4-2022

Recessionary Effects on Transfer Fees in European Professional Football

Pierce Snyder
University of Richmond

Recessionary Effects on Transfer Fees in European Professional Football

Pierce Snyder

Honors Thesis

Department of Economics
University of Richmond
Richmond, VA

April 2022

Advisor: Dr. Jim Monks

1. Introduction

Association football, most commonly referred to internationally as football, is the world's most popular sport with billions of fans. Professional football leagues operate in countries all over the globe. While other continents have prominent and successful teams, Europe is the sport's summit for the club level of competition. Europe boasts the best five leagues in the world, commonly referred to as "the big five": the Bundesliga (Germany), La Liga (Spain), Ligue 1 (France), Premier League (England), and Serie A (Italy). In the 2016-2017 season, these five leagues accounted for 12.6 billion pounds—57.5 percent—of European football's revenues of about 21.9 billion pounds across all leagues in the 54 UEFA associations (Reuters, 2018). As evidenced by their majority share of European football revenue, the big five leagues include many of the highest spending football clubs.

European football clubs almost exclusively obtain new talent from the transfer market (Depken II and Globan, 2020), contrary to American sports where teams typically demonstrate their financial might in the free agency market or acquire new players via new player drafts or direct player(s)-for-player(s) trades with other teams. Direct trades are a rare occurrence in professional football. Instead, teams pay other clubs around the world a transfer fee to sign a contracted player for themselves. For example, Arsenal, an English Premier League club, signed forward Pierre-Emerick Aubameyang from German club Borussia Dortmund in January 2018 for £57,380,000 (Transfermarkt).

Like most industries, the COVID-19 pandemic and the recession it induced in the spring of 2020 dramatically impacted European professional football. Across Europe, footballing activities came to a standstill. While four of the big five leagues resumed play without fans, beginning with the Bundesliga in May 2020, France's Ligue 1 cancelled the remainder of the

2019-2020 season due to the pandemic's effects (Daumann et al., 2020). The COVID-19 pandemic dramatically reduced revenue derived from gate receipts and other matchday income sources, broadcasting deals, and corporate sponsorships, having a profound economic impact on European professional football clubs (Frick et al., 2021). The literature on the pandemic's economic impact on European football is developing, although most research focuses on the English Premier League.

The COVID-19 pandemic and its resulting global recession followed the Great Recession, which had similarly negative economic effects just over a decade earlier. Somewhat surprisingly, there are few papers dedicated to the Great Recession's impact on professional football in Europe. Moreover, no studies in the literature directly compare the impacts of the two recessions on any level of European professional football, much less across five leagues in different countries.

In this paper, I attempt to address the gap in the football economic literature concerning the negative effects of the Great Recession from 2007 to 2009 and the presently ongoing COVID-19 pandemic. Using data on transfers completed by teams competing in the big five leagues from the 2004-2005 season to the summer transfer window coinciding with the 2021-2022 season, I seek to provide insight on how the Great Recession and the COVID-19 pandemic affected transfer fees in Europe's top five professional football leagues and what explains the variation in recessionary effects. In assessing recessionary effects on European football transfer fees, this study seeks to understand not only the impacts of recession on sport but also to contribute to the broader knowledge of the economic effects of recessions.

Naturally, I expect both the Great Recession and the recession brought on by the COVID-19 pandemic to have had negative effects on transfer fees. Given the more drastic and abrupt

negative effect of the pandemic, particularly on several key revenue sources for European professional football clubs, I anticipate the pandemic to have caused a greater short-term reduction in transfer fees. Specifically, I hypothesize the greatest impact was felt in the summer transfer window at the start of the 2020-2021 season as football clubs were feeling the recessionary effects of the pandemic on revenue. I expect the reduction in transfer fees paid by clubs during both recessions to have been least severe in the English Premier League, which is the world's largest professional football league in terms of revenue (Reuters, 2018). I hypothesize further that the COVID-19 pandemic had the greatest negative impact on transfer fees paid by either Ligue 1 clubs or Serie A clubs. Serie A is the top football division in Italy, which has the highest COVID-19 death rate per 100,000 people of the five countries in my study (BBC, 2021). Ligue 1 was the only of Europe's top five leagues to opt not to resume the suspended 2019-2020 season and has the smallest revenue of the five leagues (Daumann et al., 2021). Clubs in France's top division experienced a near quarter billion euro loss of broadcasting revenue (Depken II and Globan, 2020) due to the COVID-19 pandemic.

2. Literature Review

The economics of professional sports are unique in many regards relative to other industries, and an understanding of the theoretical foundation of sports is required to truly appreciate the findings and implications of empirical studies. Rottenberg (1956) addresses the inner workings of the labor market for professional baseball players and presents generalizable conclusions for other sports, including football. The paper finds that sports teams look to maximize rent from the players they employ which prompts great investments into player development and optimization. Noting the unique characteristics of sports, Rottenberg finds that

teams require competitors to remain financially solvent so that matches between the two can take place. As competition occurs, independent teams combine to create one output. Neale (1964) elaborates on the earlier findings of Rottenberg (1956) and finds that there is an incentive for professional sports teams not to become too dominant relative to other teams. Becoming too superior reduces the uncertainty over outcomes which in turn reduces interest. Just as teams require competition to create a product for the consumer, sports fans and tighter competition standings help drive revenue as they promote income sources such as matchday attendance. To apply Neale's (1964) findings to European football, Manchester City would act against their own best interest were they to purchase the highest quality players from the other top Premier League clubs through excessive transfer spending. Doing so would greatly reduce the uncertainty of outcome driving sports economics and would result in reduced revenue both in the short-run—matchday revenues—and the long-run through broadcast revenues should this hypothetical transfer behavior persist. Rottenberg (1956) and Neale (1964) argue football fans prefer a close title race and 1-0 nail biters than for Bayern Munich to win 5-0 every match and run away in the league standings.

El-Hodiri and Quirk (1971) expand on the theoretical sports literature by drafting a framework of a professional sports league. The model addresses the sale of playing contracts which is the essence of the transfer market in professional football. If teams are free to engage in the sale of player contracts, disparities in revenue potential between different markets prevents the equalization of playing strength among teams. Thus, football clubs in London can be expected, all else equal, to earn more than clubs in Wolverhampton which permits the clubs in London to spend more on transfer fees. It is therefore unsurprising that many of football's largest spenders in the transfer market are clubs located in major cities.

Kesenne (2007) applies the models of both Neale (1964) and El-Hodiri and Quirk (1971) specifically to professional European football. Kesenne motivates his work through observations that the professional football labor market is a notable exception to the general European trend of increased capital mobility with limited labor mobility. He finds the opposite is true for football where the transfer market promotes international labor movement, but the product is consumed primarily domestically. Assuming win maximization behavior, Kesenne (2007) finds widening revenue gaps between small and large countries as well as small and large local markets within the same country using a model with two countries with two teams each. The study's findings help explain why, say, Sweden's Allsvenskan is not one of Europe's top leagues and why clubs from England's larger cities tend to occupy the top positions in the league table and continue to do so in part through higher transfer spending relative to their competitors.

