The transfer system in European football: a pro-competitive no-poaching agreement?

Revision: December 2020

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The transfer system in European football: a pro-competitive no-poaching agreement?

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Abstract

We assess the proclaimed pro-competitive effects of the "transfer system", the no-poaching agreement governing the European football (soccer) labor market. A major argument to legitimize this system is that transfer fees, which hiring clubs pay to release players from their current clubs, redistribute revenues from large market to small market clubs. This would strengthen small clubs' financial clout and their ability to compete in sporting terms. Player transfer fees represent over 10 billion Euros in asset value in the financial statements of the 202 clubs we analyze. Still, small market clubs rarely obtain substantial revenues from the transfer market. The main beneficiaries are clubs around the middle of the market size distribution. A select group of large market clubs makes significant transfer losses, but this does not undo their initial financial advantage. Overall, the transfer system therefore leads to a very minor reduction in revenue inequality.

JEL Codes: J41; K12; L41; L83

Keywords: no-poaching, antitrust, revenue redistribution, transfer system, European football

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1. Introduction

In 2002, the European Commission and FIFA, football's worldwide governing body, agreed on a set of regulations to govern the labor market of European football (soccer) players (European Commission, 2002). Under this regulation, known as the "transfer system", a player is held to his temporary employment contract with a club unless a rival club or the player himself pays a release clause, which is typically much higher than the economic value of the remaining term of the contract. In reality players almost never break up their contract unilaterally because they lack the financial resources to do so. Instead, they are forced to wait for a rival club to poach them if they desire to end their current employment. The hiring and releasing club typically end up negotiating the height of this "transfer fee", rather than paying the amount specified in the original employment contract. The accounting standards in professional football explicitly reflect this practice by requiring clubs to book player registrations as intangible fixed assets. In other words, current employees are recognized as commodities which may turn a profit for employers in future trade.

As it currently exists, the transfer system clearly restricts the labor rights of European football players and therefore constitutes a potential breach of EU regulation in this domain. In addition, the football players' union, FIFPro, filed a complaint with the European Commission in 2016 arguing that the transfer system violates EU competition rules.[4] The system would shield currently dominant clubs from competition by new rivals because it creates an unnecessary financial hurdle to assemble a competitive playing squad (Szymanski, 2016). This line of reasoning echoes the antitrust arguments raised against other types of non-compete and no-poaching agreements (see Naidu et al, 2018; p.595), which are widely used in the US labor market (Starr et al, 2020).

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[4] FIFPro later dropped this case after reaching a settlement with FIFA before the Commission judged the merits of the case.

In response to these challenges, two arguments have been proposed to legitimize the system. The first argument maintains that transfer fees are necessary to reward clubs for training and testing talented young players. Without the system, clubs would lose their incentive to educate young players, because they cannot reap the full benefits of training and discovery (UEFA, 2005; p.7). This in turn would lead to an "under-discovery" of talented players relative to the socially optimal level, as predicted in Terviö (2006). The second argument contends that the transfer system eases the economic disparities among European football clubs, such that they can stage a more tense and interesting on-field competition (Szymanski, 2016). If players predominantly transfer from relatively poor clubs to relatively rich clubs, the monetary flows resulting from these transactions should benefit smaller clubs at the expense of larger ones. Hence, the transfer system may redistribute revenues towards small market clubs and counter-act the growing inequality in club revenues from other sources. This could in turn lead to a more favorable "competitive balance" if clubs effectively use this additional revenue to field a more competitive team. Note however that the redistribution of revenues in this system goes hand in hand with the redistribution of talented players in the opposite direction. As a result, there may even be inherent tension between providing incentives for training youth players and achieving more parity in sporting strengths (Norbäck et al, 2020).

In this paper we ask to what extent the transfer system redistributes revenues from large market to small market European football clubs. Our data covers the seasons 2014 through 2018 for all football clubs who played in the top division of England, France, Germany, Italy, the Netherlands, Portugal, Scotland, and Spain. We collect the original financial statements for these clubs from their respective national firm registers or regulatory agencies.[5] In accounting terms, player transfers are regarded as investments in intangible fixed assets. Only the original financial statements therefore provide enough information to calculate the true costs and revenues that clubs incur from transfer activity. Other data sources either do not provide a detailed split-out of club revenues and amortizations (e.g., Bureau van Dijk's Orbis data), or

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[5] In this analysis we focus on the seasons 2014-18, but this sample is part of a larger dataset which we have made publicly available in the EUR data repository.

neglect certain types of transfers (e.g., FIFA only tracks cross-border transfers). From the financial statements we derive the book value of a club's tangible and intangible assets, its revenues from transfer activities and other sources, and its expenditure on salaries and transfers. Using this information, we construct a measure of a club's earning potential or "market size" and investigate how the transfer system affects club finances along this market size distribution. We essentially compare the inequality of club income without transfer activities to the inequality of club revenues after transfer activities have been accounted for. Next, we assess whether the transfer system leads to revenue flows at the level of national associations. Finally, we evaluate whether clubs fielding younger playing squads earn more from the transfer system, as a potential compensation for training and discovering new talent.

Looking at all European clubs combined, we find that the transfer system redistributes very little revenue from large to small market clubs. Standard income inequality measures show very small movements towards increased equality in post-transfer revenue. The resulting redistributive effect is not strong enough for smaller clubs to significantly catch up to large market clubs. This is surprising, because the economic importance of the transfer system is substantial for the football industry. In 2018, transfer fees constituted more than €10 billion in intangible asset value summed across the clubs in our sample, relative to total revenues of around €21 billion in the same year. Consistent with the theory of Terviö (2006), transfer losses are concentrated near the top of the market size distribution, while the largest beneficiaries of the transfer system are the middle-income clubs. By comparison, clubs at the bottom of the earnings distribution benefit far less from player trading. Accordingly, the transfer system does not reduce income inequality within smaller leagues, such as the Netherlands, because the large market clubs in these countries are among the top net earners from player trading, whereas the small clubs earn very little. Among national associations, the transfer system redistributes revenues from the top leagues, primarily England, towards the smaller associations. However, we cannot trace back all transfer spending, because significant amounts flow to player agents and clubs in associations outside our data sample, such as Argentina and Brazil. Finally, we find that clubs with younger player rosters are active in smaller markets and obtain slightly higher transfer

earnings, although this correlation is not statistically significant. This is consistent with the notion that transfer earnings may compensate clubs for training and testing youngsters, but we cannot make any causal claims on this issue.

To the best of our knowledge, we provide the first empirical investigation of the impact of the transfer system on revenue inequality in European football. The economic literature has extensively explored the repercussions of the transfer system for the employment contracts and effort provision of players, both in theoretical models (see e.g., Feess and Muehlheusser, 2002; 2003a; 2003b; Dietl et al, 2008) and combining theory with empirical work (Feess et al, 2015). A recent paper by Coates et al (2020) maps networks of clubs connected through transfer activity and investigates the role of these relationships for club performance. Most closely related to our analysis, is the paper by Terviö (2006), which explores how the transfer system induces clubs to "test" the ability of novice players. Under the assumption that playing ability cannot be observed before a player enters the labor market, it is socially optimal to increase the degree to which clubs test novel players, because this brings the discovery of talent closer to the socially optimal level. While not the focus of his paper, Terviö's model implies that the transfer system generates the largest transfer losses at clubs near the top of the earnings distribution, resulting in a more egalitarian distribution in post-transfer income relative to pre-transfer income.

Within the European football industry, our analysis extends the literature on antitrust policy,[6] whose main interests so far have been the sharing of gate revenues (e.g., Szymanski and Kesenne, 2004), the joint selling of media rights (e.g., Falconieri et al, 2004; Peeters, 2012) and the break-even rule in the "Financial Fair Play" regulation implemented by UEFA[7] (e.g., Peeters and Szymanski, 2014). Within the antitrust

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[6] See Budzinski (2018) for an overview.
[7] UEFA is short for the "Union of European Football Associations". This federation groups 55 football associations in Europe (widely defined) and organizes international tournaments such as the Champions League and European Cup for national teams.

literature, our work is most closely related to a number of papers analyzing the "Bosman ruling" of the European Court of Justice, which ended the original transfer system in 1995. Under the pre-Bosman rules, players faced additional restrictions preventing them from working in other EU member states, which were deemed illegal by the court. Norbäck et al. (2020) show that the integration of the European football market, which followed the ruling, created a vertically organized market with a handful of established top clubs and many "nursery" clubs, acting as suppliers of star players. As such, the Bosman ruling led to a player labor market, on which the transfer system can provide stronger incentives for training and discovery to small market clubs. Deschamps and De Sousa (2019) argue that the ruling lowered monopsony power, which has limited clubs' ability to act on their prejudices. As a consequence, wage discrimination has disappeared for minority workers whose mobility constraints were lifted after the Bosman ruling. We contribute to this literature by focusing on the redistributive effects of the post-Bosman transfer system, which has not received empirical attention due to a lack of financial data heretofore.

More generally, our paper speaks to the literature on non-compete covenants, which came under renewed antitrust scrutiny after the US Department of Justice challenged the no-poaching agreement of six Silicon Valley firms in 2010 (Naidu et al, 2018). On the upside, non-competes may protect private information and incentivize firms to invest in employee training — an argument which also pertains to the transfer system. However, this contention lacks credibility due to the widespread use of non-competes for low-wage jobs in US franchising chains, where it seems unlikely that firms heavily invest in employee training (Krueger and Ashenfelter, 2018). So far, the literature has mainly looked at the adverse effects of non-competes on the functioning of the labor market. For example, Marx et al (2009) argue that no-poaching agreements reduce the mobility of knowledge workers, whereas Starr et al (2019) show that US areas with stronger non-compete enforcement see lower wages and fewer job offers for both constrained and unconstrained workers. We add to this literature by analyzing the effect of a no-poaching agreement on the competitiveness of the product market and find very limited empirical support for its alleged pro-competitive effects.

The remainder of the paper is structured as follows. In Section 2, we present our data and methodology. In Section 3, we report the results of our empirical analysis at the European level. Section 4 focuses on the redistributive effects of the transfer system within national associations, followed in Section 5 by a look at the role of transfer payments in talent discovery. In section 6 we discuss the implications of our results and potential alternatives to regulate sports labor markets. Section 7 concludes.

2. Data and methods

2.1. Variable definitions and coverage

In order to evaluate how the European football transfer system redistributes revenues from large market to small market clubs, we digitized data from the audited financial statements of all football clubs playing in the top divisions of England, France, Germany, Italy, the Netherlands, Portugal, Scotland and Spain. We obtain the financial statements from the respective national firm registers or regulatory agencies of these countries. Our sample includes the seasons 2013-2014 until 2017-2018. We convert all monetary values to euros using the exchange rate on the 30th of June of the respective year. We collect data on all clubs that compete in the highest division of their association[8] in at least one of these seasons. For these clubs, we include all years in the sample period, even if they were active in lower divisions. The resulting dataset is a balanced panel that represents all clubs which have been active in the highest division of each association. Using the complete set of seasons for each club draws a more accurate picture of the economic strength of promoted and relegated clubs, because the financial performance of these clubs is usually at its best when they play in the top division. Selecting just these seasons would therefore overestimate the typical financial position of the relatively smaller clubs.

