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Is there a Bias against Foreigners?

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Abstract

Using a panel of National Basketball Association players from 1989 through 2013, we analyze the determinants of career length in the league. In our analysis we include performance, the race of the player and nationality of origin to determine their importance in determining career length. First we find that the performance is an important determinant of career length and that the race of the player does not determine career suggesting that there is no race based exit discrimination. We do find, however, that foreign-born players who did not play college basketball in the United States have shorter careers than do American-born players holding performance constant. We suggest that exit discrimination exists for immigrant workers in the NBA where fans have a preference for players who were native-born or played college basketball in the United States.

JEL Classifications: Z22, L83

Keywords: National Basketball Association, discrimination, and professional sports.

Introduction

Exit discrimination is defined as the involuntary termination of employment due to a particular innate characteristic of the worker. For example, exit discrimination exists when a worker is terminated because of their race or country of birth even when they are as productive as other workers. We test for exit discrimination against foreign-born players in the National Basketball Association (NBA) using a panel of players from 1989 through 2013 and focusing on whether there are systematic differences in career length between American and foreign-born players of similar playing ability. We posit that the influx of foreign-born players in the NBA could lead to exit discrimination if the NBA chooses to retain native-born players over foreign-born players.

As employers pursue talent, labor markets have increasingly become more international. For instance, in the United States in the health care profession 27% of surgeons are foreign-born while in the education profession 40% of engineering professors are foreign-born. Aslanbeigui and Montecinos (1998) estimated that in the 1990s approximately 30% of US economics professors were foreign-born. The internationalization of labor markets has led researchers to question whether foreign workers are more productive because of self-selection on the part of immigrants (Borjas and Bratsberg, 1996), less productive due to language and cultural differences than native-born workers (Dustmann and Soest, 2002) or are foreign-born workers discriminated against (Aslund et al., 2014)? All sports leagues in pursuit of the most talented players have international labor markets. For instance, in 2014, twenty-five percent of Major League Baseball were foreign-born and in the National Hockey League fifty- one percent of the players were born in Canada, twenty-four percent born in the United States and twenty-five percent born in Europe.

Sports leagues provide a fertile ground to further the research on immigration due to the increasing degree of internationalization of sports leagues. For instance, Kahane, Longley and Simmons (2013) find that NHL teams who employ higher proportion of Europeans perform better given the Europeans are from the same country than teams with less Europeans or Europeans from many different countries. Alverez et al. (2011) analyzing soccer data find that increases in the number of international players in a domestic league tends to generate improvements of a national team that is only comprised of domestic players.

Focusing of the National Basketball League, Eschker, Perez, and Siegler (2004) find that there was a premium paid to international players for the 1996-97 and 1997-98 seasons due to a “winner’s curse” in the market from the an inability of scouts and general managers to properly evaluate the worth of foreign-born players who did not play college basketball in the U.S. More recently using an unbalanced panel dataset (1999-2008) and a two-stage double fixed-effect model Yang and Lin (2012) find evidence of salary discrimination against international players. Hoffer and Freidel (2014) using data from the 2010-2011 season, however, find the opposite with foreign-born players paid a premium in the NBA. Hill and Groothuis (2015) using a panel study from 1989-2013 fail to find either wage discrimination or a wage premium paid to foreign-born players in the NBA and suggests that previous results were not robust.

In sports leagues discrimination may arise if fans, managers, or other players prefer native-born players over immigrants. For instance, many European soccer leagues limit the number of foreign-born players on a team by requiring that at least eight players on the team are locally-trained. In the Kontinental Hockey League, Russian teams are not allowed more than five foreign players. Although no U.S. league explicitly limits the number of foreign-born players, teams may still discriminate against foreign players due to fan, player, or management preferences.

Exit discrimination has a long history in sports economics. Johnson and Marple (1973) pioneered this branch of discrimination research when they found evidence from 1970-71 NBA data that marginal White players had longer careers than marginal black players. Hoang and Rascher (1999) more formally developed a model to explore the concept of racially-based retention barriers in the NBA. They, too, found evidence that, performance being equal, there was exit discrimination in the NBA. Groothuis and Hill (2004) failed to confirm Hoang and Rascher's results using more recent data, adding height as an added explanatory variable, and using a duration model that allows for both stock and flow samples. In addition, Ducking, Groothuis, and Hill (2015) find no racial based exit discrimination in the NFL.