Both explicitly and implicitly utilizing the theoretical sports literature, other studies broaden the understanding of the transfer market in professional football. Moorhouse (1999) assesses the transfer market's economic benefits in consideration of the 1995 Bosman ruling by the European Court of Justice. The case prompted a fundamental shift in the transfer market, adding an element akin to American free agency which allows footballers to join a new club following the expiration of their contract with their present club with the crucial absence of a transfer fee exchanged between the two clubs. Providing supporting evidence for El-Hodiri and Quirk (1971) and Kesenne (2007), Moorhouse finds most transfers are conducted between top division clubs such as those in the big five leagues.

Much like the methodological approach of Moorhouse (1999), Frick (2007) provides a literature review of the professional football labor market. The paper notes that footballers do not have equal likelihoods of being transferred. Additionally, more valuable players have a higher

probability of being transferred as they represent an important potential revenue source for their present clubs. Frick warns the implications of these observations may produce biased coefficients when running regressions involving transfer fees and transfer fee determinants. This is something to keep in mind when considering the results of my study.

Using an empirical approach, Depken II and Globan (2020) utilize transfer data from Europe's big five leagues to obtain estimates of transfer premiums—the difference between transfer fees and crowd-estimated market values of transferred players. Depken II and Globan find English Premier League clubs pay statistically significant higher premiums on transfer fees than clubs in Europe's four other largest leagues. The study empirically associates this finding with a 2012 broadcast deal signed by the Premier League. Focusing on cross-team rather than cross-league differences, Breuer and Rohde (2016) estimate the impact of different ownership structures on Premier League clubs. As evidenced by the substantial 2012 Premier League broadcasting deal, European professional football possesses massive commercial influence. Observing an increase in labor costs for clubs with private majority owners along with reduced profits, it can be inferred by Breuer and Rohde (2016) that the twenty-first century uptick in private owners in the Premier League is also associated with increasing transfer fees as these owners tend to prioritize success on the pitch rather than profit-maximization.

Whereas the academic literature on the COVID-19 pandemic's impact on professional football continues to develop, the literature pertaining to football and the Great Recession is scarce. Buraimo et al. (2020) analyze the Great Recession's impact on attendance in English football's lower divisions. While not primarily concerned with the big five leagues in Europe, the study notes the Bundesliga, La Liga, Ligue 1, and Premier League experienced increasing attendance during the recession. However, Serie A clubs saw reduced matchday attendance

figures. Based on this, a comparison of the Great Recession's effect on Serie A relative to the other four leagues in my study will be of particular interest.

A variety of contributions to the academic sports literature have been made in recent months researching the pandemic's economic and operational impact on European professional football. As some papers were published before fans had returned to football stadiums across Europe, there is a need for studies on the pandemic's ongoing impact on sports. Kennedy and Kennedy (2021) utilize qualitative methods to analyze the behavior of the Premier League's twenty clubs during the pandemic. They note that while Premier League clubs and players perhaps could have done more for the community during this time as evidenced by the minority of clubs who implemented wage cuts, football clubs have an important social role in communities. Recognizing their social role, the few clubs who did implement pay cuts signaled a greater prioritization of their social functions than their counterparts who did not take such measures.

Compared to Kennedy and Kennedy (2021), Daumann et al. (2021) and Frick et al. (2021) focus more on the recessionary effects on professional football clubs themselves during the pandemic. Daumann et al. (2021) was published prior to the return of fans to football matches. The study analyzes potential revenue scenarios for football clubs based on varying levels of fan readmittance. Notably, the paper discusses activities undertaken by Bundesliga clubs which recall theoretical notions put forth by Rottenberg (1956) and Neale (1964). Some of Germany's top football clubs contributed to a fund for their competitors in the first and second division to help weather the reduction in revenues onset by the pandemic. This illustrates the unique quality of sports which posits that clubs have an incentive to maintain high levels of competition. Daumann et al. (2021) cites the enormous influence of television contracts on

revenue in Europe's top leagues; the Bundesliga is the least reliant though media represents a sizeable 39 percent of revenue, while 59 percent of the Premier League's revenue comes from television deals. With broadcasting contracts called into question due to the footballing hiatus across Europe in 2020, it is logical to expect a reduction in transfer fees from the COVID-19 pandemic. Focusing on the Premier League, Frick et al. (2021) represents the first empirical study of the pandemic's effect on player salaries and the transfer market. The working paper was authored following the return of top-flight football in Europe but before the completion and distribution of a vaccine; thus, my study has the benefit of more complete information in assessing the negative effect of the pandemic. Developing various forecasts based on potential pandemic-related scenarios, Frick et al. (2021) predicts between a 13 percent and 28 percent reduction in revenue for Premier League clubs. Significantly, this corresponds with a decrease of transfer expenditures between six and fourteen million pounds per club. Working with data from the 2021-2022 season in my study, I will be able to offer insight on the effectiveness of their model.

In light of the substantial negative economic effects of the Great Recession and the COVID-19 pandemic on European professional football, the football financial distress model formulated by Alaminos and Fernández (2019) is worth consideration. Using a logit model and a Multilayer Perceptron—an artificial neural network utilized in machine learning—the study finds the best indicators of financial distress in football clubs are small market size, poor on-field performance, and high leverage. This paper informs my understanding of negative financial indicators in professional football clubs and thereby my empirical model.

3. Institutional Details

The transfer market of European professional football differs greatly from common practice in American sports. Transfers are generally only permitted during two allotted windows per year, one in the summer, and one in January. During these windows, buying clubs approach others regarding a player under contract with the potential seller. The two teams negotiate a transfer fee for the player's services. Once agreed upon between the two clubs, the player is released from his contract, allowing the buying club and player to sign a new deal while the selling club receives the transfer fee for his sale.

In addition to permanent transfers, loan transfers are also an important component of the transfer market. Loans are temporary transfers which generally range from six months to two years and see the player move to another club in the same league as the parent club or to another league. Fees may be associated with loans, and players return to the parent club upon the expiration of the loan agreement. Loans can be understood as similar to the use of minor leagues in American professional sports such as baseball for player development in preparation for competing at a major league level. While football clubs maintain academies to achieve part of this goal, players may also be loaned out to other clubs. Transfers and loans associated with a fee are the focus of this study.

