Examining the Impact of Foreign NBA Players on the Wages and Employment of American Basketball Players

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Spring 2016

Abstract

This paper analyzes the impact that the influx of foreign players has had on the salaries and labor market outcomes of domestic players in the National Basketball Association (NBA). The study builds on previous literature in the field of labor economics by examining this research question in a highly specialized labor market with a rigid salary structure. First, an unbalanced panel data set at the player-year level from 1990-2008 is used in combination with a log-linear regression model to estimate the impact that the number of foreign players in the NBA has on the wages of domestic players. Results are insignificant. A handcrafted dataset tracking the careers of Chad Ford's top 50 American prospects from 2001 through 2015 is used with a series of ordered logistic regressions to examine foreign players' impact on the career length and outcomes of American players. Additional ordinary least squares regressions are used to estimate the career quality of American prospects by the quality of the leagues in which they played. Results of all regressions investigating the career outcomes of American prospects are also insignificant.

I. Introduction

Since at least the early 1980s, economists have attempted to examine the impact that immigrants have had on both the employment and wages of domestic workers, but researchers have arrived at no decisive conclusions. In recent years, studies have shifted focus to examining the effects on domestic workers in highly-skilled labor markets, but results remain inconclusive. This paper expands on the literature investigating the effects of immigrants on domestic workers in high-skilled labor markets by examining the National Basketball Association (NBA). The NBA's fixed number of employment opportunities and its rigid salary structure[1] distinguish it from other high-skill labor markets.

Using player-level salary payout data from the 1990-2008 NBA seasons, this research finds that wage effects on domestic players are not observable, most likely due to the new equilibrium wage falling below the wage floor implemented through the NBA's minimum salary regulations.

To capture the effect of the increase in foreign players, American professional prospects' employment and career quality are then examined. Using ordered logistic regressions, the impact that the increase of foreign players has had on the career length of Chad Ford's top 50 American NBA draft prospects from the years 2001-2015 is examined. Chad Ford's prospects serve as a proxy for the American players who would have been drafted into the NBA if the influx of foreign players had not occurred. American prospects' NBA careers and total professional careers ranging from 3 years after their draft year to 10 years after their draft year are not impacted by an increase in the percentage of foreign players in the NBA. A final series of ordinary least squares regressions

[1] NBA salaries are subject to a salary cap, which is pre-determined by the collective bargaining agreement (CBA), a contract agreed upon by the commissioner, players, and owners. The CBA sets the salary cap as a percentage of the league's projected basketball-related income for the coming years (Coon, 2011).

using league quality as a measure of the quality of prospects' careers also yields insignificant results for careers of all lengths.

The structure of the paper is as follows: Part II briefly discusses the global expansion that the NBA has undertaken in the past 25 years. Part III further describes the unique salary and employment structure of the NBA. The existing literature is summarized in Part IV. Data used in the study is described in Part V. Foreign players' impact on domestic NBA players' wages is examined in Part VI. Parts VII-IX present the methodologies and results of three different attempts to estimate the impact of foreign players on American prospects' career quality. Results and alternative hypotheses are discussed in Part X, and Part XI concludes.

II. Globalization of the NBA

100 foreign players were listed on opening-night rosters for the 2015 season[2] (NBA, 2015). Over the period examined in the study, the number of foreign players increased from 17 in 1990 to 73 in 2008, while the percentage of NBA roster positions held by foreign players has increased from 4.2% to 16.2% over the same period. The increase in the number of foreign players has corresponded to the NBA's increased efforts to boost its popularity and generate revenue from outside the United States. These efforts have included instructional clinics for foreign coaches, youth basketball camps, and exhibition and regular season games held overseas.[3]

The league's efforts to bolster its international presence have been largely successful as overseas NBA popularity has grown, as evidenced by more countries broadcasting NBA games.[4]

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[2] Throughout the paper, seasons are denoted by the year in which they began. For example, 1990 denotes the 1990-91 season, 1991 denotes the 1991-92 season, etc.

[3] Since 1990, the NBA had played regular season or preseason games in the Caribbean, Mexico, Europe, and Asia. The NBA's first World Coaching Clinic also took place in 1990. The NBA's first large-scale overseas youth camp took place 2 years later in 1992 (NBA, 2016).

[4] The finals reached 215 countries and territories (Jessop, 2012) as compared to the 1996 NBA Finals, which was only viewed in 169 countries (NBA, 2016).

The NBA's successful efforts to cultivate the game overseas has allowed the league to benefit both from a larger supply of talented players and increased overseas revenues from a larger international fan base.

III. The NBA Labor Market

The NBA's salary structure is much more inflexible than those of most other labor markets. In addition to being subjected to a soft salary cap,[5] which limits the amount a team can pay its entire roster, teams' salary payouts are also restricted by league rules mandating minimum and maximum salaries, as well as further stipulations for the salary payouts for players selected in the first round of the draft.[6] Because of the salary restrictions in place, changes in wages due to an increase in the labor supply may not be observable. As the labor supply increases, the NBA's equilibrium wage may fall below the wage floor set by the minimum salary restrictions.

Expansions and contractions of employment opportunities in the NBA labor market also occur more slowly than those of other industries. Throughout the league's history, the number of available roster spots has remained nearly constant, making quick, large-scale layoffs or hirings based on the league's success or economic conditions impossible (Sheriden, 2012). The only available option for a large-scale increase or decrease in the number of roster positions would be through the addition of new franchises or the removal of existing ones, which has proven to be a

[5] The league's salary cap is considered soft because a team is able to exceed the cap, while incurring a luxury tax penalty. The amount by which a team exceeds the salary cap and its status as a "repeat offender" determine the amount of money it is taxed. Teams may also exceed the salary cap legally through a number of exceptions designed to allow a team to retain its own players. Teams that have exceeded he salary cap through legal exceptions are not taxed (Coon, 2011).

