A Work Project, presented as part of the requirements for the Award of a Master's degree in Management from the Nova School of Business and Economics.

HOW RISING TRANSFER FEES AFFECT THE DISCREPANCY BETWEEN TOP TIER LEAGUES AND MIDDLE-TIER ONES – THE CASE OF PORTUGAL

GABRIELE MONGODI

Work project carried out under the supervision of:

Elizabete Cardoso

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Abstract

This study investigates the effect of inflation of football transfer fees on financial and sports equality. To do so, have been analysed transfer market data and final standings of clubs from ten of the most important leagues in Europe from 2010 to 2019 to measure the equality both in the transfer market and on-pitch performances with the Gini coefficient. A quantitative method was applied using data retrieved from Transfermarkt.com to compute the calculations needed by the research question. Results showed that equality in the transfer market did not decrease in the face of consistent inflation, while there has been a mildly negative effect on national leagues' final standings.

Keywords: Inflation, Football, Sport Management, Football Transfer Market, Equality

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1. Introduction

The football transfer market system strongly relies on one regulation: clubs record players on the balance sheet as an intangible asset, amortised for their contract length and transfer fee value (Morrow 1996). Out of this regulation, it is possible to draw two essential assumptions over the functioning of the football transfer market. First, players do not count as personnel even if they receive a salary based on a temporary contract. Second, players are associated with a value that reflects mainly their performances on the field, considering their asset status. Therefore, if a club wants to sign a player under contract for another club, the poaching club must pay a transfer

fee to the owner club to negotiate with the player (BBC WorkLife 2017). This regulation is a result of the Bosman Ruling that came into effect in EU in 1995 (Union royale belge des sociétés de football association ASBL v Jean-Marc Bosman 1995). This structure induces a dynamic among clubs where players can be used as drivers to make profits off the transfer market. The mechanism is to invest in a player whose value is expected to increase in the future and sell it at the right time to make a capital gain off it. International legislations (FIFA 2021) authorised and incentivised this dynamic due to its economic redistribution effect, which should, at least in theory, enhance competitiveness among clubs and enable upward mobility for smaller clubs (Szymanski 2016).

On these grounds, it is vital to introduce the most talked-about trend in the football transfer market: the conspicuous increment of transfer fees' values and total expenditure of clubs in each transfer window. CIES Football Observatory confirmed this trend, marking an average yearly expenditure of 6,2€ billion in transfers from 2017 to 2019 compared to the 1.9€ billion of 2010-2012 (Poli, Ravenel and Besson 2019). The same report highlights how this phenomenon leads to a concentration of financial resources and talents in the wealthiest clubs, seriously mining the egalitarianism of football. However, being a recent trend, the literature has not yet analysed and apprehended its implication and the potential risks.

This study investigates how rising transfer fees' prices can affect power dynamics among European clubs, both financially and on-pitch, to fill in this gap. The aim is to understand whether this trend positively or negatively affects money redistribution and how it relates to club performances. Portuguese Primeira Liga served as a case study to investigate how this trend can affect a middle-tier league characterised by positive margins in each transfer window.

2. Literature Review

Considering on-field and financial performances, these are helpful to outline which leagues are to be considered top-tier and which ones can be considered followers or small-medium-tier ones. To do so, UEFA itself takes care of ranking different leagues based on the international achievements of each club. The result is the official Country Coefficient Standings that sums all the coefficients of a nation's clubs, which states that the top 5 leagues in Europe are respectively to ones of England, Spain, Italy, Germany, and France (UEFA 2021). Portugal ranks sixth right after France and ahead of Netherland, Austria, and Scotland. A similar result is recorded on the financial sides as England, Spain, Germany, Italy, and France represent the top 5 leagues per revenue generated each year (Statista 2021). Furthermore, European Leagues and KPMG drew up an extensive report named "The Financial Landscape of European Football", which states that financial and on-pitch performances go hand in hand, confirming the findings mentioned above (KPMG 2019). The same report outlines a consistent division in tiers of different leagues, ranked as follows:

- Cluster A includes leagues where average club revenue was above €50 million: England, France, Spain, Italy, and France
- Cluster B includes leagues where average club revenue was between €20 and 50 million: Belgium, Netherlands, Portugal, Russia, Switzerland, Turkey
- Cluster C includes leagues where average club revenue was between €5 and 20 million: Austria, Denmark, Greece, Hungary, Israel, Kazakhstan, Norway, Poland, Scotland, Sweden, Ukraine

Considering the total expenditure of each league, it mostly follows the distribution of the revenues, as confirmed by the most recent data retrieved from Transfermarkt.com

(Transfermakt.com 2021). CIES Football Observatory gave a further insight into the spending trend of European Leagues with a focus on Cluster A ("Big 5" from now on), highlighting how from 2014 to 2019, the transfer market recorded an average of 26% of inflation (CIES 2019), with a succession of record-breaking new high scoring transfer fees each year. In another report of 2017, CIES tracked the direction of this spending.: 66% of money spent by Big 5 clubs moved towards clubs of the same Big 5, while only 16% subsidised clubs in other UEFA associations (CIES 2017).

The literature is generally divided when discussing competitiveness related to the transfer fee system. Some argue that there is no significant evidence that domestic leagues were affected by the Bosman rule, despite highlighting a wider gap between high-spending clubs and followers in the Champions League (Binder and Findlay 2008). Others supported the transfer fee regulation, arguing that it implied a more efficient distribution of playing opportunities, allowing talented players to achieve their potential and be partly responsible for a higher-performing football system (Terviö 2006). However, a polarising effect has been recorded as small clubs have more incentives to act as "nurseries" and sell their stars to top teams, concentrating the talent in a few wealthy clubs competing among themselves over talent and trophies (Norbäck, Olsson and Persson 2020). Nevertheless, further analyses suggest that there is little to no evidence that financial inequalities influenced on-pitch performances negatively (Szymanski 2007).

Finally, it is important to look at the literature on the football agent's topic. A football agent is an intermediary that handles all interests of a player and, most importantly to this paper, has the right to ask for an agent fee over a transfer of his clients. TPO (Third Party Ownership) is the most relevant tool for agents to influence transfer fees: agents act as investors by owning stakes of player performances' rights (Richards 2016). TPO implies that part of the transfer fee paid by a club does not end in the pockets of the selling club, as an undefined part of it goes to

agents, de facto exiting from the football industry (Hoey, Peeters and Principe 2020). Media often point out how agents' fees have been increasing in recent years, alluding to a critical role in boosting inflation in the transfer market (Guardian Sport 2021) (Price 2021). However, specific studies over determinants of transfer prices pointed out that, despite the rising meddling of agents in football transfers, their role in increasing transfer fees is not significant. In addition, TPO raises an alert over the topic of money laundering, as players' rights transactions are generally under-regulated (Cindori and Manola 2020).