The financial statements of football clubs enable us to draw a clear national and international comparison of transfer costs and transfer income. In line with current accounting standards, football clubs book transfer

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[8] Associations most commonly coincide with independent nations. The United Kingdom is a notable exception to this rule, as there are separate football leagues in England (plus Wales), Scotland and Northern Ireland.

fees paid, and other costs associated with acquiring players' registrations, such as agent fees, as intangible assets. Football clubs amortize these assets linearly over the length of the player's initial contract, meaning that every year, the value of the player contract is reduced proportionally to the contract length. As a rule, clubs cannot update the valuations of these assets unless they sell the player to another club, but they may be allowed to extent the amortization term if the player renews or prolongs his employment contract.

< Insert Table 1 here >

Table 1 presents the main variables of interest we construct from the accounts database.[9] We collect the total asset value of player contracts at the end of a club-season in the variable *transfer book value*. On average, clubs have player registrations worth €38m in their accounts, but this varies immensely across clubs resulting in a standard deviation of €71m. We define transfer income on a transaction as the amount received from the buying club minus the book value of the player registration at the time of the transaction. In other words, transfer revenue is the surplus amount received above the current book value of the player contract. Our variable *transfer income* is simply the sum of these surpluses over all player transactions in a club-season. Table 1 shows that clubs received an average of €15m from transfers, with again a high standard deviation of €25m. *Transfer costs* are defined as the total amortization on player contracts owned by the club in that year plus all operating costs directly related to transfer activity. It is important to note that this measure looks at the current accounting costs of transfers and therefore disregards (potential) future costs in the form of amortizations in the years ahead.[10] For example, when Paris Saint Germain bought Neymar for €222m in 2017, this amount was not fully registered in the transfer costs for 2017. Instead, it

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[9] We provide further details and an annotated example of the variable construction in the online appendix.

[10] An alternative way to measure transfer costs would be to add the difference in book value of player registrations at the end of each season to the amortization. This would reflect that an increase (decrease) in asset book value corresponds to a net investment (divestment) in player registrations by the club in that season. This measure is therefore closer to a cash flow measure of transfer costs. In contrast, our definition measures the impact of transfers on accounting profits. We judge our measure to be more relevant, as it aligns better with UEFA protocol. Among other things, it corresponds to the measure clubs report for the infamous Financial Fair Play break-even rule.

is amortized over the length of the contract and contributes to the transfer cost over several seasons. The variable *net transfer earnings* (*loss*) is simply transfer income minus transfer costs. On average *transfer costs* marginally exceed *transfer income*, with its average value being €17m. The resulting mean of *net transfer earnings* is slightly negative at -€1.7m. This apparent discrepancy implies that not all transfer spending of the clubs in our dataset ends up being income for other clubs covered in our sample. Most likely, the differential either ends up in the pockets of agents and other intermediaries or at clubs in leagues we do not cover, such as Argentina and Brazil or lower tier European leagues.

In addition, we gather data on the clubs' *pre-transfer revenues*. These mainly consist of media rights sales, match-day revenue, merchandise sales, sponsor deals and prize money. The mean of *pre-transfer revenues* in our sample is around €82m, with a standard deviation of about €120m. We will compare these *pre-transfer revenues* to *post-transfer revenues*, which we define as revenues after adding the club's *net transfer earnings*. We further collect the total personnel costs of the club under the *wage bill* variable. As personnel expenses mostly consist of player wages, this variable is a good proxy for the club's stock of playing talent (see e.g., Szymanski, 2003). Our final financial variable measures the book value of the clubs' *tangible fixed assets*. With a mean value of around €39m and a standard deviation of €90m, these are equally important in the clubs' balance sheets as the book value of player registrations. In other words, the accounting value of player contracts is similar in magnitude to the typical club's tangible fixed assets, consisting of the combined value of its stadium, training grounds etc.

We further add three sports-related variables. We include the end-of-season *rank* of the club in its respective association, where we count the rank through the tiers of the football pyramid. Hence, the first club in the second division is typically ranked 21, as most associations have 20 clubs in the top tier. The dummy variables *promoted* and *relegated* record whether the club moved up (or down) to a higher (lower) tier before the start of season *t*. We finally collect the *average squad age*, which measure the average age in years of the players on the club's roster as reported by the leading website *Transfermarkt.com*. Since we

observe a standard deviation of 1.4 years for an average of 24.1 years, clubs do not appear to diverge too much in this respect.

<p align="center">*< Insert Table 2 here >*</p>

Table 2 describes the coverage of the dataset by association, based on the percentage of club-seasons for which a variable is available. The coverage is nearly 100% for England, France, Italy, the Netherlands, and Spain. The other associations have lower coverage either due to missing financial statements or because of clubs filing statements with too little detail to recover selected variables. We have posted the dataset described in Table 2 on the Erasmus University Data Repository. In addition, we provide open access to the original financial statements to help other researchers build on the dataset we construct for this paper.[11]

2.2. Estimating club market sizes

To investigate whether the transfer system redistributes revenues from large to small market clubs, we construct a measure of club market size. We define the market size of a club as the amount of revenues it generates from a given on-field performance. Hence, clubs with a larger market size raise more revenues from each unit of talent they employ. In the terminology of Scully (1974), talented players have a higher marginal revenue product (MRP) at large market clubs. An efficient transfer market should reallocate talent from small market to large market clubs. As a result, transfer fees flow in the opposite direction, which reduces inequality in revenues. This conceptualization closely tracks the modeling in Terviö (2006), who defines club market size as a multiplicative factor for talent in the club revenue function.

We use the following regression model to obtain an estimate of market size for clubs in our sample:

$$y_{ct} = \beta_x X_{ct} + \theta_t + \delta_c + \varepsilon_{ct}. \qquad (1)$$

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[11] The dataset and replication files are available under doi: 10.25397/eur.12901292. The metadata record for the archive of financial statements is available under doi: 10.25397/eur.13055423.

In equation (1) we relate the logarithm of pre-transfer revenues[12] (y) of club c in season t to a set of observables (X_{ct}) and season (θ_t) and club (δ_c) fixed effects. As observables we include a standardized version of the *rank* variable,[13] the logarithm of *tangible fixed assets* and the *promoted* and *relegated* dummies. Note that our intention is not to estimate the causal impact of these variables on revenues.[14] We are merely interested in isolating the club and season effects from these regressions, such that we can construct a market size measure (m_{ct}) in the following way:

$$m_{ct} = \theta_t + \delta_c. \hspace{2cm} (2)$$

We average this measure over the seasons in which the club's data is present in our dataset.[15] Throughout our analyses, we rank clubs according to this market size measure to assess their relative economic strength. Figure 1 depicts the relationship between the pre-transfer revenues and the rank in estimated market size. As expected, there is a strong positive relationship between the market size ranking and pre-transfer revenues. The elite clubs form the largest European associations, such as Manchester United, Real Madrid and Paris Saint Germain, end up at the top of the market size ranking. Top clubs from smaller associations, e.g., Ajax, Benfica, Monaco and Celtic are around the middle of the distribution along with smaller clubs from the larger associations. Naturally, the smaller clubs from the smaller leagues appear near the bottom of the market size distribution.

< Insert Figure 1 here >

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[12] We have also estimated this equation using post-transfer revenues. This does not significantly change the relative market size ranking of the clubs.

[13] We standardize rank by taking the logarithm of $\left(\frac{rank}{\max(rank)+1-rank}\right)$.

[14] We refer interested readers to the online appendix, where we report the coefficient estimates.

[15] For most clubs this is trivial, as they are present in all years of the panel. This matters for some clubs, where we were only able to retrieve financial data for some, but not all seasons.

3. European-level results

3.1. Transfer income, transfer costs and net transfer earnings

Figure 2 plots the average *transfer income* and *transfer costs* against the market size rank for each club in our dataset. We draw a smoothed line through the datapoints to get a better sense of the evolution of the variables as market size increases. We first observe that most small clubs (market size rank < 60) do not spend or earn much from player transfers. In practice, most small clubs do not seem able or willing to invest heavily in player registrations. As we move up the market size distribution, transfer costs increase gradually. In contrast, there is a large variance in the trajectory of transfer income among midsized European clubs. Some generate tens of millions of Euros per season from transfers, whereas others have no significant transfer income at all. The large market clubs (market size rank > 140) tend to earn the largest amounts from the transfer system, but at the same time they also spend the most. For this elite group of clubs, the trend line for *transfer costs* clearly follows a steeper trajectory than the trend line in *transfer income*. In other words, their spending outpaces their revenues from transfer activities.

< Insert Figure 2 here >

Figure 3 gives a more detailed view of which clubs gain and lose money in the transfer market. To aid interpretation, we plot the net earners and net spenders in two separate panels and provide separate trend lines for each group. Although the average of *net transfer earnings* is negative, there are more individual clubs with positive net transfer earnings, than clubs with net transfer losses in our sample. The sum of annual *net transfer losses* is €840m, spread over 57 clubs, or €15m per club. The sum of annual *net transfer earnings* is smaller at €565m, but spread over more clubs (116), which amounts to an average of €5m per club.

In line with the theoretical predictions of Terviö (2006), we see that almost all small and midsize clubs are net earners, and that the biggest net spenders are located at the top of the market size ranking. Still, the top panel of Figure 3 reveals considerable heterogeneity among the net earners. None of the smallest clubs (market size rank < 60) succeed in netting more than a couple million euros per year. In contrast, several midsize clubs, such as Benfica, Monaco, Sevilla, Ajax, and Lyon, earn on average 20 million euros or more per season. The gains of the transfer system are not spread equally among the smaller market clubs but concentrated among a few "top" sellers. The bottom panel of Figure 3 shows that a select group of large market clubs (market size rank > 140) is responsible for the bulk of all net transfer spending. Here, Manchester United, Manchester City and Paris Saint Germain stand out with annual net transfer outlays in the region of €80m and above, but several other clubs, such as Real Madrid, Arsenal and Internazionale, also spend upward of €40m per year. It appears that only clubs with a market size near the very top of the distribution have enough pre-transfer revenue to support this magnitude of transfer spending.

< Insert Figure 3 here >

3.2. Total player expenses, post-transfer revenues and revenues after player expenses

In Figure 4 we evaluate how much revenue clubs devote to player expenses, defined as their combined transfer and wage spending. In panel (a) we plot the average wage bill as a function of the market size ranking. As expected, we observe a close connection between market size and wage spending. Whereas the total personnel costs of smaller clubs typically do not exceed €20m, the top clubs spend more than ten times this number. Given the well documented relationship between wage bills and performance (e.g., Szymanski, 2003), this has obvious implications for the balance of playing strengths among clubs. By comparison, the *transfer costs*, pictured in panel (b), take up a smaller share of club revenues. As documented above, most small clubs do not engage in expensive incoming transfers. Even for the large market clubs however, the cost of paying player wages easily trumps the cost of acquiring players in the transfer market. The media

attention (and outrage) devoted to transfer spending as a main contributor to financial distress in European football (e.g., BBC, 2017) therefore seems somewhat misguided. The wage costs of the players already employed by the club typically impose a larger threat to the club's financial situation than incoming transfers.