Jiobu (1988) found evidence that race decreased career length, *ceteris paribus*, for black players but not Hispanics in Major League Baseball from 1971-1985. Again, Groothuis and Hill (2008) failed to find exit discrimination in MLB using more recent data from 1990-2004 either for black or internationally-born Hispanic players. Depken, Ducking and Groothuis (2015), however, do find that European-born hockey players have shorter careers than North American-born players suggesting that foreign-born exit discrimination may exist.

Theory

The textbook definition of discrimination in the labor market implies that certain individuals or groups of workers are treated differently than others unrelated to ability or performance. As discussed above, labor economists have explored a variety of formats for this differential treatment. Exit discrimination may represent the most recent path of research in the field. Hoang and Rascher (1999) define exit discrimination as "the involuntary dismissal of workers based on the preferences of employers, coworkers, or customers." Research on this topic assumes that all turnover is involuntary; Kahn (1991, p. 406) argues that the high salaries paid in sports make voluntary quits unlikely.[1] Thus, these studies are essentially survival models. If domestic players have longer careers than foreign players with similar performance statistics then exit discrimination is said to exist[2].

Jiobu (1988) and Hoang and Rascher (1999) apply exit discrimination to race and conclude that career length for black players in Major League Baseball and the NBA, respectively, were lower than their White counterparts, *ceteris paribus*. While Jiobu does not make any calculations on the impact of exit discrimination on career earnings, Hoang and Rascher (1999) conclude that this form of discrimination led to almost a two and a half times greater decrease in black career pay compared to the more commonly analyzed pay discrimination.

The motivation behind this form of discrimination could obviously come from personal prejudice on the part of owners/coaches or fans. Hoang and Rascher (1999) focused on customers as the possible source of the prejudice; the pay premium for White players was explained by the higher value of their performances compared to black players because of the prejudiced preferences of White, majority fans. Hoang and Rascher (1999, p.74) hypothesized:

> "To satisfy the fans, there is a minimum number of White players on a team. The second assumption, that the pool of quality available talent is becoming increasingly black, causes annual replacement of players with rookies to occur mostly among black players. The White players have longer careers simply because there are fewer qualified White rookies to replace them,…"

In his study of exit discrimination in Major League Baseball, Jiobu (1988, p.532) does not specifically test for customer discrimination but he does state:

> "Perhaps, motivated by the concern that White fans will not support a predominantly black team, management has silently placed an "invisible ceiling" on the black percentage. When

coupled with the desire to have a winning team, this ceiling would generate strong pressures to (a) employ as many black players as possible in order to capitalize on their performance, but (b) in order to remain under the ceiling, to eliminate black players as soon as their performance declined, and (c) to retain White players of declining but similar ability."

Given the large influx of foreign-born athletes in the NBA today, the two arguments advanced above could easily be applied to foreign-based exit discrimination. Teams in the pursuit of talent choose foreign workers but replace them sooner than players who fans prefer. Our current research attempts to address this gap in the sports economics literature on discrimination against foreign-born players by using a semi-parametric hazard model to test for differential survival patterns between American-born and foreign-born professional basketball players in the NBA.

Semi-parametric Analysis of Career Duration

We use a panel describing all players in the NBA from 1989 to 2013. We estimate semi-parametric hazard functions following Berger and Black (1998) and Groothuis and Hill (2004). Because the data are reported at the season level we calculate the hazard rate as a discrete random variable. As with Groothuis and Hill (2004), we model the durations of a single spell and assume a homogeneous environment so that the length of a particular spell is uncorrelated with the calendar time at which the spell begins. This assumption lets us treat all the players' tenure as the same regardless of when it occurred in the panel study. For instance, all fourth-year players are considered to have the same base line hazard regardless of calendar time, so a fourth-year player in 2000 has the same baseline hazard as a fourth-year player in 2009.

