)	(0.0438)	(0.0598)
Three point success probability	-0.175***	-0.175	-0.196*	-0.0767	-0.218
	(0.0602)	(0.133)	(0.101)	(0.0975)	(0.140)
Free throw	0.00170	-0.0261	0.0689**	-0.0141	-0.0575
	(0.0203)	(0.0462)	(0.0323)	(0.0285)	(0.0397)
Free throw success probability	0.0182	0.298	0.339**	-0.183	0.158
	(0.0891)	(0.225)	(0.166)	(0.118)	(0.177)
Offensive rebound	0.0493	0.00157	0.0716	0.0750	-0.0959
	(0.0315)	(0.0881)	(0.0449)	(0.0502)	(0.0668)
Defensive rebound	0.00485	0.0197	0.0884*	-0.0277	-0.0658
	(0.0281)	(0.0628)	(0.0499)	(0.0410)	(0.0526)
Assists	0.0272	0.0431	0.0767**	0.0222	-0.000362
	(0.0238)	(0.0627)	(0.0341)	(0.0400)	(0.0552)
Turn-over	0.0645	0.135	-0.0578	0.0562	0.0125
	(0.0442)	(0.105)	(0.0791)	(0.0652)	(0.107)
Steals	-0.00879	-0.0917	0.00955	-0.000472	0.0677
	(0.0379)	(0.0710)	(0.0595)	(0.0603)	(0.0738)
Blocks	0.146***	0.0776	0.172***	0.0908**	0.0464
	(0.0315)	(0.0572)	(0.0535)	(0.0459)	(0.0703)
Personal fouls	0.00475	-0.0354	0.00279	0.0375	-0.0174
	(0.0216)	(0.0369)	(0.0339)	(0.0316)	(0.0424)

Contribution to the team	-0.0141	0.00344	-0.0616**	0.0256	0.0267
	(0.0174)	(0.0420)	(0.0294)	(0.0253)	(0.0383)
Assist percentage	-0.00343	-0.00812	0.00770*	-0.0101*	-0.0132**
	(0.00307)	(0.00812)	(0.00409)	(0.00516)	(0.00635)
Turn-over percentage	-0.00182	-0.0118	0.000149	-0.00323	0.00587
	(0.00332)	(0.00769)	(0.00629)	(0.00492)	(0.00705)
True shooting percentage	0.00241	-0.656	0.00779	-9.09e-05	-0.00510
	(0.00276)	(0.398)	(0.00543)	(0.00614)	(0.0104)
Usage percentage	0.0195***	0.0219*	0.0138**	0.0233***	0.0265**
	(0.00514)	(0.0117)	(0.00641)	(0.00675)	(0.0105)
Offensive rebound percentage	0.00325	0.00596	0.00408	-0.00408	0.0139*
	(0.00452)	(0.0211)	(0.00679)	(0.00794)	(0.00735)
Defensive rebound percentage	-0.00213	0.000431	-0.00336	-0.00619	0.00269
	(0.00445)	(0.00931)	(0.00905)	(0.00628)	(0.00671)
Selected in All Star Games	0.461***	0.119*	0.172***	0.471***	0.924***
	(0.0478)	(0.0686)	(0.0476)	(0.0605)	(0.0900)
1 ≤number of draft pick ≤5	0.474***	0.485***	0.475***	0.466***	0.473***
	(0.0386)	(0.0671)	(0.0604)	(0.0597)	(0.0814)
6 ≤number of draft pick ≤10	0.348***	0.296***	0.334***	0.363***	0.370***
	(0.0368)	(0.0643)	(0.0528)	(0.0620)	(0.0723)
11 ≤number of draft pick ≤15	0.272***	0.235***	0.261***	0.320***	0.255***
	(0.0351)	(0.0726)	(0.0525)	(0.0556)	(0.0691)
16 ≤number of draft pick ≤20	0.158***	0.160**	0.231***	0.171***	0.115
	(0.0391)	(0.0627)	(0.0575)	(0.0585)	(0.0794)
21 ≤number of draft pick ≤25	0.139***	0.108	0.281***	0.0717	0.0663
	(0.0395)	(0.0917)	(0.0584)	(0.0613)	(0.0750)
26 ≤number of draft pick ≤30	0.110**	0.0348	0.191***	0.0723	0.105
	(0.0438)	(0.0808)	(0.0589)	(0.0588)	(0.0880)
31 ≤number of draft pick ≤35	-0.00986	0.0540	-0.140	0.0768	0.128
	(0.0720)	(0.107)	(0.109)	(0.113)	(0.118)
36 ≤number of draft pick ≤40	-0.0595	0.0264	-0.116	0.0144	-0.0827
	(0.0604)	(0.0909)	(0.0917)	(0.0902)	(0.107)
Constant	8.932***	10.43***	8.384***	12.58***	13.00***
	(0.869)	(2.268)	(1.417)	(1.158)	(1.520)
Observations	10,091	745	3,265	3,773	2,308
R-squared	0.674	0.751	0.613	0.597	0.567

Notes: Clustering robust standard errors in parentheses. The error term is clustered as player's level.

*** p<0.01, ** p<0.05, * p<0.1