Panel (c) of Figure 4 explores how much revenues clubs are left with after transfer activities. There is clearly a strong relationship between market size rank and post-transfer revenues. Whereas we have seen that net transfer spending tends to be concentrated at the top clubs, this is not enough to materially weaken the connection between market size and revenues. Finally, panel (d) shows that large clubs enjoy much higher revenues than smaller clubs after subtracting player expenses, even though their player expenses are much higher. Consequently, it is not surprising that large clubs are not as vulnerable to negative financial shocks, as smaller clubs are (Szymanski, 2017). This observation seems increasingly relevant in the current post-Covid-19 economic environment.

< Insert Figure 4 here >

3.3. Gini coefficient and Lorenz Curve

Next, we evaluate the overall impact of the transfer system on revenue inequality. Figure 5 shows the Lorenz curves and Gini coefficients for *pre-* and *post-transfer revenues*. Overall, the net earnings and losses from transfers do not change the distribution of revenues much. The post-transfer revenue line dominates the pre-transfer revenue line meaning that there is less inequality at all quantiles of the income distribution. However, the gap between the two lines is very small with the pre- and post-transfer Gini coefficients being 0.597 and 0.571 respectively. The gap between the two lines is largest around the middle of the population, suggesting that transfers shift most revenues from the top to midsized clubs. The lines barely diverge for the small clubs, confirming that they do not benefit much from the transfer system. By and large we

conclude that the transfer system hardly puts a dent in the large pre-existing inequality in *pre-transfer revenues.*

< Insert Figure 5 here >

3.4. Between-association redistribution

Having evaluated the effects of the transfer system at the club level, we next investigate how much redistribution occurs at the association level. Figure 6 shows the average *net transfer earnings (losses)* of clubs in each national association. The English clubs are by far the largest net spenders, as they post average transfer losses of €17m per year in the transfer market. Portuguese teams are the largest net earners with an average yearly transfer surplus of €8m per club, followed by the Dutch and French clubs with around €3m. By contrast, clubs in the smallest association in our sample, Scotland, see relatively little net earnings flowing their way. Likewise, clubs in the large associations of Spain, Italy and Germany also report fairly minor average net transfer earnings (or losses). On the whole, there is some redistribution of revenues away from the largest league in our sample (England). Yet, the total net earnings of the receiving associations clearly fall short of the total expenditures of the English clubs. The unaccounted transfer spending in part benefits clubs outside our sample. In particular, we exclude clubs in Argentina and Brazil, who have trained and discovered some of the most talented players in the European leagues and lower tier European leagues. A second part of the unaccounted spending presumably ends up in the pockets of player agents, whose aggregate earnings we cannot accurately determine from the financial statements.

< Insert Figure 6 here >

4. Association-level results

4.1. National associations

It is informative to look at revenue redistribution across the whole of Europe, as we have done above. Yet, in terms of increasing the tension of on-field competition it is more relevant to investigate how the revenue distribution evolves within national associations. After all, the modest Dutch club Willem II never encounters Spanish giants Real Madrid on the field of play, so the relative revenues of both clubs do not directly impact the competitive balance in any actual game. However, Willem II does play the largest Dutch club, Ajax, which makes their relative financial strengths more relevant.

< Insert Figure 7 here >

In Figure 7 we show the average *net transfer earnings or losses* per club in selected national associations. We rank clubs according to their estimated market size with the largest clubs on the right. We find stark differences across national associations. In England almost all clubs record net transfer losses, whereas in the Netherlands all clubs obtain positive net transfer earnings. Other associations, such as Italy, Spain, and France, see large transfer spending by their largest club(s), and modest positive earnings otherwise. In France, Paris Saint Germain is one of the top spenders in Europe. Most of the transfer gains are made by Monaco and Lyon, who rank directly below the Paris club in terms of market size. Fairly little revenues get through to the bottom clubs. A similar picture unfolds in Spain, where Bilbao and Sevilla earn most in the transfer market. In Italy the transfer gains seem more equally spread over the market size distribution. As a result, these three associations see a decrease in their Gini coefficient post transfers, as is evident from Table 3.

By contrast, we do not see a more equal revenue distribution post transfers in England, Scotland or the Netherlands. England has some of Europe's most prolific spenders in Manchester City and Manchester

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United. Yet, its smaller clubs do not make up much ground, because they themselves are also net spenders in the transfer market. In the Netherlands and Scotland almost all clubs record net transfer earnings, but in these associations the relatively large clubs (e.g., Ajax and Celtic) succeed in earning more from the transfer system than their smaller counterparts. While we cannot produce a complete picture for Portugal, the earnings figures of Benfica, Sporting CP and Porto lead us to believe that similar result would unfold. In sum, for these associations we hardly see any decrease, or even a slight increase, in the Gini coefficient when comparing post- to pre-transfer income.

< Insert Table 3 here >

4.2. Champions League

Finally, we consider the implications of the transfer system for the participants of the primary European club competition, the UEFA Champions League. Figure 8 presents the net transfer earnings and losses for all clubs which participated in at least one out of the five Champions League seasons in our sample. While our data does not cover all participants in this tournament, the associations in our sample account for a large portion of eligible clubs and over 80% of all prize money UEFA paid out over our sample period.

< Insert Figure 8 here>

Clearly, the Champions League is the competition in which the transfer system has the strongest redistributive effect, with a fairly significant decrease in the Gini-coefficient from 0.393 to 0.353. The largest clubs in this competition are easily among the biggest spenders in Europe. The "small" Champions League clubs are usually top clubs in their own association, which makes them midsize clubs at the European level. As we discussed above, these midsize clubs make most financial gains in the transfer system. It is even conceivable that their positive transfer earnings are an indirect consequence of

participating in the Champions League. After all, this format provides unique exposure to the playing qualities of their players, which may drive up their value in the transfer market.

5. Training and talent discovery

Although the primary purpose of our analysis is to investigate the redistributive effect of the transfer system, our dataset also allows to shed some light on the incentives the system provides for the training and discovery of young talents. According to Terviö (2006) and Norbäck et al (2020) it may be beneficial to social welfare when small and medium-size clubs operate as "nursery clubs" for the larger clubs. The transfer system enables them to do so, because clubs can capitalize on their discoveries through the collection of transfer fees. This would incentivize more clubs to invest in player development and improve the stock of available football talent. If this mechanism is currently at work in the football labor market, we should expect that the transfer system benefits small and medium-size clubs who have relatively young playing rosters in comparison to large clubs.

< Insert Figure 9 here >

In the top panel of Figure 9, we draw a comparison between clubs' *average squad age* and their *net transfer earnings*. We find no apparent relationship between the two variables. A univariate regression shows that the coefficient estimate for average age is indeed not significantly different from 0 with an R-squared of 0.008. In the bottom panel we plot *average squad age* against the *market size rank* of a club. Here we find a positive and significant relationship, which is confirmed by a significantly positive regression coefficient. Hence, small market clubs seem to employ on average younger playing squads, even though this does not necessarily imply that they obtain high transfer earnings in return. While we do not adhere any causal interpretation to the results in Figure 9, we conclude that these observations are consistent with smaller clubs taking up the role of "nursery" clubs for their large market counterparts. Still, it is striking that the

transfer system does not significantly reward most small clubs for their role in discovering and training young talent.

6. Discussion

6.1. Which mechanisms could explain the lack of revenue redistribution?

Given the conclusions we have drawn in the previous sections, an obvious question is why the transfer system has not redistributed more revenues from large to small market football clubs. Unfortunately, the dataset we collected does not allow to explore potential mechanisms in a structural empirical model. Nonetheless, we propose three potential mechanisms, which may explain the apparent lack of revenue redistribution and are also consistent with our other findings above.

First, it is conceivable that hiring clubs cannot monitor all the information available in the player labor market and choose to focus their attention to the most visible players. Small clubs lack the possibility to give their players exposure to top clubs, because they are effectively barred from entering European-wide competitions, such as the Champions League. This mechanism is therefore consistent with our observation in Figure 8 that the smallest clubs entering the Champions League are often large net transfer earners.

Relatedly, it could also be the case that testing playing talent is only possible when a minimal level of opposing player quality is present in a club's match schedule. If a club never gets tested against top opponents, the talent of its players cannot be assessed properly. This mechanism could again explain why the typical "losing" Champions League participants end up selling their players at a large profit. Note that for both mechanisms the identity of clubs that earn a large transfer surplus may be quite stable. Once a club has secured its spot at the top of a national league, it can maintain that position due to increased transfer earnings and European prize money.

An alternative explanation is that clubs obtain extremely noisy signals when trying to discover talented players, and star players are scarce. This corresponds quite closely to the basic assumptions in the model of Terviö (2006), which assumes that clubs cannot judge the talent of youngsters until they employ them for an extensive period of time. In this world, clubs make "lucky" selection choices from time to time, but most often they do not discover a talent worthy of selling on to higher level clubs. At any point in time, most clubs are not lucky, and we would observe that they earn little transfer income, despite their discovery efforts. At the same time, we would see a handful of lucky clubs collect large transfer earnings. This mechanism is consistent with Figure 9 in that small market clubs generally have younger playing squads, while the correlation to transfer earnings is weaker. Yet, this mechanism also implies that the identity of the clubs with large transfer earnings could easily change over time. In our time frame, we observe large transfer earnings for Monaco, Benfica, Lyon and Ajax. To distinguish between these mechanisms, future research may ask whether these clubs have been able to solidify their position at the top of the transfer earnings ranking.

6.2. Can one system incentivize training and equalize financial resources at the same time?

The association of European football leagues (UEFA) has repeatedly emphasized the importance of financial solidarity and the development of player talent as key policy objectives (UEFA, 2005; UEFA, 2010). Likewise, the European Commission has recognized that there may be "the need to ensure uncertainty concerning outcomes and to preserve a competitive balance between clubs taking part in the same competitions" (European Commission, 2007). Following this mindset, the transfer system may serve two aims: incentivizing youth development and decreasing inequality in revenues to improve competitive balance on the field. Naturally, to link revenue redistribution to an increase in competitive balance, one must assume that small clubs are able to use transfer revenues to field a better team in the long run, even though they are stripped from their most talented players in the short run.

As Norbäck et al (2020) point out, pursuing both objectives within one regulatory regime may not be feasible. To maximize overall talent discovery and training, small clubs should function as "nursery" clubs, who sell their best talent to the larger clubs. In doing so, they effectively agree to abstain from mounting a fierce sporting challenge against the larger clubs in exchange for transfer income. In this scenario there is a clear trade-off between incentivizing player development and competitive balance. Regulators, such as UEFA and the EU, may therefore need to address these policy objectives through distinct means, rather than trying to kill two birds with one stone.

Judging from our analysis, the transfer system clearly fails to redistribute significant amounts of revenues to smaller clubs. At the same time, we cannot infer the role the transfer system may play in creating the enormous inequality in pre-transfer revenues we observe in the data. We therefore interpret our findings as evidence for the absence of a pro-claimed benefit, rather than evidence of the system doing active harm to competitive balance. We also emphasize that our results apply to the *financial* inequality among clubs. Since we cannot present a credible counterfactual of sporting outcomes, we cannot assess the net effect that the transfer system has on the *sporting* strengths of clubs. As such, it is not clear whether the financial windfall, which clubs receive when selling their top talents, eventually allows them to also catch up with the top clubs in sporting terms. While our analysis does not directly address UEFA's objective to incentivize training and discovery, the fact that most small clubs do not obtain large transfer revenues clearly challenges the notion that the system provides strong incentives to these clubs.

