“The Effect of the Competition in the Telecom Market on Football Broadcasting Revenues”

Student Name	Program	Individual Title
Miguel Vilaça Azevedo Baptista Pereira	Finance	**Creation and Application of a Prediction Financial Model for International Performance of Portuguese Clubs**

Work project carried out under the supervision of:

Advisor: Pedro Miguel Soares Brinca

16/12/2022

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

Abstract

The aim of this work project is to study the impact, in Portugal, of collective bargaining on the football broadcasting revenues received by clubs.

Due to technology, streaming TV/online video business model, and Pay-high TV penetration, OTT football viewing may alter the competitive dynamics of the broadcast industry and clubs' income. However, Sport TV, the only premium sports channel with I League broadcast rights, is owned by the leading operators, preventing new players from entering the market.

According to the qualitative research, competitive equilibrium is the most important factor in football's attraction, although the quality of football must be improved. Consumers also favor TV over other channels (smartphones, tablets, PC). Despite this, Portuguese customers are eager to watch football matches through an OTT model. Additionally, piracy is a key concern which harms the broadcasting business and clubs' finances.

There is no assurance that adopting a collective bargaining model will promote competition, although adopting a centralized model would undoubtedly have a negative financial effect on several clubs in the Portuguese League (mostly the top three). This negative influence would certainly be detrimental to the overall performance of Portuguese teams in international events, causing the Portuguese football association's international coefficient to decrease.

Keywords (Football, Competition, Portuguese League, Strategy, Telecom Market, Collective bargaining, OTT Model, Broadcasting Revenues, Illegal Access)

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

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Acronyms

ABC - American Broadcasting Company

AdC - Autoridade da Concorrência

AFC - American Football Conference

BTV - Benfica TV

CBC - Canadian Broadcasting Corporation

CD FEIRENSE - Clube Desportivo Feirense

CD NACIONAL - Clube Desportivo Nacional

CEO - Chief Executive Officer

CF - Football Club

CHELSEA FC - Chelsea Football Club

CS MARÍTIMO - Club Sport Marítimo

DFL - German Super Cup

EPL - English Premier League

ESPN - Entertainment and Sports Programming Network

EY - Ernst & Young

FA Cup - Football Association Cup

FC - Football Club

FC BARCELONA - Football Club Barcelona

FC BAYERN MUNICH - Football Club Bayern Munich

FC PORTO - Futebol Clube do Porto

FIFA - Federation Internationale de Football Association

GDP - Gross Domestic Product

HBO - Home box Office

ICS/ ISCTE - Institute of Social Sciences/ University Institute of Lisbon

ICT - Innovation and Communication Technology

IP - Internet Protocol

IPTV - Internet Protocol Television

ISP - Internet Service Providers

LA LAKERS - Los Angeles Lakers

LFP - Ligue de Football Professionnel

LIVERPOOL FC - Liverpool Football Club

MANCHESTER UNITED FC - Manchester United Football Club

MLB - Major League Baseball

NBA - National Basketball Association

NBC - National Broadcasting Company

NFC - National Football Conference

NFL - National Football League

OECD - Organization for Economic Co-operation and Development

OTT - Over-The- Top

PARIS FC - Paris Football Club

PPP - Purchasing Power Parity

PSG - Paris Saint-German

PT - Portuguese

QPR - Queens Park Rangers

QSI - Qatar Sports Investments

REAL MADRID CF - Real Madrid Football Club

R&D - Research and Development

SC BRAGA - Sporting Clube de Braga

SL BENFICA - Sport Lisboa e Benfica

SPENT - Social, Political, Economic, Natural, Technological

SPORTING CP - Sporting Clube de Portugal

sVoD - Subscription Video on Demand

SV Werder Bremen - Sportiverein Werder Bremen

TNT - Turner Network Television

TOTTENHAM HOTSPUR FC - Tottenham Hotspur Football Club

TV - Television

U23- Under 23

UEFA - Union of European Football Association

UE - The European Union

UK - United Kingdom

VITÓRIA SC - Vitória Clube de Guimarães

VLC - Visible Light Communication

VO - Viaccess-Orca

VoD - Video on Demand

VPN - Virtual Private Network

1. Work Project Purpose

With this project there are two main questions we aim to answer, through research and analysis: Q1: What impact a collective bargaining agreement of broadcasting rights in the I and II professional football league have on the broadcasting revenues from football games?

And as a complement to this question:

Q2: To what extent competition in the broadcasting rights market can influence the clubs' financial structure?

2. Research methodology

First, a literature review was conducted to collect up-to-date information on the background and trends of the subject under investigation, which allowed us to conduct an in-depth analysis and speculate on the subject's potential future consequences. To understand the potential impact of

collective bargaining of audio-visual rights distribution in the Portuguese Football League, we must examine the impact it has had and continues to have in various competitive sports leagues that use a collective bargaining model of audio-visual rights distribution, such as the major European Football Leagues, certain American Sports Leagues, and the Brazilian Football League. The fact that each of these scenarios utilizes a centralized model with such glaring differences allows us to compare which distribution approaches could or might not work in the Portuguese League. In addition, the analysis of the American Leagues (NFL, NBA, and MLB) and the major 5 European Leagues (England, Spain, Italy, Germany, and France) will enable a comprehension of collective bargaining models with great to moderate success, despite the fact that Portugal's demographic and social sections are vastly different. The study of the Belgian and Dutch Football Leagues, on the other hand, serves as a compromise. Given the observable similarities between the nations themselves (in terms of population) and the comparable overall appeal of the three Football Leagues (as indicated by the UEFA ranking), it may be possible to construct a comparison between them for future study.

While analyzing the particulars of these situations and the development of revenue, popularity, and club performance, we may draw conclusions and possibly anticipate its future success in the Portuguese League.

Two strategic frameworks, SPENT analysis and Porter's five forces model, were utilized to gain a more in-depth understanding of the external environment and the competitive structure of the Portuguese telecommunications industry. In addition, we decided to study the OTT model as a medium for broadcasting athletic material, as this is a developing trend. By analyzing its attractiveness, not only can a more realistic image be obtained of its danger to the present participants in the Portuguese football match broadcasting industry, but also its potential to enhance the market's overall revenues.

In addition to the aforementioned data, we attempted to develop a mathematical model that would mimic the number of points that Portuguese teams would lose to other clubs that would profit from the collective bargaining of rights. The purpose of this model is to determine the points that the "Big

three" (and SC Braga) may lose in the future, and the points that the remaining Portuguese clubs that benefit from collective bargaining may gain in the future, in order to determine whether the Portuguese league will experience a net gain or loss in international competitions.

To acquire qualitative data, an interview was performed with Eleven Sports, one of the largest companies in the Portuguese sports broadcasting industry, which also provides content via OTT platforms. In addition, a study was conducted to collect data from consumers and characterize the market's major trends, opportunities, and dangers.

3. Literature Review

3.1. Collective bargaining of broadcasting rights

Due to the increasing significance of broadcasting rights, which are viewed as a critical component in determining the discrepancy in income between clubs, media revenues are regarded as a major worry in the football business (KPMG, 2017).

The broadcasting of football events is very essential since technology advancements allow the matches to reach a broader audience. In addition, it is one of the largest sources of revenue for clubs (FOOTBALL BENCHMARK, 2019).

The primary sources of revenue for football clubs are broadcasting, advertising, and matchday. In most situations, clubs have little control over the central distribution of broadcasting money (FOOTBALL BENCHMARK, 2017). According to the Deloitte Football Money League study, television income account for 43% of Money League teams' revenue, while commercial and matchday revenues account for 40% and 17%, respectively. In this case, it was deemed pre-pandemic data because to the atypical nature of the year, therefore it does not reflect reality.

The sale of television rights has dramatically grown its weight in football teams' earnings during the last decades. The convergence of the telecommunications and television industries has altered the media landscape by boosting competition and the number of channels accessible to the public for accessing the games, hence expanding customers' options and dispersing them among the many

channels. Therefore, media outlets are willing to offer more than ever before for exclusive football broadcasting rights (FOOTBALL BENCHMARK, 2016).

The collective bargaining model prevents football clubs competing in the I and II Leagues from marketing the rights to their individual matches (Público, 2021). In contrast, a decentralized model gives the TV rights holders of the clubs with the greatest performance and the most supporters the ability to obtain a larger share of the broadcasting rights money than the others.

Since its inception in 1992, the Premier League has utilized a central distribution model, which is regarded as one of the primary reasons for its financial success. This model promotes more negotiating power and the "no single buyer" rule, so fostering a competitive environment

(FOOTBALL BENCHMARK, 2019). A few years later, this model was adopted by Bundesliga, Ligue A, Serie A, and LaLiga, despite the fact that each league had its own particularities regarding the metrics used and their weights.

The objective of the central distribution model was to improve the broadcast and multimedia rights of professional football contests and distribute earnings more evenly among clubs, hence providing a level playing field (Publico, 2021).

3.1.1. Theoretical Assessment of Collective Bargaining

Theoretically, the simultaneous broadcast of two independent games from the same professional league corresponds to rival sports programs, vying for television audiences. The individual selling of rights has the ability to generate competition in television markets, despite the fact that it increases the asymmetry in the financial distribution of television broadcast earnings between clubs and may need customers to subscribe to more channels to see all the games (OCDE, 2010).

From the perspective of a competitive evaluation, the collective sale of broadcasting rights, reading clubs as rivals, entails a sort of horizontal collaboration in which professional clubs forego individual competition. In terms of competition law, the League of clubs equates to an organization of corporations. Collective bargaining "has the effect of coordinating the price policy and all other

business circumstances on behalf of all the various football clubs involved," (EUR-Lex, 2003) granting the seller monopolistic power vis-à-vis potential purchasers, television providers, and telecommunications firms.

There are three anti-competitive theses regarding the collective sale of rights: they give the League market / negotiation power (greater than the individual power of the clubs) to determine the price of audiovisual rights, leading to inflated prices at the wholesale level for television operators and at the retail level for consumers; they restrict the number of games displayed based on the individual trading situation; and they reinforce the market position of the most important television operators, as only the main television operators will be able to bid for all rights. (United Nations, 2018)

In Germany (T. Evens et al, 2013), and the Netherlands (NMa, 2002), competition authorities disallowed collective bargaining of football rights before to 2003, when the European Commission established a precedent in the UEFA Champions League case (Eur-Lex, 2003). In 1999, the Office of Fair Trading (the predecessor of the current Competition and Markets Authority) in the United Kingdom believed that collective selling by the Premier League would be restrictive of competition, acting as a cartel, and inflating costs and prices. However, a court found that the ban on collective selling limited the income of clubs and prevented the possibility of maintaining a competitive balance between large and small clubs (Falconieri, Sonia et al., 2004).

Rottenberg (Rottenberg, S. 1956) and Neale (Neale, W. C., 1964) identified a set of features of the demand for professional sports, according to which competitive balance is a component of the show's quality that consumers desire, so providing support for the "uncertainty of result theory." In this way, collective selling, to the extent that it permits the deployment of income redistribution mechanisms that promote competitive balance in the league, can be advantageous for consumer welfare.

However, it has been questioned that consumers primarily desire competitive balance when viewing the show, as there is little empirical evidence to support competitive balance as a demand reason for the show (Budzinski, O., & Pawlowski, T., 2017) (Pawlowski, T., Nalbantis, G., & Coates,

D., 2018). There are empirical studies in opposition to the "uncertainty of outcome hypothesis" in which it was observed that only when the probability of winning the home games of a given club is extremely high is there a negative impact on the presence of clubs' supporters – supporters of a given club want their team to win and are more likely to attend home games when the probability of winning is high (Borland, Jeff and Macdonald, Robert, 2003).