[6] All players selected in the first round of the draft receive guaranteed two-year contracts with the team having the option to retain the player for a third and fourth year. Contract amounts for each pick are predetermined by the NBA's collective bargaining agreement, and teams have the option to pay up to 120 percent of this predetermined amount or pay as little as 80 percent (Belzer, 2015). Players in the second round are not subject to predetermined salaries and often receive shorter, non-guaranteed contracts around the league's minimum salary. The amount players can make is further restricted by a salary minimum and maximum dictated by the collective bargaining agreement. These amounts are determined by the number of years a player has been in the league (Coon, 2011).

slow process.[7] Because of the fixed number of players, employment becomes a zero-sum game, so a foreign player entering the league denies access of an American player into the NBA labor market.

IV. Literature Review

In one of the earliest papers on the subject, Grossman (1982) uses cross-sectional data of the United States population in 1970 in a theoretical model to estimate the impact of an influx of low-skilled immigrants on the native population. She finds that both short-term employment elasticity and long-term wage elasticity of natives experience a small, but not negligible, effect from immigration. Both employment and wages are slightly negatively impacted by an increase in foreign workers. She also finds that immigrants substitute for second-generation workers much more effectively than for native workers. Grossman's results are contradicted by Card (1990) who uses cross-sectional data from years surrounding the sudden arrival of Cuban immigrants to Miami as a natural experiment to examine the nearly instantaneous increase of Miami's low-skilled labor supply after the Mariel boatlift in 1980. He finds no effect on wages or employment of the city's low-skilled natives. Card hypothesizes that an increase in labor supply also results in an increase in consumption, which can boost employment. Borjas et al. (1996) argue that a basic assumption of the cross-sectional studies is violated in reality, thus, nullifying the results. The researchers argue that these studies assume immigration leads to an increase in the local labor supply. This is not necessarily true in reality because an inflow of immigrants may cause native workers to migrate to another region, and the labor supply may not be impacted.

[7] Since the 1994 season, only three teams have been added to the NBA.

More recently, economists have begun investigating the impact of immigration inflows on the wages of high-skilled individuals. Borjas (2005) examines the effect that foreign doctoral students who remain in America have on the wages of their American counterparts. He constructs a panel data set from responses to the Survey of Earned Doctorates and the Survey of Doctoral Recipients. Consistent with studies on low-skilled labor that have found a small negative impact on domestic wages, Borjas finds that a 10 percent immigration-induced labor supply, a huge increase, lowers the wages of competing domestic workers by 3 percent. Maani & Chen (2012) find that immigration has no adverse effect on high-skilled domestic wages when examining the wages of highly educated New Zealanders. The researchers use cross-sectional data from the Household Labour Force Survey and the New Zealand Income Surveys.

Though this research question has been examined in a variety of labor markets, researchers have yet to examine the immigrant effects in a professional sports labor market. Most of the works in sports labor economics investigating the NBA have focused on wage discrimination for foreign players. Eschker et al. (2004) estimate a log-linear model with contract and performance data from all players in the NBA in the 1996 season and track their wages until the 2001 season. They find that controlling for performance, foreign players initially earned a wage premium in the 1996 and 1997 seasons, but the premium then disappeared. They hypothesize the existence of the wage premium was due to NBA teams' inexperience evaluating foreigners and causing them to initially overbid for foreign talent. In opposition to Eschker et al., Yang & Lin (2010) find foreign players suffer from wage discrimination when using a two-stage double fixed-effect model to analyze an unbalance panel data set of 618 NBA players between the 1999 and 2007 seasons. They employ this model because home country is a time invariant determinant of salary that cannot be properly estimated by an ordinary least squares or panel data estimate of the wage equation. The first-stage

fixed-effect regression determines the individual-specific wage premium, and the second-stage fixed-effect regression estimates the effects of nationality and overseas market size on the salaries of international players.

By examining the impact that foreign players have on domestic wages in the NBA, this paper expands on the existing literature in the field of labor economics by investigating immigration wage effects in a new arena with unique characteristics. It also supplements previous sports economics research investigating player salaries.

V. Data Overview

Two separate datasets are used for this study. The first is an unbalanced panel data set consisting of entries at the player-year level spanning from the 1990 season through the 2008 season. Each data entry is an individual player's salary payout for that year, characteristics for that year, and career performance statistics up to and including the year prior to that specific salary payout. Salary payout data is taken from Rodney Fort's *Sports Economics* – Sports Business Data. The performance metrics, player efficiency rating (PER)[8] and minutes played, as well as age are taken from Basketball-Reference.com. Each player's country of birth and nationality is taken from Basketball-Reference.com. This allows for the creation of a dummy variable to identify foreign players when the data is merged.

The second data set is a handcrafted, wide-format panel data set tracking the careers of the top 50 American prospects[9] in Chad Ford's top NBA prospects lists from the 2001 draft to the

[8] The player efficiency rating (PER) is a rating of a player's per-minute productivity. It is generated through a number of formulas that take into account positive accomplishments such as field goals, free throws, 3-pointers, assists, rebounds, blocks and steals, and negative ones such as missed shots, turnovers and personal fouls. PER is constructed so an average NBA player has a value of 15 (Hollinger, 2011).