6.3. What could an alternative system look like?

Our analysis of the current transfer system naturally provokes the question what kind of regulatory regime may or should come in its place. While we recognize this discussion is inherently speculative, we sketch two broad alternatives to the current regulatory framework.

A first and obvious alternative is to apply labor law to the player labor market in a similar way as it is applied in all other high-skilled European labor markets. This would alleviate most restrictions placed on player mobility, an undisputed cost of the current transfer system. In addition, the price for acquiring talent would go down, as transfer fees disappear, reducing barriers to entry for owners and investors, who seek to increase the sporting success of their club. This in turn may increase competition for players and increase their wages because clubs' only option to attract players would be to bid up wages. Again, the players would benefit as rents are shifted towards them, away from their (former) employers.

The question for regulators is how to support financial solidarity and incentives for player development in this system. First note that our results suggest the reduction in financial solidarity would be minimal. Moreover, there are alternative regulatory reforms that may be more promising in this regard. For example, the prize money from the UEFA Champions League currently distributes more revenues towards the large clubs than the transfer system shifts in the other direction. Given that the prize money mechanism is directly under UEFA's control, it seems obvious to prioritize reforms in this domain. The same holds for the revenue distribution of joint media rights sales, for which most leagues currently implement sharing rules that favor their large market clubs (Peeters, 2012).

An alternative to support player development would be the creation of an education fund. While various versions of this idea have circulated in the past, it usually calls for a tax on football-related income, which can be used to subsidize football academies for young players. Subsidizing the investment in education irrespective of the subsequent sale of players would put the financing of player development on a more secure footing. If, as discussed in section 6.1, clubs need "luck" to discover star players and earn the associated lopsided transfer fees, they may shy away from investing in player formation because it is perceived as too risky.

A second alternative would see the football player market move towards a more regulated regime, more in line with the major North American leagues. In North America, player labor market regulation is part of the collective bargaining agreement (CBA) between club owners and player unions. This implies that no regulation can be implemented without the explicit consent of the players, but also that the regulation is by default exempt from antitrust scrutiny.[16] American leagues have implemented salary caps, which specify minima and maxima for individual player salaries and team payrolls. Early-career players (rookies) are typically tied to their initial employer for a pre-specified amount of years (usually 4 or 5) after which they become "free agents" who can sign for the team of their choice. At this point, players can let clubs bid up their salary above the minimum wage they have earned throughout their rookie years. Clubs do not really invest in the development of youth players, but rather select the best players from junior leagues or (amateur) college teams. These youngsters enter the league through the annual draft, where the last ending team from the previous season gets to choose a prospect first, followed by the next-to-last etc.[17] In addition, most major leagues use extensive revenue sharing mechanisms to ensure that clubs operate on an equal financial footing.

On the whole, the North American regulatory regime clearly puts more restrictions on the player labor market than the football transfer system does. Crucially however, it does this with the explicit consent of the player unions and it implements measures, such as salary caps and revenue sharing, which have the potential to level the playing field between small and large clubs. Because of the draft system, major league clubs have little incentive to invest in player development and have largely outsourced this activity to high schools and colleges. Still, there is no apparent shortage of playing talent in any of the major US sports leagues.

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[16] Major League Baseball has an explicit "blank" antitrust exemption in the US, but this is not the case for the other major sports leagues (NFL, NHL, and NBA).

[17] All league's system has its own specific intricacies, which we abstract from here to keep our explanation tractable.

7. Conclusions

The transfer system in European club football puts an exceptionally harsh restriction on the mobility of professional football players. The players are held to their temporary contracts unless a rival club or the player himself pays a release clause, which is typically much higher than the economic value of the remaining term of the employment contract. This system is supported by two main arguments. On the one hand, by the idea that it rewards the discovery and development of new talents. On the other hand, by arguments of resource redistribution, as the transfer system may reduce revenue inequality when money flows from large to small market clubs.

Using a unique dataset of digitized financial statements for clubs across eight European national associations, this paper provides the first empirical investigation into the redistributive functions of the transfer system. We show that under the current regulations the transfer system redistributes little revenues between clubs. The inequality indexes and graphical breakdowns of pre- and post-transfer revenues show very small movements towards a more egalitarian distribution of revenue post-transfers. Further analysis on what clubs have left to spend after player costs indicate that, again, the large market clubs have more to spend after these expenses. Therefore, we argue that the redistributive effect of the transfer system is clearly not strong enough to significantly reduce the gap between small and large market clubs.

Our findings put the alleged pro-competitive effects of the transfer system in serious doubt. We argue that this should urge antitrust authorities to further scrutinize other arguments brought forward to legitimize the transfer system. As we have discussed, one can easily come up with less intrusive arrangements to compensate clubs for training young players. In that case, proportionality would require that these arrangements replace the current system. Secondly, the mere fact that a governing body (FIFA), and not an explicit cartel of dominant clubs, is the instigator of this regulation does not reduce the effectiveness of the transfer system in protecting the market power of dominant clubs. As argued by Budzinski and Szymanski

(2015), the vertical nature of the relationship between FIFA and the clubs does not matter for the conclusion that FIFA's rules may enable collusion. Finally, we might consider that firms in the franchising industry have been able to evade antitrust scrutiny over no-poaching clauses in their franchising agreements by invoking the single entity doctrine. Yet, the courts in both the US (in American Needle vs. NFL) and EU (in the Bosman ruling) have clearly established that sport leagues do not qualify as a single economic entity.

One of the aims of this paper was to create a unique data set based on reliable audited accounts, instead of using potentially inaccurate measures taken from various online sources. This study and its companion dataset therefore offer several opportunities for future research. When clubs' financial accounts become available for additional years, follow-up research may extend our dataset to look into the mechanisms we have outlined in section 6.1. Second, the financial statements for a subset clubs also report individual contract information, such as individual wages, contract length and transfer fee. This type of data would allow researchers to adopt a more structural empirical approach to estimate the transfer of economic rents from workers to employers under the transfer system.

Apart from the transfer system, the dataset also lends itself to explore more general trends in the financial situation of European football. Researchers could for example explore the consequences of the Covid-19 crisis. Based on our results, we speculate that it will primarily affect small market clubs as they suffer both from a reduction in gate revenues due to closed-door games and from a reduction in transfer revenues. If public health concerns about big gatherings also push up the demand for televised games, this would further favor larger TV markets and widen the gap between small and big leagues. Alternatively, researchers could explore the financial statements of earlier years to evaluate landmark regulatory initiatives from the past, such as Financial Fair Play or the introduction of joint media rights sales.

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Tables and figures

Table 1: Descriptive statistics and variable definitions

Variable	Obs.	Mean	Std. Dev.	Definition
Transfer book value	921	38,062,788	71,467,024	Book value player registrations at end season t.
Transfer income	817	14,982,856	25,409,058	Cash revenue from player sales – book value of players sold in season t.
Transfer costs	849	16,708,201	26,596,986	Amortizations player registrations in season t.
Net transfer earnings (loss)	819	-1,659,255	22,513,675	Transfer income – transfer costs in season t.
Pre-transfer revenue	828	82,172,763	119,590,107	Revenues exclusive net transfer earnings in season t.
Post-transfer revenue	856	82,860,699	113,820,787	Revenues incl. net transfer earnings in season t.
Wage bill	925	48,422,962	67,606,040	Total personnel costs in season t.
Tangible fixed assets	927	38,953,203	90,820,553	Book value of tangible assets at end season t.
Rank	1004	14.458	10.341	Rank at end season t, where 1 = champion, 2 = runner-up etc.
Promoted	1009	0.115	0.319	Dummy =1 if club promoted in t-1, 0 otherwise.
Relegated	1009	0.094	0.292	Dummy =1 if club relegated in t-1. 0 otherwise.
Average Squad Age	819	24.11	1.432	Average age (years) of club players in season t

<u>Notes</u>: This table presents summary statistics and variable definitions for the full sample. An observation in this table refers to a club-season. All financial variables are expressed in Euros. We converted other currencies using the exchange rate on 30th of June of the respective season, as this is the most common filing date. If clubs file accounts on another date than 30th of June, we divide their data across seasons in proportion to the number of months covered from each season.

Table 2: Coverage of selected variables per association and source of financial information

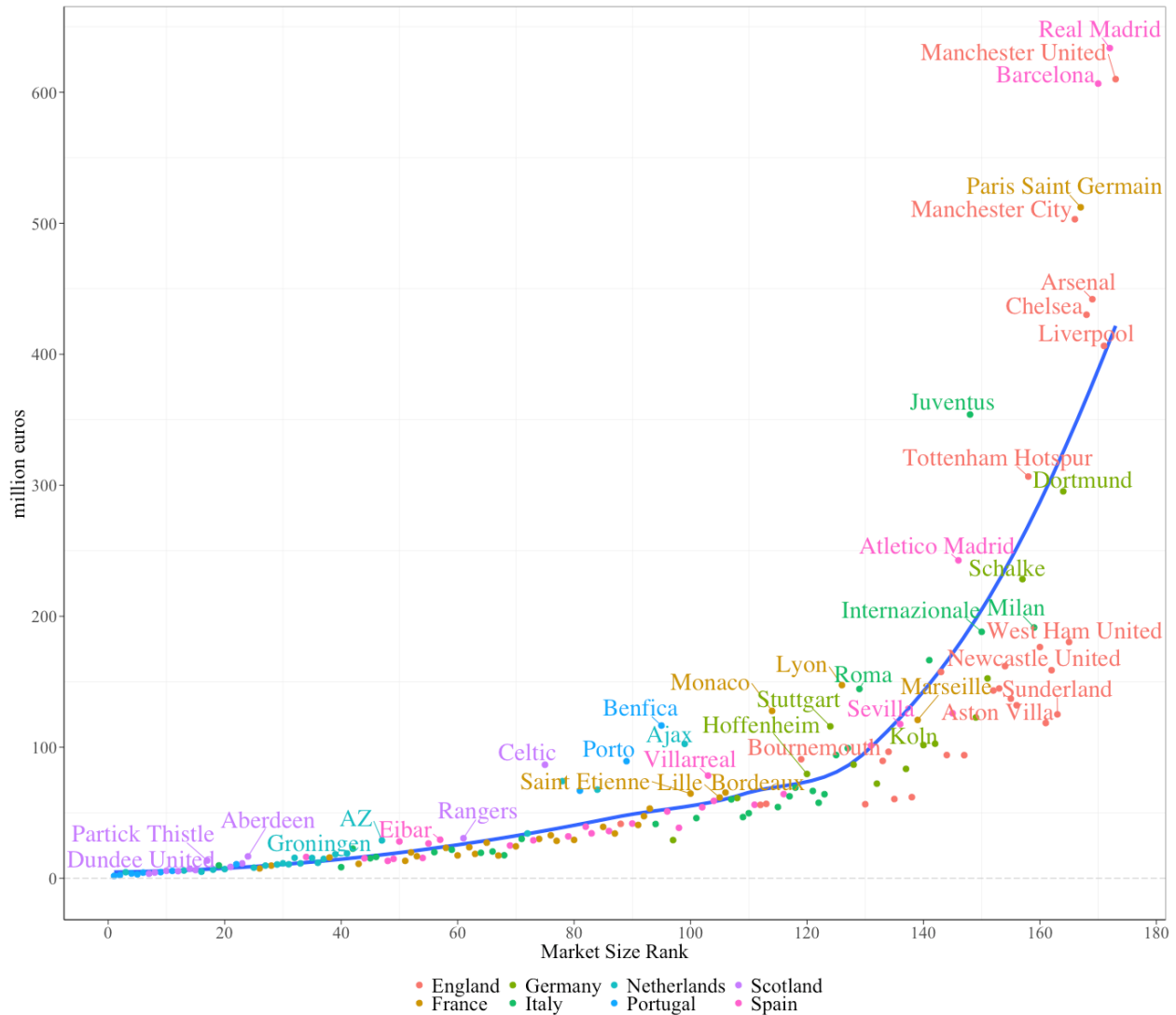| Association	Clubs	Obs.	Net transfer earnings	Pre-transfer revenue	Post-transfer revenue	Wages	Source
England	28	140	100%	100%	100%	100%	Companies house
France	30	150	96%	96%	96%	96%	Direction Nationale Contrôle de Gestion
Germany	23	115	43%	43%	65%	65%	Bundesanzeiger
Italy	29	145	96%	97%	98%	99%	Chamber of Commerce: visura.it
Netherlands	24	120	93%	94%	89%	97%	Kamer van Koophandel
Portugal	25	125	36%	39%	93%	94%	Portal de Empresa
Scotland	15	75	72%	72%	72%	69%	Companies House
Spain	28	140	96%	99%	97%	99%	Chamber of Commerce: infocif.es
Overall	**202**	**1010**	**81%**	**82%**	**90%**	**92%**	

Notes: This table gives an overview of the coverage and source for the key financial variables in our analyses. An observation in this table refers to a club-season.