Then, the debate over competitiveness and its relationship with the transfer market seems to lean towards the polarisation between high-spending and low-spending clubs. However, it is still uncompleted. First, it lacks a unilateral conclusion based on accurate data analysis. Second, inflation's effects on the football economy are not studied at all. Therefore, this study focused on filling these two deficiencies by comprehensively analysing the transfer market's redistributive effect and inflation's implications. The study's results applied to the Portuguese Primeira Liga led to a simple but extensive comprehension of its features, offering a solid base for improvements in the future.

3. Methodology

A positivist approach was chosen for this study, using credible and observable data from a large sample to test a theory that leads to hypothetical explanations. The researcher's point of view detached from the data collection step to ensure an objective output of measurements (Saunders, Lewis and Thornhill 2019). The final output is descriptive of the transfer market inflation on egalitarianism and redistribution, so it does not represent a holistic and comprehensive conclusion over the topic.

Data over the inflation trend on transfer fees in the football transfer market from 2010 to 2019 are retrieved from Transfermarkt.de (Transfermarkt.de 2021). This decision was made to avoid the pandemic's influence on prices by centring the analysis on a trend that is supposed to replicate once the crisis has passed. For all the analyses, have been taken into consideration all clubs that participated in 10 of top-level leagues from either A, B, and C Clusters (KPMG 2019): Premier League (Custer A), Bundesliga (Cluster A), Serie A (Cluster A), La Liga (Cluster A), Ligue 1 (Cluster A), Primeira Liga (Cluster B), Eredivisie (Cluster B), Jupiler League (Cluster B), Russian Premier League (Cluster B), Scottish Premiership (Cluster C). Transfermarkt.com (Transfermarkt.de 2021) served as a database for all clubs' transfers from 2010 to 2019 and their respective final standings in the considered leagues. Regarding international performances – UEFA Champions League and Europa League –, have been used club coefficients calculated by UEFA (UEFA 2021), as they are already inclusive of discrepancies among different tiers, stages, and prestige of each match played in these competitions. Beyond the thoroughness of the UEFA coefficient, the study's purpose required an ordinal variable instead of a categorical one such as final placement in these competitions. Data over UEFA coefficients of 2010 are not available on the institutional website; the analysis does not consider this year.

Once the inflation rate was known, to assess whether inflation affected the equality of the transfer market, the Gini coefficient (Gini 1921) was used, which is a measure of statistical dispersion that evaluates the inequality within a group of values and is often used to describe income and wealth inequality within countries. It is a value between 0 and 1, where 0 represents perfect equality and 1 perfect inequality. The Gini coefficient has been calculated for revenues and expenditures separately of each year from 2010 to 2019. Afterwards, the linear regression was calculated on the yearly balance (revenues – expenditures) of Cluster A and Cluster B to ascertain the redistribution effect presence. The aim was to obtain a yearly index of the degree

of inequality in revenues and expenditures to investigate the tendency of those inputs. Finally, the Gini coefficient has been applied to the final standings, where the equality in the yearly distribution of points within leagues was analysed. The *ratio* applied here is analogous to the one used for financial equality: as the yearly inflation rate is already computed and ascertained, has been investigated the equality within each league to assess whether the inflation affected on-field performances. A linear regression was performed to examine the relationship between the transfer market and international performances considering UEFA coefficients as the known variable y and money spent on the transfer market as independent variable x. Then, clubs were divided into three tiers according to their expenditure:

- Tier 1: 20 highest spending clubs
- Tier 2: from the 21st to the 40th highest spending clubs
- Tier 3: least 20 spending clubs

The purpose is to examine if the ratio between money spent and international performance changed, as one is led to believe or not. Finally, the trend of the UEFA coefficient for every Cluster was monitored to see if it changed over time.

4. Analysis and Discussion

4.1. Analysis of results

For the clubs considered in this study, the prices of transfer fees rose, on average, by 14% yearly. As a result, in 2010, the yearly average expenditure in players per club was €7.757.946,

while at the end of the decade, it peaked at €24.373.692, approximatively three times its initial value.

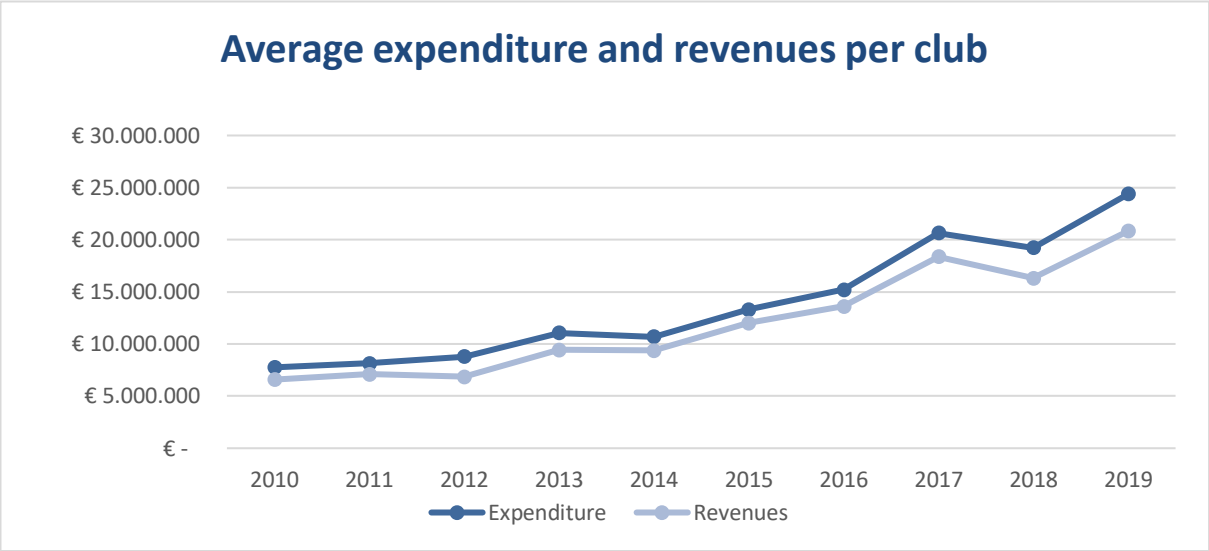

Table 1. Trend of yearly average revenues and expenditure of clubs on the transfer market from 2010 to 2019. Source: Transfermarkt.com, author's calculations

The equality of yearly expenditure maintained roughly stable during the decade, as the Gini index fluctuated among 0,5 and 0,616 quite arbitrarily (Appendix 1). The correlation between money spent on the transfer market and the Gini index is positive, even if weak, with an R^2 value of 0,445. In particular, the linear regression slope is 4,32009E-09, meaning that for every €2.315.786 increase in average spending per club, the Gini coefficient rises by 0,01 (Appendix 3). The same analysis on revenues outputted similar results, recording average yearly inflation of 15% of revenues generated by each club from 2010 to 2019. In 2010 the average revenue was €6.582.140 and topped €20.828.907 in 2019. The equality recorded an evolution analogous to expenditures; however, the variance of the Gini index for expenditure was 0,0014, while the one for revenues was 0,0028 (Appendix 2). The correlation between revenues generated in each year and their inequality was positive with an R^2 of 0,762. The slope for the linear regression was 9,15112E-09, and for every additional €1.092.763 in average yearly revenues per club, the Gini coefficient rises by 0,01 (Appendix 3). The correlation between Cluster A and Cluster B

balances is negative and consistent as the *r* correlation index is -0.85 and the slope is -0.44. There is a correlation between the width of the discrepancy between Clusters' balances and inflation of 0,95, so it is almost a perfect linear correlation.

