Senior Project
Department of Economics

"Exit Discrimination in the NBA: Involuntary Turnover "

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May 2013

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Abstract

The purpose of this analysis is to test the probability of exiting the NBA between African American and white players drafted between the 2000 through 2002 drafts followed through the 2009-10 season. This article is meant to compliment previous wage discrimination studies conducted on the NBA, by reporting the existence or non-existence of another form of discrimination. Secondly, it aims to revisit and analyze exit discrimination in the NBA in compared to findings from Haong and Rascher (1999) that found distinctive evidence of exit discrimination in the 1980s. The analysis highlights race, performance, experience, injuries, age, trades, and position as important influences on exiting the league and determining racial discrimination.[1]

[1] I would like to thank Dr. Francesco Renna & Dr. Randall King for their guidance in writing this research paper.

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I. Research and Motivation

In America, professional sports such as basketball have proven to be near and dear to our hearts, a pastime that continues to grow both in popularity and as a business. The National Basketball Association (NBA) is a business that has an approximate value of over twelve billion dollars. According to Forbes (2012) franchise values increased thirty percent to $509 million on average as a result of television deals, arena renovations, and a new favorable labor deal for owners. However, it is apparent that like other labor markets, professional sports demonstrate discrimination in the labor force. Although the business of professional sports in America has come a long way since Jackie Robinson broke the color barrier in baseball in 1947, discrimination in sports has still been evident in many economic studies. Various studies have found racial discrimination amongst the labor force over the cycles of a career, from entry level to exit level. According to Kahn (1997) in the 1980s there was evidence of racial discrimination for black players in the NBA in regards to wage, hiring, and retention. However, only one study has focused on discrimination at the exit level. Testing for exit discrimination among players has advantage over workers: for in professional sports a number of performance statistics are recorded. This allows to observe a particular player's (employee) productivity, or value added, and performance in an enhanced and detailed statistical report not likely available with other workers of the economy. Also unlike many other industries in our economy, the NBA is comprised of a large number of minority workers, in particular African Americans.

There are many problems with discrimination in the labor force, particularly in professional sports. Discrimination can be due to the employer; in sports this would be owners and managers who do not favor minority players and choose to exclude them from rosters. It can also manifest from coworkers or teammates that prefer to play with non-minority players. Lastly,

discrimination can transpire through consumers. Clearly stated, if fans prefer white players, owners will be rewarded for employing non-minority players via merchandise revenue and attendance. All of these forms of discrimination are capable of leading to measurable discrimination in the NBA in terms of wage, hiring, and retention. Obviously, athletes who have made it to a professional level have dedicated their lives to the sport. Subsequently, being subjected to discrimination that causes a penalty in wage or retention constitutes a major problem and flaw in the market. The motivation is to find if discrimination in the NBA still leads to a premium for white players in terms of career length.

The goal of this study is to evaluate and continue research on whether discrimination exists in the National Basketball Association at the exit level based on seasons from the past decade. More clearly stated, does discrimination still exist at the exit level in the NBA today? Furthermore, is there a significant difference between career length in a player's career timeline, between white and black players? Specifically, after being drafted what is the probability a player is still in the league 7-10 seasons down the line?

II. Literature Review

There is a substantial amount of literature focusing on discrimination and more specifically wage discrimination in professional sports. Additionally, there is also an ample amount of studies that particularly focus on discrimination in the National Basketball Association alone. However, studies that involve discrimination not based on wage and salary are limited. Previous studies of the labor force in regards to markets outside of professional sports have provided models and data that conclude discrimination is evident at the beginning of the life cycle in the workforce. However, since discrimination is not testable at the NBA entry level, this study focuses on

discrimination at the exit level. For this study the dependent variable is not wage. It aims to observe racial discrimination based the probability of still being in the league between 7-10 seasons after being drafted.

In Kahn & Sherer (1988), a study is conducted to test for pay discrimination between white and black players in the NBA. In this study, the model uses a data set from the 1985-86 NBA basketball season. The study finds white players actually received an astonishing 20 percent pay premium compared to their black counterparts. Furthermore, when omitting and observing different variables they concluded that the premium was due to consumer discrimination from fans. This is evident in their findings that when replacing a black player with an identical white player, home attendance increased by 8,000 to 13,000 fans per season. In other words, the consumers or fans preference for white players resulted in a sizeable wage gap between white and black players. A similar result was again determined by Brown, Spiro, Keenan (1991) where they found using a similar model yielded similar results for the 1984-1985 season. They reported a wage premium approximately 15 percent favoring white players, which they also determined was a product of consumer discrimination.