Falconieri et. Al (Falconieri et al., 2004), using an analytical model, in which consumers value the competitive balance – "uncertainty of outcome hypothesis" –, which depends on the investment in talent/ players by clubs, compared the collective selling solution with the individual selling solution. Falconeri et al., identified three effects: bargaining power effect, which rises with collective selling compared to individual selling, which can have a positive or negative effect on global wellbeing; the prize effect, when the exogenous prize for winning the league is low, the league can set an individual performance bonus based on the redistribution of collective income based on sporting performance, which encourages clubs to invest in talent, which can be higher with collective bargaining that increases global well-being; and the free-riding effect, which reduces the incentive for clubs to invest in talent, free-riding which is greater the greater the number of clubs in the league. From the combination of the three effects, Falconeri et al. concluded that individual selling is the one that maximizes global welfare when the number of clubs in a given league is greater, clubs are heterogeneous in relation to their individual bargaining power, and when there are exogenous monetary performance rewards – i.e. not determined by leagues – big.

Without collective bargaining, and subject to the purchasing power of television operators, wholesale prices for audiovisual rights can be lower, if we refrain from the possible impact of the value of the rights on the quality of the show. As the US antitrust case Weyerhaeuser illustrates (Werden, Gregory J., 2007), monopsony power, which lowers the value of wholesale prices, may not be negative for final consumers if in retail markets the monopsonist does not have market power, i.e. if you pass-through to consumers the lowest wholesale prices. However, in the Pay-TV industries and Telecommunications markets in general, the monopsonist or oligopolist of the audiovisual rights has

market power in the exhibition of the rights, i.e. has the capacity to impose prices above marginal costs.

The assessment of the impact of collective bargaining by the League on consumers and global well-being is not a trivial matter, insofar as the growth in the price of television rights, which is associated with the monopolization of sales, can have a positive impact on the quality of television spectacle, through the growth of the competitive balance of the League. Whether consumers effectively value competitive balance – consumers of sports shows are heterogeneous and supporters of specific football clubs – which justifies the rise in the price of access to viewing sports shows, is an issue on which there is not enough scientific consensus supported by empirical evidence.

3.1.2. General Advantages and Disadvantages

In the hypothesis of implementing a collective bargaining model in Portugal, meaning in the Portuguese Nacional leagues, I Liga and II Liga, it was taken in consideration several studies and reports in order to identify the advantages and disadvantages of this model to all the stakeholders involved. The main reports taken into consideration were: “Estudo sobre o impacto da negociação centralizada dos direitos televisivos em Portugal” from (Servir Benfica, 2022), and “Estudo Internacional sobre direitos audiovisuais desportivos” from EY (Farinha, 2021), “The European Club Fotballing Landscape” from UEFA and a report from a national agency, Autoridade da Concorrência, which gives recommendations regarding this topic. With this in mind, we will go into the theoretical advantages and disadvantages of implementing this collective sale of football rights in the Portuguese professional leagues, always keeping in mind that these pros and cons of the implementation are highly correlated with assumptions on certain outcomes, as we are going to elaborate further.

As previously mentioned in the international context, numerous European leagues have embraced a collective bargaining model, and the advantages they enjoy are comparable to those that Portugal may enjoy. From the standpoint of the rights owners (i.e., the football clubs), a collective sale of these rights may create a higher selling price than individual sales due to the teams' greater bargaining

leverage with broadcasters and the opportunity to provide value-complementary packages. This impact also enables clubs to enhance their earnings relative to individual earnings, which, in theory, leads directly to a more equal income distribution among all championship clubs.

Additionally, from the standpoint of sports channels and customers, the combined selling of rights might bring about a number of advantages. In reality, collaborative marketing enables the construction of sports channels with content tailored to customer interests by enabling the acquisition of game packages with considerable value complementarities. Also from the perspective of broadcasters, a centralized strategy might provide fresh money to combat piracy and illicit broadcasting. Lastly, the collective bargaining of sports rights could be an adequate starting point for effectively addressing the identified competition problems, as it would allow for the regular release of a portion of television rights at the same time, thereby lowering entry barriers and guaranteeing access to sports content with higher quality and innovation at a theoretically lower price.

On the other hand, its execution and its benefits might also cause certain downsides and disadvantages for the stakeholders, constituting an antithesis. According to the research, no forward public study with particular values and assumptions for a centralized scenario has yet been conducted, and the downsides of this model may have a greater impact than their benefits, depending on the scale of each good and negative effect. According to AdC, the expected increase in income is not quantified, nor has a thorough prediction been prepared. In light of this and taking into consideration the fact that the Portuguese market, which will be analyzed in greater depth, has the highest football viewing costs relative to the average national wage in Europe, Portuguese consumers already pay the highest rates relative to the rest of Europe. This is also consistent with the belief that the Portuguese market has already reached its maximum income potential in this subject. SL Benfica, FC Porto, Sporting CP, and SC Braga will see a considerable loss in revenue if the collective bargaining does not result in a significant rise in revenues, and if the 50-25-25[1] distribution model is assumed.

[1] This means a distribution of revenues of 50% equally shared revenue, 25% distributed based on current season performance and the remaining 25% based on social impact, mainly home games attendance. For more information on this refer to chapter 5.2.3.2.

In addition, according to a research by "Servir o Benfica", the Portuguese League is one of the most reliant on money generated by UEFA competitions. Considering that the top four clubs are the ones representing Portugal in international competitions, this decrease in revenues for the top four clubs could very well lead to a decline in performance in international competitions, thereby reducing the inflow of revenues from international games and creating a vicious cycle that will lead to a decline in competition in the Portuguese I Liga and II Liga.

Therefore, in order to prevent this loss to the larger Portuguese clubs, (again, taking into consideration the new distribution model), revenues required to more than double, if a collective bargaining is implemented. Given that we have the third-highest revenues in football streaming per capita and in PIB by purchasing power (Servir Benfica, 2022), it may be challenging to raise these revenues through a price increase for customers.

Considering the positions and interests of broadcasters and sports channels on the national market, the implementation of this model is also subject to certain limits. First, in the collective approach, bidders for broadcasting rights would compete for ownership. This indicates that collusion is feasible if bidders express the same interests, as is the case in the current Portuguese scenario with Sport TV[2]. Second, this rivalry under a collective negotiation paradigm might impede the emergence of new, creative trends, such as OTT, in other areas, which take time to reach the income levels of traditional broadcasters.

As outlined previously, the implementation of this model would have an impact on the various stakeholders present, whether they are consumers, clubs, broadcasters or TV operators, or even indirect stakeholders such as the competition in the Portuguese League and the performance of clubs

[2] For detailed information on this refer to chapter 3.2.2.3.

on the international stage. After briefly highlighting the major advantages and disadvantages of this suggested paradigm, we shall investigate each of its sides and effects in this article.

3.2. Audiovisual rights landscape

3.2.1. Internationally

Several elements distinguish the Portuguese League from the American Leagues (NFL, NBA, and MLB) and the top five European Leagues (England, Spain, Italy, Germany, and France). Initially, they use a collective bargaining model to negotiate the sale of audiovisual rights. This negotiation typically involves packages (where different channels have the possibility to bid on several offers, based on game day, schedule or on different platforms). The availability of more than one large "audiovisual player" enhances the viability of this system by permitting rivalry among players, which results in the "sharing" of material. Most of the audiovisual content is distributed via Pay-TV and streaming channels. Lastly, the League publishes each team's revenue in a transparent manner, in contrast to the Portuguese system in which each club exposes its own revenue stream inside its own financial reports.

3.2.1.1.European Leagues

Premier League

Currently, the EPL is the most significant football league in Europe, ranking first in Brand Value, Total Broadcasting Revenue, and Average Total Operating Revenues. In fact, the EPL's Brand Value has reached such high levels (8,600M€) that it is worth more than twice as much as the next player, the Spanish League (4,100M€) (Statista, 2022). Five English teams (Manchester City, Manchester United FC, Liverpool FC, Chelsea FC, and Tottenham Hotspur FC) are among the top10 leading teams by total operating income, with Manchester City in first position and Arsenal, the remaining top six clubs, in 11th (Football Benchmark, 2022). The amazing numbers of the EPL are

reflected not only in the monetary values of their income streams, but also in the aggregate number of social media followers, which is 820 million, followed by the Spanish League, with figures of 764 million, and the Italian Serie A, with 281 million.

The initial implementation of the collective bargaining model occurred in 1992, following an agreement between the Football Association and the 20 clubs. The EPL creates a clear separation between national and international broadcasting earnings, employing unique allocation mechanisms for each revenue source. There are presently 20 clubs in the league that play home and away games, totaling 380 total games every season, divided into 38 game weeks. As the EPL expands its worldwide strategy, the foreign audiovisual income stream contributes significantly to the maintenance of a strong Brand Value. When it comes to international rights, the EPL takes an egalitarian approach, since the whole amount of the profits is distributed equally among the 20 clubs. Given the strength of international markets, the English Premier League adopts an internationalization plan to maximize profits on various markets. Currently, the EPL assigns one "big six" (Arsenal, Chelsea, Liverpool, Manchester City, Manchester United, and Tottenham) match every game week to the premium schedule for the Asian market.

The EPL's overall broadcasting income have climbed over the past decade, reaching $3,010 million in 2021/22. Moreover, the data for the previous two contract renewals have increased, with a 43% increase in 2016/2017 and an 8% increase in 2019/2020.

While local broadcasting income have been on the rise, the importance of foreign broadcasting contracts appears to distinguish the Premier League from other European leagues. International revenues will account for 46% of overall broadcasting income in 2021/2022, with a total value of 1,400 million euros. As of 2019/20, the EPL implemented a new formula for distributing international revenues, in the case of future increases: the current value of that stream would continue to be distributed equally through each club, but the increased amount would be distributed on a merit-basis, according to each team's league position, while establishing a ceiling ratio of 1.8:1, meaning the

"highest-earning club receives 1.8 times the amount received by the lowest-earning club" (Premier League, 2016).

However, the Domestic Revenues distribution model is considerably different: fifty percent is allocated equally to all clubs, twenty-five percent is granted depending on each club's final league place, and twenty-five percent is distributed as a facilities fee for matches shown on television (Premier League, 2016).

The data given by the EPL itself (Exhibit 1) enables us to analyze their distribution model in a clear manner. In season 2020/21, the English Premier League disbursed a total of 2,518 million pounds in income, or an average of 126 million pounds per team. As Manchester City, the league's first-place team, earned 152.55 million, we can compute an increase of 21% when compared to the average, whilst Sheffield United, in last place, received 97.56 million, a relative value of -22.6% to the average. Absolute statistics reveal a lesser disparity, with the top spot earning 6.06 percent of the total broadcasting income and the worst spot receiving 3.87 percent of the same pool. Focusing on merit-based distribution has an immediate effect on final values, with top place receiving 9.52 percent of the overall merit-based payment pool (including local and foreign) and last place receiving only 0.48 percent (Exhibit 2). On the "Facility Fees" category, we observe a different approach, with fourth-place Chelsea FC receiving the most amount due to the live broadcasting of 30 games, more than first-place Manchester City's 27 games.

The unquestionable success of the EPL distribution model, with its robust audiovisual offering, highly devoted audience, and high-quality and competitive football, has also boosted the coverage of the competition in the rest of the world, with one billion households having access to its games.

La Liga

LaLiga, generally known as the Spanish Football League, ranks second in terms of Brand Value (Statista, 2022). It also lags behind the EPL in Total Broadcasting Revenue and Aggregate Social Media Followers, but is third in Average Total operating revenues and has two clubs (Real

Madrid CF and FC Barcelona) in the top five clubs by total operating revenues. Furthermore, Real Madrid CF is presently the market leader in terms of worldwide brand value (Brand Directory, 2022). LaLiga is perhaps the second most prominent football tournament in the world, with 764 million followers on social media and a significant lead over third place.

In contrast to the EPL, where a collective bargaining model of audiovisual rights has been in existence for some time, the LaLiga did not adopt the model until 2016, when Royal Decree-Law 5/2015 forbade individual negotiations (EY). After early opposition from teams, particularly FC Barcelona and Real Madrid CF, this model was not adopted until the 2016–17 season.