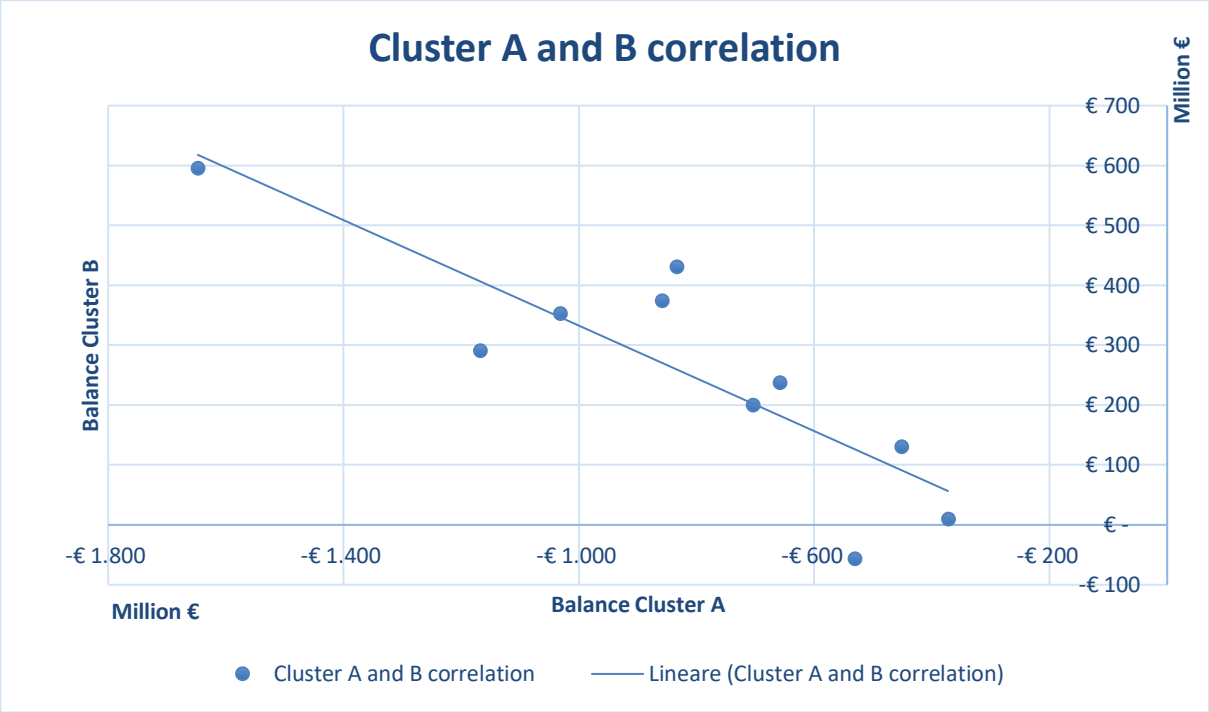

Table 2. Correlation between total balances of Cluster A and B. Source: Transfermarkt.com, author's calculations

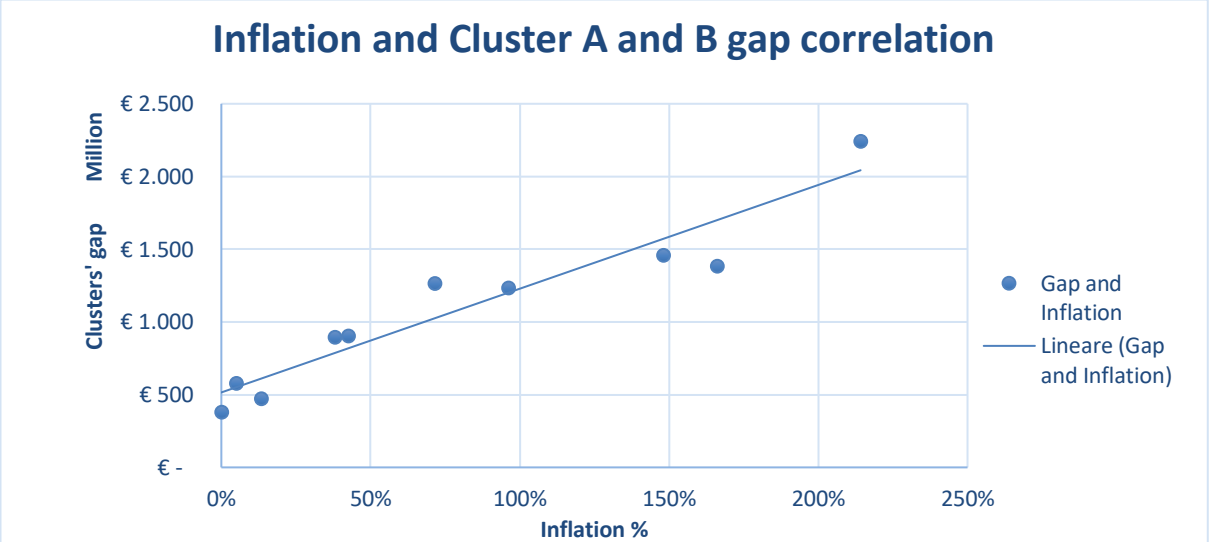

Table 3. Linear regression of inflation and gap between total balance of Cluster A and Cluster B in each season from 2010/2011 to 2019/2020. Source: Transfermarkt.com, author's calculations

Regarding the analysis of on-pitch performances, the Gini coefficient calculated over final standings for the ten leagues considered in this study showed a mild uptrend, as it grew on average by 1.26% each year (Appendix 4). Leagues from cluster A recorded an average Gini coefficient of 0.176, while those from cluster B 0.183 and the Scottish Premiership, the only league from cluster C, 1,86. It can be inferred that the higher the average spending per club, the lower the Gini coefficient, as the ANOVA run on clusters rejected the H0 null hypothesis that Clusters do not influence the average Gini coefficient of leagues (Appendix 5). Furthermore, the correlation between the inequality in the redistribution of points within leagues and the inflation of the transfer market is positive and has an R^2 value of 0,226 (Appendix 6). Consequently, the linear regression slope is shallow, being 6,54582E-10: for every €15.276.918 spent in addition on average by each club, the Gini coefficient rises by 0,01.

