2017

Testing for Nationality Discrimination in Major League Soccer

Matthew Swift
Claremont McKenna College

CLAREMONT McKENNA COLLEGE

TESTING FOR NATIONALITY DISCRIMINATION IN MAJOR LEAGUE

SOCCER

SUBMITTED TO

PROFESSOR HEATHER ANTECOL

BY

MATTHEW SWIFT

FOR

SENIOR THESIS

SPRING 2017

APRIL 24th, 2017

Table of Contents

Abstract

Using data from the 2014-2016 Major League Soccer seasons, this paper finds evidence for nationality discrimination in the MLS. In particular, foreign players receive a wage premium of 15.97 percent, *ceteris paribus*. Foreign players also receive an additional bump in their salary based on performance. Finally, using an Oaxaca (1973) decomposition, I find that 22-26% of the differences in wages between foreign and domestic players is largely due to discrimination.

Acknowledgements

I would like to thank everyone who has helped me throughout the duration of my thesis. Professor Burdekin helped me find an exciting thesis topic that so closely aligned with my love for soccer. Professor Antecol was pivotal in guiding me throughout the entire thesis process and was willing to help me at any moment. I am extremely grateful for my parents, Elaine Kostopoulos and Ken Swift, who supported me throughout this paper and throughout my academic career. Also, I would like to thank Claremont McKenna College and the Robert Day School of Economics and Finance for providing me with the knowledge to write a successful thesis.

I.   Introduction

Sports like basketball, football, hockey, and baseball all have a rich and lengthy history in the United States. Soccer, however, has only more recently began to gain traction in the American sporting world (Heitner, 2015). Global powerhouse soccer nations such as Brazil, Argentina, Germany, and Italy have been able to grow the game of soccer for many more years than the United States (Mayassi, 2014). These countries have a culture founded on both domestic and international soccer success. Importantly, each of these powerhouse soccer countries have achieved some domestic success by way of their premier soccer leagues' achievements.

In the United States, there is currently only one premier soccer league. That league is Major League Soccer (MLS). The MLS is a very young league as it was only created in 1993. As far back as its inception, the league has been labeled as a league for aging foreign stars to finish their careers (Nguyen, 2016). It is said that the older foreign stars are paid handsomely to play soccer while living an exceedingly comfortable lifestyle (Davis, 2016). These players are no longer as talented as they once were on their former teams. This unusual aspect to the league is reflected by the apparent convex wage structure in the MLS. The MLS wage structure is different to those in Europe because players receive larger salaries[1] towards the end of their career, despite their drop in performance from age (Kuethe and Motamed, 2009). This is due to the willingness of the MLS to pay higher wages for aging foreign stars in hopes that these foreign stars can help

---

[1] Salary, wages, and compensation are used interchangeably throughout the paper.

grow the league through their star power and global popularity (Davis, 2016). No matter how influential all foreign players have been for the growth of the league, they are often the ones targeted by the media for much of the aforementioned reasons (Davis, 2016).

There is limited research on racial and/or nationality discrimination in soccer largely due to the lack of available data on salaries and performance metrics. The studies that exist generally employ a market test approach. That is, assuming that markets operate efficiently, the wage bill of any club should match the productivity of its players and, therefore, the performance of the team in terms of league position. They find that there is evidence of racial discrimination against black players in English league soccer (Szymanski, 2000) as well as in the English Premier League, German Bundesliga, Spanish Primera Division, Italian Serie A, and French Ligue 1 (Wilson and Ying, 2003), and some nationality discrimination against domestic players in English league soccer (Pedace, 2007). Moreover, said discrimination appears to be driven by owner discrimination as opposed to fan discrimination (Szymanski 1998, 2000; Wilson and Ying, 2003).

There is, however, extensive research on racial and/or nationality discrimination in other sports as they do not suffer from the lack of salary data and comprehensive performance metrics. The evidence on nationality discrimination in the NBA is mixed. Some studies find international players receive a wage premium (see for example, Eschker, 2004), while others find they experience a wage penalty (see for example, Yang and Lin, 2010). A shortcoming with these studies, however, is they do not allow for differential returns to performance characteristics by nationality. The purpose of this paper is to add to the existing literature on nationality discrimination in soccer by

applying the methodology used in the NBA studies. To the best of my knowledge, this has not been performed in soccer due to data constraints in European soccer leagues. Importantly, this paper includes detailed player salary data and an advanced performance metric for every field position. Moreover, I extend the analysis in the NBA studies by allowing for differential returns to the variables by implementing an Oaxaca decomposition. This decomposition allows me to determine how much of the nationality wage differential is due to observable and unobservable characteristics.

This paper finds support for foreign players being paid a wage premium for their services. Further, after controlling for the differences between foreign and domestic players, foreign players receive an added "bump" in their salary for their on-the-field performance compared to domestic players. The models account for a player's performance and popularity by the Man of the Match award and All-Star team selection. Foreign players selected to the All-Star team roster receive an additional salary "bump." While every attacking position was statistically significant for domestic players' salaries, it is the foreign forwards who are paid more than their domestic counterparts. Utilizing the Oaxaca (1973) decomposition, 22-26% of the wage differential is largely due to discrimination.

The remainder of the paper is organized as follows: Section II presents a history of the premier soccer leagues in the United States. In Sections III and IV, I discuss the data and empirical strategy and results, respectively. The closing section presents conclusions and possible MLS policy implications for the future.

II.   History

The history of soccer in the United States is very different to many top global leagues. The first attempt to create a premier soccer league in the United States was the creation of the National American Soccer League (NASL). This league was started in 1968 but then subsequently folded in 1984. The failure of the NASL can help us understand the importance of growing soccer through a premier soccer league and creating an authentic soccer culture.