[9] 50 American prospects are used because it is the largest amount of players for which reliable career outcomes could be found for every draft year. Chad Ford's early lists did not include 100 prospects. By only including American prospects, this number is decreased. It is further decreased due to data limitations for lowest ranked prospects.

2015 draft. Chad Ford's list provides a ranking of the top players, both foreign and domestic, entering the upcoming year's draft. Examining only the American prospects on the lists provides insights into a counterfactual situation. Only investigating the American players on Chad Ford's lists simulates a scenario in which no foreign players were to enter the NBA. Without the increase in foreign players, these are the American prospects who would have been drafted into the NBA. These players would not be observable if only draft selections were used in the data set. The league and year in which each top 50 American prospect appeared is recorded in the data.[10]

VI. Foreign Player's Impact on American Players' Salaries

i. Methodology

EQUATION 1:

$$\ln Salary = +\beta_0 + \beta_1 PercentageForeign + \beta_2 Lockout + \beta_3 NBARosterSpots + \beta_4 SalaryCap + \beta_5 CareerPER + \beta_6 TotalMinutesPlayed + \beta_7 Age\text{^}2 + \beta_8 Forward + u$$

Equation 1 is used to estimate the effects of an increase in the percentage of foreign players in the NBA on the salaries of the domestic players in the league. The coefficient of interest is isolated through individual player performance and trait control variables and year-specific league control variables.[11] The most important of such league control variables is a salary cap control, which controls for the increasing wages of NBA players over time. The coefficient of interest is interpreted as the average percent change in domestic players' wages associated with a one percentage-point increase in the percentage of foreign players in the NBA.

[10] Players' careers are tracked through their individual pages on Wikipedia. For players that appeared in multiple leagues during the same season, the league in which the individual played the greatest number of games during that season is used.
[11] A description of all control variables is provided in the Appendix.

ii. Results

Table 1: Foreign Impact on Domestic NBA Player Salaries				
Percentage Foreign	Coefficient	-0.000494	**Career PER**	0.0765***
	T-Stat	(-0.11)		(25.37)
Lockout		-0.0978*	**Total Minutes**	0.000526***
		(-2.06)		(41.24)
NBA Roster Spots		-0.00310~	**Age^2**	0.000902***
		(-1.96)		(20.74)
Salary Cap		2.77e-08***	**Forward**	0.253***
		(12.41)		(12.21)
Observations	6738			
F-statistic	873.82			
~ p<.10	* p<.05	** p<.01	*** p<.001	

Though Table 1 displays the coefficient of interest as negative, no statistically significant result stemming from an increase in the percentage of foreign players in the NBA is observed. Foreign player effects are most likely felt through channels other than wages in the NBA labor market.

VII. Foreign Player's Impact on American Players' NBA Careers

i. Methodology

An ordered logistic regression is employed to estimate the impact of the increase of foreign players on domestic players' career lengths. An ordered logistic regression is employed because the outcome variable is not continuous and has an upper limit. Additionally, the differences between years of experience are not consistent. The difference between a 0 or 1 year career in the NBA is likely different than that of a 4 or 5 year career, and this is accounted for through the use of this model.

EQUATION 2:

$$YearsInNBAOutOfGivenNumberOfYearsFollowingDraft= \beta_0 + \beta_1 ChadFordsAmericanRank + \beta_2 Height + \beta_3 Weight + \beta_4 Forward + \beta_5 SalaryCap + \beta_6 NBARosterSpots + \beta_7 PercentageForeign + u$$

The dependent variable used in this model to measure a prospect's inclusion in the NBA labor market is the number of years played in the NBA out of a given number of years. Separate regressions are run to examine all ranges of years from 3 years after a prospect's draft year to 10 years following the draft. The performance variable used is Chad Ford's prospect ranking, which serves as a proxy for career potential. Individual player and year-specific league controls are also included in the regression.

ii. Results

Table 2: Percentage Foreign Coefficients for NBA Career Regressions

	3YR Career	**4YR Career**	**5YR Career**	**6YR Career**
Coefficient	-0.0658	-0.0109	-0.00205	-0.00461
Z-Statistic	(-1.22)	(-0.18)	(-0.03)	(-0.08)
	7YR Career	**8YR Career**	**9YR Career**	**10YR Career**
Coefficient	0.0440	0.0150	-0.000124	0.0242
Z-Statistic	(0.74)	(0.23)	(-0.00)	(0.39)

The coefficient of interest is insignificant across all regressions run on NBA career length. A one percentage point increase in the share of foreign players in the NBA has no significant effect on the number of years domestic prospects play in the NBA out of the 3 through 10 years after their draft year. Limiting the sample size to only include lower-ranked prospects, those ranked 26-50, still yields insignificant results.[12]

[12] Results for all Regressions in Parts VII-IX with a limited sample size are provided in the Appendix. All yield insignificant results.

Because a limited number of openings in the NBA exist and an increase in the percentage of foreign players has no effect on those players appearing in Chad Ford's top 50, the employment and career lengths of lower quality prospects, those not being considered for the NBA draft, must be subject to the effects of the increase in foreign players. Examining the careers of players who have entered the NBA on 10-day contracts would likely more accurately capture the effect of foreign players, but data on these shorter-term contracts is not widely available.