Besides this analysis, there are some notable takeaways to report. First, Portuguese Primeira Liga is the less equal league as their Gini coefficient is 0,200, distancing itself consistently by the second worst, Italian Serie A, which recorded a 0.189. Eight leagues out of the ten considered showed an uptrend in their Gini coefficient, leaving only Primeira Liga and Jupiler Pro League with a downtrend. Finally, the equality does not seem to be influenced by the number of participants in a league, as the mean Gini coefficients do not show significant differences regardless of the different number of participants.

Due to inflation, the ratio between money spent on the transfer market and the UEFA coefficient has dropped steadily during the decade. For example, if in 2011, for every additional €3.466.966 spent on the transfer market, a club would increase its UEFA Coefficient by 500; to obtain the same result in 2019, the same club would have to spend €7.569.494. However, a positive correlation persists between money spent on the transfer market and the UEFA coefficient, as the linear regression slope is positive throughout the decade. Among the clubs considered in this study, Tier 1 clubs accumulated an average of 50% of the whole coefficient points available

each year, while clubs in Tier 2 30% and clubs in Tier 3 were 15% (Appendix 7). This distribution of UEFA coefficients among tiers is stable throughout the decade, confirming, on the one hand, the positive relationship between money spent on the transfer market and results on the pitch, while on the other hand, it excludes any signals of relation with inflation. Similar results happened for the distribution of UEFA coefficients among Clusters, which have been constant through the whole decade.

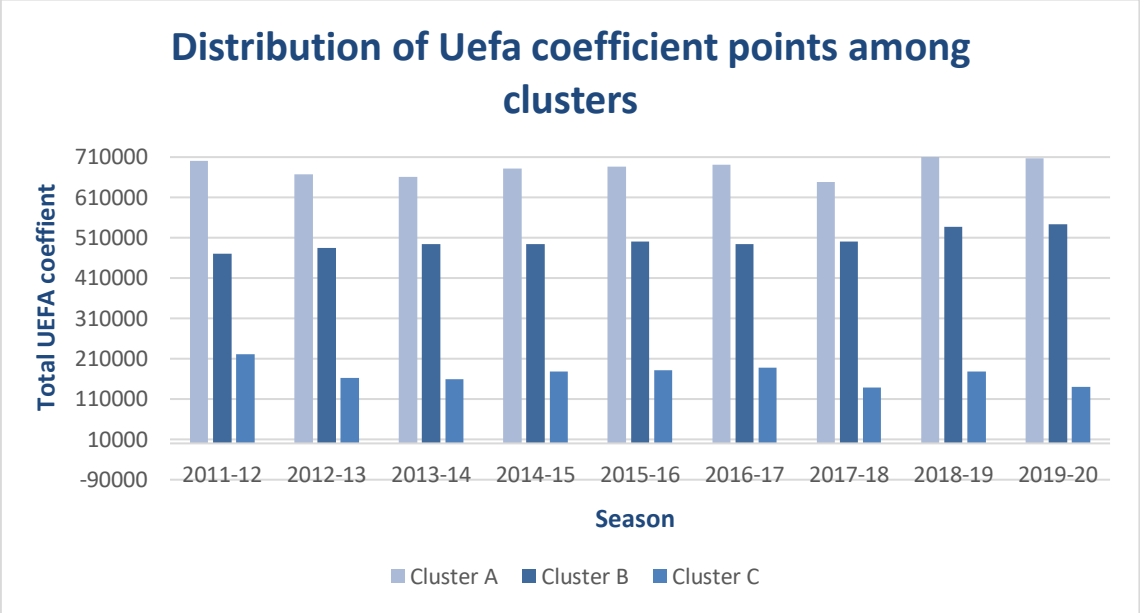

Table 4. Distribution of UEFA coefficient points among clusters for each season considered. Source: Transfermarkt.com, UEFA.com, author's calculations

4.2. Discussion of results

A financial redistribution between Cluster A and Cluster B happens, as shown by the *r* coefficient of correlation near -1. The almost linear correlation between Cluster A and Cluster B balances' gap implies that inflation does not generate losses in redistribution. Therefore, it is possible to conclude that in the face of an accentuated inflation, the transfer market did not

change its substantial internal dynamics, as money flows with analogue direction and proportion so that it redistributes in the same way. This evidence brings out two primary considerations. First, although the transfer market is an efficient tool for driving revenues, these are arguably useless to constructing a winning team. This finding is aligned with Hoey, Peeters, and Principe (2020) study for what concerns the redistribution part and with the words of the advocate Lenz during the Bosman case of 1995 regarding the connection with upward mobility for clubs (Lenz 1995). Therefore, the money spent on the transfer market does not level to the revenues generated by such, and the positive correlation between the expenditure on the transfer market and on-pitch performances cannot be exploited. The second and consequent consideration is that the most efficient way to boost sports results is by financial sources, driven mainly by broadcasting, commercial, matchday, and UCC revenues, as reported on The Financial Landscape of Football. According to this report, regarding financial sources, there is a growing gap between Cluster A and B revenues due to the difference in performances in UCC that boost the club image, increasing the opportunity to capitalise money off it. Considering the findings of this study – a positive correlation between money spent on the transfer market and UCC results -, this trend must be monitored to avoid a severe crack between these two clusters. Indeed, a vicious cycle can occur as better financial performances grant conspicuous investments on good players, leading to better UCC performances that drive better financial performances.

A question might arise regarding the correlation between the money spent on the transfer market and competition within leagues. The answer could again lie in leagues' financial health and the number of their UCC participating clubs. Combining these two elements is sufficient to create a wider gap between top clubs, followers, and those who usually stay at the bottom of standings for Cluster 2 leagues. On the one hand, Cluster 2 leagues have fewer clubs participating in UCC so that relative revenues spread among a shorter percentage of clubs within the league.

However, on the other hand, the incidence of revenues on Cluster 2 operational profit is higher, since it ranges from 8.2% to 19.8%, while in Cluster 1, the range is from 5.6% to 10.4% (KPMG 2019). In this direction, the newly established UEFA Conference League should defuse this effect by mainly allowing middle-tier clubs from Cluster A and B to benefit from UCC revenues and boost their brand's international appeal.

4.3. The case of the Portuguese Primeira Liga

This study revolves mainly around the discrepancies between Cluster 1 and Cluster 2, focusing on transfer market dynamics. Portuguese Primeira Liga suits as a great example to study since it is considered a Cluster B league but is not far from crossing the border and entering Cluster A. Moreover, it represents a unicum when it comes to transferring market dynamics since the balance of its clubs is widely positive, as it probably represents the most extensive nursery of talents of the last decade. In the light of the findings of this study, some interesting considerations can arise. Primeira Liga is arguably the proof that a positive balance from the transfer market does not necessarily translate into having funds to reinvest to build a better team. In the past decade, it generated a total of €1.65 billion in revenues and closed every season with a positive balance. However, its national UEFA coefficient slightly decreased yearly, meaning that Portuguese clubs lost their competitiveness in UCC. The explanation lies perhaps outside the topic of this study, as the business model of Primeira Liga clubs estimates in advance a profit from the transfer market to compensate for the lack of external revenues such as broadcasting rights, sponsors, and revenues from UEFA competitions (KPMG 2019). The heart of the matter seems to lie in the lack of talent replacement resulting from a financial gap with top-5 leagues. Indeed, top-5 leagues have the privilege of closing the transfer window in

negative since higher financial sources cover these exceeding costs compared to Cluster B leagues. The direct implication is that Cluster 1 leagues lure the best talents by leveraging their financial superiority.

