

Kicking off Transitions:

Analysing the impact of the English Premier League footballers migration to the Saudi Pro League on Domestic Wages

By: Aakash Daswani (203206060)

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Abstract

This paper examines the causal relationship between player departures from the Premier League to the Saudi League and the impact it has on the salaries of players who remain in the Premier League. The migration of “superstar” footballers to new emerging football markets has raised a question of the repercussions it has on the already established leagues. Using an empirical framework and data spanning several seasons, we analyse the effects of the migration on wages within the Premier League.

Employing a differences-in-differences model, the research shows the distinct financial consequences of such player movements. The study leverages detailed transfer data and salary information to determine the adjustments in remunerations within the Premier League after a player's migration to the Saudi League.

The research contributes to understanding how global player migrations impact already established football markets and sheds light on the spillover effects of the sending league.

Conceptual Framework

The conceptual framework for this study is rooted in the field of economics through several different dimensions.

Labour Market Dynamics and Wage Determination

The movement of footballers across leagues is similar to the labour market in a broader economic context. Wages differ by every country and this displays an opportunity cost for the different employment opportunities available to employees in the labour market. Understanding how migration influences wage determination, labour market equilibrium and market policies is central to the economic analysis. The paper will be relating the migration of footballers to the standard labour market of employees as well to see the drastic effects of migration in general

Investment and Economic Incentives

The enormous financial investments made by various leagues to attract the biggest named footballers will lead to overall economic growth of the nation. This research seeks to understand how these new players affect the economy of a new country. For example, Messi, one of the biggest footballers, made news by going inter Miami. In the short time Not only did he make his own club Inter Miami 200 million dollars but he boosted ticket sales and economic growth in the United States of America.

Market Equilibrium and Price Mechanisms

The football industry represents an economic labour market where the players are the critical factor of production. The movement of players, especially the “superstars” can lead to shifts in the demand and supply curve, impacting the equilibrium wages and number of players that are signed on with contracts.

To summarise, my research analyses the effects of footballers migrating from the English Premier League to the Saudi Pro League on salary wages of remaining players (spillover effects). My hypothesis is that when a prominent member leaves the team then their remaining team members will have more leverage over their contract to increase their salaries since they are now playing a bigger role in the team and that there is a demand for their services in the Saudi League.

Background

Globalisation of Football

The football world has had major transformation over the past few years, driven by forces of globalisation, expanded connectivity and the reach of new markets. The introduction of new leagues in previously exploited markets such as the Saudi Professional League has drawn major attention to the economics within the global football industry. Many ‘superstar’ players have been transferred throughout their careers however recently the Saudi Professional League is the most in demand market, due to their higher salaries and even more superior living conditions.

The English Premier League (EPL)

The English Premier League has been one of the most renowned leagues in the world since 1992. It has an international fanbase and is one of the most prestigious leagues to exist. The English Premier League has economic significance beyond the pitch and influences broadcasting deals, sponsorship agreement and player wages.

Player Migration

In recent years there is a notable trend of players from all across the world moving to the Saudi League. The player migration is led by players who are soon to retire but still want to enjoy the game before they do. The Saudi League is a perfect match since it exhibits a high salary structure and living condition for the soon to be retired players. This raises the questions about the impact of salary structures of players who remain behind in the league.

Research Gap

There is existing knowledge that acknowledges the globalisation of football, the labour markets and the ‘superstar effect’ however there is no previous research regarding the impact of the Saudi League on the Premier League. This study unravels the economic intricacies of player migration and aims to contribute insights towards global football economics.

Introduction

In recent years there has been a substantial change in the football world, which is reflected by the growing mobility of players in the international leagues. According to Fifa approximately 67,000 players transferred to different teams between the years 2011-2020 with them going to various clubs. The most notable trend as of yet are hundreds of footballers that are migrating from the English Premier League to the Saudi Pro League. There is an intriguing concern regarding the possible effects of players from the Premier League, particularly in relation to the salaries of players who remain behind.