When analysing the immediate effects of the new collective bargaining agreement, we see a 29.6% rise in broadcasting income, from 3,167.60 million euros in the previous season to 3,662.30 million euros in 2017/18. It is essential to note, however, that this increased tendency was also observed in prior years, particularly in the fluctuation between 2014/15 and 2015/16, which represented a variance of 31.3%. (Sports Business Institute). Based on the prior data, a conclusion that the collective bargaining agreement increased the entire pool must be viewed with considerable skepticism.

LaLiga's new agreement stipulates that 10% of the overall broadcasting profits will be allocated to the second division clubs, while the other 90% will be divided among the 20 first division clubs. These 90% would then be distributed based on the following criteria: 50% is divided evenly among the league's 20 clubs, 25% is awarded based on league places during the previous five football seasons (merit-based), and the remaining 25% is based on the team's social impact, referred to as "Club Support." Club Support is further subdivided and calculated as follows: "average income from season tickets and gate receipts over the past five seasons" (Sports Business Institute Barcelona) corresponds to a 1/3 proportion and "contribution to broadcast resource generation calculated by comparing the average audiences recorded by the participating clubs each season" (Sports Business Institute Barcelona) corresponds to a 2/3 weight. With the factors given above, the final distribution

is 50%/25%/17%/8%. After all distributions have been made, the revenue gap between the highest and lowest earners is 3.5 times larger.

On the second contract renewal, which covered the period between 2019 and 2022, domestic broadcasting rights were offered in packages/bundles, allowing for competition amongst major participants (in this case MediaPro and Telefonica).

Comparable to the EPL, foreign broadcasting income are shared evenly among LaLiga clubs, but without the merit-based component experienced in later EPL seasons. LaLiga follows the pattern set by the EPL by scheduling the first "El Clasico" in the early afternoon to target the Asian market and the second in the evening to target the American market.

Despite the absence of information on the precise categories within the LaLiga's distribution model, Exhibit 3 displays the total broadcasting income values collected by each team during the 2020/21 season. With a total worth of 1,445.00 million euros, it is simple to establish that the average revenue is 72.25 million euros, which is much lower than the EPL average. However, the club with the most earnings receives 129% more than the average, while the club with the lowest earnings receives -35% of the average. It is irrelevant that top place earned 11.46 percent of total income while lowest place received only 3.24 percent. When compared to the EPL, the outliers in the Spanish model have substantially larger disparities, mostly owing to the merit-based and social impact categories that give larger sums to more popular clubs.

Bundesliga

The Bundesliga is the premier football league in Germany. It follows LaLiga in Brand Value and Total Broadcasting Revenues, while surpassing it in Average Total Operating Revenues. FC Bayern Munich is the most well-known club in the league, ranking first in Club Brand Value in 2021 before Real Madrid CF overtook them in 2022. However, the Bundesliga is far less popular, ranking seventh among the top seven leagues with 192 million collective social media followers.

In contrast to the preceding leagues, the Bundesliga's overall broadcasting income has decreased from 2020/21 to 2021/22, from 1188 million euros to 987 million euros (Football-Finance, 2022). However, the provided preview of the following 4 years hints to a small recovery of the value, albeit being still below the values of 2020/21. Due to the fact that the standards utilized for analyzing prior competitions were from 2020/21, we shall employ the same technique for the Bundesliga.

Similar to the EPL and LaLiga, the Bundesliga distinguishes between domestic and international revenue. However, Bundesliga's International Revenues offer a substantially lesser share to the entire pool, compared to the EPL and LaLiga. In contrast to the EPL and LaLiga, where attendances ranged from 40 to 50%, the Bundesliga can only attain 14%. Given the Bundesliga's popularity and the fact that it is significantly smaller compared to the previous leagues, it is unsurprising that it is unable to get much attention outside of Germany. The "index" of competitiveness may also be cited as an explanation for the Bundesliga's lack of attention. FC Bayern Munich has won the title for the past ten years in a row, while Borussia Dortmund has finished second for the past six.

The distribution model of the Bundesliga adheres to the so-called "Four Pillar Principle": Equal Distribution, Performance, Youth Talent, and Interest (DFL, 2020). 53% of Pillar 1's value belongs to Equal Distribution. In this category, the entire National Broadcasting Revenues are divided and distributed equally between the 18 clubs from the first division and the 18 clubs from the second division (Bundesliga 2). At number two is the Performance pillar with a weight of 42%, further divided into three sub-categories: a Separate 5-year table, with a weight of 24.5%, for both the Bundesliga and Bundesliga 2 (where each club receives points from 1 (last place in Bundesliga 2) to 36 (champion of the Bundesliga), with points from the previous five seasons weighted 5:4:3:2:1 and providing two separate tables for each competition); a Joint 5-year table, where the final table Concerning the Youth Talent pillar, its division into two subsections adds to the model's complexity. The first component amounts for two-thirds of the pillar and allocates money proportionally to the minutes played by club-trained Under-23 players during the current season. The remaining one-third

is based on the proportion of U23 local players' total training time (starting at age 12) and is weighted by minutes played. Lastly stands the Interest pillar, which accounts for 2%, and determines interest in each club of the 2 major divisions, with the assistance of a survey performed by Allensbach Media Market Analysis and aimed at general population from the age of 14, with a representative sample of roughly 23000 persons. The survey permits the categorizing of the interest in each club in relation to the general interest in all clubs. (DFL, 2020)

Concerning International Revenues, the distribution model focuses more on UEFA European tournaments and the success of German clubs in relation to them. A predetermined 4% stake of the overall International Revenues is originally awarded to the Bundesliga 2 clubs, while the Bundesliga clubs keep the remaining 96%. Erst danach may a three-pillar distribution for Bundesliga clubs occur. Equal Distribution, the first pillar, distributes 35% evenly across the 18 participating clubs. The Performance pillar, worth 65% in total, with 50% allocated through 5-year performance in UEFA European competitions, using a coefficient designed by the DFL that closely corresponds to the club coefficient used by UEFA, and 15% based on a 10-year participation of Bundesliga clubs in said UEFA competitions, only considering group stage and elimination rounds matches. (DFL, 2020)

The 2020/21 broadcasting income allocation is seen in Exhibit 4. FC Bayern Munich, winner of the Bundesliga for that season, obtained the greatest sum of income, with an 8.9% share of total revenues, while last place Arminia Bielefeld kept only 2.9% of the total value. With an average of 66 million euros awarded every club, we can also compute the distance from the top and worst position to the average. Whereas the top position earns +59.6%, the lowest place collects -48% of the same amount, exposing certain anomalies, yet with a better distribution than LaLiga.

Serie A

The Serie A is the premier Italian football league. The negotiation of broadcasting rights has followed a collective bargaining model since 2008, when Legislative Decree No. 9 of January 9, 2008, also known as the Melandri-Gentiloni Decree, was signed into law. Following the scandals of

2008, this renegotiation of broadcasting rights aimed to decrease the risk of match manipulation. (EY, 2021)

As there appears to be no distinction between Domestic and International Revenues in Serie A, it may be inferred that the distribution model splits them equally based on a set of rules: 50% is considered equal distribution, where each of the 20 participating clubs receives an equal share, 15% is merit-based and includes only the previous season's classification, 10% is based on the last five seasons' classification, 5% is based on historical classification, and 20% is based on the number of supporters (calculated by TV audience on a team's games and ticket sales). The most recent threeyear contract period (2018-2021) was negotiated through bundles, with Sky and DAZN ultimately dividing the total games unequally. According to EY, the annual value of this deal (including domestic and international rights) was around 1,320 million euros. Importantly, the value of
International Rights increased from 190 million euros to 371 million euros during this period, while Domestic Broadcasting Rights appeared to generate 973 million each season (Sportstar, 2020)/1025 million dollars (Football-Italia). The revenue gap between the top and bottom earners in Serie A is 4.7x (EY, 2021), making it the most unequal among Europe's top five leagues.

Ligue 1

The Ligue 1 is the elite football league in France. Despite being regarded as a Top-5 European League, it is one of the least popular in that field, as it is placed fifth in Average Total Operating Revenues and Total Broadcasting Revenue, but fourth in Aggregate social media followers, ahead of the Bundesliga but below the others. The centralized model originated in France with the Law 84610 of July 1984, which declared that the Sporting Rights belonged to the event organizers, in this instance the LFP. In 2018, League 1 signed a 3-year contract with Mediapro for 80% of the Domestic Broadcasting Rights, while beIN Sports acquired the remainder 20%, allowing the LFP to obtain 1153 million euros for the entirety of the Domestic Broadcasting Rights. The transaction got completed

despite Mediapro's lack of bank guarantees. Although Mediapro's financial status was already unstable before to Covid, the pandemic exacerbated the company's financial difficulties. Although they were able to pay the initial installment, they were unable to pay the subsequent two installments. This sequence of events resulted in the LFP and Mediapro terminating their contract in December of 2020 (SP, 2022). The LFP was able to negotiate a new three-season deal with Amazon, worth 275 million euros per year, for approximately 80% of Ligue 1 and Ligue 2 (France's second division) matches, while beIN Sports retains the remaining 20% (which it sublicenses to Canal+), for which it paid 330 million euros per season in 2018. The latest agreement with Amazon has prompted Canal+ to seek to return their rights (after analyzing the issue and realizing they were overpaying), but a French judge has ruled that they must continue to pay beIN Sports until the present contract expires. In Ligue 1, the present Agreement for International Broadcasting Rights exposes a mostly untapped market, with beIN Sports as the sole owner (with a contract that began in 2018/19 and will finish in 2023/24) and sublicensing to other media firms, such as DAZN in Japan (SP, 2022). This agreement is worth around 80 million euros every season, which, even in the more current scenario with Amazon and beIN Sports as the owners of the Domestic Broadcasting Rights, is just 11.7% of the entire income pool. Given the lack of consistency in Revenue streams over the past several years, it becomes impossible to analyze their model in its entirety. Nonetheless, it is worthwhile to clarify how earnings might be split throughout a typical season. The LFP adheres to the 50-30-20 rule: 50% is split equally across all clubs, 30% is set and 20% is tied to club licensing, 30% is merit-based and shared according to league places, with 25% from the current season and 5% from the preceding five seasons, and 20% is based on media profile.

Eredivisie

Despite the fact that the top five European leagues are an example of a well-applied collective bargaining model, the sporting, demographic, and social conditions in those leagues and the nations they represent are vastly different from the Portuguese instance. For the purpose of analyzing a

distribution model that may be more directly related to and utilized in the Portuguese League, the Eredivisie was one of the selected leagues, as several of its variables had comparable sizes. According to the UEFA Country Coefficients ranking as of the date of this study, the Netherlands and Portugal are placed sixth and seventh, respectively, with a point difference of 53700 to 51716 (UEFA.com). Despite their demographic disparities, this provides the Netherlands and Portugal with a ranking worthy of comparison.

The population of the Netherlands is around 17.6 million, whereas Portugal stays at 10.3 million (Statista). This demographic disparity is substantial, indicating that the Netherlands have the potential to establish a larger broadcasting market than Portugal, given the right conditions. The current Domestic Broadcasting Rights contract for the Eredivisie was signed in 2013 and expires in 2025, with an average value of 80 million euros per season. This scenario goes against what is typical is the big-5 Leagues, where broadcasting deals tend to have no more than 5 years. The distribution of broadcasting earnings by the Eredivisie is based on a ranking methodology that takes into account the club's standing in the League over the previous ten seasons. The sum of each team's total points from the aforementioned seasons is then divided by the 18 clubs' total points. At the end of the season, the ultimate value allocated to each club will be determined by multiplying a percentage by the overall value of Broadcasting income.

Regarding International Broadcasting Rights, IMG is the exclusive owner, having just signed a new deal for its exploration between 2022/23 and 2024/25 (Insider Sport, 2022). The preceding agreement, which ran from 2018/19 to 2021/22, generated 12 million euros annually (Servir o Benfica, 2022).