The NASL was an ambitious attempt to create a soccer fandom from virtually nothing (Abnos, 2015). It is easy to understand why it failed when you look at how the teams were constructed and what the league was hoping to create. From the start, owners did not often have the growth of the game and American soccer players in the front of their minds. One of the most famous teams to come out of the NASL era was the New York Cosmos. The New York Cosmos did an excellent job at selling out stadiums and securing large attendance figures for their games, but this was only due to their extravagant spending on older foreign players, notably Pele and Franz Beckenbauer (Salter, 2015). These players were once the best the soccer world had to offer. Once the Cosmos had signed their foreign stars, other teams felt the need to follow the Cosmos path and sign other foreign stars like Johann Cruyff and George Best. Their business model was not sustainable in the long-run.

Short-term growth spurred the decisions made by the owners. They were more concerned about getting more fans at the immediate NASL games than growing the game of soccer in America (Abnos, 2015). The San Diego Sockers President describes the

situation that evolved in the NASL when he stated, "It became fashionable to chase the Cosmos. Everyone had to have a Pele. Coaches went around the world on talent searches, forcing up prices." (Abnos, 2015) The exceedingly high payrolls coupled with high rent for stadiums and inadequate broadcasting contracts were detrimental to the league (Abnos, 2015). I argue that the rosters appeared to be constructed more for popularity than for success. The ambition was there, but the forward-thinking was not.

The league faced many troubles during its time. One of areas where the league was initially lacking was the roster composition of its member teams. It was not until the league began to falter when the owners decided to make changes to help the league and improve the domestic players. Although the league began the college draft in 1972 to boost native American and Canadian players in the league, these players were never truly showcased or given the tools to succeed ("North American Soccer League (1968–84)", n.d.). It was often the case that the American soccer players were left to sit on the bench. To 1979 season, the NASL only required each team to start two US or Canadian born players ("North American Soccer League (1968–84)", n.d.). In 1980, to improve domestic talent, the number of domestic players required to start was increased to three. These increases led to an increased demand for top American talent and to the highest transfer fee for an American player at the time with the signing of Jim McAlister for $200,000 (Reed, 1980). The attempts to increase American and Canadian born players' presence in professional soccer was well-intended, but the effort was not enough and arguably came much too late. One of the larger failures by the NASL came down to their lack of developing domestic talents (Wangerin, 2008).

Despite the failure of the league, soccer was formally introduced to the American public. Further, the failures of the NASL provided valuable lessons for the MLS, and some of the current MLS teams have their roots in NASL member teams.

The formation of the MLS is another unique piece to the league. Upon the United States being awarded the 1994 World Cup, the Fédération Internationale de Football Association (FIFA)[2] pressured them into forming a professional soccer league (Abnos, 2015). FIFA had never awarded the World Cup to a nation that did not have a professional outdoor soccer league (Jewell, 2005). Being awarded a World Cup was a big step for soccer in the United States as it provides global recognition for the host country (Abnos, 2015).

During the development of the MLS, much of the discussion by the commissioner and owners was placed on how to create a soccer league that would garner the most attention, create a vast American fan base, and be sustainable for the long-term (Abnos, 2015). Being sustainable for the long-term was the key. This new soccer league was not like the other premier soccer leagues across the globe in many ways. To make the league different and more exciting, several of the owners pushed for things like bigger goals, countdown clock, shootouts instead of draws, and even more lenient referees regarding offside calls (Abnos, 2015). Not all the discussed changes were implemented, but from the start, the MLS was a unique soccer league (Abnos, 2015).

---

[2] FIFA is the governing body that controls nearly all major international competitions. The organization FIFA decides which countries are chosen to host the World Cup. The 1994 World Cup is the only time the United States has hosted a World Cup.

Officially founded in 1996, the MLS included ten teams: DC United, New England Revolution, NY/NJ MetroStars, Tampa Bay Mutiny, Columbus Crew, Dallas Burn, Kansas City Wiz, Colorado Rapids, Los Angeles Galaxy, and San Jose Clash (Strauss, 2015). These teams tried to increase the importance of domestic players on the team (Abnos, 2015). Like the NASL, to attract attention to the league and garner support for the league, the MLS also began to sign older, high-profile foreign talents like Jorge Campos, Carlos Valderrama, and Roberto Donadoni (Abnos, 2015). These additions were an expensive effort to get fans to the newly created teams' games.

Although the growth of the league was slow, it did end up finding success when it began to market itself to domestic talents like DeMarcus Beasley and Landon Donovan ("History of Major League Soccer", n.d.). It was the domestic players who gave the MLS the added bump it desperately needed at the time. The shift from relying on foreign talent to looking at domestic players in 2002 was pivotal to the success of soccer in the US ("History of Major League Soccer", n.d.). Following the success of the United States Men's National Team in the 2002 World Cup, the league began to truly climb.

Despite the early troubles, the MLS has seemingly risen to new heights in recent years. The creation of soccer-specific stadiums and the introduction of strong domestic talent along with foreign talent like David Beckham, Cuauhtémoc Blanco, Thierry Henry, David Villa, and Kaka have helped lift the game of soccer domestically and internationally (Baxter, 2015). In addition, a recent study shows that the MLS has the same number of "avid" fans from 12-to-17 years old as Major League Baseball (Marcin, 2016), often considered America's pastime sport.

With the MLS expansion, the league has been able to add the likes of Houston

Dynamo, New York City FC, and Montreal Impact among various other teams. MLS

expansion has brought soccer to all parts of the United States and Canada and is

constantly looking to grow. Minnesota United FC and Atlanta United FC are the newest

members for the 2017 MLS season (Couch, 2016). Another two, Los Angeles FC and

Miami, are slated to join the league in 2018 and 2019 respectively (Couch, 2016).

Looking closer at the structure of the league, the MLS currently operates in a

closed-league system. There is one premier division split between a Western conference

and an Eastern Conference. Thus, there is no promotion or relegation like in most other

countries (Smith, 2016).