A study conducted by Vanderhill (1988) was similar to Brown, Spiro, Keenan (1991) using the same season statistics. However, this study included an abundance of variables previously not included in regards to performance and experience. This led to results that displayed a drastic decrease in the reported premium for white players. However, they still concluded that pay premiums for white players in the NBA existed at approximately 9 percent, which concluded discrimination against black players who consistently outperformed white counterparts.

Shifting to a study focused on exit discrimination, Johnson and Marple (1973) determined that for bench players in the NBA, whites had longer careers than their black counterparts. However, the data they used was only comprised from one NBA season and measured solely on points per game; no other variables are included. Due to the lack of methodology the finding of discrimination is possibly inaccurate.

However, in a study conducted by Hoang and Rascher (1999) exit discrimination in the NBA is revisited using many more variables and controls. In this study the model used was the hazard rate, allowing researchers to find the probability of exiting the NBA during a specific interval of time, taking in account for duration. Using observations from the 1980-1986 seasons it's determined that exit discrimination does exist, resulting in white players receiving a premium of two full seasons before exiting the league when compared black players. Thus the average career length for white players was 7.5 seasons compared to 5.5 seasons for blacks. Additionally, according to their findings, white players had a 36 percent less chance of being cut from the NBA than black players. Lastly, this study also concludes that exit discrimination reported is at least partly a result of consumer discrimination; based on the findings they found a positive relationship between a team's racial makeup and the racial makeup of the metropolitan area the team resides in.

It is important to note that up to this point the studies conducted have all found evidence of discrimination in the NBA, whether in terms of wage or retention. However, these results are all based on statistics from seasons from the 1980s and prior. Studies conducted on seasons and statistics post this era begin to find results that wage gap in the NBA, has been shrinking, or has completely disappeared. Thus, studies focused on more recent seasons begin to illustrate a different story.

In Hill (2004), a similar study is conducted that focuses on the height variable and its impact on results. In this study, Hill (2004) uses a panel data set from the 1990-2000 seasons. He concluded that during the 1990's in professional basketball there was no pay discrimination in the case of black players. Although OLS and the Random Effects model results showed a premium for white players, this disappeared when the variable height is included. Thus, the pay premium was related to height, and whites on average were approximately two inches taller than their black counterparts. Based on seasons from the same era, Gius and Johnson (1998) reported that all wage discrimination in the NBA had disappeared during the 1995-96 season. Using a log linear model that incorporated variables derived from performance and experience, they concluded that black players did not earn less than white players. Lastly, Kahn (2009), reports that the wage gap in the NBA during the 1980s has in fact disappeared. He also suggests that customer preference for white players has changed over time. However, his paper is completely derived from theory and lacks any empirical model or testing.

This leads to the purpose of this particular study that focuses on NBA discrimination at the exit level as an extension of these previous studies. This study will use an updated data set taken from the 2000 through 2002 NBA drafts. Based on data collected from all players drafted during this time interval, a logit model is used to see the probability a player stays in the league for a determined time period. Previous studies that report discrimination has disappeared in NBA are focused on salary and wage gap. This study intends to revisit Haong and Rascher (1999) to see if exit discrimination still exists today, or if like the wage discrimination gap, it has vanished.

III. Theory

The theory behind this study is derived from Gary Becker (1971), and his theory on the economics of discrimination. Becker explains that based on certain characteristics of the market, competition decreases discrimination. Becker's theory suggests that over time firms that do not discriminate will hire minority workers at a lower wage which will result in increased profits.

Becker's theory translates to this study with the idea that if there are teams that discriminate, then teams that choose not to will be able to increase their win percentage, reduce payroll, or obtain both by retaining the most productive players at the lowest cost (Kahn 2009). However, this only accounts for discrimination that manifests through the employer, and does not account for discrimination derived from the other ends of the spectrum, the consumer and employee. It is evident that the sports industry, more specifically the NBA, is a consumer based market. Subsequently, although a black player may perform equally or exceed that of a white counterpart, consumer discrimination may yield a franchise owner greater rewards for retaining the white player longer through merchandise revenue and game attendance.

Out of the 147 players observed through three NBA drafts, approximately 69 percent were African American in comparison to 81 percent for Hoang and Rascher (1999). This may be evidence that consumer discrimination still has an impact on retention of black NBA players. However, it also may be due to the fact that since the 1980s basketball has grown in popularity globally, and the league has seen an influx of European players.