Table 3: Gini coefficients for pre- and post-transfer revenues by national association

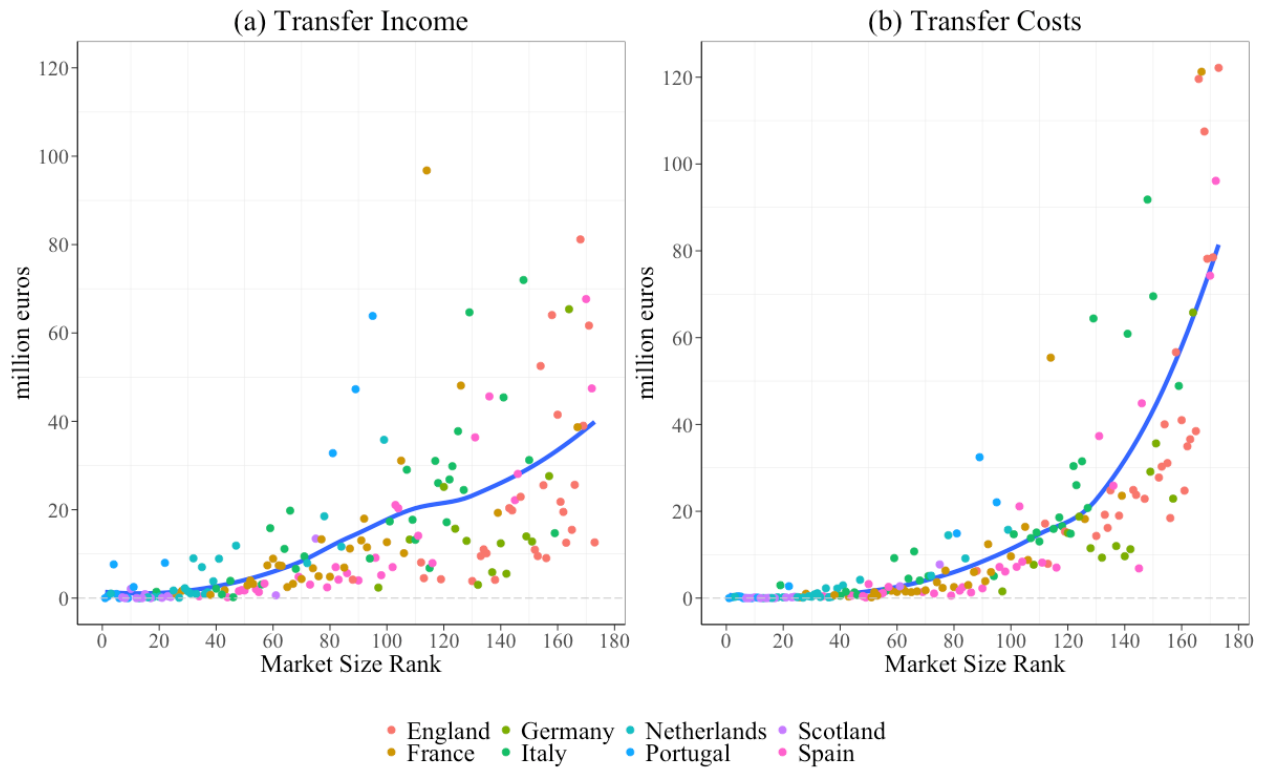| Association	Gini pre-transfer	Gini post-transfer	Δ Gini	Clubs included
England	0.406	0.405	-0.002	28
France	0.553	0.517	-0.036	29
Germany	0.298	0.292	-0.006	13
Italy	0.487	0.449	-0.039	29
Netherlands	0.497	0.503	0.006	22
Portugal	0.665	0.658	-0.007	11
Scotland	0.536	0.531	-0.004	12
Spain	0.604	0.589	-0.015	28
Champions League	0.393	0.353	-0.040	30
Overall	**0.597**	**0.571**	**-0.026**	**172**

Notes: This table displays the Gini coefficient of *pre- and post-transfer revenues* (as defined in Table 1) for each national association in the dataset. We further include the Gini coefficients measured among clubs, which participated in the Champions League for at least two out of the five seasons in our data sample. In the final column we detail the number of individual clubs the Gini calculations are based on. All calculations refer to club averages over the seasons 2014 to 2018.

Figure 1: Average pre-transfer revenues as a function of ranking in estimated market size
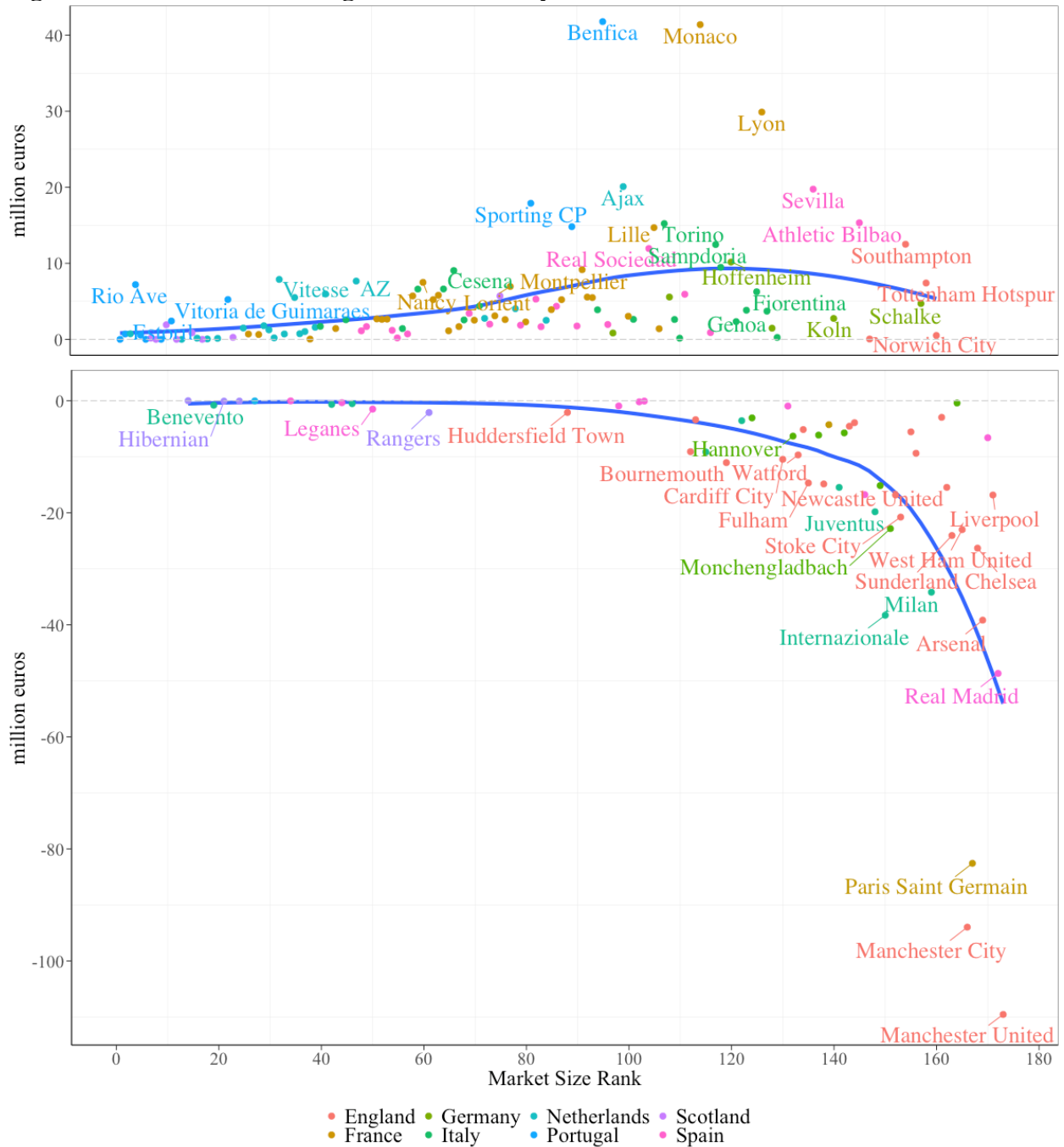

Notes: This figure plots the average pre-transfer revenues of a club as a function of its estimated market size rank. Colors refer to different national associations in which clubs are active. We add labels to some observations to aid the interpretation of the data. The smoothed line is created using the LOESS algorithm with smoothing parameter 0.75 and polynomial of degree 2.