To understand how stock data influence a likelihood function we follow the notation of Groothuis and Hill (2004). Suppose the probability mass function (pmf) of durations is defined as $f\ (t, x, \beta)$, where t is the duration of the career, x is a vector of performance and personal characteristics, and β is a vector of parameters. Denote F(t,x,β) as the cumulative distribution function; the probability that a career lasts at least t° years is then 1 - F(t°,x,β). Defining the hazard function as h(t,x,β) ≡ f(t,x,β) / S(t,x,β) and applying the definition of conditional probabilities, the pmf can be expressed as

(2) $$f(t_i, x_i, \beta) = \prod_{j=0}^{t_i - 1} [1 - h(j, x_i, \beta)] h(t_i, x_i, \beta).$$

If we have a sample of n observations, {t1, t2, . . ., tn}, the likelihood function of the sample is

(3) $$L(\beta) = \prod_{i=1}^{n} f\ (t_i, x_i, \beta) = \prod_{i=1}^{n} \left(\prod_{j=1}^{t_i - 1} [1 - h(j, x_i, \beta)]\, h(t_i, x_i, \beta) \right).$$

Often it is not possible to observe all careers until they end, hence careers are often right-censored. Let the set A be all observations where careers are completed during the sample period and the set B be all observations where careers are right-censored. For the set B , all we know is that the actual length of the career is greater than t_i, the observed length of the career up through the last year. Because we know that the actual length of the career is longer than we observe then the contribution of these observations to the likelihood function is just the survivor function,

$$S(t, x, \beta) = \prod_{i=1}^{t-1} [1 - h(i, x, \beta)].$$

To introduce stock sampling, let the set C be the careers that were in progress when data collection began. For these observations, we know that the career for player *i* has lasted for *r* years before the panel begins so the likelihood must be adjusted by the conditional probability of the career having length *r*. Of course, some stock-sampled observations may be right-hand censored. Let the set D be all stock-sampled observations that are also right-hand censored. An example of a career that is both right- and left-censored would be a player who starts his career prior to 2000 and ends his career after 2010. Taking into account all four sets: A, B, C, and D the likelihood function becomes

$$L(\beta) = \prod_{i\in A}\left(\prod_{j=1}^{t_i-1}[1-h(j,x_i,\beta)]\,h(t_i,x_i,\beta)\right) \times \prod_{i\in B}\left(\prod_{j=1}^{t_i-1}[1-h(j,x_i,\beta)]\right)$$

$$\times \prod_{i\in C}\left(\prod_{j=r_i}^{t_i-1}[1-h(j,x_i,\beta)]\right) h(t_i,x_i,\beta) \times \prod_{i\in D}\left(\prod_{j=r_i}^{t_i-1}[1-h(j,x_i,\beta)]\right) \quad (4)$$

In equation (4), the contribution of censored, stock-sampled observations to the likelihood function is strictly from the last two terms; such observations simply provide information about the survivor function between (r,t).

Thus we, as Groothuis and Hill (2004), have expressed the likelihood function as a function of the hazard functions. All that remains is to specify the form of a hazard function and estimate by means of maximum likelihood estimation. As the hazard function is the conditional probability of exiting the NBA given that the NBA career lasted until the previous season, the hazard function must have a range from zero to one. In principle, any mapping with a range from zero to one will work. Cox (1972) recommends

$$\frac{h(t,x,\beta)}{1-h(t,x,\beta)} = \frac{h_t}{1-h_t}e^{x\beta} = \exp(\gamma_t + x\beta) \quad (5)$$

which is simply the logit model with intercepts that differ by time periods. The term h_t is a baseline hazard function, which is common to all observations. The $x\beta$ term, determined by the player's personal and productivity characteristics, shifts the baseline hazard function, but it affects the baseline hazard function in exactly the same way in each period. Berger and Black (1999) consider other hazard functions and find that their results are relatively robust across various specifications of the hazard function. As the logit model is available in many software packages, we follow Cox and use the logit model.

The intuition behind equation (5), when using the logit model for the hazard function, is relatively simple. For each year during the survey in which the player is in the NBA, the player either comes back for another season or ends his career. If the career ends, the dependent variable takes on a value of one; otherwise, the dependent variable is zero. The player remains in the panel until the player exits the NBA or the panel ends. If the panel ends, we say the worker's spell is right-censored. Thus a player who begins his NBA career during the panel and plays for 6 years will enter the data set 6 times: the value of his dependent variable will be zero for the first 5 years (tenure one through five) and be equal to one for the sixth year.