For example when Cristiano Ronaldo, one of the world's highest paid athletes left Manchester United, what would be the effects of other Manchester United players salaries once such a superstar left? (Manchester United 2022)

The purpose of this paper is to determine the causal relationship between footballers who migrate from the Premier League to the Saudi League and the salary effects on those players who remain behind in the Premier League (spillover effects).

In this paper I will attempt to establish a causal relationship between player migration and salary increment within the Premier League through the use of a differences-in-differences model. The paper will also analyse the spillover effects on Premier League players salaries by comparing players who stay in the Premier League before and after the migration occurs. The paper will determine the driving forces behind these salary increments.

There are 2 main research objectives of this paper:

- 1) To quantify the effect of players leaving Premier League for the Saudi League on salaries of players remaining in the Premier League (spillover effects)
- 2) To determine insights for teams and players to manage financial dynamics to answer the migration of players through analysis of how another prominent league affects the viewership and sponsorship received

Literature Review

Scarfe et al examines the wages of soccer players through their performance data and the viewership that they bring to the stadium with the so-called “superstar effect”. The author analyses salaries of the players through the amount of shots on targets they had per season and the amount of viewership they brought on. Through the research the author found that there is no correlation between the amount of shots on target and the salary being paid. In conclusion, the author shows that there is no data that shows that higher salary necessarily means better performance. This paper is extremely useful towards my research question because it gives evidence on how players are not sometimes signed for their skills but also for the viewerships and superstar effect that they bring to the team. (Scarfe et al. Extreme Wages, Performance and Superstars in a market of footballers, 2021)

Stephen et al analyses the payroll of athletes through their performance data and looks at the relation between team performance and payroll in the case of Major League Baseball (MLB) and English Soccer. The study first determines how high spending is associated with a high level of success for the MLB and then does a comparison with English Soccer, specifically the Premier League. This study takes into account the promotion and relegation aspect of English Soccer to illustrate how payroll gets affected and whether the team’s performance was above or below par. This paper is useful for my research question as it shows that team performance is directly correlated to wages. This goes to show that the player effect might not be as drastic as a team effect. (Stephen et al: Testing Causality between team performance payroll: The cases of Major League Baseball and English Soccer, 2002)

William et al looks at the effect of Mohammed Salah on Islamophobia in the UK. The paper looks at how anti-muslim tweets in the UK reduced over time as the one player Mohammed Salah joined Liverpool. This paper is not directly related to the research question by any means however it provides the difference and difference model that should be achieved. It looks at the effect of islamophobia before Mohammed Salah and similarly the paper will discuss the effects of wages in the Premier League before a player leaves to the Saudi League and after. (William et al: Can exposure to Celebrities reduce prejudice? The effect of Mohammed Salah, 2021)

Data

The data used to answer the research question would be the salary of players in the English Premier League from the years 2013 to 2023 (Premier League dataset) and the migration in movement to the Saudi League(Saudi League dataset).

The Premier League dataset provides the panel data required to see how players salaries change over time with other important variables such as their ranking, squad and age. The independent variable player migration, would be a binary measurement (1 for players leaving to the Saudi League, 0 otherwise). The dependent variable in this case would be the players weekly wages and how it is affected by the binary variable. The wages are logged to see the proportion of salary increments as a player migrates to the Saudi League. Lastly, we have the fixed variables to be taken into consideration, the age, the ranking and the squad.

The Saudi Premier League dataset also provides panel data of many variables such as: Saudi club name, player name, age, transfer movement (in or out) and more. This dataset is only needed to match players from the Premier League to the Saudi League. The process of data cleansing for the Saudi League involves dropping all variables other than the transfer movement, specifically the ones that moved in and the player name.