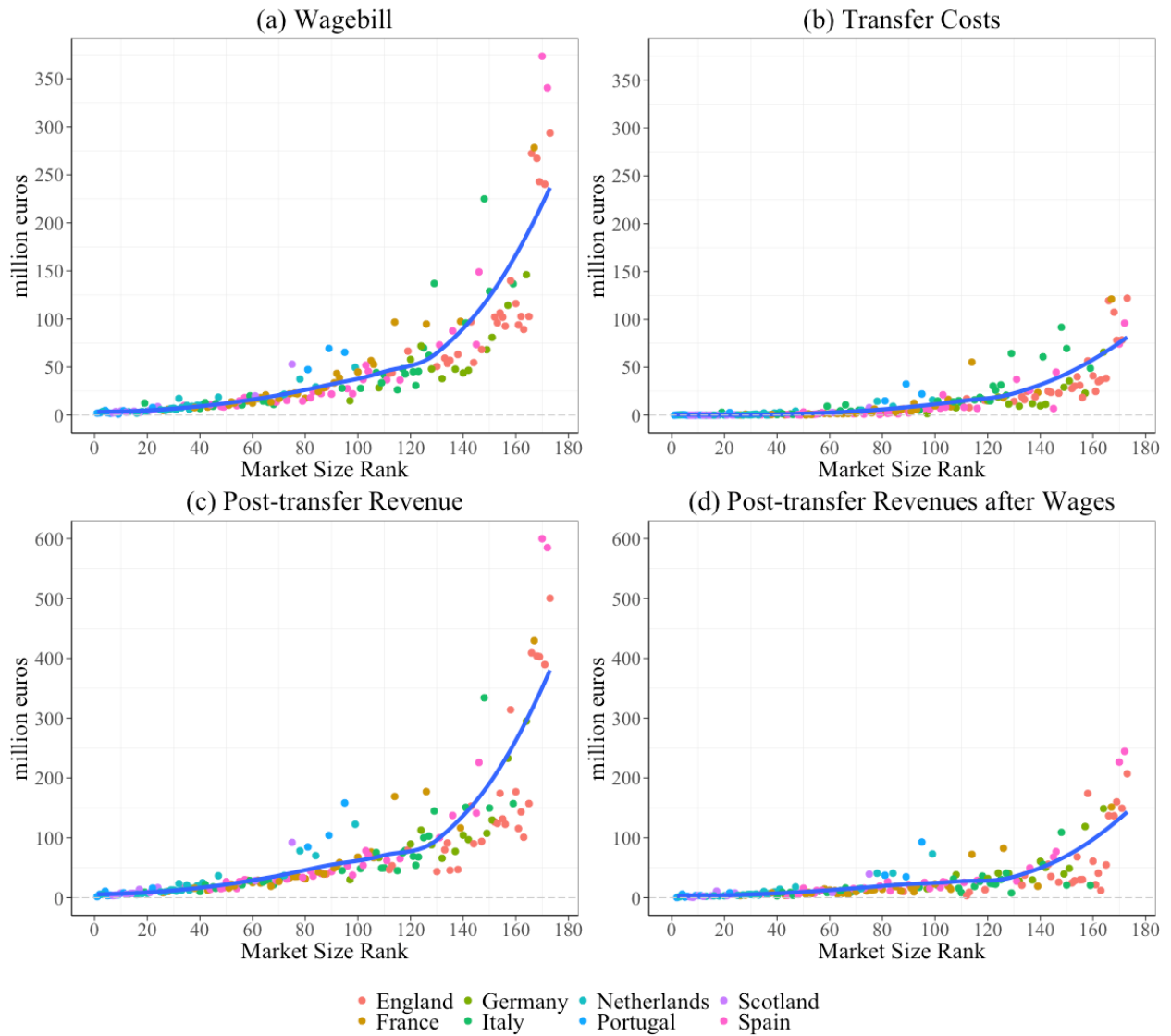**Figure 2: Average transfer costs and transfer income by market size rank.**

Notes: In panel (a) we plot the average *transfer income* for each club as a function of its market size rank. In panel (b) we plot the average *transfer costs* for each club as a function of its market size rank. Both variables are defined in Table 1. All numbers refer to the seasons 2014 through 2018. If clubs have missing years, we include their average over the available years. Colors denote the national association the club plays in. The smoothed line is created using the LOESS algorithm with smoothing parameter 0.75 and polynomial of degree 2.

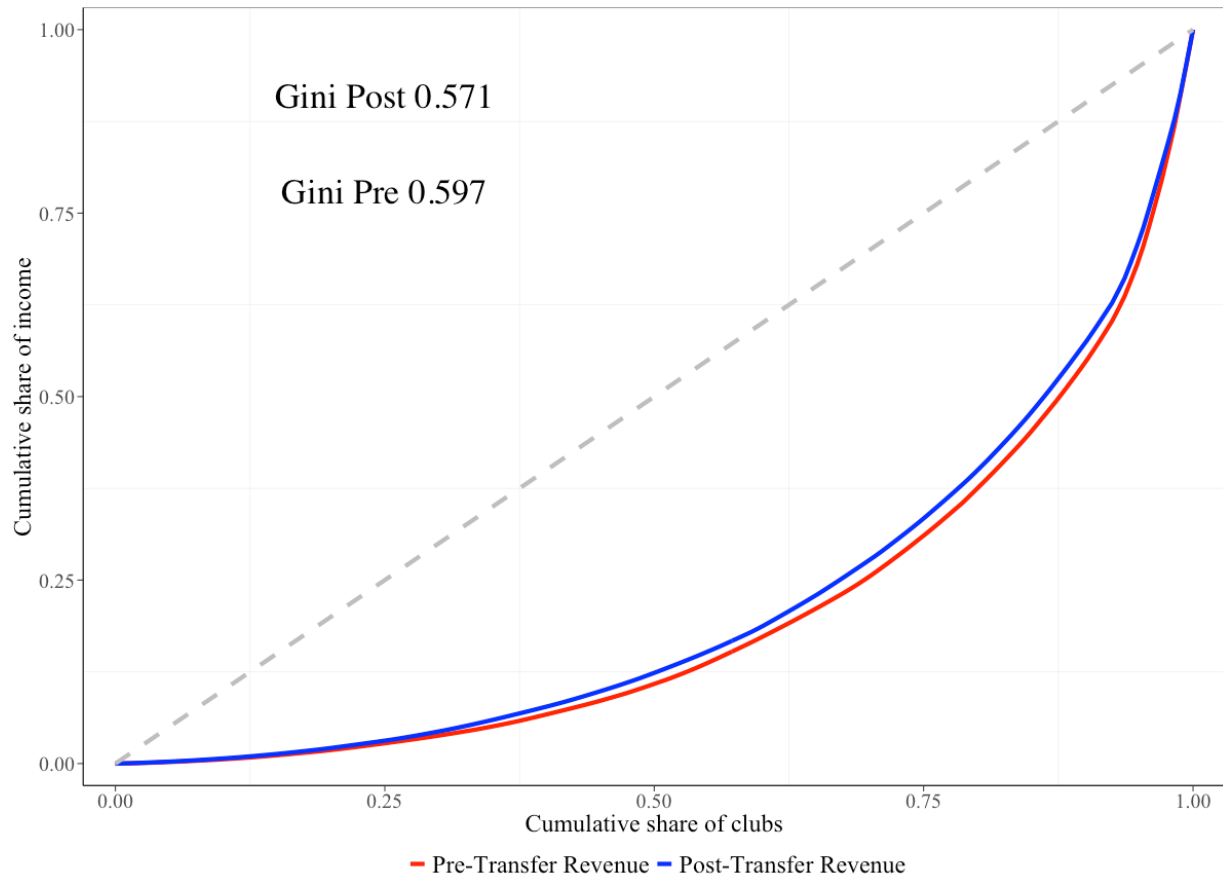**Figure 3: Net transfer earnings versus losses by market size rank**

Notes: This figure plots the average *net transfer earnings or losses* for each club as a function of its market size rank. A variable definition is available in Table 1. All numbers refer to the seasons 2014 through 2018. If clubs have missing years, we include their average over the available years. Colors denote the national association the club plays in. We add a separate trend line for clubs with positive or zero net transfer earnings and net transfer losses. Both trend lines are created using the LOESS algorithm with smoothing parameter 0.75 and polynomial of degree 2.

Figure 4: Player expenses and operating margin after player expenses by market size rank

(a) Wagebill

(b) Transfer Costs

(c) Post-transfer Revenue

(d) Post-transfer Revenues after Wages

England • Germany • Netherlands • Scotland
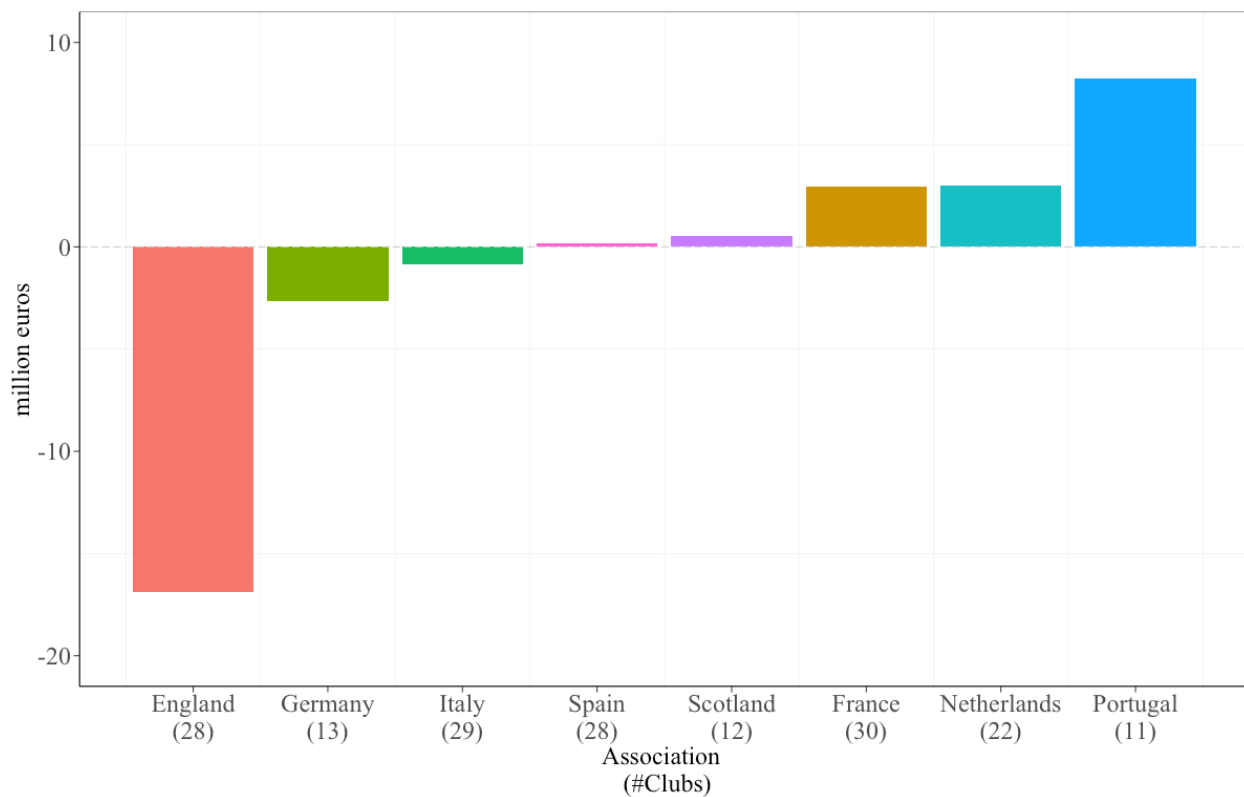France • Italy • Portugal • Spain

<u>Notes</u>: Panel (a)-(c) show the average *wage bill, transfer costs* and *post-transfer revenues* for each club as a function of its market size rank. These variables are defined as in Table 1. In panel (d) we plot average post-transfer revenues minus the average wage bill as a function of market size rank. All numbers refer to the seasons 2014 through 2018. If clubs have missing years, we include their average over the available years. Colors denote the national association the club plays in. The smoothed line is created using the LOESS algorithm with smoothing parameter 0.75 and polynomial of degree 2.