H: This study hypothesizes that there will no longer be any evidence that discrimination exists in the NBA at the exit level. It's expected that nearly 25 years after Haong and Rashcher reported evidence of exit discrimination in the NBA, it is no longer is present. This is based on

Gary Becker's theory that in the long run discrimination proves costly to the firm who discriminates. Additionally, I base this hypothesis off the findings of more recent studies that find previous wage gaps ranging from nine to twenty percent in the 1980s have disappeared. Lastly, my testable hypothesis is to accept the null, H_0, that beta is indeed equal to zero.

H_0: β for *black* = 0

H_a: β for *black* $\neq$ 0

IV. Data

The sample that is being observed includes all the players selected in 2000-2002 NBA draft. To be part of this sample, however, a player must have been given a NBA contract and recorded playing time. It follows each of the 147 players observed until their exit from the league or until the 2009-10 season, whichever came first. However, all performance variables observed are strictly from the player's rookie in the league. This ensures that all players are comparably observable, whether they played one or ten seasons. During this time period out of 147 players, 80 were cut from the league.

The online source, NBA.com, provided player photographs in order to code each individual player's race. This concluded that 46 out of the 147 players observed were white. I created a dummy variable that accounts for black players as 1 and white players as 0. Additionally, player position, performance statistics, number of games played, team win percentage, college experience, detailed information regarding injuries and trades were all gathered from Nbareference.com.

Due to Hill (2004) concluding that premiums were present for taller players and positions a variable for player position is added. Furthermore, the taller skilled position's, center and forward, are scarcer than the guard position. Thus a dummy variable was created to distinguish between forward/center and guard. I presume that guards will have a higher probability of exiting the league prior the last season of data observed.

Points, assists, rebounds, blocks, 3-point percentage, free throw percentage, field goal percentage, are used to measure the impact of a player's performance on the court. Since performance statistics vary depending on how much actual playing time a player experiences, all performance statistics are divided by a player's total minutes of playing time. Also included is the number of games played by a player, which is how many games in which each player saw action during their rookie season divided, by 82 regular season games.

One variable that plays a major role in a player's career length is injuries. A dummy variable, *inj,* accounts for whether or not a player has suffered an injury that cost them 41 or more game absences in one season. This number accounts for half an entire NBA season, by observing the injury variable in this manner we control to observe only more serious career-threatening injuries.

Another variable that carries a significant impact on career length is the possibility of being traded. Thus, the *trades* variable indicates how many times a player is traded throughout his NBA career. This is important because number of trades can be an indicator of players overall skill, more particularly signal a player's declining or increasing abilities.

Another observation that affects career length is college experience. The *CollegeEXP* variable measures how many years of college basketball a player experienced before entering the

NBA. This variable is measured between 0-4, 0 meaning a player entered the league straight from high school, 4 signifying a player experienced all four years of college basketball. This variable is created with the idea that the experience of college basketball as well as college coaching may affect a player's skill set when transitioning to the NBA. Also variable *Age* was included which obviously measures each individual player's age when drafted.

Draft position is also accounted for through a variable. The variable *draft#,* controls for a player's perceived skill level upon entering the league. Players that are drafted early are regarded as high potential talents; this affects their entry-level salary, which in return affects a team's commitment to him for the long term.

Also, it is evident that a player drafted in the 2000 draft had a higher likelihood of being cut prior to the 2009-10 season than a player drafted in 2002. This is based on the idea that he had to endure two extra seasons to reach this point. These extra seasons allow for more wear and tear on a player's body, and increase the chance of injury. Dummy variables, *D2* and *D3*, are created to account for what year each player was drafted in reference to the 2000 draft in order to fix this problem.[2]

V. Model

The model used in this study is a logit model constructed to determine the probability a player stays in the league through the 2009-10 season based on the data previously reported. Using this model we can test for discrimination by using the coefficient for the dummy race variable in the logit.

[2] Refer to Table 1 in Appendices for data sources and descriptive statistics

The dependent variable in my model is the *Play* variable, which is simply whether or not a player is still playing during the 2009-10 season. If a player is playing during the final season he receives a 1, and if he is cut prior he receives a 0. This function explains a probability based on the various data statistics listed earlier.

The first part of the model is the *Race* variable, which accounts for whether a player is black or white. It is expected that the race variable will carry no statistical significance. This is based on the hypothesis that exit discrimination in the NBA has disappeared.