There is a merge of all the players in the Premier League dataset and the Saudi League dataset to determine all players who have left from the Premier League to the Saudi League and who haven't left. The merged data is then further manipulated by dropping all unnecessary variables and then wages are logged to see the percentage effect of play migration throughout the timespan

Summary Statistics					
Variable	Obs	Mean	Std. dev.	Min	Max
Ranking	6,434	293.6018	169.9928	1	638
Player	0				
Squad	0				
Age	6,434	25.39944	4.615942	15	43
Wages	6,434	48375.58	51029.36	96	600000
Transfer Year +1	6,434	2017.933	3.130768	2013	2023
If Player is in Saudi and Played for Premier League	6,434	1.054399	0.325353	1	3
If ever transferred to Saudi	6,434	0.0271993	0.162676	0	1
If ever transferred to Saudi (Year)	175	2020.486	4.115931	2003	2023
Transfer Year +1	6,434	2018.933	3.130768	2014	2024
Player Next Year Transfer	6,434	0.0027976	0.052823	0	1
Squad Code	6,434	16.91514	10.32415	1	34
If Player migrated but NOT to Saudi (Year)	5,475	2016.097	5.51885	2003	2023
2 Years Before Migration	6,434	0.0573516	0.232531	0	1
1 Year Before Migration	6,434	0.0553311	0.228643	0	1
Year of Migration	6,434	0.0596829	0.236917	0	1
1 Year After Migration	6,434	0.0562636	0.230448	0	1
2 Years After Migration	6,434	0.0533105	0.22467	0	1
3 Years After Migration	6,434	0.0404103	0.196935	0	1
Player Code	6,434	1128.209	666.9629	1	2266
Log Wages	6,434	10.15722	1.402375	4.564348	13.30468

Methodology

The Difference and Difference regression equation that will be used in the paper will be:

$$\text{Salary}_{it} = \beta_0 + \beta_1 \text{Departure}_{it} + \alpha_i + \gamma_t + \epsilon_{it}$$

- Salary_{it} is the lagged outcome variable (the Premier League Salary) for player i at time t
- Departure_{it} is a binary variable indicating if player i has gone to the Saudi League from the Premier League. ($\text{Departure}_{it}=1$ if player from the team left for Saudi League, $\text{Departure}_{it}=0$ if remained behind)
- β_0 is the intercept representing the mean salary of Premier league players
- β_1 is mean salary difference between players remain behind in the Premier League after a player from their team has migrated to the Saudi League
- α_i represents the player fixed effect over time
- γ_t represents the time fixed effects to take into account the economic situation at that time period
- ϵ_{it} is the error term

Assumptions

In order to test the proposed hypothesis a few assumptions had to be made: the Parallel trend assumption, the Causal assumption and lastly Data quality and reliability.

The parallel trend assumption is the assumption that in the absence of treatment, the difference between 'treatment' and the 'control' group is constant over time. In this scenario, the assumption to be made is that in the absence of player migration to the Saudi League, the wages of the players in the Premier League would have followed a similar trend to those observed when players migrated. This assumption is key when determining a differences-in-differences model.