Exhibit 6 depicts an estimate of broadcasting income per team for the 2019/2020 season (nonofficial values, only based on published data). With an average of 4.42 million euros earned each club, the Eredivisie has one of the smallest earnings agreements among Europe's major clubs. Ajax, in first position, earns 133% more than average, while Fortuna Sittard, in bottom place, earned -56%

less than normal. When comparing the highest and lowest incomes, we compute a difference of 428%, indicating disparities not observed in the top five leagues and exposing a flawed model.

The Jupiler Pro League is Belgium's premier league. In contrast to the Eredivisie, which was a case of interest owing to its proximity to Portugal in UEFA's Nation Coefficient ranking, the Jupiler Pro League is played in a country with a demographic profile closer to Portugal, with around 11.65 million inhabitants. While winning on the demographic side of parallels, it loses on the sporting side, ranking ninth in the UEFA's Country Coefficient with 35400 points, as contrast to Portugal's 51716. The current Domestic Broadcasting Rights contract with Eleven Sports is worth 103 million euros and has a length of 5 years, beginning in 2020/21 and continues for 5 seasons. Distribution methods and particular amounts are not released, although it is believed that the top five clubs in Belgium earned 80% of the revenue, while the remaining eleven clubs received just 20%. (Digital TV Europe, 2020). The criteria used to identify the top five "vary from commercial effect to TV audiences" (Inside World Football, 2020).

The International Rights distribution is still in its infancy, with Eleven Sports working with Mediapro to deliver the Jupiler Pro League on worldwide stages. The cooperation between Eleven Sports and Mediapro has enabled the league to be aired across the Americas and Oceania due to Mediapro's worldwide reach. Eleven Sports is leading the charge by providing free access to preplayoff matches on its streaming platform, MyCujoo.

It is important to note that the Jupiler Pro League has a different structure than the other leagues mentioned. In the first phase, 16 teams play each other twice and a final ranking is determined based on the regular schedule. However, in the second phase, the first six ranked clubs form a group, where their points are halved and their order is retained. After that, they play each other twice more to determine the final standings of the season. This model has enabled Eleven Sports to provide free access to first-phase games, then to create a pay-per-view model for the second phase. This method facilitates the league's increased visibility.

3.2.1.2.American Leagues

Despite the fact that the United States of America are a unique nation, we have previously analyzed, both demographically and socially, the continued cultural significance of sports. American sports also utilize a collective bargaining model, with some mixing it with regional variations. The use of advertising as a source of money for the media is utilized in a much more pronounced manner, which is a second set of distinctions. In American sports, particularly in the leagues listed below, the league system is closed, there are no relegations, and college players are picked annually by each club in a seven-round draft. Priority in the Draft is given to the clubs with the lowest win % from the previous season, while the Champions of the League select last in each round.

NFL

The NFL is the main American Football competition. The NFL possesses 32 teams, split between two conferences: the AFC[3] and the NFC[4]. Each conference has four divisions, which are divided between the North, South, East, and West. Each Team plays their division opponents twice every season, four Conference rivals, four teams from the opposite Conference, and two games against division rivals from the other divisions within the same Conference (NFL Football Operations, 2022). It is a league focused on the postseason, with 16 regular-season games determining a ranking of clubs that will subsequently compete in the postseason. There is a distinction between regional and national games, with regional games representing the regular season and national games representing the remaining playoff contests (Wild Card, Divisional, Conference and Super Bowl). The National Football League is a pioneer in the media rights market, executing a collective bargaining model that gives each team an equal portion of income. Despite having the fewest amount of games played in the United States (255), it makes significantly more income than the NBA

[3] American Football Conference

[4] National Football Conference

(Basketball) and the MLB (Baseball). Five packages are discussed during the bundle negotiation (seen in every major American competition), with CBC, FOX, NBC, ESPN, and ABC being the bidders (EY, 2021). Each package specifies beforehand the number of games, the weeks during which they are televised, the number of wildcard games (playoffs), and whether the game will be telecast in prime time or on Thanksgiving (considered a major holiday in the US). The Super Bowl (the championship game that determines the League's winner) is annually aired on a single network.

MLB

MLB[5], the primary Baseball competition in the US. Like the NFL, it is characterized by a playoff-based structure, where regular season games and each team's win percentage determines a ranking of teams, from which the best teams follow through to a knockout round. Also comparable to the NFL is the split of clubs, which consists of two Conferences (American League and National League) with 15 teams each, and three divisions (Central, East, and West) within each Conference. There are around 2400 broadcast MLB games every season, with each team playing 162 games. Even if the concept of regional and national games has been confirmed, the NFL and MLB share no other characteristics. The MLB's national games (meaning postseason games) adhere to a collective bargaining model in which each team receives an equal share of the total revenue pool. However, the League permits individual team talks for regional games. Naturally, the inequalities in broadcasting earnings from regional games are considerably greater, since the more popular clubs are able to negotiate larger deals and maybe get national coverage. In light of the inequalities in the contracts, there is a collective agreement amongst the 30 teams that stipulates a preset proportion of overall money collected by clubs to be pooled and then allocated evenly. According to the most recent accords, each team earns around sixty million dollars each year from national games. Regional broadcasting revenues reflect a 12.5x disparity between the highest and lowest earners (Los Angeles

[5] Major League Baseball

Dodgers and Miami Marlins, respectively) compared to total broadcasting revenues, which reveal a 3.9x difference. The Los Angeles Dodgers earn $250 million for the rights to their regional games, but the Miami Marlins only receive $20 million. This figure indicates the Brand Value of certain clubs with widespread fan bases, while others fail to gain sufficient popularity to negotiate better terms.

NBA

The NBA[6] corresponds to the main division of professional Basketball in America. As is customary in American Sporting events, it is a playoff-based tournament, with clubs qualifying for the postseason based on their regular-season standing. It consists of 30 teams, which are divided between two conferences (East and West) and three divisions within each conference (Atlantic, Central, and Southeast in the East Conference; Northwest, Pacific, and Southwest in the West Conference). Each season, around 1300 games are aired using either a Pay-TV or Streaming model.

The NBA employs the same structure as Major League Baseball, with regional and national games. Regional games consist exclusively of regular-season contests, but national games comprise every round of the postseason, from the first to the championship. Regional games may be separately negotiated by NBA clubs, while national games are supported by a collective bargaining agreement.

Regarding national games (using a centralized method to the negotiation of television rights), the whole income pool is divided evenly among the 30 participating clubs, or $90 million per year for each. Regarding regional competitions, the scenario is rather distinct. The examination of values reveals a 6.1x disparity between the highest and lowest earners, despite the fact that the inequities discovered are not quite as pronounced as those in the MLB. The exact example identifies the Los Angeles Lakers and the Miami Heat as the highest and lowest earners for their respective rights, collecting 122 and 20 million dollars, respectively. Since it stands, this demonstrates a disparity in popularity across clubs, with the more popular teams receiving larger broadcasting contracts (as

[6] National Basketball League

millions of people are provided) and the less popular teams being unable to secure higher offers owing to their limited social reach.

When entire broadcasting income are considered, however, the disparity narrows to a mere 1.9x, with the LA Lakers receiving 212 million dollars and the Miami Heat receiving 110 million dollars. Comparing the above-mentioned figures to those given by the MLB reveals that the influence of regional broadcasting rights in the NBA is lower, at least when comparing the top and bottom clubs. The commercialization model includes four important participants (ABC, ESPN, TNT, and NBA TV) with varying degrees of effect on the number of televised games. ABC airs 19 games (Christmas, Saturday evenings, and Sunday afternoons), ESPN airs 82 games (Wednesdays, Fridays, and 20 playoff games), TNT airs 67 Thursday games and 45 playoff games, and NBA TV broadcasts 106 games (Sundays, Mondays, Tuesdays, and Saturdays, and 9 playoff games). This agreement is effective until the expiration of the present long-term contract in 2025.

3.2.1.2.1. Americanization of the European Competitions

Over the past several years, European football has taken on a new form and adopted more American techniques. Despite some of its benefits, the collective bargaining model might be viewed as anti-competitive since it has some features entrenched in American sports: The Leagues are often closed to a fixed number of teams – the owners of the teams currently placed in the League can veto the entrance of other teams from the same geographical area, while being financially rewarded for new entrants; there are strong restrictions on the recruitment of new players – the Draft mechanism allows the weaker teams in the previous season to be the firsts to select new players coming from College Football Leagues, with the goal of preserving talent; and there are strong restrictions on the transfer of players between Leagues (leaving College). This alignment of team interests elicits a response from the players, as seen by a high level of unionization on the players' side (Besanko, D. et al., 2014). In the American Model of professional sports organization, athletic "shows" feature competition.

The "Unique League" model widely used in the United States, with strong competitive restrictions and barriers to entry, differs from the traditional model used in European Football competitions, in which the sporting competitions are organized by sporting federations or associations, containing all levels from amateur to professional, creating a structure in which entries and relegations are determined in a competitive manner and based on sporting merit, especially through a promotion and relegation system.

The proposal to establish a "European Superleague" in 2021, comprised of a group of 12 predetermined teams from the leading European professional football clubs, has produced an obvious conflict between the European and American athletic models. Within the scope of the initiative, the aforementioned 12 clubs petitioned the Commercial Court of Madrid for preventive measures. The court also prohibited UEFA and FIFA from threatening the founding members of the Superleague with fines, deeming UEFA's regulations prohibiting the participation of football teams in competing athletic events without prior authorisation to be an abuse of dominant position (Orth, M., 2021). It similarly saw as an abuse of dominant position FIFA's laws defining FIFA and its members as the owners of football event audiovisual rights. The value of broadcasting rights, which are jointly bargained within UEFA's championships and further divided based on equitable standards and sports performance, with teams unable to claim direct ownership, was one of the issues that the Superleague concept intended to resolve. The project confronts the monopoly power of the federations and confederations, such as UEFA and FIFA, in the organization of sporting competitions - in fact, the precedent of the judgment T-93/18 International Skating Union v. Commission, considered that it was a violation of the right to competition for a federation to punish athletes that desire to play in competitor competitions – with a horizontal agreement between a set of powerful clubs, that establish a competitive model. The Commercial Court of Madrid is awaiting a preliminary opinion from the Court of Justice of the European Union on a pending case (Orth, M., 2021).

The widespread adoption of the collective negotiation of audiovisual rights of professional sports in Europe is consistent with a growing tendency of European competitions to incorporate traditional characteristics of the American model for the organization of professional competitions (OCDE, 2010), as football's weight as a sporting spectacle in Europe increases in economic significance, despite the fact that some of these characteristics, such as the financial fair play rule, can be considered anticompetitive. Indeed, on deregulated markets, corporations have no investment restrictions other than those imposed by the capital markets' availability to financing. The financial fair play standards enforced by UEFA, although being justified in maintaining the financial riches of the participants, can act as a barrier to competition by preventing some clubs from spending in order to win the tournament or gain entrance to an international UEFA competition. In conventional competition, the loss of market operators due to financial failure is neither an issue of competition nor a model of athletic rivalry with many divisions and relegation systems. On a model of closed league, such as the American model observed in the majority of professional sports, the rules that aim to guarantee the financial well-being of the participants have their own framework, which is justified by entry and exit barriers that restrict the competitive functioning of the markets.

3.2.2. Portuguese Context

Channel providers like as Sport TV, BTV, Canal 11, Sporting TV, and others transmit the sporting audiovisual rights. After that, the Telecom providers Vodafone, NOS, and Altice transmitted them. According to EY's study (Farinha, 2021), these operators "are present in every phase and hold a shared position in Sport TV." As a result, it creates "competitive issues, prompting the Competition Authority to submit a proposal in support of audiovisual rights centralization."