VIII. Foreign Players' Impact on American Players' Overall Professional Careers

i. Methodology

The same ordered logistic model as Equation 2 is run, only with a different dependent variable. Rather than only including years played in the NBA, for these regressions, the measure of career quality is the number of years played professionally in any league out of a given number of years following the draft. This includes years played in the NBA, professional foreign leagues, and lesser American professional leagues. These regressions are used to investigate whether the percentage of foreign players in the NBA during the year in which prospect was eligible for the NBA draft impacted his overall professional career. The same control variables are included as in the regressions of the previous section.

ii. Results

Table 3: Percentage Foreign Coefficients for Overall Professional Career Regressions				
	3YR Career	**4YR Career**	**5YR Career**	**6YR Career**
Coefficient	0.0892	0.0195	-0.00465	-0.0323
Z-Statistic	-0.99	-0.21	(-0.05)	(-0.38)
	7YR Career	**8YR Career**	**9YR Career**	**10YR Career**
Coefficient	0.0282	0.0571	0.00281	0.0234
Z-Statistic	-0.35	-0.7	-0.04	-0.35

Table 3 illustrates that, again, the coefficient of interest was insignificant across all regressions. A one percentage point increase in the share of foreign players in the NBA has no effect on the overall professional careers 3 years to 10 years after the year in which they could be drafted. Again, the lack of effects on the prospects included in the sample implies that the impact is felt on lower quality players not included in the data set.

IX. Foreign Players' Impact on American Players' Career Quality

i. Methodology

EQUATION 3:

$$CareerQualityMetricOverSpecifiedYearsfollowingDraft= \beta_0 + \beta_1 ChadFordsAmericanRank + \beta_2 Height + \beta_3 Weight + \beta_4 Forward + \beta_5 SalaryCap + \beta_6 NBARosterSpots + \beta_7 PercentageForeign + u$$

Equation 3 is the Ordinary Least Squares regression used to identify the impact that the increase in foreign NBA players has had on the overall career quality of American prospects. A similar framework to the previous series of regressions is employed to investigate the years following a given prospect's draft year, but in this series of regressions, the dependent variable if a league-quality measure. Because of the wide disparity in the quality of leagues around the

world, weighting all leagues equally, as the regressions in Part XIII did, is not the most accurate measure of a prospect's career quality.

In this section, league-quality serves as a proxy for a prospect's career quality. For leagues that appear in FIBA's European national basketball league rankings, the points associated with these rankings are used to calculate the league-quality measure. For domestic leagues of nations not appearing in these rankings, the measure used is the FIBA Combined World Ranking points of the league's home country scaled to the European national league rankings. The FIBA Combined World Rankings, which rank the national teams of a country, correspond relatively closely to the quality of the nation's domestic league. The natural logarithm is then taken to better linearize the league-quality measure.[13] The dependent variable in these regressions, the career-quality metric, is the sum of the league-quality metrics over a specified range of years following a prospect's draft year.

ii. Results

Table 4: Percentage Foreign Coefficients for Career Quality Metric Regressions				
	3YR Career	**4YR Career**	**5YR Career**	**6YR Career**
Coefficient	-0.143	-0.0482	-0.0592	-0.0378
T-Statistic	(-1.54)	(-0.37)	(-0.37)	(-0.20)
	7YR Career	**8YR Career**	**9YR Career**	**10YR Career**
Coefficient	0.207	0.200	0.172	0.252
T-Statistic	(0.89)	(0.68)	(0.49)	(0.63)

Coefficients for all regressions in this series again reveal insignificant results. For all ranges of years following a prospect's draft year, an increase in the percentage of foreign players in the NBA has an insignificant effect on his career quality.

[13] Summary statistics for the league quality metric are provided in the Appendix.

X. Discussion

Though the results of this study are inconclusive, discussion of a number of economic mechanisms that may be active in the NBA and foreign basketball labor markets should not be dismissed.

As hypothesized, the increase in foreign players in the NBA has no significant impact on the wages of domestic players. This inconclusive result is most likely due to the existence of the league-mandated minimum salary, which prevents the new equilibrium wage from being observed.

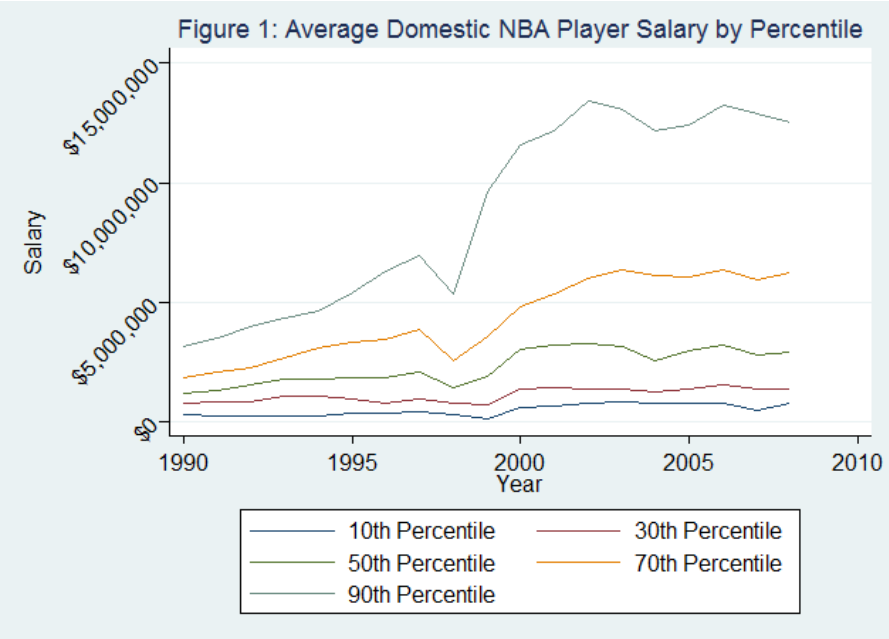


Figure 1 reveals little difference between the wages of players earning salaries below the league average. Because such a large portion of the league's salaries are determined by the league minimum, wage effects due to an increase in the supply of NBA-caliber players are unlikely to be observable.