The MLS player salary structure is similar to the National Basketball Association

(NBA). The salary cap for the league is like the NBA in that it is not a "hard" cap. The

cap for the 2016 season was $3,660,000 ("Roster Rules and Regulations", n.d.).

However, only the players listed 1-20 in the roster count towards the salary cap. This is

known as the Senior Roster. Teams can allocate more money to players 1-18 if they

chose not to fill slots 19 or 20 in the Senior Roster. The maximum a player on the Senior

Roster can earn is $457,500. The salaries of players 21-28 do not count towards the

salary cap. Spots 21-24 make-up the club's Supplemental Roster and spots 25-28 make

up the Reserve Roster. The roster spots have certain requirements that must be met by the

teams including being filled with Generation Adidas Players[3], Homegrown Players[4], Designated Players[5] eligible for the MLS SuperDraft, and 24-year-olds or younger players.

Despite the league having a salary cap, teams are permitted to go over the cap by millions of dollars. The way teams exceed the salary cap is through the Designated Player (DP) Rule. This rule allows teams to acquire up to three players whose compensation and acquisition costs exceed the salary cap. However, the individual club is the one responsible for the compensation above each player's salary amount. The teams' DPs have traditionally been highly paid foreign stars whose services would not be attained under the normal MLS salary restrictions. To improve the league with foreign players while also aiming to grow domestic talent, each club is allotted 8 international player spots which can be traded.[6]

Further, the single-entity nature of the MLS allows the MLS to control all player contracts, sponsorships, and broadcasting for the league (Jewell, 2005). When players sign contracts to play in the MLS, they are contracted by the MLS and not the individual

---

[3] Generation Adidas is a collaboration between the MLS and the US Soccer Federation and is sponsored by Adidas. The goal of the joint venture is to grow the youth professional talent in the United States. Between 6 and 13 athletes have been chosen per year since the projects inception in 1997 (hosted by Nike until 2005). Generation Adidas is designed to help the United States compete with foreign leagues. Players selected for Generation Adidas have the soccer ability to play professional soccer, but they are not yet eligible to enter the MLS SuperDraft.

[4] Homegrown players are local players who were signed directly to their local MLS team. These players do not have to go through the normal player allocation process by way of the MLS SuperDraft

[5] The Designated Player rule is discussed in the next paragraph.

[6] The MLS roster regulations can be found at http://pressbox.mlssoccer.com/content/roster-rules-and-regulations.

team they play for (except for the aforementioned DP exception). The clubs do negotiate the player's salary, however, to create a salary distribution that fits the specific clubs' needs. With the players being paid by the MLS, the MLS also controls the movement of players. This single-entity structure, unique to the MLS, allows the MLS to control player salaries, maintain equal quality levels amongst the entire league, and limit the large-market versus small-market problems that hinder other American sports leagues (Young, 2016). The MLS structure is designed to bring long-term prosperity to the league and soccer in the United States (Jewell, 2005).

The MLS is at an interesting point in its life given the rapid expansion that is taking place. Changes will likely be made to accommodate the growth of the league and the changing landscape of the league. There may be pressures from at home and abroad to adopt a promotion and relegation system to enhance competition amongst the clubs (Smith, 2016). Whether the MLS changes its structure or rules in the future, hopefully it will continue to grow in the United States and abroad. This paper provides direction for changes to MLS regulations in the future. Specifically, a reevaluation of the salary dispersion will be necessary by the league. Salaries for all MLS players should emanate from their marginal productivity. Then, the MLS will not only be able to continue to attract the top foreign talent, but importantly, the MLS could retain its top domestic stars. Another key component could be the regaining of domestic players who took their talents overseas. Such change could be pivotal for the growth of the MLS and ultimately the growth of soccer in the United States.

III.   Data

I use data from three main sources: The *Major League Soccer Players Union* (MLSPU) player compensation site[7], MLS statistics site[8], and Whosocored.com. The site Whoscored.com is widely used in the soccer media ("By WhoScored.com", n.d.) and has become the forefront website for global soccer specific statistics. The site has only recently provided player metrics data for the MLS. The player salary figures come directly from the MLSPU. The MLSPU, unlike other soccer leagues around the world, makes all the MLS players' salaries available to the public. The non-salary variables are taken from the remaining two data sources. This data is ideal for my purposes as it includes detailed information on player salaries and performance metrics, as well as certain demographic characteristics.

To be included in the data set, a player needed to have played a minimum of one minute in the respective season. This restriction led to 242 players being excluded from the analysis because they did not have any performance metrics. Additionally, the model looks exclusively at the 10 outfield players (goalkeepers have been excluded as they were not included on the MLS's roster site containing the individual player characteristics). The goalkeeper position is quite unique compared to the other 10 positions by the number of them on a roster, the fact that only one tends to play each game (or each season) per team, the different metrics used for their performance, and the differing salaries for goalkeepers compared to the field positions.

---

[7] The MLS salary data can be found at https://www.mlsplayers.org/salary_info.html.
[8] The MLS statistics can be found at https://www.mlssoccer.com/stats/season.

Regarding the seasons measured, there were 20 teams in 2015 and 2016 seasons, there were only 18 teams in the league in the 2014 season. This is because the Chivas USA folded before the 2014 season and both Orlando City FC and New York City FC began playing in the MLS starting in the 2015 regular season. The final data set consists of 1,397 observations for the 2014-2016 MLS seasons.