In contrast to Portugal, the major international football leagues of Europe use a "centralized model of marketing of audiovisual rights" to commercialize the audiovisual rights of professional football tournaments. (Farinha, 2021). In the analysis conducted by EY, only the Portuguese league and the premier division of the Brazilian championship Série A do not use a collective bargaining model for income distribution. This collective bargaining model varies from the Portuguese league in

that the league (or an organization selected by the league) negotiates the rights of the clubs, rather than the clubs themselves. In addition, it is the league that chooses how the value of the negotiated rights is allocated among the clubs, depending on criteria that the league has already defined. Non-exclusivity of rights broadcasting by the same media operator is an additional difference between broadcasting rights in Portugal and the major international leagues of European football. This is the "no single purchaser" regulation. In Portugal, nearly all matches of the top two football divisions are shown on the premium pay channel Sport TV (only Benfica's home matches are carried on the club's station, BTV). In the major European leagues, rights commercialization is conducted differently, with a structuring of packages/bundles dividing the numerous matches into groupings based on the day and time of the match or the broadcasting platform. This enables for a redistribution of matches from these leagues among channels/platforms.

3.2.2.1.Historical Competitive Structure of the Portuguese Broadcasting Market

Audiovisual rights linked with premium sports programming, especially those that attract enormous audiences, such as professional football, are essential inputs in the Pay-TV and Telecommunications industries, with high demand and high economic value, but they also create significant competitive difficulties.

The rights sale model, which is based on exclusive distribution contracts, has frequently related to potential concerns of market foreclosure and market domination in Pay-TV markets. Multiple interventions by national competition authorities and the European Commission have been made in this area.

Access to premium content is a significant bottleneck and source of market power in Pay-TV marketplaces, according to the OECD (OECD, 2013). Vertical integration between content owners and television providers, as is the case with movie and series streaming platforms, and the existence of exclusivity contracts can drastically restrict content access and, consequently, competition.

In actuality, the entry of operators into the Pay-TV and Telecommunications markets, in which content is included in combined offers of triple and quadruple play telecommunications services, is determined by their ability to access the content that consumers want and to differentiate their offer, thereby increasing the attractiveness of combined packages of telecommunications services and content (OECD, 2013). The OECD distinguishes between entertainment material (films and series) and sports content, with bottleneck effects being more significant in sports content due to the demand for live transmission by large audiences.

To build entry barriers, operators with Pay-TV markdcet power can exert buyer power in content markets by negotiating exclusive content and transmission rights, allowing them to also exercise market power in retail marketplaces (OECD, 2013).

The collective negotiation of rights by the Leagues of professional football clubs, a common solution in many countries, adopts many characteristics common to cartels, and the assessment of competition authorities has balanced the anti-competitive effects with potential gains in efficiency, of a largely theoretical nature, and approved with conditions regarding the duration of the contracts, division into lots, and negotiation methods based on open, non-discriminatory procedures.

In Portugal, it was in the field of audiovisual rights for sport and its retail marketing that the AdC's[7] first decision condemning abuse of position, that was confirmed in Court - case in PRC/2010/2 Sport TV - and also one of the bans on operations most relevant mergers, Ccent 4/2013 Controlinvest / NOS / MEO, through which MEO's entry into the capital of Sport TV was blocked, also highlighting the Recommendation addressed to the Government on the creation of regulations aimed at allowing the auctioning of television and multimedia broadcasting rights for matches in the First and Second Professional Football Leagues.

However, the results of the AdC's intervention in mitigating market power, resulting from dominant positions or horizontal agreements between competitors, are minimal, to the detriment of the consumer, as Portugal is one of the European countries in which consumers pay more to access

[7] Authority of Competition – an agency with the authority to block anti-competition moves made by companies

premium sports content. Twenty years after the AdC's initial regulatory involvement in the purchase and selling of national professional football broadcasting rights, the competitive landscape remains comparable to that of the early days of Sport TV. The competition for the television broadcasting rights of professional football clubs' home games, which existed briefly in the bidding war between Altice and NOS, at the end of 2015, which defined the current 10-year contracts with the main clubs, with values considerably higher than the previous contracts with Controlinveste Media/PPTV, was once again terminated by the agreements signed in July and August 2016 between the major telecommunications operators, which buried the horde. Currently, the three largest telecommunications companies in Portugal are connected through agreements, contracts, and shareholder structures that constitute a global non-competition agreement in the wholesale acquisition of national professional football media rights and their retail marketing to consumers. The AdC chose not to challenge agreements that were blatantly anti-competitive, indicating enforcement fatigue in this market, and indicating that legislative intervention was the solution to competition problems, having recommended to the government the implementation of collective bargaining, with duration of contracts limited to three sports seasons and divided into lots with a "no single buyer" clause. As a countermeasure to a cartel on the side of the purchase of rights, the AdC advocated a cartel on the side of the sale, based on collective selling, which, based on empirical evidence from other markets, has unclear effects on consumer welfare. In effect, collective selling is associated with the increase in the price of transmission rights, which is a result of monopolistic selling, and the solution of division into lots has not been sufficient to stimulate retail competition, as packages are complementary products and not true substitutes, which is likely to increase competition in premium sports content channels. Without the ban of the worldwide non-compete agreement between Telecom providers, which has an impact on the wholesale and retail marketing of rights, the establishment of collective bargaining is unlikely to promote consumer welfare or benefit professional football clubs.

3.2.2.2.Current contractual situation in Liga Portugal

Focusing on the overall picture of the end of the present audiovisual contracts of Liga Portugal clubs, it is important to note that FC Porto, SL Benfica, and Sporting CP have signed long-term contracts that will expire between 2026 and 2028, much as SC Braga and Vitória SC. As these two clubs are known for their recent national and international success as well as their significant associative mass, they may have an effect on future discussions over the collective bargaining of the audiovisual rights of Liga Portugal. The late expiration of the audiovisual contracts in effect for these clubs may necessitate delaying the commencement of collective bargaining discussions to a period near to the deadline stipulated by the decree-law. Given its enormous weight in Portuguese football, "the beginning of centralization without the inclusion of these clubs may not generate a sufficiently attractive product, particularly from a perspective of building a solid strategy for promotion and penetration in international markets."

Comparing the contracts of the three biggest clubs in Liga Portugal (FC Porto, SL Benfica, and Sporting CP) with those of the other teams in the league, it is easy to detect the value disparity. FC Porto earns around 46M€/Year, SL Benfica approximately 40M€/Year, and Sporting CP approximately 43M€/Year. These are, however, simply reference amounts, since the FC Porto and Sporting CP contracts also contain shirt sponsorships, and it is not feasible to differentiate the rise due to the absence of information supplied by the clubs. In addition, the amount earned to date is difficult to evaluate due to the income advances that these clubs get.

In order to address the problem of economic disparity, it is necessary to examine the remaining clubs. SC Braga gets around €10 million every year, although the study of the values of the other Portuguese clubs is incomplete due to a lack of data.

According to the EY report, the "Top 3 Club Television Revenues Compared to Median Club Revenues" takes the highest figure for European leagues, with a multiplier of 15.4. However, the Portuguese case also differs from the other leagues, given the prevalence of supporters of the Big 3

among the Portuguese population, with a combined value of around 94.5%. The total value of TV rights for Liga Portugal is currently estimated at between 170-180M.

The present situation regarding the competition for the audiovisual rights of the two main divisions in Portuguese football is quite different from when the 'Big 3' (3 biggest clubs in Portugal, Sporting, Benfica, and Porto) signed the corresponding contracts for their rights with the operators NOS and Altice Portugal, back in late 2015 (*Sporting e benfica com nos, Porto com altice: O que vale mais?* 2015). As it is public, in 2015, Altice acquired Portugal Telecom, forming their subsidiary in Portugal (*Concluída Venda da PT Portugal à altice,* 2015), Altice (which eventually changed to Altice Portugal in 2018), and after that acquisition they decided to take a hostile posture towards their competitors, declaring 'war' to its main competitor: NOS. One of the stages of this 'war' was the fight for the audiovisual rights of Portuguese football (Suspiro, 2017). The contracts signed by the Big 3 at the end of 2015 (Sporting and Benfica with NOS, and Porto with Altice Portugal), took advantage of this commercial war between the two giants of Telecom operators in Portugal, and we can see that clearly in the astronomical values in these contracts, these values are one of the main arguments behind the reasoning of Liga Portugal in favor of the collective bargaining of rights. The issue with this argument, is that the current situation is much different from the one when the contracts were signed. This is because, in 2016, NOS and Altice Portugal decided to end their conflicts, therefore, ending the commercial environment that allowed these incredible contracts (*MEO assina acordo para partilha de conteúdos desportivos,* 2016). With the absence of competition, there is no reason to pay such high values for the TV rights, which becomes an obstacle to the reasoning of Liga Portugal in favor of collective bargaining.

However, the future may be better than it seems due to the possibility of new "players" joining the market (Exhibit 8), so helping to "raise the size of the cake." The English firm Eleven Sports entered the American market in 2018, gaining the rights to tournaments such as the Champions League, Spanish, English, German, and French leagues. In addition, the group has already made it known that they are interested in acquiring a portion of the Portuguese league rights, and they are not

alone in this regard, as other platforms and actors in the digital world such as Google, Amazon (which already broadcasts matches from the Brazilian cup) see this as an opportunity to enter the market for audiovisual rights of the top divisions in Portuguese football. Moreover, DAZN (which already has well-established roots abroad, for instance in our neighboring country, Spain, DAZN broadcasts Premier League matches) recently acquired Eleven Sports and they promise to increase growth, which maintains the premises of the presented arguments but modifies the structure of the possible repartion.

3.3.Emerging of OTT model and competition in the Telecom market

3.3.1. International Landscape

The broadcast industry has been changing due to technological advances in online video streaming. Analysing the impact of this change on the topic under study, the OTT model emerges, since it has revolutionized the traditional way of broadcasting football games.

The OTT model consists of content's transmission through the internet, directly to the consumer. In this business model, customers usually pay a subscription fee, which enables them to consume content on demand (FOOTBALL BENCHMARK, 2020). Moreover, according to Statista, the number of digital live sports viewers, in the United States, will increase by approximately 58% from 2021 to 2025. On top of that, it is predicted that by 2024, American viewers will spend more money on streaming video than on paid television. Additionally, in this study, it was concluded that Americans' spending on TV subscriptions between 2020 and 2023 will drop by approximately 22% (Strategy Analytics, 2021). On the other hand, the number of digital live sports viewers, in the United States, is expected to increase from 65.5 million of users (2022) to 90.7, in 2025 (Statista, 2021). Furthermore, by 2027, OTT TV and video revenue worldwide is expected to be 224.3 billion U.S. dollars, a 43.5% growth over May 2022 (Statista, 2022).

As reported by YouGov Sports data collection, it can be concluded that in China (54%), Indonesia (50%), and Taiwan (49%), is where half of the people watch/follow sports via online

streaming (video). On the other hand, in Peru (84%), Colombia (81%), and Brazil (78%), is where the weight of sports broadcasting on TV is greater. Also, focusing on European countries in this study (Spain, Italy, the UK, Finland, Sweden, Denmark, Germany, and France), it can be stated that the Spanish are the most likely to watch/follow sports on a streaming platform and the French the least. In addition, in European Union, in 2020, Germany was the country that has the highest number of unique subscribers to OTT SVoD services- 33.33 millions- which corresponds an approximately 40% of the total German population. Followed by United Kingdom, France, Italy, and Spain.

In contrast, Portugal had only 1.47 million of unique subscribers to OTT SVoD services, that means 14.26%, approximately. At an international level, this kind of broadcast football games is being used by some service providers, such as Amazon Prime, DAZN, and MyCujoo.

Regarding Amazon Prime, until now, it will broadcast 19 Premier League games of the 2022/2023 season (GQ, 2022), being present in more than 200 countries and territories worldwide.

Related to DAZN, it is present in the USA (including Puerto Rico and the United States Virgin Islands), Italy, Spain, Canada, Germany, Austria, Switzerland, Brazil, and Japan (DAZN), and soon will be accessible in Portugal (DAZN, 2022). This streaming service is available on many platforms, namely: Apple TV, Google Chromecast, PlayStation, and Chrome. On this platform, concerning football matches, subscribers can see The DAZN Soccer Show, UEFA Champions League, UEFA Women´s League, and Liga F.