The second part of the model is the *Per,* which accounts for all the performance statistics listed in the data set. This part of the model is expected to have a positive relationship with the probability of playing through the 2009-10 season. Simply stated, the greater a player performs in his rookie season should increase his probability of staying in the league.

The third part of the model is *CollegeEXP,* which measures for a player's college experience. It's expected to have a positive relationship with the dependent variable, Play. It's believed that a player who experienced a full four years of college basketball and coaching will have increased his probability of playing through 2009-10. The model also accounts for the age a player was when drafted into the league.

Next is the *Pos* variable which accounts for whether a player is categorized as a guard or forward/center. This dummy variable gives a value of 1 to the forward/center position and a value of 0 to guards. Like previously stated, earlier studies focused on seasons from the 80s era found evidence of discrimination based on height and position. Thus, it is expected that players who occupy the center/forward position to have an increased probability of playing through the 2009-10 season.

Also in the function is the *Inj* variable which again accounts for player's who suffered serious career altering injuries throughout their time in the league. It is expected to have a negative relationship with the probability of playing through the cut off season. In other words, players who receive a 1 for this dummy variable are expected to have a decreased probability of staying in the league.

The *Gplay* part of the model accounts for the amount of games a player saw action in during their rookie season. It is expected to have a positive relationship with the dependent variable. This states that as the number of games a player competes in during his rookie season increases, so does the probability he is still in the league through 2009-10.

Lastly, the model accounts for *Draft#* and *Trades* which accounts for a players draft position and amount of trades during the NBA career, respectively. It is expected that in the case of both of these segments of the model, they will have either a positive of negative relationship with the dependent variable. Thus, a player's probability of exiting the league prior to the 2009-10 season is a function based on race, performance statistics, college experience, position, injuries, games played, draft position, trades, and age.

In summary, the relationship between exiting the league and these variables is modeled as follows:

$$\text{Prob (Y=Play)} = \alpha + \beta_1 Race + \beta_2 Per + \beta_3 CollegeEXP + \beta_4 Pos + \beta_5 Inj + \beta_6 Gplay + \beta_7 Draft\# + \beta_8 Trades + \beta_9 Age + \varepsilon$$

VI. Regression Analysis

The results from a logit regression (QLIM) are essential in determining whether or not a variable is statistically significant, as well reporting a positive or negative correlation. However, it is also important to note that when interpreting the results of a logit regression economically, it is necessary to do so by finding the marginal effect. Thus, parameter estimates, t-values, and p-values derived from the logit regression are only important from a mathematical standpoint. After running the logit regression, or QLIM procedure, results were mixed in reference to expected outcomes for certain variables.

The race variable, *black,* reported a coefficient indicating that it was not statistically significant. This indicates that whether a player is black or white, has no impact on the probability of playing up to or beyond the cut off season 2009-10. This coincides with the hypothesis that racial discrimination at the exit level will have disappeared. Since *black* is the variable of interest, it is indeed economically significant.

However, the variable accounting for how many games a player saw action or competed in during his rookie season was both economically and statistically significant at the 95 percent confidence interval along with reporting a positive parameter estimate. Simply stated, the more games a player recorded time in during their rookie NBA season increased his probability of employment through the 2009-10 season. In other words, as expected *Gplay* has a positive relationship with the dependent variable. In order to interpret the economic significance derived from the logit (QLIM) regression, it is essential to measure for the average of the individual marginal effects. In this case we find a marginal effect value for the *Gplay* variable of 0.294. This accounts for the difference between appearing in no games and all 82 games. This is to say, if a

player appeared in all 82 games of their rookie season he had increased his probability of being employed through 2009-10 by approximately 29 percent. Subsequently, a player who appeared in no games during his rookie season increased his probability of playing by 0 percent. Thus, however many number of games a player participated in during his rookie season correlates to that percentage between zero and twenty nine percent.

In regards to 3-point percentage, free throw percentage, field goal percentage, points, assists, steals, rebounds, and blocks, not one reported values of any statistical or economical significance. It was expected that in some cases, these variables, would explain how a player who recorded superior statistics in a certain performance category would increase his probability of employment through the 2009-10 season. However, like stated in the data section of the study all performance variables are recorded as percentages. It is very conceivable that by entering these performance statistics as percentages skewed their significance in affecting involuntary exit. A player who only played ten minutes during his rookie season who scored three points received the same value, .3, as a player who played a thousand minutes and scored three hundred points. Since it was found that games played is significant at the 95 percent level, a player who logged a high number of minutes has increased his probability of still playing through 2009-10. Subsequently, had performance statistic values been recorded as a raw total, most likely some if not all would report to be both statistically and economically significant.