To illustrate a stock observation, consider another player who enters the panel with 7 years of NBA job tenure prior to 1989 the first year of the panel, then plays for an additional 3 years for a 10 year career. For this player, we ignore his first 7 years of tenure because he is left-censored. As the equation of the likelihood function with stock data indicates, the duration of a NBA career prior to the beginning of the panel makes no contribution to the value of the likelihood function. Therefore only years 8 through 10 will enter the data set with the dependent variable taking on the value zero for year 8 and 9 and in the 10^{th} year it takes on a value of one, this player appears in the data set a total of 3 times. Note, for all players who are right-censored, we do not know when their careers end, so their dependent variables are always coded as zero.

Because the players in the panel have varying degrees of job tenure prior to the beginning of the panel, we identify the hazard function for both long and short careers. The disadvantage to this approach is that the vector γ_t of equation (5) can be very large. In our study it would require 25 dummy variables. We also run into problems with the Cox technique because we have too few players who have long careers. To simplify the computation of the likelihood function and to be able to keep the long careers, we approximate the γ_t vector with a 5^{th} order polynomial of player's tenure, which reduces the number of parameters to be estimated from 25 to 5. Thus, the hazard function becomes

$$(6) \qquad \frac{h(t,x,\beta)}{1-h(t,x,\beta)} = \Phi(t)\, e^{x\beta} = \exp(\phi(t) + x\beta),$$

where $\phi(t)$ is a 5^{th} order polynomial in the worker's tenure. We choose the Taylor series approximation technique over using tenure dummies due to the small number of observations for high tenures. This method provides a very flexible specification of the baseline hazard, but does impose more restrictions than Cox's model.[3]

Dataset, Variables, and Results

The dataset for our analysis includes all players in the NBA from the 1989-90 season thru the 2012-13 season. Variables used to measure on-court performance include points scored per game, rebounds per game, assists per game, steals per game, turnovers per game, blocks per game, and games played. Experience, experience squared, experience cubed, and experience to the fourth and fifth power are included as described above for equation 6. A dummy variable for White players is included in different models. In our analysis we use three measures of being foreign-born; the first dummy variable, foreign-born, is equal to one if the player was born outside the U.S. and its territories to non-U.S. citizens, the second dummy and third dummy variable divide the first dummy variable into two groups based on those who played collegiate basketball in the United States and those who did not. Age at the start of the season is also included to capture the wear and tear factor on a player's body that may cause retirement. Lastly, a player's draft number is included to capture any effects on duration over and above on-court performance.

In table 1, we report the means of the variables. In column 1 we report the means for all players. This column shows that from 1989-2013 that eleven percent of the observations in dataset were foreign-born. A closer look at the growth of foreign-born players in the league, not shown in Table 1, reveals that for the 1989-1990 season there were 19 foreign-born players, 4 with no college experience and 15 with college experience. By the 2012-2013 season these figures had escalated substantially, particularly for those without college experience; there were 77 foreign-born players, 59 without college experience and 18 with college experience.

In the next columns we compare the means of foreign-born to native-born players. The comparison suggests that foreign-born players are on average over two inches taller than native-born players. Another interesting comparison reveals that while foreign-born players without college are overwhelming White, the opposite is true for those with college experience. Comparing the performance statistic shows that foreign-born players have more rebounds and blocks, functions of height, and fewer points and assists. Foreign-born players with college experience are chosen earlier in the draft than foreign-born players who do not. Overall, the means suggest that the NBA uses the international market to obtain the tallest players. It also suggests that college basketball in the United States prepares players for the NBA or provides a signal for future productivity in the NBA.

In Table 2, we report the results of estimating equation (6) for seven different specifications to show the robustness of our results. In all seven specifications, we find that performance increases career length (or decreases the likelihood of exit) with the coefficients points per game, rebounds per game, assists per game, blocks per game, and games played per season all negative and significant. In addition, we find that the coefficient of draft number does not have any significant impact on career length. Additionally, height only appears to decrease the probability of exit in models 4 and 5 and only at the 5% level of significance. These results suggest that performance variables capture the influence of height and draft number on career length. We do find, however, that the coefficient on age is positive and significant suggesting that older players are more likely to exit than younger players, ceteris paribus. This result suggests that age captures the wear and tear on the body from playing in the NBA. We also find that the race of the player does not influence career length showing that racial-based exit discrimination is not present in today's NBA.