Another service provider is MyCujoo which belongs to Eleven Sports, since 2021, and reaches more than 26 million users worldwide (ELEVEN, 2021). It allows not only to watch live matches but also their highlights. The competitions included are Beach Soccer, Elite Women's Football, Youth matches, Brasileiro Serie A, and others.

3.3.2. Portuguese Landscape

In Portugal OTT services and VoD are still in between the Innovative and the Growing market stage. According to (Anacom, 2021), these services appeared in Portugal in second semester of 2015 with Netflix, FOXPlay and NosPlay. With this innovation, upon a monthly payment, clients could watch all the content desired with all the benefits of OTT, and only the need of internet access.

The majority of services already available relate to movies and series and more players have been entering the market in the coming years such as Amazon (2016), HBO and Apple TV (2017), Acorn and Disney+ (2020) and Opto, the platform for the Portuguese broadcaster SIC (2020), the later comprises all the affiliate channels such as Sic Notícias or Sic Radical content through the OTT platform Opto. Posteriorly, Telecom Operators have incorporated this feature in their bundle of products, meaning that clients benefit, without an additional cost, from OTT service for their subscribed content. Besides this there are also several "niche" services available on the Internet for specific consumers (Anacom, 2021). This penetration in the Portuguese market led to most Telecom operators starting to partner with these broadcasters, as Netflix, where the telecom client can subscribe the Netflix product directly through the TV service.

Utilization of these services in Portugal has increased throughout the years, and the latest pandemic has intensified this trend. The percentage of Internet users who utilize paid OTT services, including VoD, is projected to reach 34% in 2020, a 20% rise from 2018. According to these statistics, Portugal was the fourth country with the greatest rise in VoD, and it presently ranks 15th among UE nations. In a wider sense, OTT use climbed by 16 percentage points from 2018 to reach 26% of the overall population. (OECD, 2021).

This huge increase in the use of video streaming on demand was caused by a behavioural shift triggered by the pandemic, which was announced to begin in March 2020. According to Marktest, the total number of VoD subscribers climbed by 30% between March and April of 2020. (Marktest, 2020).

In order to gain a better understanding of the user profile for these types of services, paid VoD in Portugal is primarily utilized by the younger population (16 to 34), which has a higher-than-average income, and the majority of which is enrolled in higher education, similar to the profiles of other EU partners. From the OECD's 2021 research on Internet users who watched paid VoD, which was filtered by quartile, income, education level, and employment circumstances (OECD, 2021), the following conclusions can be drawn: the penetration of these services in Portugal was two percentage points lower than the European average, with the exception of the 25-to-34-year-old demographic, which was two percentage points higher. Lower-income and less-educated individuals were 12 percentage points below the EU average in terms of deceitfulness. As stated earlier, the most important lesson from this study is that between 2018 and 2020, the usage of paid VoD services rose dramatically across all demographic groups analysed, with a 30% rise among those aged 16 to 34. This indicates that people are moving their viewing patterns away from traditional television providers and increasingly requesting this kind of over-the-top service.

Regarding the sports broadcasting industry, the general overview is that the market is much less developed when compared with general entertainment (movies, tv shows, etc). For the sake of this work project, when analysing the market in the sports industry, we mostly focus on the football industry since it is the most relevant in the country and also because it is the one correlated with the topic being discussed in this document. Currently the OTT services in the sports, and particularly in the football broadcasting industry are in a stagnated stage where growth is possible but external forces do not allow it, as we will further ahead discuss.

The players in this industry are dependent on one barrier to enter which are the broadcasting rights. As so, the major player in the sports VoD is Eleven Sports and the second player is Sport TV. Both broadcasters, which are the current right-holders for the Portuguese and International football broadcast, offer VoD to their clients allowing multi-screening and online access to the content, although with one main difference: Sport TV only allows clients to subscribe to their transmissions, which are a paid content, via their TV operators. This means that clients that want to access the content

through the OTT service from Sport TV need to be clients of a TV operator already. This means Over-the-Top content from this broadcaster is only available as an additional feature to the Television premium channel subscription. On the other hand, Eleven Sports offers an OTT service that can be subscribed and accessible through only the need for Internet access and so can be watched without a TV operator affiliation. With this Eleven Sports, in addition to offer the TV channel, offers the possibility to access all their contents through OTT model, meaning only the use of Internet.

3.4. Portuguese consumers' influence in the current market

Analysing the data provided by Liga Portugal and present in the EY report "International Study on Sports Audiovisual Rights", a possible significant increase in revenues (assuming a centralized model of audiovisual rights by Portuguese clubs) is presented, between 56% and 85%, thus taking an absolute value in the order of 275 to 325 million euros per year. This increase would, however, have to be driven by an "increase in consumers and/or an increase in revenue generated per consumer" (Servir o Benfica, 2022). With the application of the model suggested by the Liga, i.e., of the total revenues obtained from the sale of the broadcasting rights of football matches, 50% would be distributed equally among the 18 clubs, 25% according to performance and 25% based on social impact, the financial structure of the three big clubs would be strongly affected, as can be concluded from the sensitivity analysis carried out by the "Servir o Benfica" study (Exhibit 9). Through this analysis it can be concluded that Sport Lisboa e Benfica would obtain approximately -44.87% of the current revenues, Futebol Clube do Porto -52.74%, and Sporting Clube de Portugal -58.71%. In addition, the clubs occupying the fourth and fifth positions, Sporting Clube de Braga and Vitória Futebol Clube, respectively, would also lose out.

Also, with the sensitivity analysis performed and based on what was previously discussed, it is necessary that the total value of the broadcasting rights of the games increases its current value so that Benfica would not lose with the application of this model. However, Sporting and Porto would

still lose even if the total value of the broadcasting rights of Liga NOS games reached 350 million euros.

With the need to increase the total value of the revenues so that at least one of the three big clubs does not lose, the question arises of how to increase the total value. In the study "Servir o Benfica" it was calculated how many subscriptions would be needed at different price levels for the value needed according to the sensitivity analysis to be obtained (325 million euros) (Exhibit 10). With the data present in the graph, it is possible to state that, considering that there are about 4 million households in Portugal (Instituto Nacional de Estatística, 2021), it would be necessary for 1/5 of the households to have a subscription at the minimum value of 35 euros, or 30 euros if 1/3 of the households had a subscription to a Portuguese premium sports channel.

On the other hand, it is convenient to analyse the possibility, or lack thereof, of this model being financially sustainable based on: Total Television Revenue, Television Revenue per capita and Television Revenue in purchasing power parity. It is important to note that these metrics include international rights, an aspect that is currently underexplored in the Portuguese case.

In Total Television Revenue, Portugal ranks seventh behind England, Spain, Germany, Italy, France and Turkey. In Television Revenues per capita, however, there is a Portuguese rise in the ranking, obtaining fourth place, a trend that is also seen in Television Revenues in purchasing power parity, where third place is occupied, behind England and Spain (EY, 2021). Looking now at the possibility of increasing the revenue generated per consumer, it is important to analyse the current situation and study whether there is room for an increase in this figure. Since this is a variable directly influenced by the consumer's economic situation, it is important to understand the price the Portuguese consumer pays to access domestic competitive games. Later, when comparing this figure to the average salary earned in Portugal and assuming a percentage approach, these figures offer problematic contours. Regarding the 2018/19 season (the last season before the Covid-19 pandemic), and while in the five major European leagues (Germany, Spain, England, France and Italy, according to the UEFA ranking) this figure (which corresponds to the price of television packages as a

percentage of the average salary) reaches only 1.6%, in Portugal it stands at 4.1%. (Serving Benfica, 2022). It is important to mention that the total price of television packages includes the channels needed to watch all the games related to the Portuguese soccer championship, which in this case includes the Sport TV and BTV channels.

4. Primary and secondary research

The primary research was conducted through an interview and a questionnaire.

4.1. Survey and interview objective

Concerning the questionnaire, the aim was to obtain information about the profile of football games consumers, i.e. their preferences and whether the advantages set out in the EY report[8] arising from collective bargaining are aspects that interest them. Another conclusion we wanted to acquire, through the survey, is related to the Telecom industry and premium sports channels in Portugal. Here, the objective is to study the current competitive environment and draw some beneficial conclusions for football clubs, due to the fact that the greater the competition in these industries, the greater the bargaining power, which can lead to higher revenues for the football clubs. However, it is important to have in mind that, the broadcasting clubs' revenues depend on the collective bargaining model that it will be implemented.

Regarding the interview, it was conducted to understand how the premium sports channels competition for the audiovisual sports rights occurs and also the Telecom operators' role in this competitive market structure. Furthermore, we intended to know the Eleven Sports' position on the collective bargaining of broadcasting rights. To conclude, we aimed to explore the causes and the effect of piracy on the profit from the broadcasting of games and how the OTT Model is perceived in Portugal.

[8] Estudo Internacional sobre os Direitos Audiovisuais Desportivos (2021)

4.2. Qualitative Research: Consumers

4.2.1. Methodology and questionnaire

The questionnaire was answered by 249 people who have Portuguese nationality, regardless of whether they live in Portugal or not.

Concerning the questionnaire's design, there was a first section in which we collected personal information from all respondents. Then, there was an eligibility question for the subsequent completion of the questionnaire, which was whether the respondent attended football games. Thus, for those who do not watch, only demographic data were requested, mainly so that we could narrow down our target in terms of gender and geographical location.

After this filtering was done, the next section was about tastes and frequency of going to the stadium, in order to better understand the profile of the target consumer.

In addition, a section was dedicated to watching games on television and another one through other channels (smartphone, tablets, PC), in order to understand the consumption habits and their choices. With this, it was intended to conclude the advantages and disadvantages of each channel. After that, two more sections were created where respondents with and without premium sports channels were separated to identify the differences/reasons between those with and without a premium sports channel. Another information that was sought was the relationship between those with/without premium sports channels and their willingness to pay to watch football games through an OTT model. Aiming to find out if there is a possibility of increasing competitivity through this emerging format and consequently increasing clubs' revenues.

Finally, a section on piracy was created in order to characterize the Portuguese consumer who uses these illegal channels and their reasons. With this data, we intend to figure out what already causes the use of illicit channels and consequently what can be done to reduce this illegal practice.

The complete questionnaire can be found in Exhibit 12.

4.2.2. Sample

We surveyed 249 people, of which 205 answered affirmatively to the question "Do you watch football games?" and so, they continued to answer it. (Exhibit 13)

Due to the short period available for the survey and the fact that our reach is mostly residents of Lisbon between the ages of 18 and 35, our sample is not as diverse or broad as we would like.

The questionnaire was completed by 86 women and 153 men, with only 65% and 91.4% attending football games, respectively.

In terms of age groups, more than half of the women belong to the 18-35 age bracket. As for men, 93% are between 18-35 and 36-65 years old, 63% and 30%, respectively. Of the 205 respondents who watch football, 66% (136) live in Lisbon.

4.2.3. Main findings

Sport Lisboa e Benfica and Sporting Clube de Portugal represent 85% of the fans in our sample, with 44% and 41%, respectively. Next, Porto represents 9% of the supporters, concluding that **the three big clubs** in Portugal represent 94% of the supporters surveyed.

The **most followed leagues** are the Portuguese (96%); international club competitions (89.26%); Premier League (66.82%) and La Liga (38%).

A large part of the respondents (74%) does not have a seat at the stadium, with only 10.6% going there frequently. More than half go occasionally (32%) or rarely (44%).

Of the 205 respondents who watch football 174 (approx. 85%) consider that the competitive balance correlates with the attractiveness of the game. Of these, 79 (45.4%) would change their opinion if the level of football played was low, 78 (44.8%) would not change their opinion and 17 (9.8%) have no opinion.

Of the 205 respondents who watch football only 7.8% do not consider that competitive balance correlates with the attractiveness of the game.