The variable accounting for draft position, *draft#,* was not statistically or economically significant. This differs from the initial hypothesis that the higher a player was drafted would present a positive relationship with the probability of playing through 2009-10. It was expected that most likely the higher a player was drafted the higher the probability he was still playing during the 2009-10 season. Draft position is a direct reflection of a player's perceived value and

talent upon entering the league, thus it not having an impact on career length differs from perceived expectations.

The variable accounting for trades was also economically and statistically significant at the 99 percent confidence interval. However, this can be interpreted in both directions. This coincides with my initial hypothesis that the number of trades a player is involved in could present both a positive or negative relationship with the probability of exit. It can be explained that a high number of trades could indicate a high opinion of a particulars player's value, resulting in different teams constantly luring that player to their organization with greater financial incentives. However, it could also indicate that teams did not value the player, resulting in the player being dealt from one team to another until eventually being cut.

The variable *CollegeEXP* also showed to be a non-significant variable. This explains that whether a player recorded four full seasons of college basketball or entered the NBA directly from high school was not a significant factor in determining the probability of employment. Unlike the initial hypothesis, the greater the amount of college experience a player has did not report a positive relationship with the probability of continuing play. Subsequently, unlike the initial hypothesis, variable *Age* reported to carry no statistical or economic significance that influences the probability of playing in 2009-10.

Not surprising, however, was the statistical and economic significance of the *inj* variable. Not only was this significant at the 99 percent confidence interval it also reports a negative relationship in terms of employment 7-10 seasons later. When accounting for the marginal effect it reports a value of -0.205, which translates that a player who suffered an injury that resulted in

missing 50 percent or more of a full season has approximately a 21 percent greater chance of not being employed through 2009-10.

The dummy variable for position, *pos*, which separates players into two groups center/forward and guard also reported as non-significant. Unlike previous studies there does not seem to be any discrimination based on position. In other words players who occupy tall positions have no advantage over smaller players at guard positions in terms of career length. Again, this differs from the initial hypothesis that playing the forward or center position would have a positive relationship with probability of still playing through 2009-10.

Both dummy variables that take into account whether a player was drafted in 2001 or 2002 both, as expected, were both statistically and economically significant. Variable *D2,* which accounts for those drafted in 2001, was significant at the 99 percent confidence level. This explains that a player drafted during the 2001 draft had 26 percent greater chance of employment through 2009-10 than a player drafted in 2000. Additionally, dummy variable *D3* which represents those drafted in 2002, was significant the 90 percent level. It reports that a player drafted in the 2002 draft has a 13 percent greater probability of continuing play through 2009-10.[3]

VII. Conclusion & Limitations

Based on the results of the logit (QLIM) procedure it is evident that there is no measurable racial discrimination at the exit level of the NBA. In regards to the hypothesis, it fails to reject the null that beta is equal to zero. Following the same trend illustrated in the literature review, similar to the wage gap, discrimination based on retention has also been eliminated from the NBA. This is evident in the results that clearly report the race variable (*black*) is not statistically significant. It

[3] Refer to Table 2 in Appendices for Marginal Effect and QLIM results

can be stated that the probability of exiting league is no greater for black players in comparison to white counterparts. As stated in the theory section of the study, this is accurate with Becker's theory that in the long run competition will drive discrimination out of the market. Furthermore, it is evident that consumers or fans no longer have a preference that favors white players over black counterparts in the NBA. Previous studies attributed reported discrimination to the consumer; this clearly is no longer true.

The two most influential variables in terms of increasing a player's probability of involuntary exit are injuries (*inj*) and games played (*Gplay*). In other words, a player who competed in a high percentage of games during his rookie season who also did not suffer a major injury had a high probability of extending his career through the 2009-10 season.

Two major limitations to this study are listed as follows:

(1) Again, in reference to the performance statistics, their significance may be more accurately reported by recording their values as raw totals. This would give more accurate results in regard to how a player's performance during his rookie season increased or decreased his probability of exit prior to the 2009-10 season.

(2) Also, this study is limited due to the fact there is no direct comparison to a previous era that reported exit discrimination in the NBA using the same model. This study will be extended in the future by creating an identical data set for players from the 1980-82 drafts, then using the same logit model to compare results from both eras.