4. Data and Methods

Following Depken II and Globan (2020) and Frick (2021), I use data from a single source, *transfermarkt.co.uk*.[1] Based in Germany, Transfermarkt provides comprehensive information of transfer activity in professional football leagues around the world. In addition to

[1] To acquire this data, I utilized web scraping. The data I gathered consisted of player name, primary position, age at time of transfer, transfer date, nationality, and nominal transfer fee in pound sterling

the reporting of more recent transfer activity and estimated player market values, Transfermarkt maintains a database of historical transfers for each professional league. Müller et al. (2017) develops a model that estimates a crowd-generated player market value. Crowd-estimated market values on Transfermarkt are highly correlated with transfer fees exchanged between clubs.

Using historical transfer data from the Bundesliga, La Liga, Ligue 1, Premier League, and Serie A, I gathered information on 18,122 permanent transfers and loans from the 2004-2005 season to the 2021-2022 summer transfer window. Only incoming transfers are considered in my study, I do not include players who left clubs in the five leagues unless they were transferred to another league included in the study. The knowledge that English football clubs are Europe's largest spenders in terms of transfer fees and that the 2012 television deal is of great significance in differentiating the Premier League from the other four leagues of interest will help inform the analysis of transfer fees in this study (Depken II and Globan, 2020).

Table 1 gives summary statistics on transfers and loans associated with a fee as these forms of transfers are the focus of my study. Such paid player exchanges constitute 52.8 percent—9,574 instances—of the original dataset pointing to the large number of free transfers and loans without a fee. Transfer fees are adjusted to real 2019 euros. The mean age of footballers at the time of their transfer suggests that players are most likely to be transferred as they begin to enter their prime, though the minimum and maximum ages in the data indicate players of all ages may be transferred. Figure 4 provides a visual representation for the age distribution of permanent transfers and loans. Unsurprisingly, players in the following three age groups appear most frequently in the data: 21-23, 24-26, and 27-29. While the mean transfer fee is approximately 6.5 million euros, massive amounts of money are spent in the transfer market on individual players. In August 2017, French club Paris Saint-Germain paid Spanish club FC

Barcelona a €223,776,000 transfer fee for Neymar Jr., the highest such fee to date (Transfermarkt). The data include dummy variables indicating which league the player was transferred to. Bundesliga clubs had the fewest incoming transfers in the sample, while Serie A transfers constitutes over seven percent more of the data set than the next most active league. Recession is a dummy variable indicating whether a player was transferred during either the Great Recession or the COVID-19 pandemic and is included to help capture recessionary effects on transfer fees. Great Recession is a binary variable with a value of 1 for transfers from January 2008 to December 2009, whereas COVID-19 is a binary variable with a value of 1 for transfers from the January 2020 transfer window through the summer 2021 transfer window. Likewise, loan is a dummy variable with a value of 1 for loan transfers in the data set. The data also include a player's primary position and a player's home continent as defined by their national team.[2] Forwards constitute 33.8 percent of transfers and loans associated with a fee, followed closely by defenders and midfielders at 31.4 percent and 28.8 percent, respectively. Goalkeepers represent the remainder of the position data. Unsurprisingly, European players comprise a majority of transferred and loaned players associated with a fee—67.6 percent. They are followed in order of transfer frequency by South American and African players at 16.7 percent and 11.9 percent, respectively. Asian, North American, and Oceanian players each make up less than 2.5 percent of the data containing paid transfers and loans.

I estimate the recessionary effects on the natural log of real transfer fees in Europe's big five leagues on the sample of transfers with positive fees using Ordinary Least Squares.[3] The first estimating equation takes the following form:

[2] Due to gathering issues, the data does not include the league which the player was transferred from and the player's new club in the five leagues

[3] Results from Tobit models on the sample of all transfers, including free transfers and loans, are included in the appendix

$$\begin{aligned}\ln\text{RealTransferFee}_{it} &= \beta_0 + \beta_1\text{Trend}_t + \beta_2\text{Age}_i + \beta_3\text{Age}_i^{\,2} + \beta_4\text{PremierLeague} \\ &+ \beta_5\text{LaLiga} + \beta_6\text{Bundesliga} + \beta_7\text{SerieA} + \beta_8\text{Recession} + \beta_9\text{Loan}_i \\ &+ \beta_{10}\text{Position}_i + \beta_{11}\text{Continent}_i + u_{it}\end{aligned}$$

Results from this regression can be found in Table 2 under Specification (1). France's Ligue 1 is omitted among the league dummy variables.

Additionally, Table 2 includes the regression results from a second estimating equation, listed under Specification (2). The second estimating equation takes the following form:

$$\begin{aligned}\ln\text{RealTransferFee}_{it} &= \beta_0 + \beta_1\text{Trend}_t + \beta_2\text{Age}_i + \beta_3\text{Age}_i^{\,2} + \beta_4\text{PremierLeague} + \beta_5\text{LaLiga} \\ &+ \beta_6\text{Bundesliga} + \beta_7\text{SerieA} + \beta_8\text{GreatRecession} + \beta_9\text{COVID} \\ &+ \beta_{10}\text{Loan}_i + \beta_{11}\text{Position}_i + \beta_{12}\text{Continent}_i + u_{it}\end{aligned}$$

In the above equation, the recession dummy variable from Specification (1) is replaced by Great Recession and COVID-19 dummy variables. Doing so allows me to isolate the individual effects of the two recessions.

To consider the impact of recessions on each of the big five leagues, Table 3 includes recession and league interaction terms. The third estimating equation is as follows:

$$\begin{aligned}\ln\text{RealTransferFee}_{it} &= \beta_0 + \beta_1\text{Trend}_t + \beta_2\text{Age}_i + \beta_3\text{Age}_i^{\,2} + \beta_4\text{PremierLeague} + \beta_5\text{LaLiga} \\ &+ \beta_6\text{Bundesliga} + \beta_7\text{SerieA} + \beta_8\text{Recession} + \beta_9\text{EPL} * \text{Recession} \\ &+ \beta_{10}\text{LaLiga} * \text{Recession} + \beta_{11}\text{Bundesliga} * \text{Recession} + \beta_{12}\text{SerieA} \\ &* \text{Recession} + \beta_{13}\text{Loan}_i + \beta_{14}\text{Position}_i + \beta_{15}\text{Continent}_i + u_{it}\end{aligned}$$

As in the prior two estimating equations, Ligue 1 is the omitted league categorical variable. Like Specification (2) in Table 2, the regression detailed in Table 4 separates the recession variable and its league interaction coefficients from the previous estimating equation and interacts both the Great Recession and pandemic dummy variables with the four included leagues. The estimating equation takes the following form:

$$\begin{aligned}\ln\text{RealTransferFee}_{it} &= \beta_0 + \beta_1\text{Trend}_t + \beta_2\text{Age}_i + \beta_3\text{Age}_i^2 + \beta_4\text{PremierLeague} + \beta_5\text{LaLiga} \\ &+ \beta_6\text{Bundesliga} + \beta_7\text{SerieA} + \beta_8\text{Great Recession} + \beta_9\text{COVID} + \beta_{10}\text{EPL} \\ &* \text{Recession} + \beta_{11}\text{LaLiga} * \text{Recession} + \beta_{12}\text{Bundesliga} * \text{Recession} \\ &+ \beta_{13}\text{SerieA} * \text{Recession} + \beta_{14}\text{EPL} * \text{COVID} + \beta_{15}\text{LaLiga} * \text{COVID} \\ &+ \beta_{16}\text{Bundesliga} * \text{COVID} + \beta_{17}\text{SerieA} * \text{COVID} + \beta_{18}\text{Loan}_i + \beta_{19}\text{Position}_i \\ &+ \beta_{20}\text{Continent}_i + u_{it}\end{aligned}$$

The division of the recession variable and its league interaction effects in the above equation allows for the isolation of the individual effects of the Great Recession and the COVID-19 induced recession on transfer fees paid by clubs in the Premier League, La Liga, Bundesliga, and Serie A.