It was concluded that **the most important factors** to make football games more attractive are competitive balance (33%) playing with a higher-quality team (23.4%) and the presence of fans in the stadium (22.9%). On the other hand, the factors considered less important were hiring renowned players (29.3%) and investing in young players (26.8%).

Regarding **the channels** which the respondents use to watch football games 88.78% use frequently (41.95%); occasionally (30.73%) and always (16.10%) television. While 62.92% of the respondents watch football occasionally (34.63%); frequently (23.41%) and always (4.88%) on other media (smartphone, tablet, PC). Even tough, the respondents have seats at the stadium, 96.3% still watch football games on television frequently (48.15%); occasionally (27.78%) or always (20.37%). On the other hand, respondents without a season ticket show a lower tendency to watch football games on television (86%).

Both respondents who have a seat at the stadium and those who do not, watch the games less often through other channels (smartphones, tablets, PC), -22.23% and -31%, respectively.

The factors that make respondents prefer the TV box over the others are the image quality, and the screen size (70.81%). Moreover, the fact that it is practical and that there is greater freedom to choose content is also considered a critical factor of choice. Regarding the other media (smartphone, tablet, PC) **the determining factor** is the fact of being practical (58.55%). Additionally, the consumer having the freedom to choose the content (48.79%) and greater mobility (43.91%) is also important.

About the **subscription** to **premium sports channels**, the number of respondents that have and do not is balanced, since 49.76% do and 50.24% do not.

Among those who own a Portuguese premium sports channel, 66.67% would choose to watch the game through an **OTT model** instead of a premium TV channel and 32.4% consider the OTT model to have no disadvantages. However, 28.4% consider the need for an internet connection to have access as a **disadvantage** and 10.8% identify as a drawback not having all content on the same platform. When analysing the percentage of respondents who have a season ticket and who have a

subscription to premium sports channels, it was concluded that 68.52% have both a season ticket and a subscription. Regarding the **subscribed channels**, 41.18% of respondents have Sport TV + Eleven Sports; 26.47% have Sport TV + Eleven Sports + BTV; 16.67% have only Sport TV and 6.86% have only Eleven Sports. Regarding the **value of the subscription packages** of the respondents, 54% pay more than 30€ and 36% pay between 16-30€, being these values where the highest percentages are registered.

Of those respondents with a subscription, the predisposition to pay a higher price so that the league would become more competitive is equalized between no (43.14%) and yes if the football practice were of a higher level (42.16%).

When asked if they would be **willing to pay for one or more subscriptions** to watch Portuguese first-division football games if they were broadcast on different channels, 39.81% answered no, 34.95% yes but the price would have to decrease, and 20.39% would only be willing to pay for the channels that broadcast their club's games.

Of the respondents who have a subscription, it can be stated that 86.27% have an income between 1250-2000€ (26.47%) or over 2000€ (59.80%).

In contrast, more than half (56.95%) of the respondents who do not have a season ticket, do not have a subscription to a sports premium channel. Of these, 59% (61) would not be willing to pay if the league was more competitive and 28% (29) would only be willing to pay more if the football played was of a higher standard.

Of those who do not have premium sports channel subscriptions, approximately 62% resort to online stream and account sharing; 47% watch the games at a relative/friend's home; and 39% go to a coffee or restaurant.

Regarding the channels to watch the games, 68.9% are willing to watch football through an OTT model. Regarding this model, 39.81% consider that there are no disadvantages concerning this channel, however, 30.10% point out as a disadvantage not having all the contents available on the same platform, and 22.33% the fact that internet is required to have access. When asked about the

reasons why respondents would subscribe to a Pay-TV channel instead of channels through an OTT model, 53.4% would subscribe only if the price was more attractive, 35.92% if they had access to specific content (appropriate to their interests) and 13.59% if the price was attractive and they had access to specific contents (appropriate to their interests). Regarding access to foreign league content, 71% of respondents without premium channels are not willing to subscribe. However, 29% are the European competitions and the Premier League, the ones they would be interested in (61.57%).

Concerning the illegal practices, piracy is practiced by 36.27% of respondents who own premium channels and by 66% of those who do not subscribe to sports content channels. That said, it was concluded that regardless of whether respondents have premium channels or not, 105 resort to piracy, i.e., more than half (51.2%).

The most used illicit channel to watch the games are online streaming (95.59%), account sharing (38.24%), and IPTV (22.06%).

Regarding the VPN service, only 21.90% use it mainly to protect their connection (65.22%). The main reasons that lead most of the respondents to resort to illegal ways are the price and the format of the available subscription packages. It was concluded that if new packages were made available, 68.57% of respondents were willing to purchase but if the price decreased, 19.05% only if it was in an OTT model, and 10.48% would not purchase.

Survey's insights VS EY's report[9]

According to the survey results previously analysed, most of the respondents consider that the competitive balance is related to the attractiveness of the game. Right from the start, if the league became more competitive as it is stated in the EY report (2021) as one of the reasons for collective bargaining being the increase of clubs' investment capacity, sport competitiveness and quality of football matches, there would be more people interested in watching the matches. As a consequence,

[9] Estudo Internacional sobre os Direitos Audiovisuais Desportivos (2021)

the clubs' revenues would increase. However, almost half of the respondents would change their answer if the competitive balance resulted in a lower football level. That said, there is no scientific basis that proves that competitive balance means higher quality in the show presented, hence, the argument that collective bargaining will attract a greater number of fans and allow a greater volume of revenue is not certain, and this uncertainty is increased by the survey's answers.

Another reason given for collective bargaining power was to generate a higher sales value compared to individual bargaining. Here, one can consider that due to greater competition on the demand side (through other ways of distributing the games, such as through the OTT model) it would allow clubs a greater bargaining power. However, the existence of greater competition is also uncertain due to the fact that the operators are shareholders of the only channel that allows watching all the Portuguese I league games (except the home games played by Sport Lisboa e Benfica). Based on the data from the survey, if higher sales value is related to the consumers' willingness to pay higher prices to watch the games, it is possible to state that more than half of the respondents with premium channels pay a subscription package value higher than 30€ and, when asked if they would pay more if the league became more competitive, almost all of them said "no" or "yes, if the league would become more competitive". Furthermore, the respondents that have premium channels have an income between 1250-2000€ or more than 2000€, being these values well above the minimum wage and the national average wage. Moreover, from the respondents that do not have a premium sport channel, 59% would not be willing to pay if the league was more competitive. That being said, this argument presented as one of the reasons for collective bargaining to happen, is also considered not to have sufficient basis to expect a higher sales value.

Another argument used in favor of collective bargaining is the greater ability to fight piracy. At the same time, it is not explicit about how it would reduce the use of illegal channels effectively. It is implied that this decrease would result from the growth of competition on the demand side and the reduction of prices. This, can lead to the possibility of having different packages available and aligned to the consumers' needs. However, in our view, increased competition is underlying an

increase in the price of broadcasting rights. For the rightsholders companies to make a profit they need to monetize their costs and raise the packages' prices to the end consumer is a potential solution. However, more than 2/3 of the respondents who resort to illicit channels state that they would only pay to have access to the games if the price decreased.

To conclude, we consider that the statement "the collective bargaining is one of the main pillars of financial sustainability of clubs" (EY Report, 2021), reveals some concerns about its applicability.

4.3.Qualitative research: Industry Experts

4.3.1. Main findings

Jorge Pavão de Sousa managing director of Eleven Sports considers that the implementation of a centralized model is beneficial and implies a restructuring of football revenues as a whole. He is of the opinion that a revenue-sharing scheme is needed between the big three and the others. In addition, he puts as a possibility the need to redesign the Portuguese league, which is composed of fewer clubs and has a distinct competitive system, giving as an example the Dutch league. Also, he believes that one of the limitations is the term of the contracts and that collective bargaining will probably only make sense if they are long-term and attract foreign buyers.

Regarding Eleven Sports' position in the Portuguese market, the interviewee stated that the channel is interested in entering the market and that they have already expressed it. However, he identifies as a strong limitation the fact that there is the consortium and the operators, since they are Sport TV shareholders. The CEO of Eleven Sports justifies this limitation by the fact that operators have several Sport TV subscribers, because there are Sport TV customers who have been subscribers for a long time and who pay more than 40€ (representing 25% of customers). Hence, operators have no interest in penetrating the bundle Sport TV (at the current price) + Eleven because they are reducing margin and thus, revenue. Also, Jorge Pavão de Sousa identifies Sport TV as the operators' problem, since, they have every interest in increasing the penetration of premium content in their base, giving the example of doing upselling or cross-selling with Eleven's customers. Eleven Sports gives

incentive for operators to encourage X number of customers to subscribe, and by doing this, Eleven is dismantling the model, however it means a loss of revenue for Sport TV as they had to reloyalize customers at a price point. Additionally, he highlighted the economic imbalance that exists, since when Eleven Sports entered the market Sport TV was losing money, which is problematic because Portuguese football went from being worth 80 million to 180 million. That said, the CEO of Eleven Sports points out as a solution the restructuring in relation to the structure, this means, the operators become distribution platforms and must look at the remaining Sport TV competitors, which implies, once again, having to leave the shareholder structure.

Another topic talked about was piracy, which the interviewee considered of extreme importance and with a great negative impact on this industry. He considers that the piracy culture is big in Portugal, giving us the example that when Benfica plays in the Champions League about 500 to 600 thousand illegal accesses are detected. Hence, this leads to losses in the value chain. In his opinion, one of the reasons for this to happen is the fact that operators do not act against it, and he points out as a solution the application of high fines and permission from the public ministry so that if the operators discover cases of piracy, they can send the site down and inform the IP of these people so that it is possible to charge progressive fines. Another of the reasons given was the fact that access to premium content in Portugal is extremely expensive, where it is paid more to have access to BTV + Eleven + Sport TV than to the operator. In Portugal and based on the average salary (1300 euros), there is a ratio of 2.8%, and 4.4-5% in relation to the minimum wage, to have access to premium sports content. These values are 4 times higher than in Spain and 6 to 8 times higher than in other European countries. Furthermore, he states that the launch of BTV has led to increased access to illegal channels.

In his opinion, operators do not want to act in an integrated way because they do not want to lose margin, however, he states that they are not considering that the penetration, in 2012, of premium content channels was higher (where 18-20% corresponded to premium football content) and that currently, it is approximately 11% (which sports content corresponds to 7-9%). The cause of this

decline, for the director of Eleven Sports, is related to piracy since people continue to watch the same amount of football. Another cause of the increase in piracy pointed out was the fact that sports now compete with global platforms. If a family has a monthly income of 1300€ gross and pays 120-140€, this means that the share of the wallet is 8-10%, which is well above the European average. One of the practices being talked about nowadays is account sharing, however, he considers that it is better than piracy since there is always someone who pays. That said, he prefers that what was done in other markets happen, where the strategy consisted of one person paying and 4 people having access to that account and then after 2/3 years it goes from 4 to 2. Here, 2 users would be left out, but as they would already be addicted, they would end up joining. To solve this problem, the director of Eleven is of the opinion that piracy is a process of cultural education and that there are cultural processes associated with educational processes that can lead to the transformation of behaviour. Moreover, he believes that this practice will only be solved when the rightsholders such as UEFA and FIFA, realize that they have to be part of the solution. Nowadays right holders are not worried about the situation because of the existence of companies such as Sport TV, Eleven Sports, Dazn, and so on.

Finally, we focused on the topic of the growth of the OTT Model. Eleven Sports' OTT park grows in the summer, where it represents about 20% of subscribers. Of the 300,000 subscribers (total consumption) 7% of min correspond to viewing on a smartphone/tablet while 96% of the min corresponds to TV. Moreover, he considers one of the big challenges the fact that not only 9.5%/10 people in Portugal cannot watch a game in its entirety on their smartphone, but also because of the top 5 channels people watch, it is probably concentrated on view-in-time, being a big limitation for live sports and sporting events.