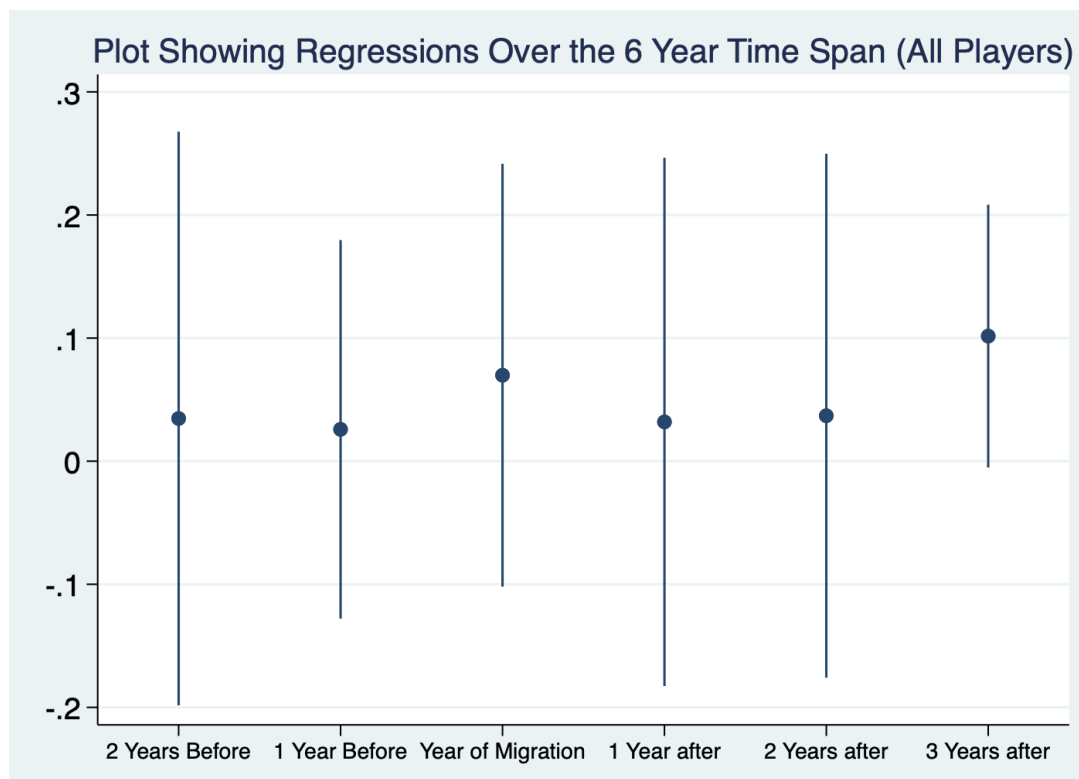
The causal assumption is the assumption that the migration of the players from the Premier League to the Saudi League causes changes in the salaries of the players who remain behind. This assumes that the movement is exogenous and not influenced by other factors affecting Premier League wages.

Lastly the data quality and reliability assumption is that all data used for this analysis is accurate, reliable and does not contain any measurement error or biases that could bias the findings.

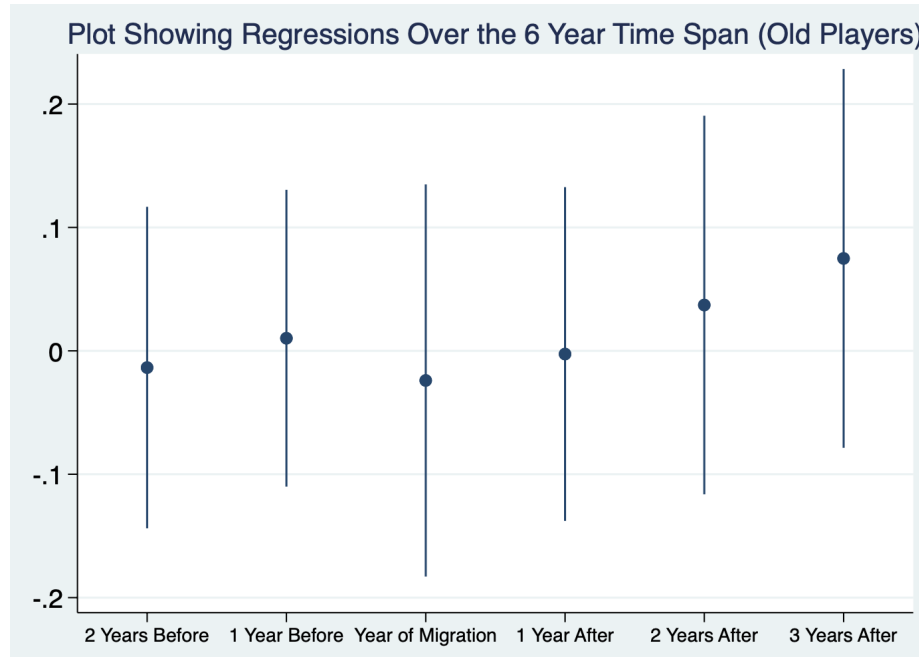
To analyse the effects of before and after the Saudi League a difference and difference regression would be best. A difference and difference regression assesses the causal effect of an event by comparing sets of units before the event happening and after. The goal is to see if the Saudi league boosts salaries for all players who remain behind in the Premier League through a difference and difference regression.