Salary is defined as each player's guaranteed compensation for the calendar year. Each player's salary was taken either at the start of the season (if they were already on the roster) or around the midway point of the season (if they transferred into the club over the summer transfer window). I convert salary into the natural log of salary to consider salary outliers (often the DPs). Table 1 reveals that the average salary in the MLS over the sample period is $317,784.80[9]. During the three-season period, the minimum salary was $36,500[10] while the maximum salary was $7,160,340[11]. The minimum salary and the salary cap for each team increased over each of the three years ("MLS Players Union announces that it has ratified collective bargaining agreement", n.d.).[12]

Given the salary restrictions in the MLS, very few players can the attain million dollar salaries. Only 65 players[13] for the three seasons recorded salaries of over 1 million

---

[9] All summary statistics salaries are adjusted according to the CPI average for the respective year. The regression is not adjusted by the CPI because it already accounts for time fixed effects.

[10] This was the MLS minimum salary for the 2014 season.

[11] This salary was earned by the DP Ricardo dos Santos Leite (Kaka).

[12] The salary cap for the 2014, 2015, and 2016 season were $3.1 million, $3.49 million, and $3.66 million, respectively. The reserve minimum also increased each of the three years from $36,500 to $50,000 to $51,500. Also, all the salary restrictions and limitations come from the MLS collective bargaining agreement (CBA) from 2010 to 2014 and the CBA from 2015-2020.

[13] Many of the players receiving the higher salaries received them in more than one year.

dollars. Especially due to the roster spots reserved for younger players and the limited

salary caps for each team, just over half of the players had salaries of $150,000 or below.

It is therefore the salaries of the DPs that helps bring the MLS average salary up

tremendously.

To separate players by nationality, I create an indicator variable for foreign status

that equals 1 if the player is foreign born and equals zero if the player is domestic (born

in either the United States or Canada). Due to the MLS having teams located in both the

United States and Canada, I have considered both countries to represent the domestic

group. The players in the MLS are roughly 48 percent foreign. Moreover, foreign players

appear to earn more their domestic born counterparts. Specifically, foreign born players

on average earn $414,915.20 while domestic born players earn $227,463.10 (see Table

1).

The most unique variable included in the models that has not previously been

used in other soccer studies is the continuous *player rating* variable. This variable

represents the average of each individual player's rating for their entire season. As

previously mentioned, these rating are among the best for soccer in the world and are

used widely by media outlets, bookmakers, and individual soccer clubs. These ratings are

formulated by using a comprehensive statistical algorithm that is calculated live during

each game of the season ("WhoScored Ratings Explained", n.d.). The algorithm

considers over 200 raw statistics that effect a player's performance. Each raw statistic is

weighted according to its influence on the game. Each event on the field that a player

takes part in can have a positive or negative effect on the overall rating for the player. An

example is as follows: a failed/missed pass would have a negative effect on the players

overall rating while a successful/completed pass would have a positive effect on a players overall rating. The scoring system ranges from 0 to 10 and is as follows: 9.0-10= Excellent, 8.0-8.9= Very Good, 7.0-7.9= Good, 6.0-6.9= Average, 5.0-5.9= Poor, 4.0-4.9= Very Poor, and 0-3.9= Extremely poor.

Per game, about 85% of players have a rating between poor and good. Few players receive above an 8 or below a 5. However, the ratings in this paper are not based on individual games but rather the ratings represent a player's average rating for the entire year. This cumulative measure allows for the best representation of a player's performance throughout the entire season. The *player rating* variable considers every minute the player played in the season. Looking at the ratings for the entire season, fewer players averaged above a 7 or below a 6 rating. Above a 7 rating for the season is only earned by the top players in the season.

I include the following indicator variables for position: *defenders, defender-midfielder, midfielder, forward-midfielder,* and *forward.* The two multi-position variables account for the players who play various positions throughout a game or season. As seen in Table 1, foreign players make up more of the attacking positions while domestic players make up more of the defenders. The two multi-position variables together constitute 8.5 percent of all positions. Those variable help account for the more versatile players who can play multiple positions.

I have created three different age buckets with age ranges of 16-23,24-31, and 32-38. The different age buckets help control for differences in returns for younger, middle-aged, and older aged players. Looking at the differences in age between foreign and domestic players in Table 1, young players make-up 29% of all domestic players and

make-up only 20% of all foreign players. Also, there are 10% more foreign players than domestic players in the oldest age bucket in their respective group (see Table 1). The main reason for this dramatic difference is the roster requirement that requires domestic players to fill the latter places on a MLS team's roster.

A variable that takes on-the-field performance into account is the *Man of the Match* variable. This variable represents the number of times a player won the Man of the Match award for a game. The Man of the Match award is given to one player every game who is decided to have been the best or most important player in that game. Better players tend to receive more Man of the Match awards. The only limit to the number of Man of the Matches a player can receive is the number of games they appear in. On average, foreign players receive more Man of the Matches than domestic players (see Table 1).

At the half-way point of the season, a roster of around 22 players is selected by MLS coaches, the MLS commissioner, and the fans to represent the MLS team in an All-Star game. The players selected for the All-Star game are assigned the dummy variable *All-Star Team.* Players who were on the All-Star roster or were selected to be on the roster but could not play due to injury or other circumstance are seen as being selected for the All-Star team. The All-Star roster representation between the foreign and domestic players is split roughly 50/50 (see Table 1). The MLS All-Star game is only once a year and has included opponents such as Chelsea FC, Arsenal FC, Tottenham FC, and Bayern Munich.

MLS All-Star players are the league's best and most popular players. Given their popularity, due to soccer skill and off-the-field prominence, these players are often the

higher-salaried individuals who are assigned the DP role on their respective team. The

dummy variable *DP* accounts for each of the DPs in the league. Teams must allocate the

DP roles wisely due to their only being three spots available per team. Foreign players

make up roughly 3/4ths of all DPs (see Table 1).