5. Results

Table 2 presents results which begin to help answer this paper's primary research question pertaining to the recessionary effects on transfer fees in European professional football's five largest leagues. Coefficient estimates for traditional transfer determinants under Specification (1) provide expected results, such as the positive coefficient on age and negative coefficient on age squared. All else equal, a player's transfer fee first increases with age as their on-field production grows before decreasing as the player gets older and has fewer years of quality performances remaining. Goalkeepers are associated with the lowest transfer fees of any position. This is expected as it is the most specialized—therefore least versatile—position as corroborated by Frick (2007). Conversely, forwards command the highest transfer fees of all four position categories—on average, 65.8 percent higher than goalkeepers, 36.2 percent more than defenders, and 15 percent more than midfielders—likely owing to their goal and assist contributions. South American players are associated with the highest transfer fees per continent, outpacing fees paid for European players by a premium of 42.3 percent. This can likely be

attributed to their scarcity and quality relative to the droves of European players transferred into Europe's most successful five leagues, as well as visa issues commonly associated with transfers for non-European players. Unexpectedly, the coefficient estimate on the recession variable is positive and indicates an increase in real transfer fees of 2.9 percent, on average, though it is not statistically significant. Only La Liga and the Premier League are associated with higher transfer fees relative to Ligue 1, while the coefficient on Serie A is close to zero and not statistically significant. This indicates that while French club Paris Saint-Germain has paid the two highest transfer fees in world football, the rest of the league lags behind in terms of transfer expenditures relative to top-flight Spanish and English clubs (Transfermarkt). However, Ligue 1 clubs are associated with 14.7 percent higher transfer fees than Bundesliga clubs, on average; this is statistically significant at the 95 percent level. As expected—and providing support for the results of Depken II and Globan (2020)—the Premier League is associated, on average, with higher transfer fees than the other four leagues observed in this study. Transfer fees paid by top-flight English clubs are, on average, 87.3 percent higher than those paid by French clubs. On average, Premier League clubs pay 67.7 percent higher transfer fees than those in La Liga—the league associated with the second largest transfer fees. The coefficient estimate on loan is negative and statistically significant, owing to the notion that fees associated with loans tend to be lower than permanent transfer fees. My results demonstrate that fees for paid loans are 155 percent lower than those for permanent transfers, on average. The trend variable indicates a positive annual increase in transfer fees of 5 percent from the 2004-2005 season to the 2021-2022 season.

Table 2's Specification (2) differs from Specification (1) in that separate recessionary dummy variables are included for transfers which took place during the Great Recession and the

COVID-19 pandemic. The coefficient signs and statistical significance of the other variables remain unchanged from the first specification. The results provide great clarity on the absence of statistical significance for the recessionary variable which combines the individual Great Recession and COVID-19 observations. Contrary to my hypothesis, the coefficient estimate for the Great Recession is positive, however it is not statistically significant. This result appears to support Buraimo et al. (2020), who note that all big five European football leagues with the exception of Serie A experienced increased attendance figures during the Great Recession. While the Great Recession had large negative impacts on football clubs in England's lower divisions, perhaps Buraimo et al. (2020) and my results indicate that clubs in the wealthier top divisions of European professional football were better able to navigate the recession. Like the earlier recessionary shock in Europe, the coefficient on the COVID-19 pandemic is positive with a value of 0.002 though not statistically significant. The effect of the Great Recession on transfer fees appears to outweigh, on average, the effect of the pandemic by 4.7 percent.

The results of the estimating equation detailed in Table 3 are particularly interesting as the introduction of interaction terms allows for the consideration of recessionary effects on transfer fees paid in each individual league. The coefficient estimates for trend and age remain positive and statistically significant as in the previous two estimations, while the estimate for age squared remains negative and statistically significant. The Premier League is associated with 88.1 percent larger transfer fees on average than Ligue 1 while La Liga is associated with 22.9 percent higher transfer fees. Bundesliga clubs pay the lowest transfer fees of the five leagues, spending on average 15 percent less than French clubs; this supports Depken II and Globan (2020) who find Bundesliga clubs pay the lowest transfer market premiums of the big five leagues. The recession dummy variable remains positive and statistically insignificant. As with

the recession variable, none of the league and recession interaction terms are statistically significant. Premier League transfer fees were 3.2 percent lower during recessions, while Serie A clubs paid 6 percent higher transfer fees, on average, the highest increase in the big five during recessionary shocks.

Some clarification for these results is provided with the results presented in Table 4, though the results remain largely the same. This equation, an extension of that found under Specification (2) in Table 2, remains qualitatively the same regarding their overlapping variables. All the coefficient estimates for the Great Recession and league interaction effects are not statistically significant, indicating transfer fees in the big five leagues were not significantly impacted by the recessionary shock. On average, Serie A clubs had the highest increase in fees during the Great Recession—14.9 percent greater than in transfer windows outside of the earlier recession; English clubs are associated with 18.2 percent lower transfer fees over this period, the greatest decline of the five leagues. The results for the COVID-19 and league interaction terms are initially curious. The estimates for the interactions involving the Premier League, Bundesliga, and Serie A are not statistically different from zero. Clubs in these three leagues paid, on average, approximately 15 percent higher transfer fees during the pandemic. The coefficient estimate on the La Liga and pandemic interaction is -0.344 and is statistically significant with a p-value of 0.0254. This result indicates that, on average, Spanish clubs paid 34.4 percent lower transfer fees during the pandemic impacted transfer windows. This is a notable result considering the La Liga independent variable for all seasons demonstrates that, on average, Spanish clubs pay the second highest transfer fees of the five leagues. Deloitte's Annual Review of Football Finance helps provide an explanation for the significant reduction in transfer fees paid by Spanish clubs during the pandemic. At the onset of the pandemic's recessionary effects, La Liga

instituted a new economic policy to help promote sustainability for its clubs (Ajadi et al., 2020). In doing so, the league reduced the total amount which clubs were allowed to spend on salaries and transfers by approximately 24 percent. During the prior season, wage expenditures increased slightly, indicating the policy had the greatest impact on transfer fees paid by Spanish clubs.