Empirical Analysis

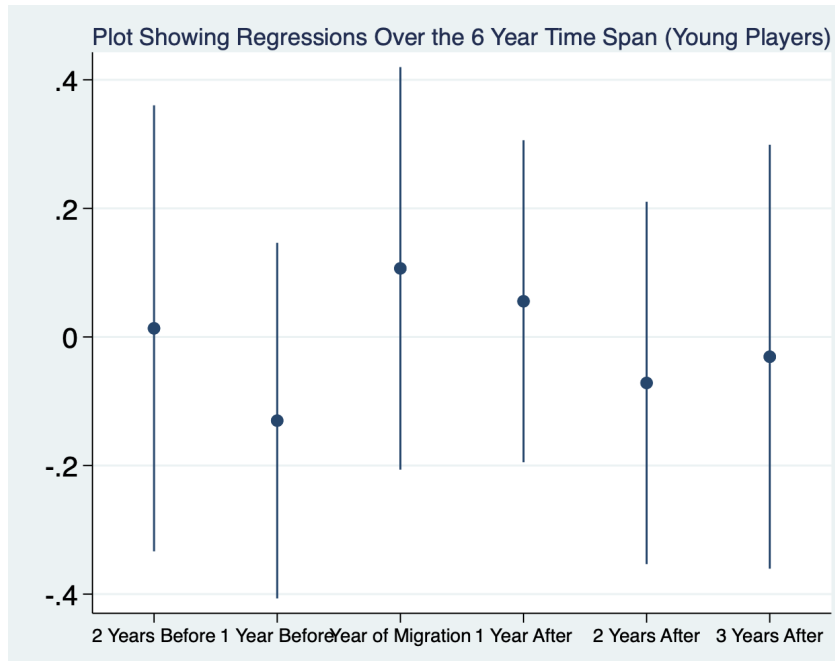
To begin the analysis firstly a regression was done for the 5 year span of when a player first migrated from the Premier League to the Saudi League to see the effects for each year before and after the player migrated. From the graph below we can see that salaries tend to increase over time and that 3 years after a player's migration to Saudi, salaries can increase by 10.2%. This goes to show that a player's salary doesn't increase right away as after another player's departure but after 3 years it does. This is because most players are bound by their contracts which are typically three years long. However this thesis is disproven because it is not statistically significant with a t-value less than 1.96 and a p-value greater 0.01.



The above analysis takes into account all players within the Premier League, but what if there are certain players who get a salary increment? The next thesis was to check whether the older or younger players who remain behind get a salary increment. The mean age of a player within the Premier League was 25. Therefore we wanted to see if players below 25 and above 25 get a salary increment.