We do find that being foreign-born matters. In column 1, we find that the coefficient on being foreign-born is positive and significant suggesting that all foreign players have a higher probability of exit. In column two we use the two categories of being foreign-born based on whether the player collegiate basketball in the United States. We find that the coefficient on foreign-born is positive and significant for foreign-born/no college but insignificant for foreign-born with college. Our results suggest that exit discrimination exist for foreign-born players who did not play college basketball in the United States.

To test the robustness of our results we estimate various specifications that include variables that are correlated with our foreign-born dummy variables. The results do not change. The coefficient on foreign-born/no college is always positive and significant; the coefficient of foreign-born/college is never significant. Since 80% of the foreign-born/no college observations are White we exclude all the foreign-born dummies from model 7 to see if these dummies are masking racial discrimination; the coefficient of White is not significant.

Our results are consistent with exit discrimination where foreign-born basketball players have shorter careers because of either fan preference for American-born players, or employee discrimination that might arise with possible language or cultural differences (see Kahane, 2013).

It also suggests that college experience in the United States minimize the influence of exit discrimination for foreign-born athletes. It could be that fan loyalty to a player is established for collegiate experience or it could be that collegiate experience trains foreign-born players on how basketball is played in the United States.[4]

To get a feel for the magnitude of exit likelihood, we convert the coefficients into a percentage change by using 100(exp(β)-1) for the dummy variable in specification two. We find that for foreign-born players including those who did not play collegiately in the United States have a 70% higher likelihood of exiting than a native-born player, holding performance constant. Our results suggest that although there has been a large influx of foreign players, exit discrimination or other reasons limits the proportion of foreign players in the NBA to a smaller percentage than performance would suggest.

Conclusion

We find that foreign-born basketball players have shorter careers than their performance statistics would suggest ceteris paribus. In particular, foreign-born players who did not have collegiate experience in the United States have the highest likelihood of exit. Our statistical evidence is consistent with exit discrimination but it is not possible to identify whether such discrimination is customer-based, player based, or owner-based. On the other hand, our evidence is also consistent with players leaving early to play in other leagues in Europe and there is anecdotal evidence that some players choose to retire from the NBA and end their careers in their home countries.[5]

Table 1: Descriptive Statistics for Variables					
Variable	Mean/(Standard Deviation)				
Foreign-Born	0.11 (0.32)	Foreign-Born		Foreign-Born/ No College	Foreign-Born/ College
		=1	=0	=1	=1
Foreign-Born No College	0.07 (0.26)	0.62 0.49	0 (0)	1 (0)	0 (0)
Foreign-Born College	0.04 (.21)	0.38 0.49	0 (0)	0 (0)	1 (0)
White Dummy	0.22 (0.41)	0.64 (0.48)	0.16 (0.37)	0.80 (0.40)	0.38 (0.49)
Age at start of Season	27.21 (4.31)	26.61 (4.18)	27.29 (4.32)	25.78 (3.79)	27.94 (4.43)
Draft Number	28.90 (23.40)	29.04 (21.91)	28.88 (23.59)	31.67 (21.88)	24.82 (21.32)
Years of College	3.11 (1.35)	1.32 (1.76)	3.35 (1.09)	0.00 (0.00)	3.44 (0.88)
Year	2001.43 (7.18)	2004.29 (6.40)	2001.06 (7.19)	2005.85 (5.41)	2001.78 (7.06)
Height (inches)	79.09 (3.74)	81.54 (3.56)	78.77 (3.64)	81.45 (3.56)	81.69 (3.55)
Rebounds per Game	3.60 (2.56)	4.14 (2.81)	3.53 (2.52)	3.94 (2.56)	4.45 (3.15)
Assists per Game	1.86 (1.87)	1.50 (1.68)	1.90 (1.89)	1.59 (1.57)	1.37 (1.83)
Blocks per Game	0.43 (0.52)	0.62 (0.70)	0.40 (0.48)	0.54 (0.56)	0.74 (0.86)
Steals per Game	0.67 (0.48)	0.55 (0.39)	0.69 (0.48)	0.58 (0.41)	0.51 (0.36)
Turnovers per Game	1.24 (0.81)	1.24 (0.77)	1.24 (0.82)	1.21 (0.70)	1.28 (0.87)
Points per Game	7.98 (6.02)	7.61 (5.82)	8.03 (6.04)	7.70 (5.72)	7.48 (5.98)
Games	54.31 (24.94)	54.04 (24.50)	54.34 (25.00)	54.47 (23.92)	53.34 (25.41)
Experience (seasons)	4.60 (3.98)	3.81 (3.68)	4.71 (4.01)	3.26 (3.24)	4.69 (4.15)
# of Observations	10,787	1,239	9,548	764	475