IV.   Empirical Strategy & Results

To formally determine whether there is nationality discrimination in the MLS, I estimate a model of the following form:

$$LnS_{pty} = \alpha + \theta FOR_{pty} + \beta PER_{pty} + \delta DEM_{pty} + \lambda_t + \eta_y + \varepsilon_{pty} \qquad (1)$$

where Ln*S* is a measure of the natural log of salary, FOR is an indicator variable equal to 1 if the player is foreign born and equal to 0 if the player is domestic (born in the US or Canada), *PER* is a vector for performance characteristics (*player rating, All-Star team selection, Man of the Match, Designated Player, minutes*), *DEM* is a vector of demographic characteristics (*ages 16-23, ages 24-31, ages 32-38, forward, forward-midfielder, midfielder, midfielder-defender, defender*) , λ accounts for team fixed effects, η accounts for year fixed effects, *p* denotes player, *t* denotes team, *y* denotes year, and ε is an error term with the usual properties. Applying the natural log to the *salary* variable allows the model to control for salary outliers.

If θ is positive (negative) then it indicates foreign born players earn (face) a wage premium (penalty) relative to their domestic counterparts. Szymanski (2000) refers to θ as a "taste for discrimination" coefficient. Column 1 of Table 2 presents the results for equation (1). Foreign born players earn 15.97 percent more than domestic players. The premium MLS teams pay for foreign players is like the overcompensation of South Americans in England's premier soccer league (Pedace, 2007). For the South American players in the English Premier League, teams are willing to overpay these players due to

their positive effects on attendance and off-the-field notoriety. This is may also be the case in the MLS. Teams are willing to pay players for more than just their on-the-field productivity.

The previous MLS soccer study (Kuethe and Motamed, 2010) focused heavily on the returns to age for MLS players. In this study, the effect of age on the returns to the three distinct age groups are each statistically different at the 1% level. The two age buckets of 24-31 and 32-38 make 0.407 and 0.815 more in log salary than players in the 16-23 age group, respectively (see Table 2). These results demonstrate how the returns to age are not linear. A similar finding is presented in (Kuethe and Motamed, 2009). In their study, age has a convex relationship with salary. This convex relationship is quite unique from any other premier soccer league around the world. Older players are rewarded more than younger players. The younger players who are not able to perform are likely weeded out of premier soccer leagues at a younger age. The oldest age group contains more of the top players who could last at the top levels of soccer.

Along with older players receiving a higher salary as they get older on average, players who play in the attacking positions[14] are receive higher wages on average. The attacking players have a perception of being more valuable to their team and their effect on a game is much more pronounceable than that of a defensive-positioned player. Also, players selected to the All-Star game and DPs receive higher salaries on average. These players are rewarded for the performance and popularity. Further, the best performing

---

[14] The attacking position are traditionally any position that is not a defender or goalkeeper.

players tend to play more minutes throughout the season. Their additional impact on the team results in a higher salary on average.

The implications from the variables fall in line with the traditional labor economics wage narrative. As an individual's marginal productivity increases (their performance and benefit to the team), their compensation increases. It was surprising to see that, of all the variables, the *Man of the Match* variable was not significant at any of the three major levels. I hypothesize that due to the difficulty of receiving the award, players with more *Man of the Match* awards would be compensated for their contributions to the team since only the best players in each game receive the award.[15] The coefficient is positive, but it only has a minimal impact on a player's salary.

The model presented in equation (1), however, assumes that the returns to performance metrics and demographic characteristics do not differ by foreign status. To take this into account, I re-estimate equation (1) separately for foreign and domestic players and test if the returns are significantly different by foreign status. These results are presented in Columns 2 and 3 of Table 2 for foreign and domestic players, respectively. While previous studies have addressed what effects a soccer player's salaries, they did not consider the differences in returns. There are several noteworthy results when looking at the differences in returns for the two groups of players in the MLS.

---

[15] It is worth noting that attacking players tend to receive more Man of the Match awards due to their more noticeable impact on a game and their flashiness.

First, foreign players receive an additional salary "bump" for their performance. While domestic players receive a 46.9% increase in their salary for a 1-unit increase in their player rating, foreign players receive a 124.3% increase in their salary, *ceteris paribus*. The two groups are rewarded very differently for their respective performance levels.

The additional "bump" in foreign players' salaries are not ideal for domestic players. Presumably, performance is the most crucial factor for soccer teams signing players. But if foreign players are compensated more for a similar performance to domestic players, the pay discrepancy may act as a disincentive for keeping the top performing domestic players. Those players could take their talent elsewhere and be better rewarded for their soccer performance.

Since foreign players are more experience for their performance level, MLS teams could ideally sign more domestic players at a lower cost. Teams would be successful by avoiding the foreign player premium. If enough teams did this, the market would equilibrate and domestic players would then be compensated more like foreign players based off performance (Szymanski 2000).

All-Star players also appear to earn a salary premium for being foreign. Foreign players earn a 135.7% salary premium for being selected to the team while domestic players only earn a 41.2% salary premium (see Table 2). This finding helps understand that on-the-field performance is not the only important characteristic in determining a player's salary in the MLS. While a player needs to have played well throughout the season to be selected to the team, their popularity is also essential for selection to the roster. Players who are popular off-the-field or can help raise the global reputation of the

league are compensated for their influence. It is understandable why the MLS would take this stance given its youthfulness as a league, but one would hope that deserving domestic players are not overlooked to accommodate for the more popular players, despite their lacking performance.

Both nationality groups receive an immense wage premium for being DPs, but it the domestic DPs who receive a higher premium. Looking at Table 2, one can see that foreign players receive a 198% premium for being a *DP* compared to domestic players who receive a 468% premium, *ceteris paribus*. For both groups, the DP status results in an incredible boost in a player's salary. But on average, foreign DPs still earn less than domestic DPs. This foreign DP versus domestic DP gap likely comes down to the number of observations for the two nationality groups. In the three years being sampled, there are no more than 50 DPs in one season. Of all the DPs, three-quarters of them are foreign. The few domestic DPs are likely driving the large domestic DP wage increase. Also, as addressed previously, the salary for all MLS individuals is increasing[16]. Thus, while DPs still earn incredible wages when compared to non-DPs, the wages of all players are rising.