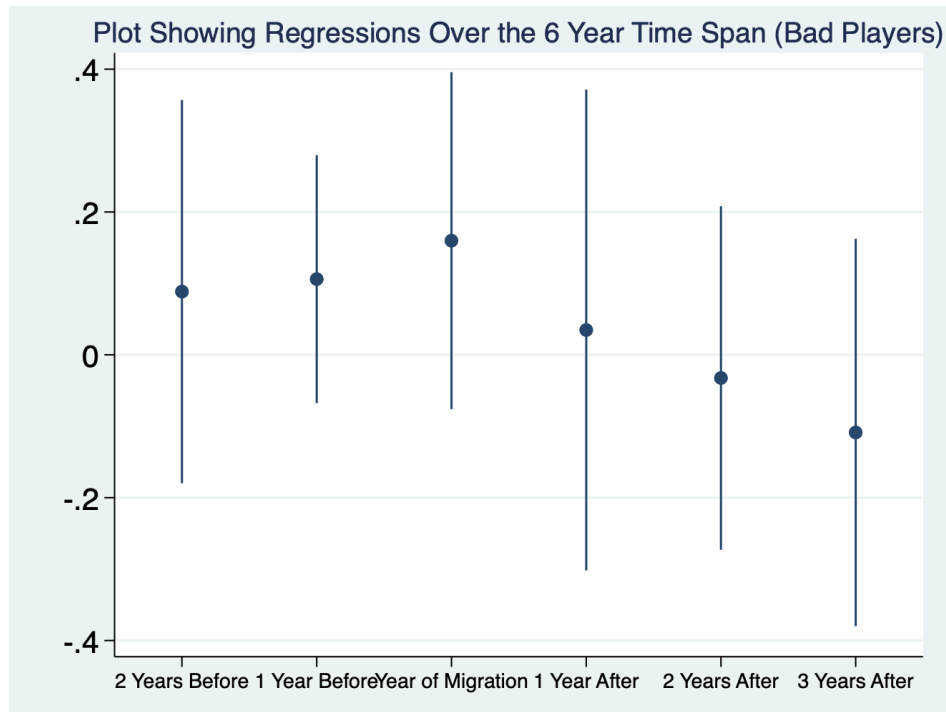


The graph above shows the wage increment for players greater than 25 who are considered in this dataset older players. Similarly we see that wages increase for players after the third year of a player's migration to Saudi by 7.49%. This goes to show that older players now have more negotiating power within their Premier League team and can negotiate to get better salaries or move to the Saudi League which pays significantly more. However this thesis is disproven so the t-value and p-value are statistically insignificant.