Table 2: Exit Logit Models of NBA Duration							
Independent Variables	1	2	3	4	5	6	7
Foreign-Born	0.32 (2.18)*						
Foreign-Born No College		0.679 (3.05)**	0.633 (4.98)**	0.619 (4.60)**	0.600 (4.48)**		
Foreign-Born College		0.116 (0.67)	0.107 (0.62)	0.230 (1.39)		0.154 (0.94)	
White Dummy	-0.027 (-0.32)	-0.063 (-0.71)					0.118 (1.45)
Age at start of Season	0.151 (3.75)**	0.146 (3.67)**	0.145 (3.92)**				
Draft Number	-0.003 (-1.33)	-0.003 (-1.46)	-0.003 (-1.47)	0.002 (1.21)	0.002 (1.2)	0.002 (1.24)	0.002 (1.17)
Years of College	-0.058 (-1.39)	0.003 (0.07)					
Year	0.005 (0.82)	0.006 (1)	0.006 (1.08)	0.002 (0.36)	0.002 (0.42)	0.006 (1.14)	0.006 (1.27)
Height (inches)	-0.02 (-1.53)	-0.019 (-1.44)	-0.022 (-1.69)	-0.027 (-2.14)*	-0.025 (-1.99)*	-0.015 (-1.19)	-0.019 (-1.47)
Rebounds per Game	-0.144 (-4.04)**	-0.144 (-4.06)**	-0.144 (-4.05)**	-0.133 (-3.79)**	-0.135 (-3.83)**	-0.141 (-3.99)**	-0.141 (-3.99)**
Assists per Game	-0.131 (-2.54)*	-0.13 (-2.51)*	-0.134 (-2.63)**	-0.139 (-2.73)**	-0.137 (-2.70)**	-0.124 (-2.47)*	-0.133 (-2.61)**
Steals per Game	-0.015 (-0.1)	-0.031 (-0.21)	-0.024 (-0.16)	-0.057 (-0.38)	-0.065 (-0.44)	-0.068 (-0.45)	-0.059 (-0.4)
Blocks per Game	-0.657 (-3.83)**	-0.639 (-3.71)**	-0.628 (-3.69)**	-0.661 (-3.90)**	-0.65 (-3.82)**	-0.665 (-3.93)**	-0.636 (-3.74)**
Turnovers per Game	-0.061 (-0.51)	-0.053 (-0.45)	-0.049 (-0.41)	-0.083 (-0.71)	-0.076 (-0.65)	-0.064 (-0.55)	-0.052 (-0.44)
Points per Game	-0.099 (-6.51)**	-0.098 (-6.49)**	-0.098 (-6.46)**	-0.097 (-6.66)**	-0.097 (-6.71)**	-0.097 (-6.65)**	-0.097 (-6.66)**
Games	-0.034 (-18.30)**	-0.034 (-18.39)**	-0.034 (-18.42)**	-0.034 (-18.58)**	-0.034 (-18.59)**	-0.034 (-18.45)**	-0.034 (-18.52)**
Constant	-11.282 (-0.97)	-13.413 (-1.16)	-13.84 (-1.21)	-1.95 (-0.19)	-2.779 (-0.27)	-10.546 (-1.06)	-11.534 (-1.16)
Observations	10787	10787	10787	10787	10787	10787	10787
Robust z-statistics in parentheses:* significant at 5%; ** significant at 1% Fifth order tenure polynomial included.							

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[1] Yang and Lin (2012) state: "The average salary of star players of European leagues approximates US$ 1 million. On the other hand, the average salary of NBA players was US$ 5.356 million during the 2007-2008 season."

[2] In the present case some of the exit might be employee initiated particularly if outside opportunities exist such as playing in the Russian KHL.

[3] When higher order polynomials of the sixth and seventh power are included the results do not change, suggesting that a fifth order polynomial is flexible enough to capture the influence of the base line hazard
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[4] We are indebted to a participant at the SEA 2015 conference for suggesting the first part of this statement during the presentation of this paper.

[5] A participant at the presentation of this paper at the 2015 SEA conference claimed to have first-hand knowledge of this in a few instances.