While the two major twenty-first century recessions did not impact positive transfer fees in Europe's elite leagues aside from La Liga's response to the pandemic, I find recessions do impact the workings of the market for transfers and loans in European professional football. Figures 1, 2, and 3 illustrate the volume of permanent transfers and loans per season across the big five leagues. At the onset of the Great Recession, transfers and loans declined over two seasons, gradually increasing during the 2010-2011 season before fully recovering. Permanent transfer volume fell 21.4 percent during the Great Recession, though loan activity during the 2009-2010 season increased 14.4 percent relative to the 2007-2008 season. The increase in loan activity during the final season played during the Great Recession was likely caused by the incentive for clubs to look for temporary, oftentimes free boosts to their squad while operating during a negative economic shock. Loan volume increased each season for eight seasons in a row beginning in 2008-2009; the uptick during from the 2009-2010 season was the largest year-over-year growth in loan volume observed over this period. The figures also capture the sharp decrease in transfer activity prompted by the COVID-19 pandemic, where the number of transfers and loans declined by nearly 25 percent during the 2020-2021 season. Whereas loan volume increased during the Great Recession, the volume of loans fell by 12.4 percent from 2019-2020 values. Permanent transfers fell by 29.2 percent over the same period. The reduction in the number of permanent transfers was 7.8 percent greater during the COVID-19 pandemic than during the Great Recession. The greater reduction in transfer volume during the pandemic

may be indicative of a 'pandemic effect', rather than a recessionary effect. While the volume of transfers adjusted during the two recessions, transfer fees appear to be sticky-downward.

Figures 5 and 6 display the average real transfer fee paid each season across all big five leagues. Figure 5 includes free transfers and loans, whereas Figure 6 includes only transfers and loans associated with a fee. The latter figure is of greater interest as this study focuses primarily on paid transfers and loans. The average transfer fee per season fell nearly 40 percent from the 2004-2005 season to the 2011-2012 season, where the average transfer fee paid by big five clubs was €3,768,148. Following the conclusion of this season, average transfer fees increased sharply, peaking during the 2019-2020 season at a value of €9,923,197. During the 2020-2021 season—partially impaired by the pandemic—average transfer fees regressed to a level comparable with the 2018-2019 season.

In addition to estimations using Ordinary Least Squares, I estimated the same four equations using Tobit models with a left-censored dependent variable. These regression models include 8,548 additional observations, which constitute permanent transfers and loans unassociated with a fee. The results of the Tobit modelling vary from those produced using Ordinary Least Squares owing to the incorporation of a large number of free transfers and loans. As in the equation detailed in Specification (1) in Table 2, the estimation under Specification (1) in Table 5 finds a positive coefficient on the recession coefficient. This result is statistically significant at the 95 percent level. The results in Table 5 under Specification (2) isolate the two recessions considered in the general recession variable. The coefficient on Great Recession is statistically significant and positive, while the coefficient on the COVID-19 variable is statistically significant and negative. This estimate for the combined recessionary variable is likely positive due to the larger number of observations during the Great Recession than during

the transfer windows included in the pandemic dummy variable. Table 6 includes recession and league interaction effects. The coefficient on the Bundesliga and recession interaction term is negative and statistically significant at the 95 percent level. The recessionary dummy variable is positive but not statistically significant, none of the other three league interactions are statistically significant. Table 7 contains results including league interaction effects with the isolated Great Recession and COVID-19 variables. As in the results in Table 5, the coefficient on Great Recession is positive and statistically significant, whereas the COVID-19 estimate is negative and statistically significant. All interactions lack statistical significance with the exception of the Bundesliga and COVID-19 interaction, which has a negative coefficient estimate.

6. Conclusion

This paper finds that the Great Recession did not have a statistically significant impact on positive transfer fees paid by clubs in the Premier League, La Liga, Bundesliga, Serie A, and Ligue 1. After implementing interaction terms for the big five leagues and the recessionary impacts of the COVID-19 pandemic, I find La Liga was the only league which saw a significant negative impact on transfer fees. This can be explained by economic policies implemented by the league to help ensure Spanish clubs survived the recession financially. When zero fee transactions are included, Tobit modelling indicates the Great Recession had a positive effect on transfer fees while the pandemic had a negative effect. During the two recessionary periods, the ration of transfers to loans changed. During the pandemic, this ratio changed dramatically, resulting in a statistically significant decline in fees paid when zero sum transfers are included. During recessionary periods, positive fee transfers do not change significantly. However, the

ratio of transfers to loans is impacted by recessionary shocks, resulting in an impact on the aggregate level of fees paid in transfer windows occurring during recessions.

The implications of these results pertain predominantly to individuals and departments at professional European football clubs responsible for transfer dealings. Unless leagues implement spending caps to promote long-term sustainability, the expected transfer fee for a given player is not expected to change as the result of a recession. Thus, there is no way for buying clubs to time the market for discounts on transfer targets. Though transfer fees remain unchanged, transfer market activity has been demonstrated to decline during periods of economic recession. Due to this reduction in transfer market activity, it may be more difficult for a club to sell its players. As smaller clubs may have more financial hardships than larger, more successful clubs during recessions, more financially stable larger clubs may be able to further their competitive advantage through continued transfer activity. This is evidenced by Manchester City's transfer of winger Jack Grealish from Aston Villa for £105,750,000 in August 2021 (Transfermarkt).

Frick et al. (2021) provide the earliest empirical study of the pandemic's effect on the English Premier League. They predict a reduction in English transfer expenditures of between 26.7 and 12.4 percent, depending on the league's medium-term response to the pandemic. I find total real transfer expenditures in the Premier League decreased by 10.8 percent from the 2019-2020 season to the 2020-2021 season.

This topic merits further research as the complete impact of the COVID-19 pandemic on European professional football remains unknown. Moreover, these findings may not be generalizable across top-flight divisions outside of Europe's big five or in lower divisions in professional football's hierarchy. The literature would benefit from a similar study which encompasses transferred players' leagues of origin and purchasing clubs.