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IX. Appendices

Table I Variable Descriptions & Mean Statistics[4]

Variable	Description	Mean	Minimum	Maximum
draft	Year Drafted 2000-02	2000.99	2000	2002
play	Still Playing in 2009-10	0.455782	0	1
Points	Total Points/ Total Min.	0.306463	0	0.58
Assists	Total Assists/ Total Min.	0.065578	0	0.26
Steals	Total Steals/ Total Min.	0.03381	0	0.29
Reb	Total Rebounds/ Total Min.	0.173401	0	0.79
Blcks	Total Blocks/ Total Min.	0.029252	0	0.5
FT%	Free Throw %	0.62915	0	1
FG%	Field Goal %	0.417558	0	1
3p%	3 Point %	0.238755	0	5
Trades	# Of Trades	2.809524	0	9
Draft_	Draft Position	25.97279	1	58
CollegeEXP	Years In College	2.360544	0	5
Black	Race Dummy	0.687075	0	1
Injury	Injury Dummy	0.571429	0	1
GPlay	Games Played Rookie Season	0.566463	0	1
Pos	Position Dummy	0.653061	0	1
Age	Age	20.45578	18	23
D1	2000	0.340136	0	1
D2	2001	0.333333	0	1
D3	2002	0.326531	0	1

[4] Data and statistics from Nbareference.com

Table II QLIM & Marginal Effect Results

Variable	Parameter	Approx Pr>|t|	Marginal Effect
Constant	(-5.789)	0.245	
Draft	(-0.026)	0.156	-0.0035
3p%	2.039	0.142	0.2682
FT%	(-1.7)	0.328	-0.2236
FG%	2.768	0.286	0.3641
Points	3.014	0.296	0.3964
Assists	3.385	0.623	0.4452
Steals	0.717	0.945	0.0944
Reb	1.279	0.659	0.1683
Blcks	0.975	0.871	0.1283
Gplay	2.24**	0.022	0.2947
Trades	0.64***	<.0001	0.0842
CollegeEXP	(-0.011)	0.957	-0.0014
Injury	(-1.563)***	0.003	-0.2056
Pos	0.688	0.353	0.0905
Black	0.144	0.809	0.019
Age	0.024	0.915	0.0032
D2	1.976***	0.002	0.2599
D3	1.014*	0.082	0.1334
***p<.001;	**p<.05;	*p<.01	
99%	95%	90%	

X. SAS

```
data one;
set NBA;
if draft = 2000 then D1=1; else D1=0;
if draft = 2001 then D2=1; else D2=0;
if draft = 2002 then D3=1; else D3=0;
run;

proc corr:
run;

proc means;
run;

proc reg data = one;
model play = Draft_ _p_ FT_ FG_ Points Assists Steals Reb Blcks Gplay Trades CollegeEXP
Injury Pos Black Age D2 D3;
run;

proc qlim;
model Play = Draft_ _p_ FT_ FG_ Points Assists Steals Reb Blcks GPlay Trades CollegeEXP
Injury Pos Black Age D2 D3 /
discrete(d=logit);
hetero ~ Play = Draft_ _p_ FT_ FG_ Points Assists Steals Reb Blcks GPlay Trades CollegeEXP
Injury Pos Black Age D2 D3 ;
run;

proc qlim data = one;

model Play = Draft_ _p_ FT_ FG_ Points Assists Steals Reb Blcks GPlay Trades CollegeEXP
Injury Pos Black Age D2 D3 /

discrete(d=logit);

/*endogenous discrete =(play 0 1);*/

hetero Play ~ Draft_ _p_ FT_ FG_ Points Assists Steals Reb Blcks GPlay Trades CollegeEXP
Injury Pos Black Age D2 D3 ;
run;

output out=outqlim marginal;
run;

proc means data=outqlim n mean;
```

```
    var Meff_P2_Draft_ Meff_P2__p_ Meff_P2_FT_ Meff_P2_FG_ Meff_P2_Points
Meff_P2_Assists Meff_P2_Steals Meff_P2_Reb Meff_P2_Blcks Meff_P2_GPlay
Meff_P2_Trades Meff_P2_CollegeEXP Meff_P2_Injury Meff_P2_Pos Meff_P2_Black
Meff_P2_Age Meff_P2_D2 Meff_P2_D3 ;
    title 'Average of the Individual Marginal Effects';
  run;
```