Though the increase of foreign players may not directly impact the wages of American NBA players, an indirect effect could still be present. Increased numbers of foreign players have

corresponded with increasing NBA revenue, which results in a higher salary cap allowing all players to be paid higher wages. If foreign players contribute to this increase in revenue, they can be considered imperfect substitutes for American workers. Imperfect substitutes possess a slightly different skillset than their counterparts. Their slightly varied skills benefit other workers, increasing in the marginal product of labor of their counterparts (Borjas et al., 2008).

Papile (2011) claims that foreign players are stronger fundamentally and defensively than their American counterparts, and Ziller (2013) argues that foreign players can better develop skills suited for the professional game earlier by playing in foreign professional leagues prior to entering the draft. More developed fundamental and defensive skills distinguish foreign players as better complementary players to surround established American stars.[14] With better complementary players, American stars can perform better, and the league can produce higher quality basketball. This results in increased revenues and higher wages shared by all participants in the NBA labor market.

The direction of causality between the increase in foreign players and the growth of basketball overseas is also in question. Foreign players in the NBA may have increased the popularity of basketball as more foreign spectators view NBA games to watch their countrymen. This boost in popularity can result in more people playing basketball and more attention and resources dedicated to domestic leagues, which further perpetuate the popularity of the game worldwide. In contrast, foreign players may have benefited from a general growth in the game of basketball separate from the rise in popularity of the NBA. Basketball could have grown domestically in foreign countries leading to improved leagues and more talented players, and only

[14] 35 of the 40 leading scorers in the NBA for the 2015 season were American (ESPN, n.d.), indicating that American players are still the focal points of most teams' offenses.

once foreign players sufficiently increased in quality did they enter the NBA. Most likely a combination of NBA-driven foreign growth and domestically-driven foreign growth has resulted in the current state of the game.

The growth of foreign leagues also has had important implications for American prospects. As the number of foreign players in the NBA has increased, some American players have been prevented from entering into the NBA labor market. To find employment, these American players entered foreign professional leagues, which provided uncertain job security and lower salaries compared to the NBA. As basketball has grown in popularity overseas, basketball leagues have grown in legitimacy, attracting major sponsors and allowing franchises to pay their players higher wages. Originally barred from the NBA labor market by foreign players, lower quality Americans playing overseas may now benefit from higher wages, which could be the result of basketball's increased overseas popularity due, in part, originally to foreign NBA players.

XI. Conclusion

This study attempts to identify the impact that the increase in the number of foreign NBA players has had on the American basketball player. The study contributes to the growing field of labor economics research seeking to quantify the impact that immigrants have on domestic labor by examining impacts on highly-skilled workers in a uniquely structured labor market.

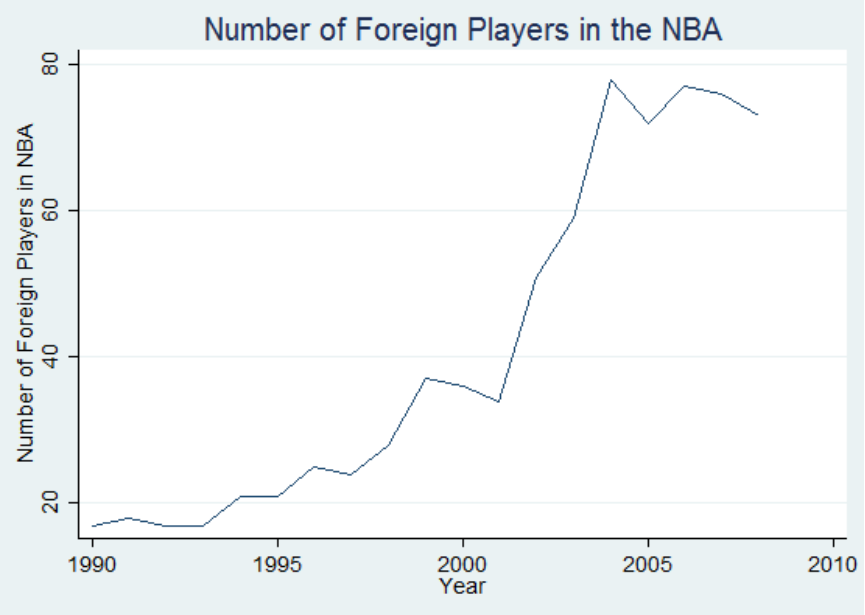
The first regression, which estimate the effects of an increase of the NBA's percentage of foreign players on the salaries of domestic players, is inconclusive, as hypothesized. Because such a high proportion of NBA salaries are dictated by the league minimum, the effects of an increase in the labor supply are not observable as the equilibrium wage dips beneath the wage floor. The next sets of ordered logistic regressions to examine the impact that foreign players have had on the