Moreover, behind the capability of fostering talents, giving them a consistent playing time permits young players to exploit their potential and make it more visible. This consideration aligns with Terviö's (2006) studies presented in the literature review. On a big scale, this mechanism triggers easily if the level of the league descends. The link between these two dynamics appears to be strong and evident. A personal consideration regarding Primeira Liga is advanced on these grounds. The current situation of Primeira Liga clubs, even if it concurred to make it the 6th in Europe, seems to have small margins of improvement. If the increase of international competitiveness and an improvement of the level of the league are two objectives for the future, the primary tool to achieve them is to rethink the investments of revenues coming from the current flow of talents outside the league. Those should increase the pool of talents playing in the league to boost its appeal and foster commercial revenues. It should be the first step in the process to convert Primeira Liga from being dependent on the financial revenues of other leagues to being able to generate them on its own.

5. Conclusions and further research

5.1. Conclusions

The results from this study highlight how inflation did not significantly undermine equality in the football transfer market, contrasting the argument of Szymanski (2007). The direction of money flows did not change significantly, and their intensity is perfectly correlated with

inflation. However, the equality within leagues showed a slight descent. More specifically, Cluster A expenditures are strongly related to Cluster B incomes, as the first one recorded a negative balance each year while the second one had a consistent revenue. This finding is in line with Terviö (2006) and Norbäck, Olsson, and Persson (2020) because it validates the argument that nursery clubs better exploit young talents who, once affirmed, are likely to move to richer clubs for high fees. Finally, inflation is hardly a significant factor in explaining UCC results, as the distribution of UEFA coefficient points among Clusters remained unaffected.

5.2. Limitations and further research

In the light of these findings, the author's considerations are focused on the lack of power that the transfer market has on granting upward mobility of clubs, as commercial sources arguably play this role. Once it is acknowledged that the transfer market has not become more unequal due to inflation and that financial redistribution still happens, it sounds disturbing that UEFA national rankings did not change significantly during the past decade. UEFA national rankings seem to relate to money spent on the transfer market rather than money received, so if there is no capability to convert a high percentage of revenues in expenditures, it is challenging to improve on-pitch performances by leveraging the transfer market. This implication is the key to comprehending why Portuguese Primeira Liga failed in improving its national UEFA ranking despite its massive profits from the transfer market. Finally, equality measurement through the Gini coefficient should become a standard index as it represents a holistic indicator for national league health.

Not using all the leagues from Cluster B and C was an explicit limitation for this study. Including those would have assured a more exhaustive overview of the inflation phenomenon. Secondarily, a distinction between the Champions League and Europa League did not occur, but since the size of the prizes distributed is mainly different, it would have been helpful to treat

them separately. For example, it could have been interesting to understand whether clubs from Cluster B or Cluster C would have benefited more from participating in the Champions League or Europa League since the chances of proceeding in each of the competitions are different. This acknowledgement would be helpful for UEFA to proportionate prizes of competitions and maximise the utility for such clubs in participating in those competitions.

Based on this study, an exciting development could include these considerations. Moreover, the newborn UEFA Conference League offers a further analysis point to add to this study, as financial equality is among the main reasons behind its foundation. However, since the Champions League and Europa League coexisted for the whole considered period, it has not been possible to measure the impact of lower-tiers European competitions on equality within leagues.

6. Bibliography

BBC WorkLife. 2017. "How does a football transfer work?" *BBC*, 29 Agosto.

Binder, John, and Murray Findlay. 2008. "The Effects of the Bosman Ruling on National and Club Teams in Europe." *Journal of Sports Economics* 107-129.

CIES. 2019. *Monthly Report reveals growing football transfer market inflation.* September. Accessed September 25, 2021. https://football-observatory.com/Monthly-Report-reveals-growing-football-transfer.

—. 2017. "Transfer market analysis: tracking the money (2010-2017)." *Football Observatory.* September. Accessed September 25, 2021. https://football-observatory.com/IMG/pdf/mr27en.pdf.

Cindori, Sonja, and Ana Manola. 2020. "Particularities of anti-money in football." *Journal of Money Laundery Control*, 27 March: 885-897.

European Leagues. 2020. "The Financial Landscape of European Football." *European Leagues.* November. Accessed September 25, 2021. https://europeanleagues.com/wp-content/uploads/REPORT-THE-FINANCIAL-LANDSCAPE-OF-EUROPEAN-FOOTBALL.pdf.

FIFA. 2021. “Regulations on the Status and Transfer of players.” *fifa.com.* Accessed 09 24, 2021. https://digitalhub.fifa.com/m/41c272bcbc3b19df/original/c83ynehmkp62h5vgwg9g-pdf.pdf.

Gini, Corrado. 1921. “Measurement of Inequality of Incomes.” *The Economic Journal* 124-126.

Guardian Sport. 2021. “Premier League clubs' spending on agents' fees rises to £272m amid Covid.” *The Guardian*, 31 March.

Hindustan Times. 2021. *Champions League prize money grows as UEFA sales rise 8%.* 27 May. Accessed November 9, 2021. https://www.hindustantimes.com/sports/football/champions-league-prize-money-grows-as-uefa-sales-rise-8-101622119640116.html.

Hoey, Sam, Thomas Peeters, and Francesco Principe. 2020. "The transfer system in European football: A pro-competitive no-poaching agreement?" *International Journal of Industrial Organization*, Dicember 15.

KPMG. 2019. “European Leagues.” *European Leagues.* Accessed November 10, 2021. https://europeanleagues.com/wp-content/uploads/REPORT-THE-FINANCIAL-LANDSCAPE-OF-EUROPEAN-FOOTBALL.pdf.

Morrow, Stephen. 1996. “Football Players as Human Assets. Measurement as the Critical Factor in Asset Recognition: A Case Study Investigation.” *Journal of Human Resource Costing & Accounting* 75-97.

Norbäck, Pehr-Johan, Martin Olsson, and Lars Persson. 2020. "Talent development and labour market integration in European football." *The World Economy.*

Opinion of Mr Advocate General Lenz. 1995. C-415/93 (Cour d'Appel, Liège, 20 September).

Poli, Raffele, Loïc Ravenel, and Roger Besson. 2019. "Financial analysis of the transfer market in the big-5 European leagues (2010-2019)." *CIES Football Observatory* (47).

Price, Steve. 2021. “Premier League Agent Fees Hit Record High Despite Covid-19.” *Forbes*, 3 April.

Richards, Alex. 2016. “What is third-party ownership and how does it affect transfers? All you need to know.” *Mirror*, 27 September.