References

Ajadi, T., Ambler, T., Dhillon, S., Hanson, C., Udwadia, Z., & Wray, I. (2021). Annual Review of Football Finance 2021. *Deloitte*. https://www2.deloitte.com/uk/en/pages/sports-business-group/articles/annual-review-of-football-finance.html

Alaminos, D., & Fernández, M.Á. (2019). Why do football clubs fail financially? A financial distress prediction model for European professional football industry. *PLOS ONE*, *14*(12), 1-15. https://doi.org/10.1371/journal.pone.0225989

Breuer, C., & Rohde, M. (2016). The Financial Impact of (Foreign) Private Investors on Team Investments and Profits in Professional Football: Empirical Evidence from the Premier League. *RedFame*, *3*(2), 243-256. http://dx.doi.org/10.11114/aef.v3i2.1366

Buraimo, B., Migali, G., & Simmons, R. (2020). Impacts of Great Recession on Sport: Evidence from English Football League Attendance Demand. Working Paper in Economics # 202019. https://www.liverpool.ac.uk/media/livacuk/schoolofmanagement/research/economics/Impacts,of,the,Great,recession,on,sport.pdf

Daumann, F., Drewes, M., & Follert, F. (2020). Exploring the sports economic impact of COVID-19 on professional soccer. *Soccer & Society*, *22*(1-2), 125-137. https://doi.org/10.1080/14660970.2020.1802256

Depken II, C.A., II, & Globan, T. (2020). Football transfer fee premiums and Europe's big five. *Southern Economic Journal*, *87*(3), 889-908. https://doi.org/10.1002/soej.12471

El-Hodiri, M., & Quirk, J. (1971). An Economic Model of a Professional Sports League. *Journal of Political Economy*, *79*(6), 1302–1319. http://www.jstor.org/stable/1830103

Frick, B. (2007). The Football Players' Labor Market: Empirical Evidence from the Major European Leagues. *Scottish Journal of Political Economy*, *54*(3), 422-446. https://doi.org/10.1111/j.1467-9485.2007.00423.x

Frick, B., Lang, M., Maguire, K., & Quansah, T. (2021). The importance of club revenues for player salaries and transfer expenses – How does the coronavirus outbreak (COVID-19) impact the English Premier League? *SSRN*. https://dx.doi.org/10.2139/ssrn.3689563

Kennedy, D., & Kennedy, P. (2021). English premier league football clubs during the covid-19 pandemic: business as usual? *Soccer and Society*, *22*(1-2), 27-34. https://doi.org/10.1080/14660970.2020.1797498

Kesenne, S. (2007). The Peculiar International Economics of Professional Football in Europe. *Scottish Journal of Political Economy*, *54*(3), 388-399. https://doi.org/10.1111/j.1467-9485.2007.00421.x

Moorhouse, H. F. (1999). The economic effects of the traditional transfer system in European professional football. *Football studies*, *2*(1), 90-105. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.575.2728&rep=rep1&type=pdf

Müller, O., Simons, A., & Weinmann, M. (2017). Beyond crowd judgements: Data-driven estimation of market value in association football. *European Journal of Operational Research, 263*. 611-624.

Neale, W.C. (1964). The Peculiar Economics of Professional Sports: A Contribution to the Theory of the Firm in Sporting Competition and in Market Competition. *The Quarterly Journal of Economics*, *78*(1), 1-14. https://www.jstor.org/stable/1880543

Reuters Staff. (2018, June 6). Soccer-Big five European leagues enjoy record revenues – Deloitte. Reuters. https://www.reuters.com/article/soccer-england-deloitte/soccer-big-five-european-leagues-enjoy-record-revenues-deloitte-idUSL5N1T82X4

Rottenberg, S. (1956). The Baseball Players' Labor Market. *Journal of Political Economy*, *64*(3), 242–258. http://www.jstor.org/stable/1825886

Transfermarkt (2021). Top Transfers. [Bundesliga]. Transfermarkt. https://www.transfermarkt.co.uk/bundesliga/toptransfers/wettbewerb/L1/saison_id/2021/land_id/alle/ausrichtung//spielerposition_id/alle/altersklasse//w_s//zuab/zu/art/%2Fpage%2F2/plus/1/galerie/0/page/1

Transfermarkt (2021). Top Transfers. [La Liga]. Transfermarkt. https://www.transfermarkt.co.uk/laliga/toptransfers/wettbewerb/ES1/saison_id/2021/land_id/alle/ausrichtung//spielerposition_id//altersklasse//leihe//w_s//zuab/zu/art//plus/1/page/1

Transfermarkt (2021). Top Transfers. [Ligue 1]. Transfermarkt. https://www.transfermarkt.co.uk/ligue-1/toptransfers/wettbewerb/FR1/saison_id/2021/land_id/alle/ausrichtung//spielerposition_id//altersklasse//leihe//w_s//zuab/zu/art//plus/1/page/1

Transfermarkt (2021). Top Transfers. [Premier League]. Transfermarkt. https://www.transfermarkt.co.uk/premier-league/toptransfers/wettbewerb/GB1/saison_id/2021/land_id/alle/ausrichtung//spielerposition_id//altersklasse//leihe//w_s//zuab/zu/art/page1/plus/1/page/1

Transfermarkt (2021). Top Transfers. [Serie A]. Transfermarkt. https://www.transfermarkt.co.uk/serie-a/toptransfers/wettbewerb/IT1/saison_id/2021/land_id/alle/ausrichtung//spielerposition_id/alle/altersklasse//w_s//zuab/zu/art/%2Fpage%2F2/plus/1/galerie/0/page/1

Visual and Data Journalism Team. (2021, December 6). Covid map: Coronavirus cases, deaths, vaccinations by country. BBC. https://www.bbc.com/news/world-51235105