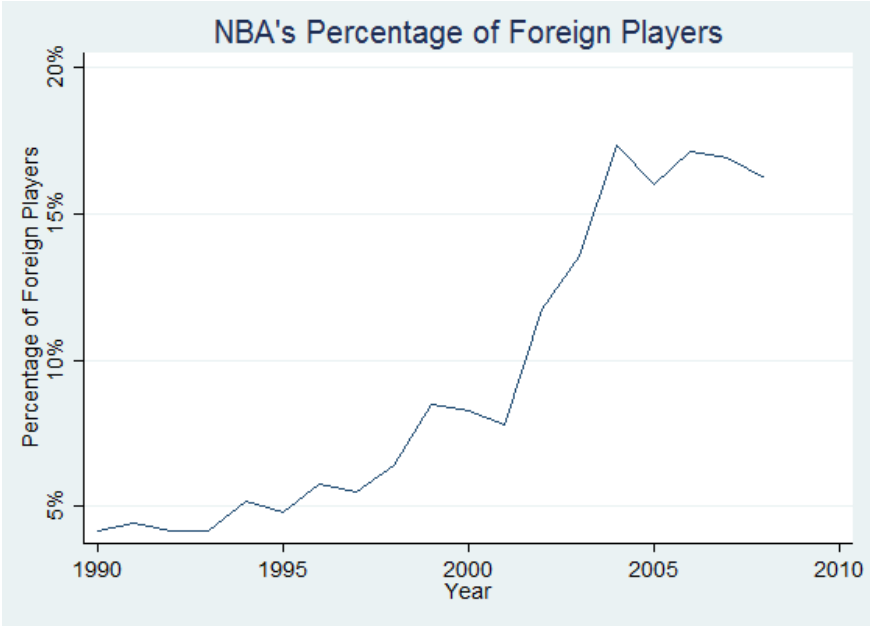
number of years played after prospects' draft years were also insignificant for all ranges of years examined. A final set of regressions using league quality based as a proxy for career quality also returned insignificant results. The effects of foreign players is most likely felt by the lowest tier of American professional basketball players who could not be included in this study because of a lack of salary and career outcome data.

As the game of basketball continues to grow both positive and negative effects may be felt by American players. The lowest quality professional players will likely lose the opportunity to ever compete in the NBA, but as the quality and profitability of basketball overseas increases, these players will have better chances of earning a living by playing in foreign leagues. For American players in the NBA labor market, foreign players' roles as imperfect substitutes will aid the league in producing a better product, which will allow all players, domestic and foreign, to share in the greater profitability of the NBA through higher wages. Unfortunately, the league's increasing global revenue could put it at odds with domestic players and fans if its efforts for expansion begin to displace too many Americans from the NBA labor market. In this case, the NBA will have to choose between protecting American basketball players by possibly limiting its overseas initiatives and maximizing profit by continuing to tap into new markets to expand the league overseas.

XII. Appendix

A. Foreign Player Influx Graphs





B. Variable Descriptions

Year-Specific League Variable Descriptions	
Variable	**Description**
Percentage Foreign	Indicates the percentage of total NBA roster spots occupied by foreign players
Lockout	Indicates if the season was shortened due to a work stoppage. Controls for players receiving lower wages in a lockout year
NBA Roster Spots	Indicates the maximum number of roster spots in the NBA. Controls for increases in the number of possible roster spots due to the addition of new franchises
Salary Cap	Indicates the inflation-adjusted salary cap, which is the maximum a team can pay its roster. Controls for the rise in salaries in the NBA over time.

Individual Player Variable Descriptions	
Variable	**Descriptions**
Career PER	Indicates a player's cumulative efficiency rating up to and including the year prior to the observation. Cumulative PER is calculated by weighting season PER by minutes played
Total Minutes	Indicates a player's cumulative number of minutes played up to and including the year prior to the observation
Age^2	Indicates the squared age of the player
Forward	Indicates if the player is an interior player (power forward or center)
Chad Ford's American Rank	Indicates a prospect's ranking compared to all other American players entering a year's NBA draft
Height	Indicates a player's height
Weight	Indicates a player's weight

C. NBA Career Regressions

NBA Career Length Ordered Logistic Regressions: Total Sample									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.132***	-0.132***	-0.128***	-0.124***	-0.122***	-0.114***	-0.106***	-0.0990***
Rank	Z-Stat	(-15.64)	(-15.66)	(-15.46)	(-14.84)	(-14.19)	(-13.19)	(-12.03)	(-10.84)
Height		0.0126	0.0178	-0.0306	-0.0218	-0.0163	0.00652	0.0321	0.0582
		-0.29	-0.4	(-0.69)	(-0.49)	(-0.35)	-0.14	-0.64	-1.1
Weight		0.00131	0.000761	-0.000291	-0.000746	0.000419	-0.00181	-0.00183	-0.00133
		-0.23	-0.14	(-0.05)	(-0.13)	-0.07	(-0.29)	(-0.29)	(-0.20)
Forward		0.0922	0.15	0.525~	0.397	0.319	0.268	0.114	-0.167
		-0.31	-0.51	-1.82	-1.35	-1.05	-0.85	-0.35	(-0.49)
Salary Cap		2.78E-08	1.60E-08	3.58E-08	4.57E-08	5.23E-08	4.87E-08	4.86E-08	9.50e-08*
		-0.76	-0.45	-1.06	-1.4	-1.59	-1.43	-1.29	-2.17
NBA Roster Spots		0.03	0.0208	-0.00454	-0.0122	-0.0318	-0.0248	-0.0182	-0.0323
		-0.93	-0.64	(-0.15)	(-0.40)	(-1.02)	(-0.76)	(-0.57)	(-1.03)
Percentage Foreign		-0.0658	-0.0109	-0.00205	-0.00461	0.044	0.015	-0.000124	0.0242
		(-1.22)	(-0.18)	(-0.03)	(-0.08)	-0.74	-0.23	(-0.00)	-0.39
Observations		650	600	550	500	450	400	350	300
Chi-squared		386.6	377.61	350.18	311.7	280.21	233.22	186.79	147.8
~ p<.10	* p<.05	** p<.01	*** p<.001						