Saunders, Mark N. K., Philip Lewis, and Adrian Thornhill. 2019. *Research methods for business students.* Harlow: Pearson.

Speziante, Matteo. 2021. *Calcio e Finanza.* 25 October. Accessed November 09, 2021. https://www.calcioefinanza.it/2021/10/25/quanto-puo-spendere-newcastle-mercato-sauditi/.

Statista. 2021. *Revenue of the biggest (Big Five) European soccer leagues from 1996/97 to 2021/22 (in million euros).* 06 September. Accessed September 25, 2021. https://www.statista.com/statistics/261218/big-five-european-soccer-leagues-revenue/.

Szymanski, Stefan. 2016. “The economic arguments supporting a competition law challenge to the transfer system.” *FIFPro* (FIFPro). Accessed 09 24, 2021. http://www.soccernomics-

agency.com/wordpress/wp-content/uploads/2021/01/Szymanski_Transfer_System_Expert_Analysis_clean-1.pdf.

Szymanski, Stefan. 2007. “The future of football in Europe.” *Economia Deporte* 191-210.

Terviö, Marko. 2006. “Transfer Fee Regulations and Player Development.” *Journal of the European Economic Association* 957-987.

Transfermakt.com. 2021. *Transfer Balance (income and expenditure).* September. Accessed September 25, 2021. https://www.transfermarkt.com/statistik/transfersalden.

Transfermarkt.de. 2021. *Transfermarkt.* 29 10. Accessed 10 29, 2021. https://www.transfermarkt.it/.

UEFA. 2021. *UEFA Club Coefficients.* 17 09. Accessed 09 25, 2021. https://www.uefa.com/memberassociations/uefarankings/country/#/yr/2022.

Union royale belge des sociétés de football association ASBL v Jean-Marc Bosman. 1995. 1995 I-04921 (Cour d'appel de Liège - Belgium., 15 Dicembre).

7. Appendices

Appendix 1

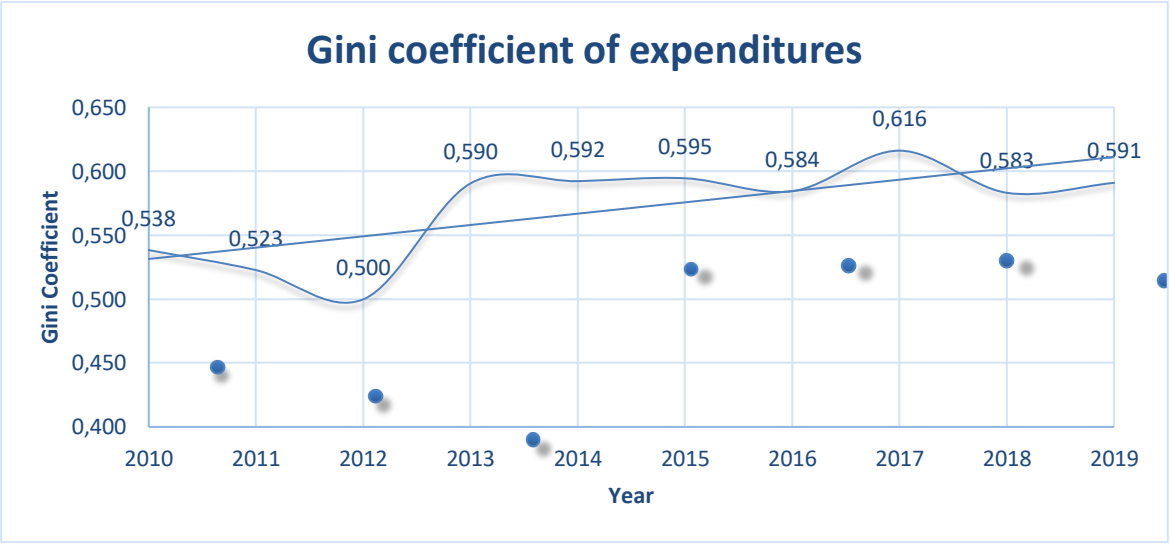

Table 5. The Gini index of expenditure on the transfer market is computed yearly from 2010 to 2019. Source: Transfermarkt.com, author’s calculations

Appendix 2

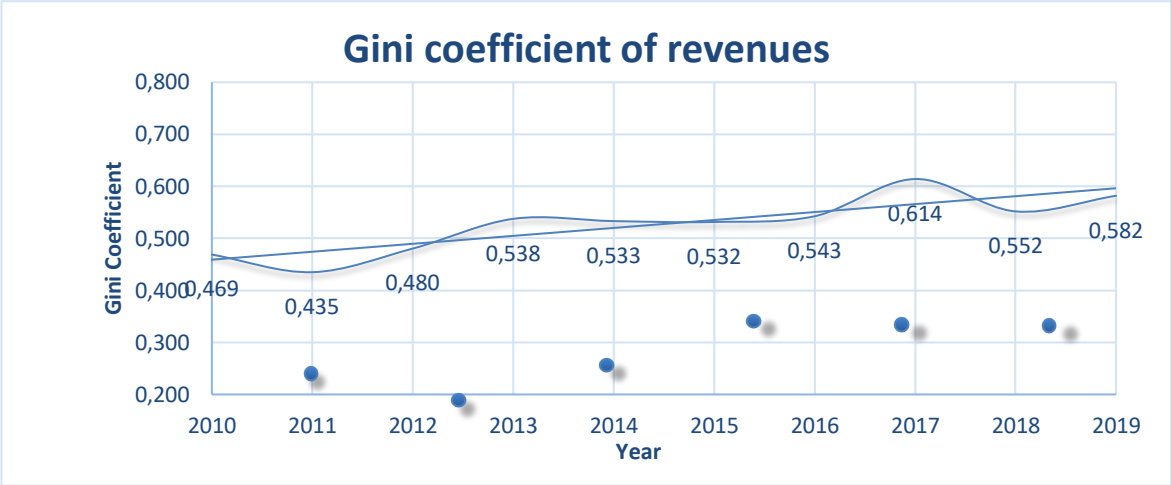

Table 6. The Gini index of revenues on the transfer market is computed yearly from 2010 to 2019. Source: Transfermarkt.com, author's calculations