FIGURES

Figure 1: Volume of Permanent Transfers and Loans Per Season

Figure 2: Volume of Permanent Transfers Per Season

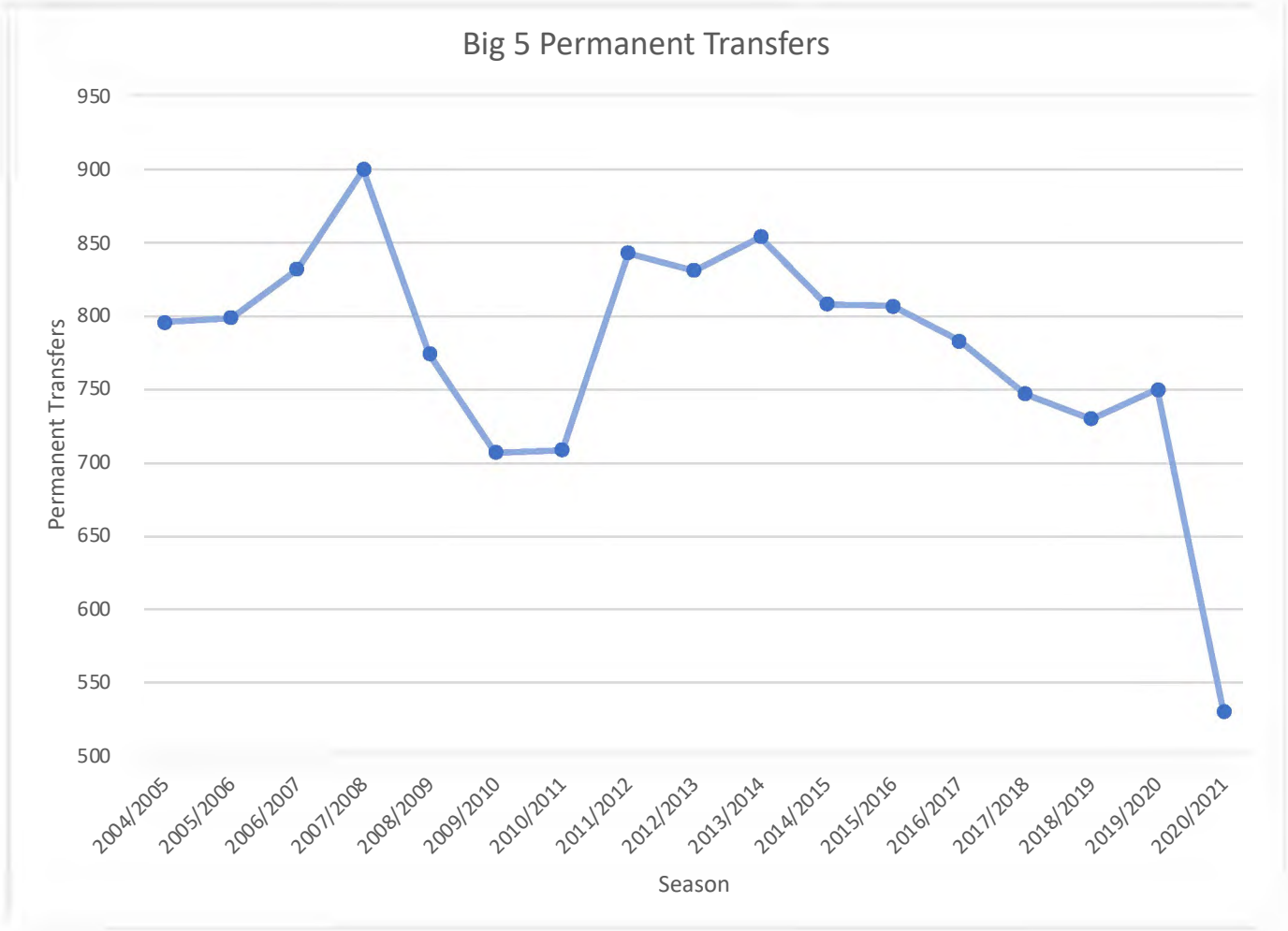

Figure 3: Volume of Loans Per Season

Figure 4: Permanent Transfer and Loan Age Distribution

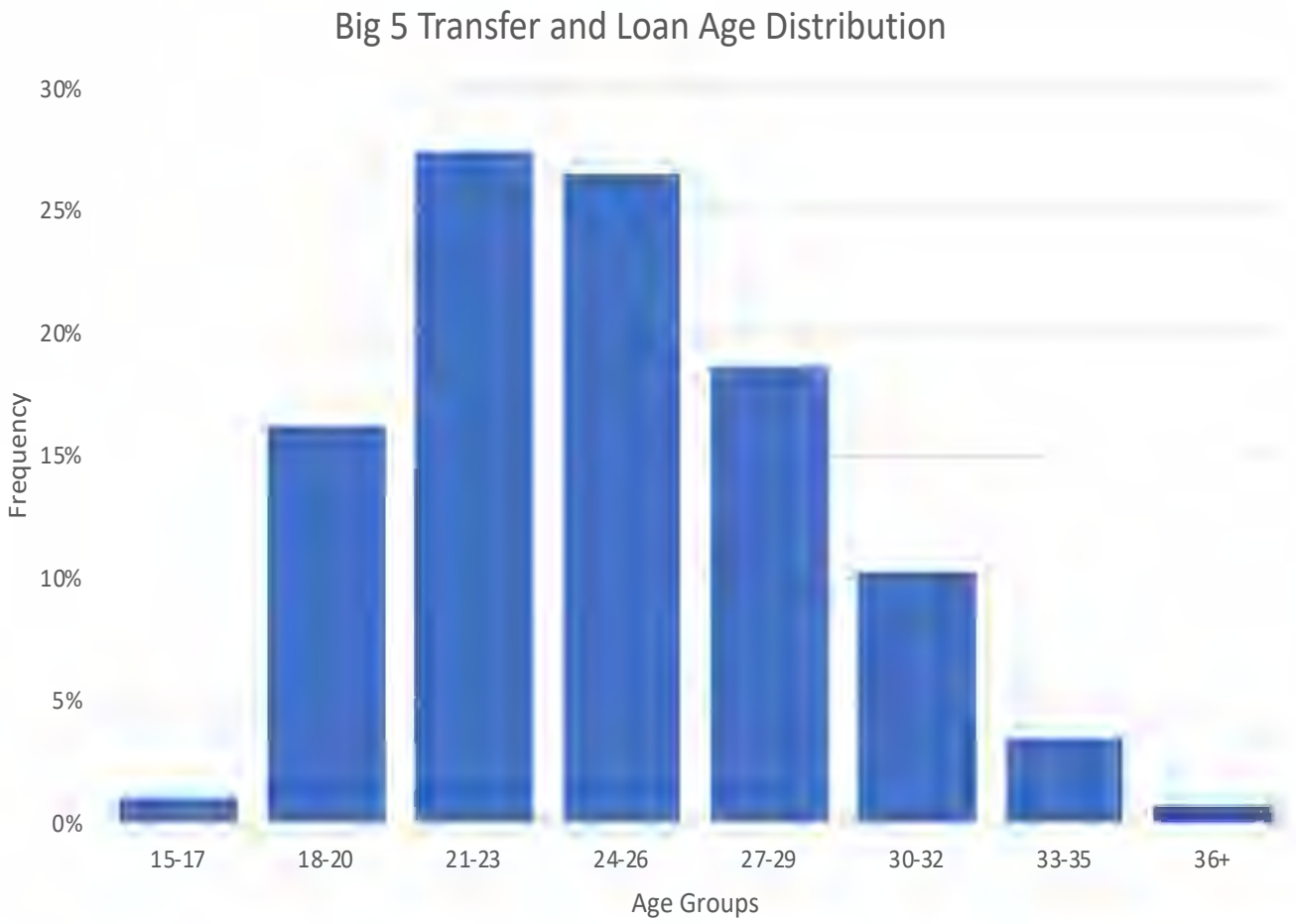

Figure 5: Average Big Five Transfer Fee Per Season, All Transfers and Loans

Figure 6: Average Big Five Transfer Fee Per Season, Paid Transfers and Loans

TABLES

Table 1
Summary Statistics, Paid Transfers
n = 9,574

Variable	Mean	Median	Min	Max
Age	24.13	24	16	37
Real Transfer Fee	€6,457,705	€2,830,561	€90	€231,362,006
Premier League	0.220	—	—	—
La Liga	0.155	—	—	—
Bundesliga	0.183	—	—	—
Serie A	0.294	—	—	—
Ligue 1	0.149	—	—	—
Recession	0.214	—	—	—
Great Recession	0.116	—	—	—
COVID-19	0.098	—	—	—
Loan	0.136	—	—	—
Forward	0.338	—	—	—
Midfielder	0.288	—	—	—
Defender	0.314	—	—	—
Goalkeeper	0.060	—	—	—
Europe	0.676	—	—	—
Africa	0.119	—	—	—
Asia	0.011	—	—	—
North America	0.024	—	—	—
Oceania	0.003	—	—	—
South America	0.167	—	—	—