NBA Career Length Ordered Logistic Regressions: Limited Sample (Prospects 26-50)									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.100***	-0.0991***	-0.0922***	-0.0870***	-0.0870***	-0.0730***	-0.0832***	-0.0830***
Rank	Z-Stat	(-6.43)	(-6.23)	(-5.64)	(-5.08)	(-4.84)	(-3.87)	(-4.05)	(-3.74)
Height		0.00249	0.0267	0.00683	0.0274	0.0432	0.0374	0.066	0.086
		-0.05	-0.5	-0.12	-0.47	-0.7	-0.58	-0.96	-1.22
Weight		-0.00316	-0.00399	-0.00575	-0.00622	-0.00503	-0.0063	-0.00528	-0.00438
		(-0.47)	(-0.60)	(-0.83)	(-0.85)	(-0.62)	(-0.73)	(-0.56)	(-0.44)
Forward		0.156	0.153	0.328	0.232	0.109	0.177	0.144	-0.201
		-0.43	-0.42	-0.87	-0.59	-0.27	-0.4	-0.31	(-0.40)
Salary Cap		1.44E-08	6.70E-09	2.64E-08	3.54E-08	4.62E-08	2.59E-08	8.83e-08~	0.000000196**
		-0.33	-0.16	-0.61	-0.82	-1.05	-0.56	-1.67	-3.08
NBA Roster Spots		0.00352	-0.0113	-0.0193	-0.0308	-0.0404	-0.0193	-0.0216	-0.0444
		-0.09	(-0.29)	(-0.49)	(-0.78)	(-0.99)	(-0.44)	(-0.50)	(-1.01)
Percentage Foreign		-0.0247	0.0194	-0.0049	0.00762	0.025	-0.0332	-0.0518	-0.0231
		(-0.39)	-0.27	(-0.07)	-0.1	-0.32	(-0.39)	(-0.60)	(-0.27)
Observations		325	300	275	250	225	200	175	150
Chi-squared		47.33	43.93	37.24	31.11	28.74	19.96	24.89	28.23
~ p<.10	* p<.05	** p<.01	*** p<.001						

D. Professional Career Length Regressions

Professional Career Length Ordered Logistic Regressions: Total Sample									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.0481***	-0.0545***	-0.0536***	-0.0501***	-0.0400***	-0.0365***	-0.0392***	-0.0370***
Rank	Z-Stat	(-3.71)	(-4.53)	(-4.75)	(-4.69)	(-4.11)	(-3.95)	(-4.34)	(-4.23)
Height		-0.0195	0.0294	-0.00924	-0.0108	0.0239	-0.00459	0.0267	0.0258
		(-0.24)	-0.4	(-0.13)	(-0.16)	-0.38	(-0.08)	-0.46	-0.46
Weight		-0.00336	-0.00377	-0.00139	-0.0067	-0.00951	-0.00595	-0.00662	-0.000966
		(-0.33)	(-0.40)	(-0.16)	(-0.83)	(-1.19)	(-0.77)	(-0.88)	(-0.13)
Forward		0.0897	0.0394	0.216	0.322	0.154	0.0414	0.0392	-0.0755
		-0.16	-0.08	-0.45	-0.71	-0.36	-0.1	-0.1	(-0.19)
Salary Cap		9.60E-08	0.000000139*	0.000000126*	0.000000113*	0.000000105*	7.83e-08~	4.84E-08	6.11E-08
		-1.44	-2.48	-2.48	-2.43	-2.38	-1.8	-1.06	-1.23
NBA Roster Spots		0.00215	0.000581	-0.00146	0.00848	-0.0255	-0.0425	-0.0082	-0.0149
		-0.04	-0.01	(-0.03)	-0.2	(-0.61)	(-1.01)	(-0.22)	(-0.43)
Percentage Foreign		0.0892	0.0195	-0.00465	-0.0323	0.0282	0.0571	0.00281	0.0234
		-0.99	-0.21	(-0.05)	(-0.38)	-0.35	-0.7	-0.04	-0.35
Observations		650	600	550	500	450	400	350	300
Chi-squared		30.7	39.42	38.24	38.85	29.63	22.7	23.57	21.03
~ p<.10	* p<.05	** p<.01	*** p<.001						

Professional Career Length Ordered Logistic Regressions: Limited Sample									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.00247	-0.0147	-0.0205	-0.0283	-0.0304	-0.00631	-0.0138	0.00244
Rank	Z-Stat	(-0.09)	(-0.63)	(-0.91)	(-1.26)	(-1.33)	(-0.29)	(-0.63)	-0.11
Height		-0.0442	0.0267	-0.0139	-0.0134	0.0269	0.021	0.0426	0.042
		(-0.47)	-0.32	(-0.18)	(-0.17)	-0.35	-0.28	-0.58	-0.59
Weight		-0.00648	-0.00146	0.000548	-0.0042	-0.00627	-0.00883	-0.0058	-0.00391
		(-0.58)	(-0.14)	-0.06	(-0.45)	(-0.63)	(-0.90)	(-0.59)	(-0.39)
Forward		-0.0183	-0.352	-0.18	-0.0088	-0.337	-0.306	-0.31	-0.15
		(-0.03)	(-0.61)	(-0.33)	(-0.02)	(-0.63)	(-0.58)	(-0.59)	(-0.28)
Salary Cap		4.62E-08	0.000000116~	0.000000133*	0.000000134*	0.000000143**	0.000000115*	9.80e-08~	8.68E-08
		-0.61	-1.85	-2.32	-2.52	-2.66	-2.13	-1.7	-1.33
NBA Roster Spots		-0.0253	-0.0283	-0.028	-0.0238	-0.0617	-0.0891~	-0.0265	-0.0164
		(-0.38)	(-0.49)	(-0.51)	(-0.46)	(-1.17)	(-1.65)	(-0.57)	(-0.37)
Percentage Foreign		0.143	0.0682	0.00826	-0.0153	0.0658	0.134	0.0378	0.0271
		-1.35	-0.66	-0.08	(-0.15)	-0.65	-1.32	-0.42	-0.32
Observations		325	300	275	250	225	200	175	150
Chi-squared		9.72	8.32	8.1	11.35	13.49	10.1	6.41	2.75
~ p<.10	* p<.05	** p<.01	*** p<.001						