Still, the enormous wages of DPs compared to non-DPs is like the findings in Kuethe and Motamed (2009). Only a few select players receive the DP designation[17] and the subsequent high wages. Without a future change in the MLS salary restrictions, this

---

[16] This notion comes from the increasing minimum salary and rising average salary in the league over the three periods.
[17] David Beckham was the first player to receive the DP designation and fundamentally changed the salary disparity in the league. The rule was created to attract the most recognized international soccer stars. Previous salary regulations would not allow for such substantial player salaries.

DP versus non-DP wage gap will likely persist.

While the position variables are all positive for domestic players, the findings for foreign players produce a slightly different result. Only the foreign forwards earn more than the domestic players in the same position (see Table 2). For the other positions on the field, the domestic players earn more than the foreign players in the same position, *ceteris paribus*. Still, foreign forwards are the most compensated of any nationality and position group. Having the best strikers is incredibly valuable for the success of a team. Teams must feel that the foreign strikers are more well-equipped to score goals than domestic strikers. For all soccer teams, valuing the contribution of midfielders and defenders is traditionally much more tough than valuing the contributions of forwards.

Oaxaca Decomposition

To determine what foreign players would earn if they had the characteristics of domestic players and vice versa, an Oaxaca (1973) decomposition is employed. The decomposition for the two weights is as follows:

$$W^f - W^d = (X^f - X^d)\,\beta^f + X^d\,(\beta^f - \beta^d) + (\alpha^f - \alpha^d), \qquad (2a)$$

or

$$W^f - W^d = (X^f - X^d)\,\beta^d + X^f\,(\beta^f - \beta^d) + (\alpha^f - \alpha^d), \qquad (2b)$$

Foreign weights are used for equation (2a) while domestic weights are used for equation (2b). The left-hand side of the equations represent the log wage differential. On

the right-hand side, the first and second terms in the two equations represent the total log wage differential attributable to differences in average player characteristics and the differences in returns for those characteristics, respectively. The intercept differences are accounted for by the subtracting of the alphas. The results for this equation can be found in Table 3 in the Appendix. Columns 2 and 3 in Table 3 represent the wage differential that is attributable to differences in characteristics versus differences in returns.

The results from the decomposition are quite interesting. Using domestic weights, roughly 78% of the differences is due to observable factors. Thus, the remaining 22% must be due to unobservable differences. When using foreign weights, the percent of unobservable differences rises to roughly 26%. There is very minor difference in obervables/unobservables between the two weights. With an Oaxaca decomposition, much of the 22-26% in unobservable differences is likely due to discrimination. Therefore, these findings are similar to the "taste for discrimination" discussed in Szymanski (2000). Also, these results align with the previous results from the *foreign* variable in Model 1. Those findings concluded that foreign players receive a 15.97% wage premium. Both the Oaxaca decomposition and findings in Model 1 support the idea that domestic players are discriminated against.

V.   Conclusion

Few soccer leagues in the world are like the MLS. It is a young league that has a single-entity structure, salary cap, ever-expanding number of teams, host of foreign stars, and an increasing presence in the shifting sports landscape. This landscape is shifting away from the traditional big four American sports (baseball, football, basketball, and hockey), the MLS provides a unique perspective for analysis.

Since the league's creation, there has seemed to be a heavy reliance on foreign players. Whether due to their soccer ability or off-the-field value, many of the foreign players have undoubtedly been vital for the growth of the MLS, both domestically and abroad. It is unlikely the MLS would be in the position it is today without their presence. However, especially in the past 10 years, there has been increasing debate about whether many of the foreign players are overpaid based on their value to the league. Ever since the DP rule was introduced for the 2007 MLS season, the MLS has attracted some of the world's greatest foreign soccer players. These players, though, have often come into the MLS at the tail ends of their careers. Despite this, they are seemingly being paid by the league not for their ability, but for their celebrity status (see for example, Kuethe and Motamed, 2009).

This study investigates whether, after controlling for performance metrics and player characteristics, foreign players are being overcompensated. In other words, are domestic players (from the United States and Canada) being discriminated against? This paper adds on to previous discrimination research in soccer (see for example, Szymanski,

2000 & Pedace, 2007) and MLS research (see for example, Kuethe and Motamed, 2010) by taking the analytical approach of NBA studies (see for example, Yang and Lin, 2010).

The results of this study support the hypothesis that foreign players in the league are overcompensated for their performance. Foreign nationality groups on soccer teams have been demonstrated to be overcompensated (Pedace, 2007). In this study, foreign players receive a 15.97% wage premium compared to domestic players. When looking at the wage differential between the two groups, between 22-26% is largely due to discrimination. Both findings support what Szymanski (2000) calls a "taste for discrimination." Then, looking at the different returns to performance for the two groups, domestic players receive a 46.9% salary increase for a one-unit increase in their player rating. However, foreign players receive a total salary increase of 124.3% for a one-unit increase in their player rating (see Table 2). This result is similar to the discrimination findings in Szymanski (2000) where black players were underpaid for their performance. Both studies demonstrate inequalities in soccer leagues both domestically and abroad.

Wage determination is undoubtedly a difficult topic in sports. Owners and league must weigh the performance of players with the profitability of the team. Finding the right balance of players to have a successful team on-and-off the field can be a challenging task. The MLS will need to change as it continues to grow in popularity and talent level. This paper emphasizes the disproportionate salary dispersion in the MLS between foreign and domestic players. A good start to keep the best domestic talent in the United States and retrieve the domestic talents who took their talents abroad would be to compensate them accordingly. If the top American players and top foreign talents are playing in the MLS, the MLS could grow at an even faster rate than it currently is.