Figure 5: Lorenz curves of pre- and post-transfer revenues for full sample

Gini Post 0.571

Gini Pre 0.597
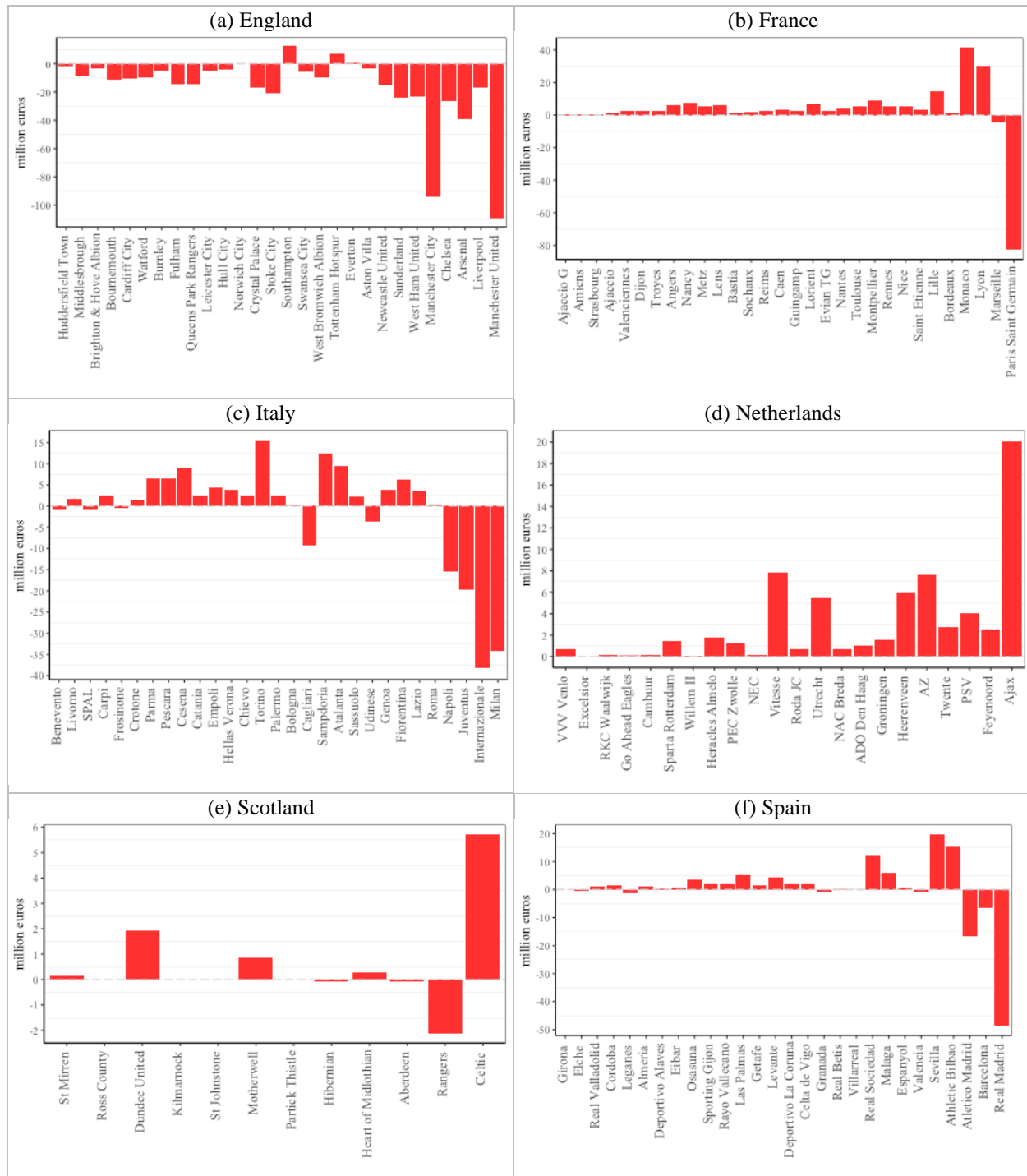
— Pre-Transfer Revenue — Post-Transfer Revenue

Notes: This figure shows the Lorenz curve for *pre-* and *post-transfer revenues* as defined in Table 1. We display results for the average over the seasons 2014-2018 for all clubs in our data sample. In addition, we display the corresponding Gini coefficients for the distribution of both variables.

Figure 6: Average net transfer earnings (losses) per club across national associations
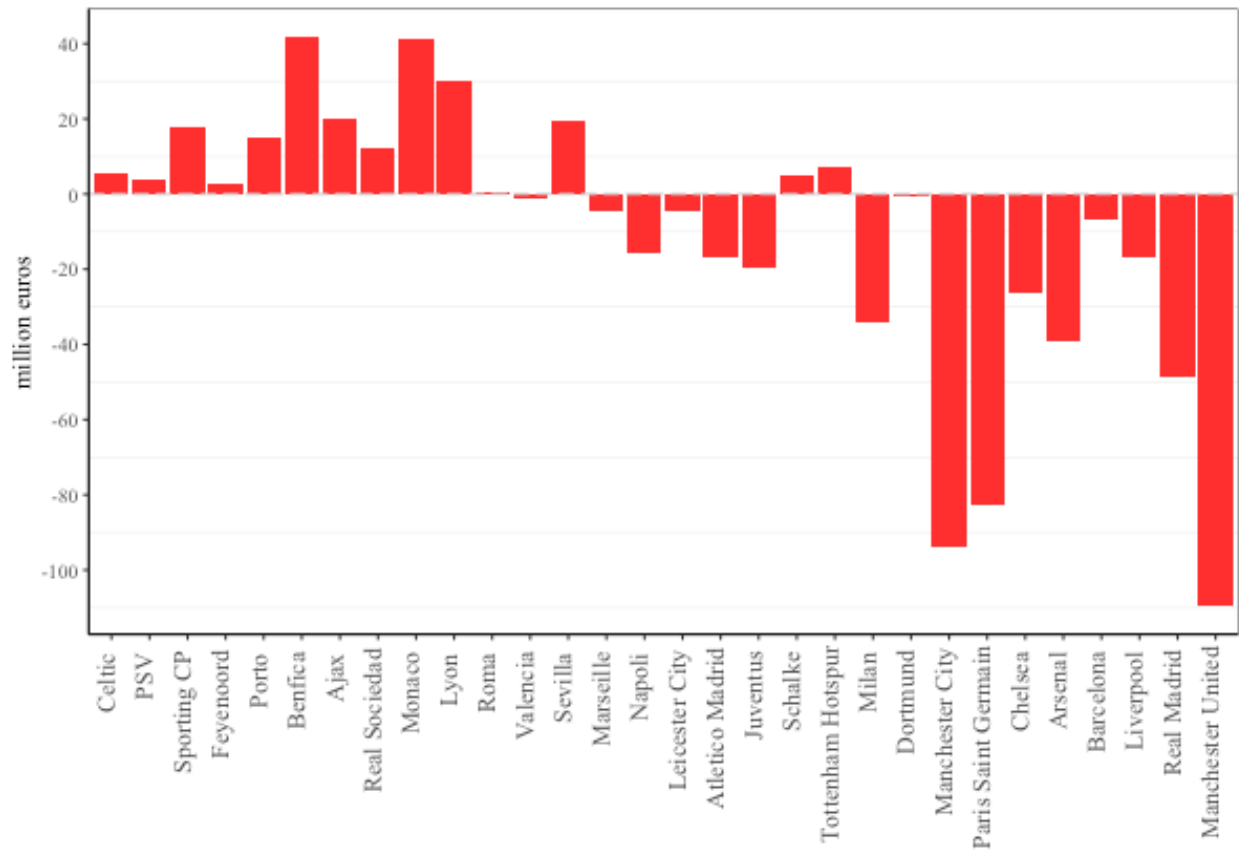

Notes: This figure shows the sum of average net transfer earnings or losses, as defined in Table 1, for all clubs within each national association. This sum is calculated by first averaging net transfer earnings (losses) over 2014-2018 for each club and subsequently summing these values to obtain an average yearly net transfer earnings (losses) figure within each national association.

Figure 7: Clubs' net transfer earnings or losses by market size rank per national association
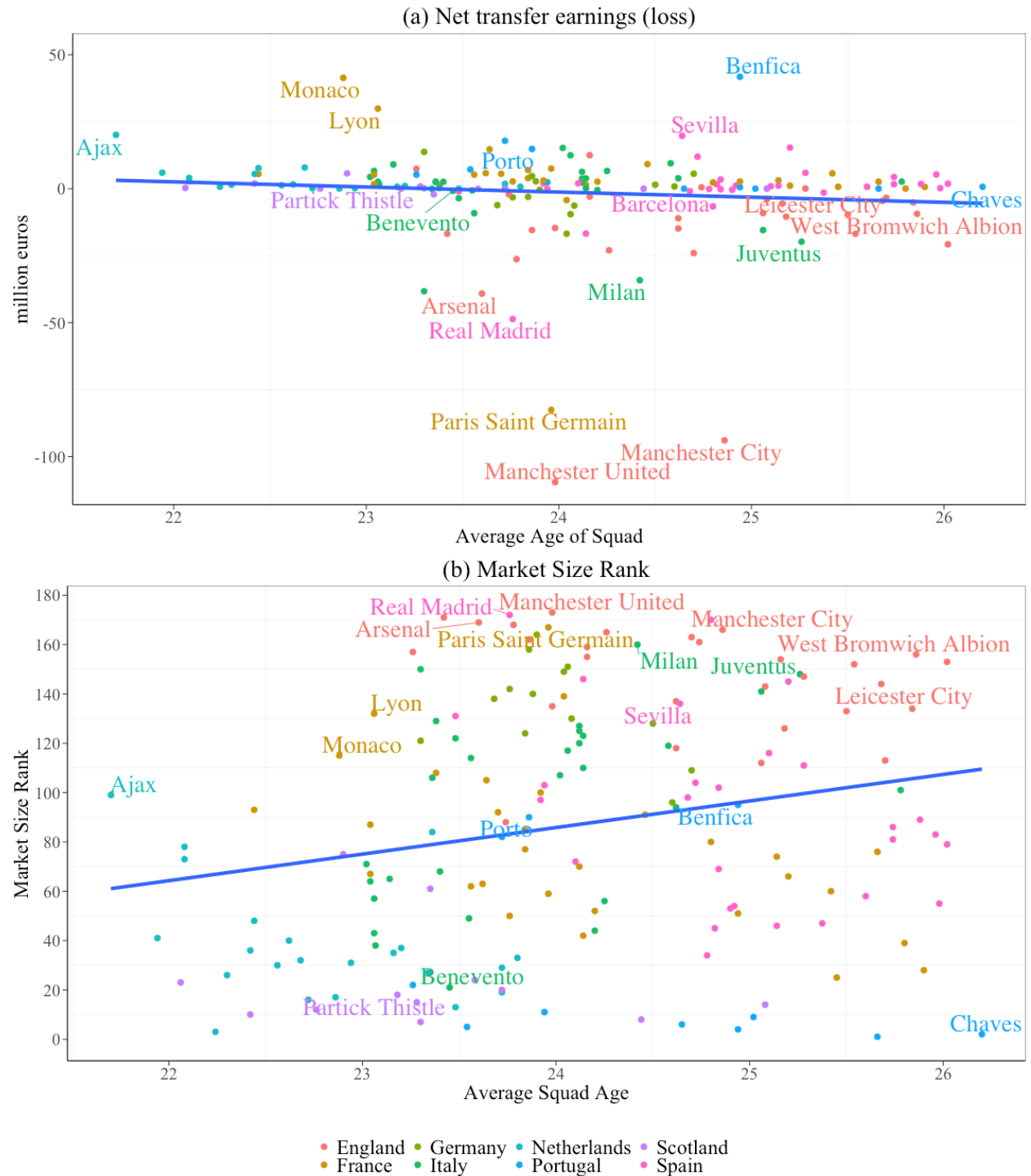

Notes: This figure shows the distribution of *net transfer earnings or losses*, as defined in Table 1, within each national association. Clubs are ranked according to their estimated market size rank. Variables represent averages over the seasons 2014-2018. Germany and Portugal have been left out, as there are too many missing observations to paint an accurate picture.