E. Career Quality Metric Summary Statistics

Career Quality Metric Summary Statistics					
Years After Draft Year	**Observations**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
3	650	11.12341	4.454056	-3.30794	14.36298
4	600	14.89803	5.592775	-3.30794	19.15063
5	550	18.4176	6.84514	-3.30794	23.93829
6	500	21.90791	8.17416	-3.30794	28.72595
7	450	25.49513	9.331828	-3.30794	33.51361
8	400	28.47697	10.83548	-3.30794	38.30127
9	350	31.26773	12.4581	-3.30794	43.08893
10	300	33.90593	14.07103	-0.1125255	47.87659

F. Career Quality Regressions

Career Quality OLS Regressions: Total Sample									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.159***	-0.212***	-0.270***	-0.319***	-0.356***	-0.405***	-0.441***	-0.472***
Rank	T-Stat	(-15.24)	(-15.99)	(-16.18)	(-15.17)	(-14.01)	(-12.75)	(-11.05)	(-9.56)
Height		0.0233	0.0175	-0.0553	-0.0783	-0.0983	-0.0877	-0.0282	0.0663
		-0.31	-0.18	(-0.46)	(-0.52)	(-0.55)	(-0.39)	(-0.10)	-0.19
Weight		0.0233	0.0175	-0.0553	-0.0783	-0.0983	-0.0877	-0.0282	0.0663
		(0.31)	(0.18)	(-0.46)	(-0.52)	(-0.55)	(-0.39)	(-0.10)	(0.19)
Forward		0.424	0.595	0.955	1.595	1.904	1.658	1.515	0.949
		(0.86)	(0.95)	(1.21)	(1.60)	(1.58)	(1.10)	(0.81)	(0.41)
Salary Cap		3.14e-08	5.88e-08	0.000000100	0.000000142	0.000000257*	0.000000272~	0.000000317	0.000000555~
		(0.51)	(0.78)	(1.08)	(1.27)	(1.98)	(1.67)	(1.48)	(1.90)
NBA Roster Spots		0.0861	0.0538	0.0288	0.0104	-0.0957	-0.115	-0.116	-0.186
		(1.52)	(0.75)	(0.33)	(0.10)	(-0.78)	(-0.75)	(-0.65)	(-0.89)
Percentage Foreign		-0.143	-0.0482	-0.0592	-0.0378	0.207	0.200	0.172	0.252
		(-1.54)	(-0.37)	(-0.37)	(-0.20)	(0.89)	(0.68)	(0.49)	(0.63)
Observations		650	600	550	500	450	400	350	300
F-statistic		34.92	38.00	38.52	34.23	29.91	24.30	18.31	14.05
~ p<.10	* p<.05	** p<.01	*** p<.001						

Career Quality OLS Regressions: Limited Sample									
Variable		**3YR Career**	**4YR Career**	**5YR Career**	**6YR Career**	**7YR Career**	**8YR Career**	**9YR Career**	**10YR Career**
Chad Ford's American	Coefficient	-0.116**	-0.173***	-0.222***	-0.219**	-0.242**	-0.192~	-0.184	-0.172
Rank	T-Stat	(-3.32)	(-3.89)	(-3.98)	(-3.15)	(-2.90)	(-1.88)	(-1.45)	(-1.12)
Height		-0.0794	-0.0591	-0.148	-0.142	-0.168	-0.103	0.0147	0.112
		(-0.63)	(-0.37)	(-0.73)	(-0.56)	(-0.56)	(-0.28)	(0.03)	(0.22)
Weight		-0.0237	-0.0317	-0.0395	-0.0535~	-0.0511	-0.0668	-0.0940	-0.106
		(-1.47)	(-1.56)	(-1.56)	(-1.69)	(-1.29)	(-1.39)	(-1.56)	(-1.49)
Forward		1.094	1.301	1.844	2.821~	2.774	2.126	2.789	1.850
		(1.28)	(1.19)	(1.35)	(1.66)	(1.37)	(0.85)	(0.90)	(0.49)
Salary Cap		-7.95e-09	5.73e-08	0.000000131	0.000000187	0.000000362~	0.000000375	0.000000557	0.00000104*
		(-0.08)	(0.45)	(0.85)	(1.02)	(1.70)	(1.44)	(1.65)	(2.31)
NBA Roster Spots		0.0899	0.0279	-0.0185	-0.0790	-0.224	-0.263	-0.265	-0.372
		(0.95)	(0.23)	(-0.13)	(-0.46)	(-1.11)	(-1.07)	(-0.94)	(-1.16)
Percentage Foreign		-0.1000	0.0144	-0.0323	0.0344	0.339	0.324	0.251	0.350
		(-0.65)	(0.07)	(-0.12)	(0.11)	(0.89)	(0.69)	(0.46)	(0.56)
Observations		325	300	275	250	225	200	175	150
F-statistic		2.76	3.26	3.45	2.61	2.60	1.66	1.60	1.79
~ p<.10	* p<.05	** p<.01	*** p<.001						

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