Another implication from this study could simply come down to in the MLS, although performance (productivity) is important, there are many other key factors that come into play when determining a player's salary. Soccer players, like other athletes, are compensated for more than just their on-the-field performance.

Future studies could build on this study by including more years' worth of data and more metrics accounting for the popularity of players. This could further the accuracy of the study and hopefully produce even clearer results. Additionally, soccer economics studies could begin using the player rating metric used in this study to better account for on-the-field productivity. While player performance has been easy to examine in sports like basketball and baseball, accounting for performance in soccer has traditionally been much more difficult. The use of player ratings could fundamentally change soccer economics research in the future.

References

Abnos, Alexander. "The Birth of a League." Sports Illustrated Longform. 2015.
http://www.si.com/longform/2015/mls/.

Baxter, Kevin. "Foreign soccer stars no longer putting down MLS." Soccer. March 14,
2015. http://www.latimes.com/sports/soccer/la-sp-soccer-baxter-20150315-
story.html.

Burdekin, R., Hossfeld, R., & Smith, J. (2005). Are NBA fans becoming indifferent to
race? Evidence from the 1990s. Journal of Sports Economics, 6, 144-159.

"By WhoScored.com." TalkSPORT. http://talksport.com/author/WhoScored.com.

Coates, D., B. Frick, and T. Jewell. 2014. "Superstar Salaries and Soccer Success: The
Impact of Designated Players in Major League Soccer." Journal of Sports
Economics 17 (7): 716–35.

Couch, Ben. "MLS announces expansion process and timeline." December 15, 2016.
https://www.mlssoccer.com/post/2016/12/15/mls-announces-expansion-process-
and-timeline.

Davis, Steve. "MLS teams must be wiser about players beyond their years."
FourFourTwo. October 18, 2016. http://www.fourfourtwo.com/us/features/mls-
designated-player-signings-old-drogba-gerrard-new-ideas.

Eschker, Erick, Stephen J. Perez, and Mark V. Siegler. 2004. "The NBA and the influx of
international basketball players." Applied Economics 36 (10): 1009–20.

Gonzalez, Roger. "MLS Expansion: Here's what to know about the 12 cities to submit
franchise bids." Soccer. February 01, 2017.
http://www.cbssports.com/soccer/news/mls-expansion-heres-what-to-know-
about-the-12-cities-to-submit-franchise-bids/.

Heitner, Darren. "How Major League Soccer Is Closing The Gap With The Big Four."
Forbes. December 22, 2015.
http://www.forbes.com/sites/darrenheitner/2015/12/22/how-major-league-soccer-
is-closing-the-gap-with-the-big-four/#4373c1387b39.

"History of Major League Soccer." Wikipedia.
https://en.wikipedia.org/wiki/History_of_Major_League_Soccer#Early_difficultie
s.Hooper, Simon. "Soccer's influence: Why the world 'turns around a spinning
ball'" CNN. June 09, 2010.
http://www.cnn.com/2010/SPORT/football/06/09/world.cup.backgrounder/.

Jewell, R. T. 2005. "An Evaluation of the Relationship Between Hispanics and Major
League Soccer." Journal of Sports Economics 6 (2): 160–77.

Kuethe, T. H., and M. Motamed. 2009. "Returns to Stardom: Evidence From U.S. Major
League Soccer." Journal of Sports Economics 11 (5): 567–79.

Kahn, Lawrence M. 1991. "Discrimination in Professional Sports: A Survey of the
Literature." Industrial and Labor Relations Review 44 (3): 395.

Lucifora, Claudio, and Rob Simmons. "Superstar Effects in Sport: Evidence From Italian
Soccer." Journal Of Sports Economics 4, no. 1 (February 01, 2003): 35-55.

Marcin, Tim. "MLS 2020 Expansion: Is The League's Rapid Growth Plan Too Much Too

Soon?" International Business Times. August 7, 2016.
http://www.ibtimes.com/mls-2020-expansion-leagues-rapid-growth-plan-too-much-too-soon-2354737.

Mayassi, Alex. "Why Are Some Countries Good at Soccer?" Priceonomics. June 19,
2014. https://priceonomics.com/why-are-some-countries-good-at-soccer/.

"MLS Players Union announces that it has ratified collective bargaining agreement."
MLSsoccer.com. July 16, 2015. https://www.mlssoccer.com/post/2015/07/16/mls-players-union-announces-it-has-ratified-collective-bargaining-agreement.

"North American Soccer League (1968–84)." Wikipedia.
https://en.wikipedia.org/wiki/North_American_Soccer_League_%281968%E2%80%9384%29#Interest_begins_to_grow.

Nguyen, Thuc Nhi. "MLS no longer 'just a retirement league' as it enters 21st season."
MLS no longer 'just a retirement league' as it enters 21st season. January 19,
2016. http://www.dailynews.com/sports/20160119/mls-no-longer-just-a-retirement-league-as-it-enters-21st-season.

Oaxaca, Ronald. 1973. "Male-Female Wage Differentials in Urban Labor Markets."
International Economic Review, Vol. 14, No. 3 (October), pp. 693-709.

Pedace, R. 2007. "Earnings, Performance, and Nationality Discrimination in a Highly
Competitive Labor Market as An Analysis of the English Professional Soccer
League." Journal of Sports Economics 9 (2): 115–40.

Reed, J. D. "A modified American plan." Vault. March 31, 1980.
http://www.si.com/vault/1980/03/31/824531/a-modified-american-plan-americanization--three-north-americans-on-the-field-instead-of-two--is-the-new-buzzword-in-the-nasl-it-might-add-a-little-pizzazz-to-a-league-that-could-use-some.