Appendix 3

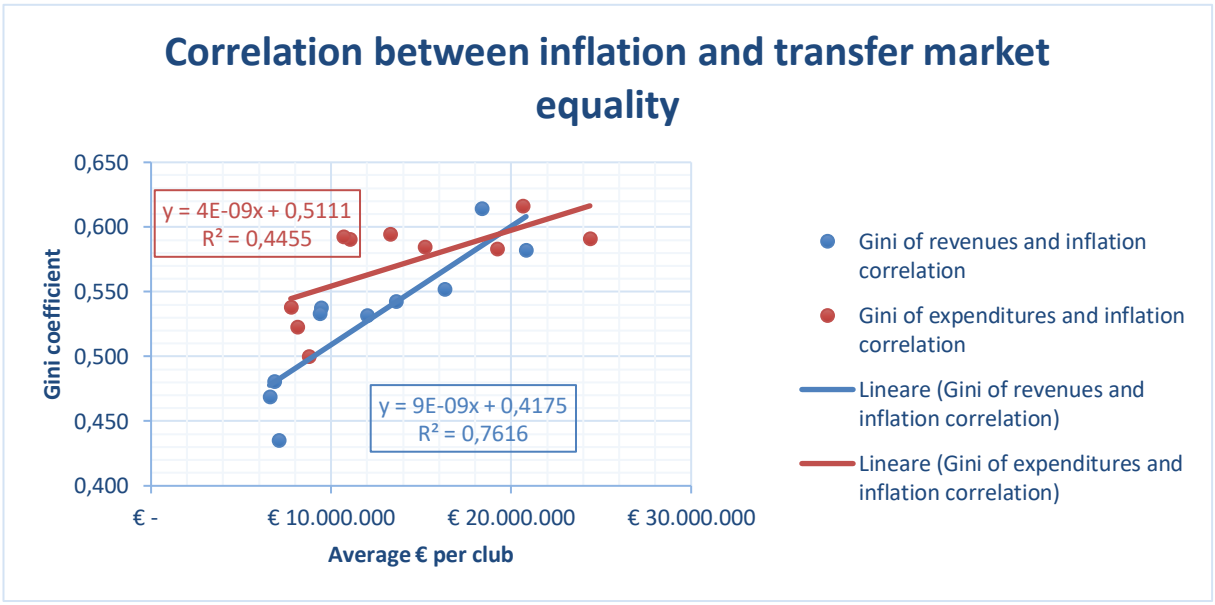

Table 7. Linear regression of both Gini coefficients of revenues and expenditures and inflation. Source: Transfermarkt.com, author's calculations

Appendix 4

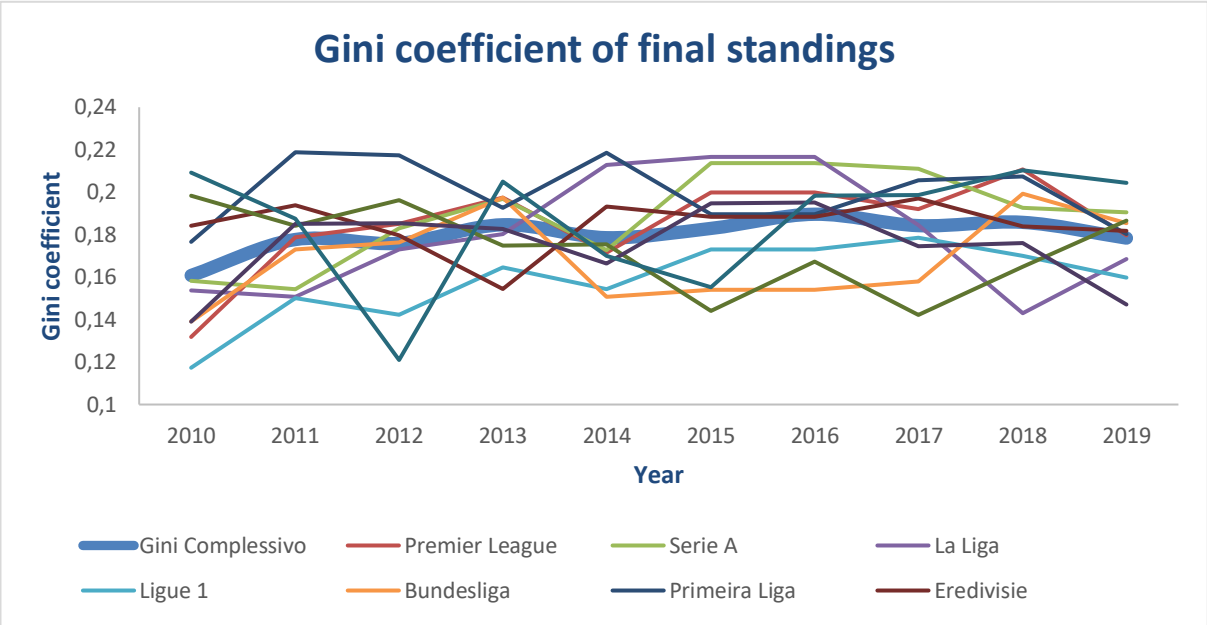

Table 8. Gini coefficient of all the leagues considered in the study throughout the decade. Source: Transfermarkt.com, author's calculations

Appendix 5

Variance analysis: one factor

SUMMARY

Groups	*Count*	*Sum*	*Mean*	*Variance*
Cluster A	10	1,846395865	0,18464	0,0004867
Cluster A	10	1,687524518	0,168752	0,0004286
Cluster A	10	1,886721664	0,188672	0,0004712
Cluster A	10	1,799934139	0,179993	0,0007621
Cluster A	10	1,582644351	0,158264	0,0003378
Cluster B	10	1,996354608	0,199635	0,0002552
Cluster B	10	1,845378051	0,184538	0,0001435
Cluster B	10	1,733907566	0,173391	0,0003762
Cluster B	10	1,746480375	0,174648	0,0003574
Cluster C	10	1,859993605	0,185999	0,0008434

VARIANCE ANALYSIS

Origin of the variation	*SQ*	*df*	*MQ*	*F*	*Significance values*	*F crit*
Between groups	0,012099203	9	0,001344	3,0128405	0,00345455	1,985595
Within groups	0,040158789	90	0,000446			
Total	0,052257992	99				

Table 9. ANOVA with one factor on Gini coefficients of leagues grouped by Clusters. Source: Transfermarkt.com, author's calculations