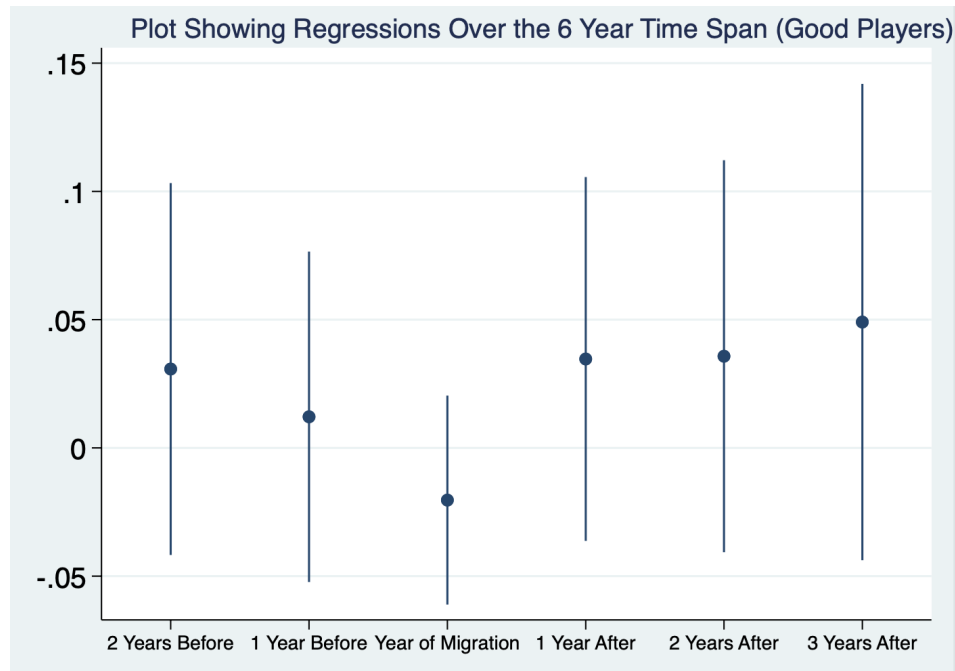


The graph above shows the wage increment for players less than 25 years of age who are considered in this dataset younger players. Similarly we see that wages increase for players in the same year of a player's migration to Saudi by 10.66%. This goes to show that younger players now have more negotiating power within their Premier League team and can negotiate to get better salaries or move to the Saudi League which pays significantly more for their talent. However this thesis is disproven so the t-value and p-value are statistically insignificant.

This analysis goes to show that age does not matter when looking into the spillover wage effect of the Saudi League migration. The next approach is to look if players ranked above and below the median are getting salary increments since players are migrating.



The graph above shows the effects on salary for players whose ranking are above 293. These players are considered to be 'bad'. The bad players in this case expect a salary increment of 15.7% when players migrate from their team but reduces by 11.5% over time. This goes to show that initially their salaries do increase but then the team gets a replacement for whomever migrated and this leads to their salaries decreasing over time. However this thesis is disproven so the t-value and p-value are statistically insignificant.



Lastly we look at the effect of players whose ranking is less than 293. These players are considered to be 'good'. The good players in this case expect a salary increment of 4.77% in the third year when it is assumed that they have more bargaining power over their contract. However, this thesis is disproven so the t-value and p-value are statistically insignificant.

This analysis shows that the hypothesis that salaries of remaining players after migration does not increase over time. Upon further inspection, neither the age nor the ranking shows statistically significant results.

Conclusion

The findings from this investigation into the impact of Premier League footballer migration to the Saudi league on the salaries of those remaining in the premier league results does not support the initial hypothesis that salaries increase.

The analysis, utilising a difference in differences framework aimed to shed light on a causal relationship between player movements and wage dynamics in the Premier League. However the empirical analysis shows that the departures of players into the new emerging Saudi League market did not yield a statistically significant impact on the salaries of remaining players in the Premier League.

This outcome was unexpected since throughout the media and rumours we would assume now that players within the Premier League have now received a salary increment. The analysis accounted for various factors and addressed endogeneity concerns, however it seems that the unobservable elements in this case might play a more significant role in determining the wage changes. If there is a recession there is no reason to expect salaries to be increasing during that year.

Although the hypothesis was not supported by the data, these findings display a better understanding of the relationship between player movements and wage dynamics. It illustrates the complexities of market transactions that are considered when determining the salary determinants in the Premier League.

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Appendix

Table showing the salary increment after player migration					
	All Players	Old	Young	Bad	Good
2 years before migration	0.0346675	-0.013556	0.013421	0.0889448	0.0309454
(SER)	0.1148465	0.0643639	0.17136	0.1322465	0.0362602
1 year before migration	0.0258655	0.0102311	-0.130139	0.1070749	0.0141522
(SER)	0.0757561	0.0594255	0.136634	0.0873145	0.0319879
During Migration	0.0698209	-0.024002	0.106652	0.1565728	-0.019467
(SER)	0.0846294	0.0785174	0.154663	0.11557	0.0211856
1 year after migration	0.0319112	-0.002576	0.055557	0.0373187	0.0373605
(SER)	0.105746	0.0668215	0.123727	0.162573	0.0328994
2 years after migration	0.0369285	0.0371433	-0.071507	-0.0398271	0.0335225
(SER)	0.1048773	0.0758059	0.139216	0.1183014	0.0372391
3 years after migration	0.1016363	0.0749063	-0.030738	-0.1148551	0.0476803
(SER)	0.0526128	0.0758405	0.16287	0.1360385	0.0453414
N	6434	3136	3298	3222	3212
R-Squared	0.1748	0.491	0.1859	0.1658	0.4889