"Roster Rules and Regulations." Roster Rules and Regulations | PRESS BOX.
http://pressbox.mlssoccer.com/content/roster-rules-and-regulations.

Salter, Scott. "How Pelé and the New York Cosmos changed soccer." April 13, 2015.
http://thesefootballtimes.co/2015/04/13/how-pele-and-the-new-york-cosmos-changed-us-soccer/.

Smith, Chris. "New Report Supports MLS Promotion/Relegation, But League Still Says
No." Forbes. November 22, 2016.
http://www.forbes.com/sites/chrissmith/2016/11/22/new-report-supports-mls-promotionrelegation-but-league-still-says-no/#13f3fbb91b9f.

Strauss, Brian. "MLS at 20: Original logos for the league's first 10 teams ..." Planet
Futbol. February 25, 2015. http://www.si.com/planet-futbol/2015/03/01/mls-original-logos-crests-20th-season.

Szymanski, Stefan. 2000. "A Market Test for Discrimination in the English Professional
Soccer Leagues." Journal of Political Economy 108 (3): 590–603.

Wangerin, David. Soccer in a Football World: The Story of America's Forgotten Game.
Temple University Press, 2008.

"WhoScored? | Football." The Guardian. https://www.theguardian.com/football/who-scored-blog.

"WhoScored Ratings Explained." WhoScored.com: Revolutionizing Football Statistics.
https://www.whoscored.com/Explanations.

Wilson, Dennis P., and Yung-Hsiang Ying. 2003. "Nationality preferences for labour in the international football industry." Applied Economics 35 (14): 1551–59.

Yang, C.-H., and H.-Y. Lin. 2010. "Is There Salary Discrimination by Nationality in the NBA?: Foreign Talent or Foreign Market." Journal of Sports Economics 13 (1): 53–75.

Young, Jared E. "MLS single-entity and the issue of trust." February 03, 2016. http://www.brotherlygame.com/2016/2/3/10819230/mls-single-entity-and-the-issue-of-trust.

Appendix

Table 1: Descriptive Statistics by Foreign Status

Variable	Total	Foreign	Domestic
Salary	317784.800 (807888.900)	414951.200 (948314.30)	227463.100 (638286.800)
Natural Log of Salary	11.926 (0.973)	12.168 (1.041)	11.701 (0.846)
Foreign	0.482 (0.500)	n/a	n/a
Player Rating	6.682 (0.361)	6.724 (0.357)	6.643 (0.361)
Designated Player	0.091 (0.288)	0.144 (0.351)	0.041 (0.199)
All-Star Team	0.054 (0.227)	0.051 (0.219)	0.058 (0.234)
Man of the Match	0.687 (1.325)	0.825 (1.530)	0.559 (1.087)
Ages 16-23	0.246 (0.431)	0.199 (0.400)	0.290 (0.454)
Ages 24-31	0.583 (0.493)	0.577 (0.494)	0.588 (0.492)
Ages 32-38	0.171 (0.377)	0.224 (0.417)	0.122 (0.327)
Minutes	1253.191 (884.884)	1293.669 (835.822)	1215.565 (927.160)
Forward	0.200 (0.400)	0.226 (0.418)	0.177 (0.382)
Forward-Midfield	0.057 (0.232)	0.058 (0.234)	0.057 (0.231)
Midfield	0.384 (0.486)	0.421 (0.494)	0.349 (0.477)
Defender-Midfield	0.028 (0.165)	0.018 (0.132)	0.037 (0.190)
Defend	0.331 (0.471)	0.278 (0.448)	0.380 (0.486)
2014	0.315 (0.465)	0.285 (0.452)	0.343 (0.475)
2015	0.343 (0.475)	0.342 (0.475)	0.344 (0.475)
2016	0.342 (0.475)	0.373 (0.484)	0.314 (0.464)

Note: N=1,397 for all, N= 673 for foreign, N= 724 for domestic.

Table 2: Salary Regression Results by Foreign Status

	Total	Foreign	Domestic
Foreign	0.148*** (0.035)	n/a	n/a
Player rating	0.613*** (0.075)	**0.808*** (0.118)**	0.385*** (0.094)
Ages 24-31	0.407*** (0.042)	**0.617*** (0.071)**	0.253*** (0.047)
Ages 32-38	0.815*** (0.056)	**0.923*** (0.084)**	0.715*** (0.072)
Designated Player	1.246*** (0.067)	**1.092*** (0.084)**	1.736*** (0.118)
Minutes	0.000*** (0.000)	0.000 (0.000)	0.000*** (0.000)
Forward	0.417*** (0.055)	**0.538*** (0.086)**	0.286*** (0.065)
Midfield	0.257*** (0.042)	**0.133* (0.068)**	0.349*** (0.051)
Forward-midfielder	0.163** (0.079)	-0.125 (0.124)	0.409*** (0.094)
Defender-midfielder	0.097 (0.106)	-0.252 (0.204)	0.270** (0.110)
All-Star Team	0.626*** (0.084)	**0.857*** (0.137)**	0.345*** (0.098)
Man of the Match	0.025 (0.017)	-0.020 (0.024)	0.049** (0.024)
2015	0.140*** (0.042)	**0.181*** (0.067)**	0.127*** (0.049)
2016	0.282*** (0.042)	**0.390*** (0.066)**	0.197*** (0.051)

Note: N= 1,397 for all, N= 673 for foreign, N= 724 for domestic. Robust standard errors are in parentheses. Salary is measured in natural logs
*, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.
Foreign variables that are statistically significant from the domestic variables are bolded.

Table 3: Oaxaca Decomposition Results

	Foreign Weights	Domestic Weights
Total Log Wage Differential	0.467	0.467
Attributable to Differences in Characteristics	0.347	0.364
Attributable to Differences in Coefficients	0.120	0.103

Note: N= 1,397 for all, N= 673 for foreign, N= 724 for domestic.