Table 2: OLS
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 9,574

	Specification (1)		Specification (2)	
Constant	4.790	***	4.780	***
	(0.489)		(0.490)	
Trend	0.050	***	0.052	***
	(0.003)		(0.003)	
Age	0.752	***	0.752	***
	(0.039)		(0.039)	
Age^2	-0.015	***	-0.015	***
	(0.0008)		(0.0008)	
Premier League	0.873	***	0.873	***
	(0.043)		(0.043)	
La Liga	0.196	***	0.196	***
	(0.047)		(0.047)	
Bundesliga	-0.147	**	-0.148	**
	(0.045)		(0.045)	
Serie A	-0.009		-0.100	
	(0.042)		(0.042)	
Recession	0.029			
	(0.032)			
Great Recession			0.049	
			(0.042)	
COVID-19			0.002	
			(0.050)	
Loan	-1.554	***	-1.553	***
	(0.038)		(0.038)	
Position Dummy Effects	Yes		Yes	
Continent Dummy Effects	Yes		Yes	
R^2	0.274		0.274	
Adj. R^2	0.273		0.273	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level

Table 3: OLS
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 9,574

	Specification (1)	
Constant	4.804	***
	(0.490)	
Trend	0.050	***
	(0.003)	
Age	0.751	***
	(0.039)	
Age^2	-0.015	***
	(0.0008)	
Premier League	0.881	***
	(0.049)	
La Liga	0.229	***
	(0.053)	
Bundesliga	-0.150	**
	(0.051)	
Serie A	-0.022	
	(0.047)	
Recession	0.039	
	(0.078)	
Premier League * Recession	-0.032	
	(0.101)	
La Liga * Recession	-0.164	
	(0.113)	
Bundesliga * Recession	0.016	
	(0.108)	
Serie A * Recession	0.060	
	(0.096)	
Loan	-1.554	***
	(0.038)	
Position Dummy Effects	Yes	
Continent Dummy Effects	Yes	
R^2	0.275	
Adj. R^2	0.273	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level

Table 4: OLS
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 9,574

	Specification (1)	
Constant	4.831	***
	(0.490)	
Trend	0.052	***
	(0.003)	
Age	0.747	***
	(0.039)	
Age^2	-0.015	***
	(0.0008)	
Premier League	0.881	***
	(0.049)	
La Liga	0.229	***
	(0.053)	
Bundesliga	-0.149	**
	(0.051)	
Serie A	-0.023	
	(0.047)	
Great Recession (GR)	0.071	
	(0.102)	
COVID-19	0.001	
	(0.107)	
Premier League * GR	-0.182	
	(0.130)	
La Liga * GR	-0.007	
	(0.147)	
Bundesliga * GR	-0.110	
	(0.140)	
Serie A * GR	0.149	
	(0.126)	
Premier League * COVID	0.165	
	(0.140)	
La Liga * COVID	-0.344	*
	(0.154)	
Bundesliga * COVID	0.171	
	(0.149)	
Serie A * COVID	-0.038	
	(0.130)	
Loan	-1.550	***
	(0.038)	
Position Dummy Effects	Yes	
Continent Dummy Effects	Yes	
R^2	0.276	
Adj. R^2	0.275	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level

Table 5: Tobit
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 18,122

	Specification (1)		Specification (2)	
Constant	-76.773	***	-77.558	***
	(3.288)		(3.279)	
Trend	0.330	***	0.456	***
	(0.019)		(0.023)	
Age	6.655	***	6.622	***
	(0.261)		(0.260)	
Age^2	-0.141	***	-0.140	***
	(0.005)		(0.005)	
Premier League	5.149	***	5.095	***
	(0.318)		(0.317)	
La Liga	-1.071	**	-1.114	***
	(0.328)		(0.327)	
Bundesliga	4.290	***	4.251	***
	(0.336)		(0.335)	
Serie A	1.457	***	1.390	***
	(0.296)		(0.295)	
Recession	0.719	**		
	(0.232)			
Great Recession			2.871	***
			(0.312)	
COVID-19			-2.155	***
			(0.364)	
Loan	-10.571	***	-10.483	***
	(0.241)		(0.240)	
Position Dummy Effects	Yes		Yes	
Continent Dummy Effects	Yes		Yes	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level

Table 6: Tobit
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 18,122

	Specification (1)	
Constant	-76.560	***
	(3.287)	
Trend	0.331	***
	(0.019)	
Age	6.630	***
	(0.261)	
Age^2	-0.140	***
	(0.005)	
Premier League	5.167	***
	(0.358)	
La Liga	-0.846	*
	(0.367)	
Bundesliga	4.776	***
	(0.377)	
Serie A	1.323	***
	(0.331)	
Recession	1.088	
	(0.559)	
Premier League * Recession	-0.077	
	(0.756)	
La Liga * Recession	-1.111	
	(0.788)	
Bundesliga * Recession	-2.329	**
	(0.799)	
Serie A * Recession	0.694	
	(0.697)	
Loan	-10.554	***
	(0.240)	
Position Dummy Effects	Yes	
Continent Dummy Effects	Yes	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level

Table 7: Tobit
Dependent Variable = Natural Log of Real Transfer Fees (2019 €)
n = 18,122

	Specification (1)	
Constant	-77.276	***
	(3.278)	
Trend	0.457	***
	(0.023)	
Age	6.590	***
	(0.260)	
Age^2	-0.139	***
	(0.005)	
Premier League	5.187	***
	(0.357)	
La Liga	-0.900	*
	(0.365)	
Bundesliga	4.746	***
	(0.376)	
Serie A	1.259	***
	(0.330)	
Great Recession (GR)	3.534	***
	(0.744)	
COVID-19	-1.923	*
	(0.765)	
Premier League * GR	-1.270	
	(0.973)	
La Liga * GR	-0.799	
	(1.049)	
Bundesliga * GR	-1.409	
	(1.053)	
Serie A * GR	-0.072	
	(0.921)	
Premier League * COVID	0.669	
	(1.049)	
La Liga * COVID	-1.307	
	(1.055)	
Bundesliga * COVID	-3.482	**
	(1.078)	
Serie A * COVID	1.452	
	(0.934)	
Loan	-10.469	***
	(0.240)	
Position Dummy Effects	Yes	
Continent Dummy Effects	Yes	

Notes:
St. error in parentheses
*** (**,*) indicates significance at the 99 (95, 90) percent level