Appendix 6

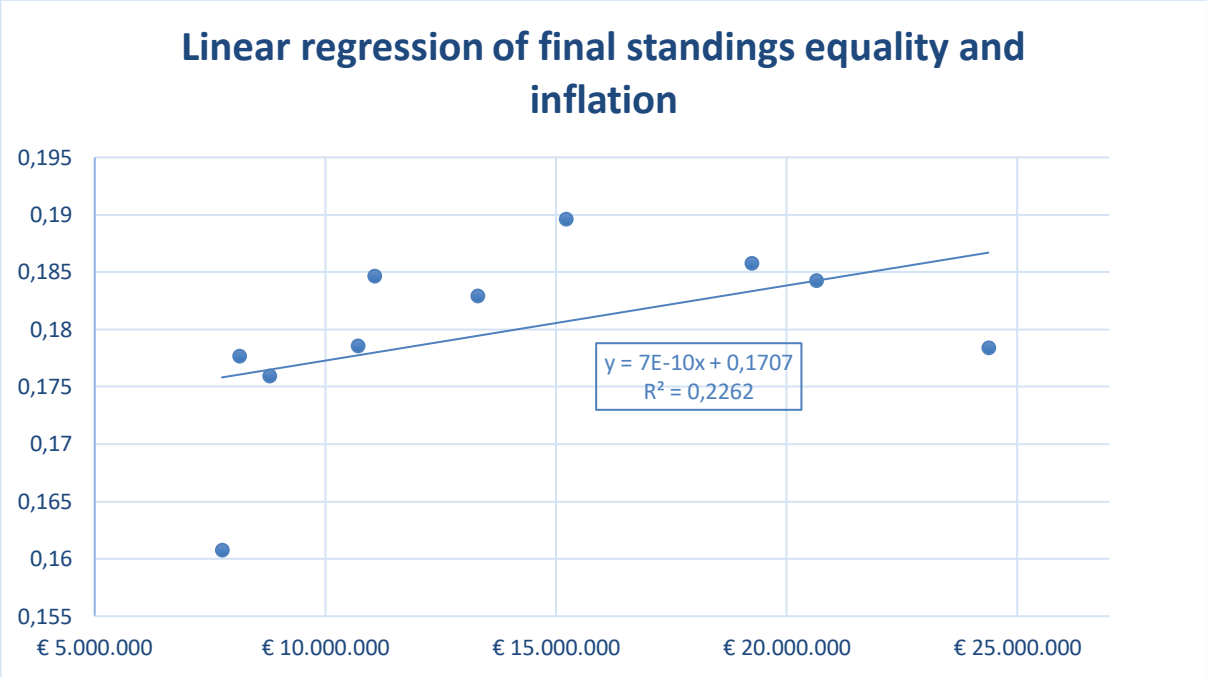

Table 10. Linear correlation between total Gini coefficient and inflation from 2010-11 to 2019-20 seasons. Source: Transfermarkt.com, author's calculations

Appendix 7

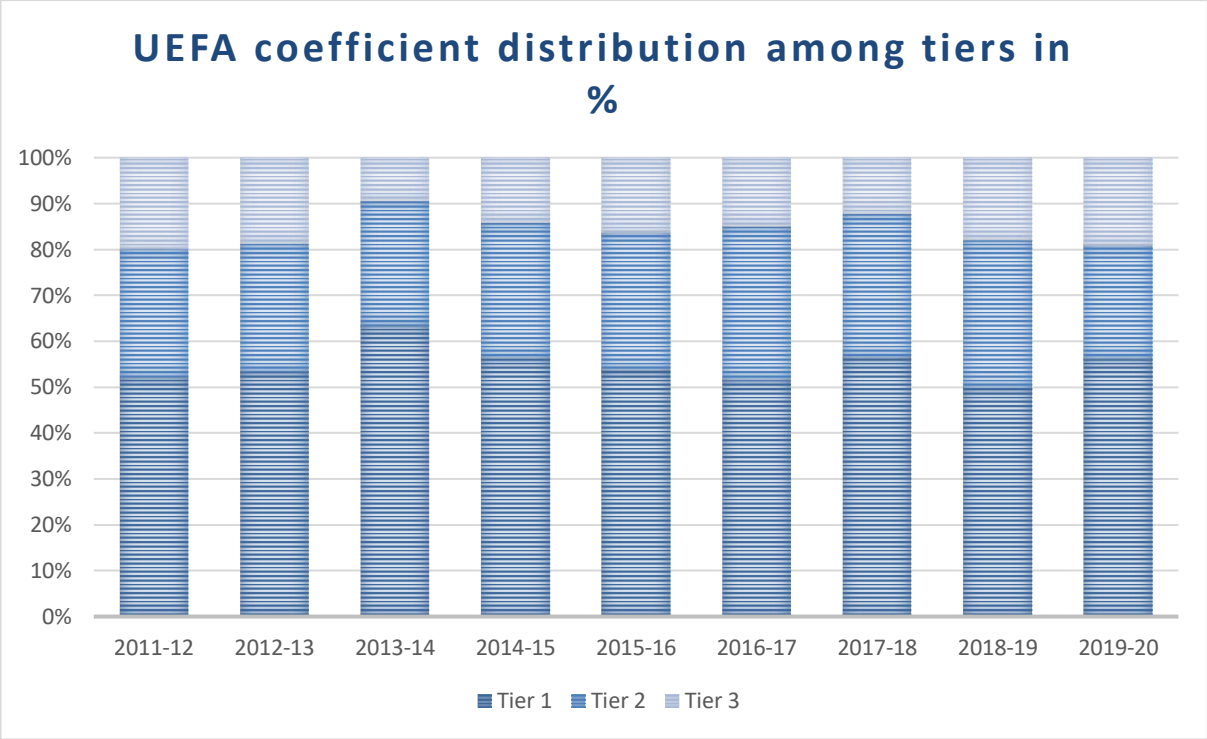

Table 11. UEFA coefficient distribution among Tiers from 2011-12 to 2019-20 seasons. Source: Tranfermarkt.com, UEFA.com, author's calculations

Appendix 8

LINEAR REGRESSION BETWEEN EXPENDITURE AND UEFA COEFFICIENT

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Mean
R	0,476	0,550	0,656	0,617	0,570	0,628	0,581	0,534	0,614	**0,581**
R^2	0,227	0,302	0,431	0,381	0,325	0,395	0,337	0,285	0,377	**0,340**
Slope	**0,000144**	**0,000147**	**0,000155**	**0,000127**	**0,000101**	**0,000110**	**0,000062**	**0,000071**	**0,000066**	**0,00011**

Table 12. Distribution of UEFA coefficients among Tiers from 2011-12 to 2019-20 season. Source: Transfermarkt.com, UEFA.com, author's calculations

Appendix 9

The author acknowledges several limitations of the Gini coefficient, in particular:

- It is fallacious in recognising different income distributions among groups with the same total income. The Gini coefficient is more sensitive to variation in the central part of the

distribution, leaving to outliers' data minor importance. Applied to this study, it becomes primarily relevant on equity among national leagues with the same number of participants, as the total number of points achieved may differ poorly. Indeed, a final standing where the winner distances its followers by a consistent number of points might have the same Gini coefficient as one with more clubs vying for the first place.

- The Gini coefficient is biased by small samples, as more extensive samples positively influence it. This coefficient was calculated over final standings with participants between 12 and 20 clubs. As a common rule, a sample is small if lower than 30. Therefore, final standings can not represent an excellent sample for the Gini coefficient.
- It is not a proper measure of egalitarianism as it does not include the inner dynamics of the population. For example, in both leagues with either 20 or 18 participants relegated – and therefore promoted – clubs are 3. That means that for leagues with 20 participants, promoted – and presumably weaker – clubs are 15% of all participants, while in 18 clubs league those are 16,67%. Moreover, the strength of promoted clubs may rely on bonuses achieved for the promotion, and those may vary from league to league. When computed, the Gini coefficient does not consider all this information; therefore, the final result may be misleading.
- It does not account for benefits or penalties within the population. Relatively to the transfer market, it does not consider those restrictions imposed by the Financial Fair Play for several clubs as exceptions. Several clubs got penalty points that the Gini coefficient has not considered exemptions regarding final standings.