Figure 8: Net transfer earnings and losses by market size rank for Champions League participants

Notes: This figure shows distribution of *net transfer earnings or losses*, as defined in Table 1, for all clubs which participated in the UEFA Champions League for at least one out of the five seasons in our sample period. Clubs are ranked according to their estimated market size rank. Variables represent averages over the seasons 2014-2018.

Figure 9: Net transfer earnings (losses) and estimated market size by average squad age

(a) Net transfer earnings (loss)

(b) Market Size Rank

Notes: The top panel plots the average net transfer earnings or losses of a club as a function of its average squad age. The bottom panel shows the market size rank as a function of the average squad age. The smoothed lines are created using a linear regression. For the top panel, the slope coefficients equals -1.91 (p-value: 0.131) with an R-squared of 0.008, while for the bottom panel the coefficient is 10.77 (p-value: 0.004) with an R-squared equal to 0.042. Colors refer to national associations. We add labels to some observations to aid the interpretation of the data.

Online appendix 1: Market size regression results

Table 4: Regression results market size model

Dependent variable:	Log pre-transfer revenue		
	(1)	(2)	(3)
Standardized rank	-0.833***	-0.707***	-0.337***
	(0.020)	(0.021)	(0.027)
Log tangible fixed assets		0.125***	0.095***
		(0.010)	(0.014)
Relegation	0.149*	0.095	-0.008
	(0.080)	(0.073)	(0.053)
Promotion	0.006	0.064	0.320***
	(0.066)	(0.060)	(0.046)
Year fixed effects	YES	YES	YES
Association fixed effects	YES	YES	NO
Club fixed effects	NO	NO	YES
Number of clubs	173	173	173
Observations	817	817	817
R-squared	0.816	0.846	0.947

Notes: This table presents the estimated coefficients for the regression model in equation (1). We regress the logarithm of pre-transfer revenues on the standardized *rank*, logarithm of *tangible assets* and the *relegation* and *promotion* dummies. Standardized rank is calculated as the logarithm of $\left(\frac{rank}{\max(rank)+1-rank}\right)$. In columns (1) and (2) we include association fixed effects, which we replace by club fixed effects in column (3). Stars denote significance levels. ***: significant at 1% level, ** at 5% level and * at 10% level.

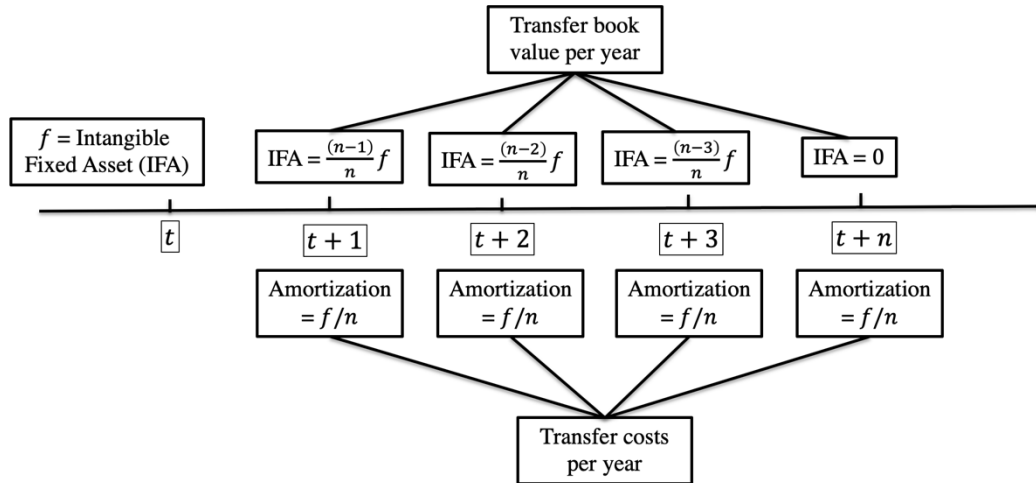## Online appendix 2: Constructing transfer income, costs and earnings

In this online appendix we use the 2018 financial accounts of Arsenal FC as an example to explain how to construct the transfer variables from a typical financial account. The first step in this process is to determine the legal company representing the club. In case the club has a holding structure with a parent company and subsidiaries, we always use the accounts at the highest consolidation level. For Arsenal FC this is Arsenal Holdings Limited (UK Company number 4250459). We obtain the relevant account from Companies House.

Figure 10 schematically shows how clubs account for the transfer fees paid for incoming players. When a player is bought the costs associated with this purchase (f) are capitalized on the club's books as intangible fixed assets. This amount is then amortized linearly over the length of the contract n. The *book value* of the player (IFA) is also reduced synchronously. The *transfer cost* for a club over a given season is the sum of the amortizations on all of its player contracts and any other costs associated with transfer activity. These costs may consist of agent fees or impairments of intangible fixed assets. Impairments may occur when a player contract ends prematurely without the player transferring clubs, e.g., because of permanent injury. If a player contract triggers additional payments when a player reaches certain thresholds, such as playing a specified number of games in the first team, these additional amounts are added to the transfer costs at the time they become payable. By contrast, if a player signs a new (second) contract with the same club, there is typically no transfer fee to be paid and consequently no additional amount to be capitalized. In some leagues, the club can however change the pace of the amortization in this case. In Figure 11, we depict the accounting treatment of incoming transfer fees. If the incoming amount is higher than the remaining book value of the player, the club books this surplus as a revenue in the financial statement. If the incoming amount does not cover the entire remaining book value, this creates a cost in the club's income statement.

Looking at the financial statement of Arsenal FC, we find the *transfer income* and *transfer costs* specified on page 11 (see Figure 12). In this case the club directly provides the "profit on disposal of player
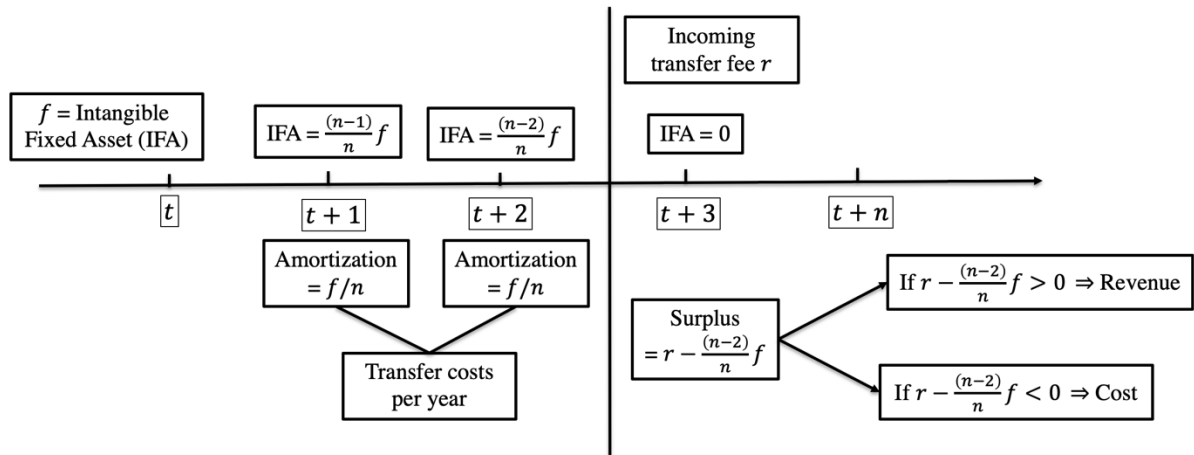
registrations", which translates directly in our variable *transfer income*. The *transfer costs* variable corresponds to the "operating expenses" in the "player trading" column. The variable *net transfer earnings* is the net result of subtracting the costs from the income. In most cases, we can obtain more detailed information from the notes to the financial statements. In the case of Arsenal FC 2018, the club provides details on the state of its intangible fixed assets on page 25, pictured in Figure 13. The total transfer costs are equal to k£85,812 (amortization charge for the year) + k£5,948 (impairment) = k£91,760. The value for "disposals" is the book value of the players for which a transfer fee was received. As such, we can derive the total amount of transfer fees the club received by adding the "profit on disposal of player registrations" to this number. Hence, Arsenal received a total amount of k£100,568 + k£120,047 = k£ 220,615. Finally, we can see that the *transfer book value* of player contracts amounted to k£ 238,245 for Arsenal in the year 2018.

Figure 10: Determining transfer costs and transfer book value

Transfer book value per year

f = Intangible Fixed Asset (IFA)

$\text{IFA} = \frac{(n-1)}{n} f$

$\text{IFA} = \frac{(n-2)}{n} f$

$\text{IFA} = \frac{(n-3)}{n} f$

$\text{IFA} = 0$

t

$t+1$

$t+2$

$t+3$

$t+n$

Amortization $= f/n$

Amortization $= f/n$

Amortization $= f/n$

Amortization $= f/n$

Transfer costs per year

Notes: The figure shows a schematic overview of the capitalization process of a transfer fee f paid for a player with contract length n.

Figure 11: Accounting procedure for incoming transfer fee

Notes: The figure gives a schematic overview of the accounting treatment of an incoming transfer fee r paid for a player with contract length n two years before the contract ends.

Figure 12: Example of transfer costs and income in Arsenal Holding Limited financial statement

CONSOLIDATED PROFIT AND LOSS ACCOUNT
For the year ended 31 May 2018

	Note ·	Operations excluding player trading £'000	2018 Player trading £'000
Turnover of the Group including its share of joint ventures		404,089	2,311
Share of turnover of joint venture		(3,131)	-
Group turnover	3	400,958	2,311
Operating expenses	4	(353,518)	(91,760)
Operating profit/(loss)		47,440	(89,449)
Share of joint venture operating result		940	-
Profit on disposal of player registrations		-	120,047
Profit/(loss) before net finance charges		48,380	30,598

Notes: Detail taken from page 11 of the financial accounts of Arsenal Holdings Limited for the financial year ending 31 May 2018.

Figure 13: Detail of intangible fixed assets from Arsenal Holding Limited financial statement

Intangible assets

	£'000
Cost of player registrations	
At 1 June 2017	432,603
Additions	165,831
Disposals	(118,423)
At 31 May 2018	480,011
Amortisation of player registrations	
At 1 June 2018	250,574
Charge for the year	85,812
Impairment	5,948
Disposals	(100,568)
At 31 May 2018	241,766
Net book value	
At 31 May 2018	238,245
At 31 May 2017	182,029

The figures for cost of player registrations are historic figures for the costs associated with acquiring players' registrations or extending their contracts. Accordingly, the net book amount of player registrations will not reflect, nor is it intended to, the current market value of these players nor does it take any account of players developed through the Group's youth system.

Notes: Detail taken from page 25 of the financial accounts of Arsenal Holdings Limited for the financial year ending 31 May 2018.