5. Situation Analysis

5.1. Assumptions and explanation of the financial model

Along our thesis, we have defended that the most probable scenario with the centralization of TV rights in the two main divisions of Portuguese football, is that the so known 'Big Three' (and to some extent 'Big four' if we include SC Braga) is most likely to lose money when comparing to the current deals that were signed previously, with the remaining teams benefitting. Facing that scenario and based on some arguments that we have discussed before (Servir o Benfica, 2022), we did a model to predict how many points would be lost and gained by Portuguese teams in UEFA competitions. The choice of linear regression16 was based on previous knowledge that we acquired on core finance courses, since it is a very popular method in finance to predict value of financial instruments such as stocks or bonds. To build our model, we used the UEFA points that clubs obtain for their participation in international competitions as the dependent variable, since it is the variable we want to predict. These points are according to the rules in UEFA's official website (UEFA.com, Club coefficients: UEFA coefficients) where a win is worth 2 points, and a tie 1 point, also other points are given for qualification to group stage and knockout stage, and they are relevant since they give placement to the leagues on UEFA's rankings which determines the number of places that each league has to European competitions (which is very important in Portugal, since revenues from participating in UEFA Champions Leagues are very important for Portuguese clubs when comparing with clubs from the top 5 leagues in Europe). For the independent variable, we have decided to use two approaches as measures of investment by the clubs in their squads, we used in a first approach the total annual salaries of the squad (Capology), and in a second approach the annual squad value (Transfermarkt). Along the many regressions we have done, we used data of clubs from different leagues, different international competitions, and different seasons also, to incorporate these different factors in our model, where we used dummy variables to differentiate them. A dummy variable can take the value of 0 or 1, and it serves the purpose of categorizing subgroups in the sample of our study, meaning

that when the dummy variable is 1, it means that the observation belongs to the referred subgroup, when it is 0 it does not belong to that subgroup. It's also important to mention, that when dealing with dummy variables on a linear regression, we must be aware of the "dummy variable trap" and use n-1 dummies for the n subgroups that we have in our sample, or else the regression will fail (Forecasting: Principles and practice (2nd ed)). "The Dummy Variable Trap occurs when two or more dummy variables created by one-hot encoding are highly correlated (multi-collinear). This means that one variable can be predicted from the others, making it difficult to interpret predicted coefficient variables in regression models. In other words, the individual effect of the dummy variables on the prediction model cannot be interpreted well because of multicollinearity." (Karabiber). In our sample, this happens for two categories, the domestic leagues, and the season, since these two categories are exclusive, meaning that one observation cannot be in two domestic leagues or two seasons at the same time, we must remove one of these dummies to avoid corrupting our linear regression. Then, we must decide which dummies to remove, knowing that "The interpretation of each of the coefficients associated with the dummy variables is that it is a measure of the effect of that category relative to the omitted category." (Forecasting: Principles and practice (2nd ed)). Based on that, we've decided to remove the dummy variable for the Portuguese league (Primeira Liga), and for the most recent season (2021-22), as we deemed the best fit for comparison in our analysis.

5.2.Analysis of the financial model

5.2.1. Capology: Salaries approach

The source of all our data for the salaries approach was the website "*Capology*", where we've obtained the available data for the free version to the public. We've extracted the total annual salary of all the clubs available in that version of the website for the last three seasons of international competitions, meaning, 2019/20, 2020/21 and 2021/22. We've obtained a total of 190 observations for those 3 seasons (176 if we exclude the leagues where only the latest season, 2021-2022 is

available), where we had data about all the clubs of the European top 5 leagues, and of most of the remaining leagues in the top 10 ranking of UEFA, such as the Portuguese league, Dutch league, Belgian league… We've filtered our data according to different criteria to replicate different scenarios so that our model could be as complete as possible. For that reason, we've calculated 6 multiple linear regressions. We started with a linear regression for the whole data of the 3 seasons merged into a single data set, where we only considered teams that have participated in UEFA's two main international competitions, the Champions league and Europa league, we decided to exclude UEFA Conference league since it's a new competition with its first edition in the 2021-22 season, thus, there was no way of comparing with the two previous seasons. This regression had a total of 155 observations (Exhibit 33). We then proceeded to filter the data to only account for teams that participated only in the Champions League over those 3 seasons, excluding teams that dropped to the Europa League and calculated another linear regression based on those filters that accounted for 58 observations (Exhibit 34). Since the latter accounted for points of teams that reach the knockout stages of that competition, we wanted to isolate our model from those points so that we could predict if Portuguese teams would make it through the group stage or not, that's why we did a multiple linear regression just for the Champions' League Group Stage and not for the other two UEFA's competitions since the revenues of reaching the latter phases of these two competitions is much less significant when compared to the Champions League. Even more, we must consider that they have a bigger weight in Portuguese teams, since as we've discussed throughout our thesis, the domestic revenues of the Portuguese League are smaller than the ones of the top 5 leagues in Europe. Taking that into account, we decided to use a filtered data set of teams in the Champions league now including all the teams in the group stage that we had information about, even the ones that dropped to the Europa League, and recalculate the UEFA points using only the performance of each team in the group stage considering UEFA's criteria for the rankings (UEFA.com) and not for the competition itself (in the competition a win is worth 3 points and a tie 1 points, however for the rankings of the

clubs across seasons, a win is worth 2 points and a tie is still worth 1 point). We ran a linear regression that accounted for 72 observations (Exhibit 38). We also ran 2 other regressions for the other 2 UEFA competitions, one for Europa league with 66 observations (Exhibit 35) (we did not considered for the 2021-22 the teams that dropped to the UEFA Conference League following the same reasoning as for the UEFA Champions League) and one for Conference league with 22 observations (Exhibit 36) (Where we have considered teams of the qualification playoff since it gives UEFA points contrarily to the other two competitions, where the team drops from one competition to another in case of failure of qualification with the points being awarded according to the international competition where the team is present and not where the team is qualifying to). In both cases we considered teams that dropped from one competition to another, either from Champions league to Europa league or from Europa league to Conference league, we only considered relevant isolating the points for the Champions league regression, since it's the most important international club's competition in every aspect, financial, sporting and prestige also. The reality of international competitions for Portuguese clubs and other clubs with similar characteristics is very different from the reality of big wealthy European clubs such as the likes of Real Madrid, Manchester City, PSG in those competitions… For that reason, we decided to filter our data set to exclude teams with high annual salaries by capping the annual total salary at 100 million euros, we then ran a linear regression on those observations. This regression had a total of 111 observations (Exhibit 37).

*"The **intercept** (sometimes called the "constant") in a regression model represents the mean value of the response variable when all of the predictor variables in the model are equal to zero."* (*How to interpret the intercept in a regression model (with examples)* 2021). In our model the interpretation of the intercept is the mean value of our omitted variable when all the other variables are 0, so it would be the average UEFA points of a Portuguese club in a season whilst investing 0€ in salaries, according to the context of the regression. Regarding the **slope** of the regressions, the interpretation is the following, when a Portuguese club increases its annual salaries by 1 million euros

the UEFA points increase by the value of the slope. Regarding the dummy variables, they represent the difference in UEFA points between the subgroups and the omitted variable, according to the context of the regression. To give an example, if the slope is 0.03, an increase of 10 million in total annual salary by a Portuguese club would lead to an increase of 0.3 UEFA points. If the dummy variable for the Premier League is 5.5 it means that in average, Portuguese clubs make 5.5 less UEFA points than English clubs holding all other independent variables constant.

Regarding the results obtained, we can start by discussing the results of the regression of the merged data sets of all three seasons and all international competitions. We have a slope of 0.03 and an intercept of 11.2 (Exhibit 33), this means that in average holding all other variables constant, if Portuguese teams invest 0€ in salaries they are expected to have 11 UEFA points in international competitions according to the context of the 2021-2022 season, and for every million invested in salaries this value increases by 0.03 points. This shows that points in European competitions are expensive for Portuguese teams, this has to do with the competition that they're facing, since they are facing European clubs with strong financial backing that invest strong amounts in their squads, so to give a more realistic scenario to our model, we decided to filter out these European 'sharks' to only consider the more realistic competition for European points of Portuguese clubs. The results of this new regression (Exhibit 37) showed us a smaller intercept of 10.6 which means that in average the Portuguese teams and clubs of similar dimension have less UEFA points comparing to the whole data set which includes top European teams according to the context of the 2021-22 season, which makes sense since those are the teams that push the intercept to higher values since they are more likely to score a lot of UEFA points, however the slope increased to the triple of the previous one, to 0.09, which means that European points are 3 times cheaper when we do not consider European 'sharks' in our data set, this has to do with the competition being more even with the reality of Portuguese clubs and other clubs of similar dimensions. The regression of the UEFA Champions League (Exhibit 34) has a very similar slope to the regression of the whole merged data, with 0.33. Furthermore, the

slope of the regression of the group stages of the UEFA Champions League (Exhibit 38) is very small, at 0.014, which shows how precious and valuable points are in the group stages of this competition, making it very hard to make it into the knockout phases, which might explain why the reward is so high, with the huge financial prices for reaching the knockout phases, much higher than the other two competitions. Also worth to mention, that the intercept is 6.25, which translates to 6 UEFA points according to the 2021-22 season, and if we do the conversion using 3 points for the wins it translates to either 2 wins and 2 ties or to 3 wins, so around 8 or 9 points using the point system of the group stage, which guarantees Europa League football at least, but often it also guarantees a place in the knockout stages of the Champions League (Hart & Esteva, 2014). Considering this coefficient is the average for Portuguese teams when they invest 0€ in salaries, we can clearly see that Portuguese teams outperform in the Champions League, by performing well reaching the knockout phases frequently. We did two more regression for the two remaining international competitions, UEFA Europa League (Exhibit 35), and UEFA Conference League (Exhibit 36), and the results obtained show us clear evidence that, according to our model, UEFA points are cheaper in these two competitions with higher slopes, 0.1 and 0.31 respectively. An increase of 4 times when comparing the Europa League to the Champions League, and 12 times when considering the Champions' League group phase only, and an increase to more than the double when comparing the Conference League to the Europa League. This means that per million of salaries invested, Portuguese clubs would get more UEFA points in these two competitions rather than in the Champions League, which might explain why the Portuguese League was recently surpassed by the Dutch League in UEFA's ranking (*Países Baixos ultrapassam Portugal (Tal Como Esperado) (UEFA)* 2022), even though they usually have less teams in the Champions League than Portugal. The explanation for this has to do with the competition that Portuguese clubs face in each of these competitions. Even though they overperform in the Champions League, it is hard to progress further than the first phase of knockout stages since the European 'sharks' that we talk about have strong squad backed by huge investments that impose

a huge obstacle for Portuguese clubs to progress, obviously in some seasons there are some exceptions with an even bigger over performance by Portuguese clubs, since as we have seen previously in our thesis, high financial capacity does not always translate into high sporting performance. On the other side, the competition in the Europa League and even more in Conference League is more adequate to the financial reality of Portuguese clubs, which would most probably help them to progress to the latter stages of the competitions, earning more UEFA points than in the Champions League. However, the prestige and financial revenues of the Champions League are crucial factors for clubs to be successful international-wise, thus the debate remains between the results of our model and the reality of Portuguese clubs.

We did a simulation using our model where we used the regression of each specific competition where the corresponding club played in the season 2021-22 to estimate the UEFA points with and without the changes from the change in TV revenues due to the proposed model for the centralization of TV rights (Servir o Benfica, 2022). We made two important assumptions to our analysis; we calculated the changes in TV Revenues according to the same method used for the 18-19 season in the "Servir o Benfica" document. We adapted the Performance and Social Impact factors (Exhibit 29) according to the classification and home stadium attendance of the 2021-22 season (Liga Portugal, *Estatísticas*). After those calculations, regarding the 6 Portuguese clubs that ended in European spots on the 21-22 edition, we have that FC Porto, Sporting CP, SL Benfica, and SC Braga lose 20.2, 22.9, 21.7 and 3.6 million € accordingly, and Gil Vicente and Vitória SC gain 7.5 and 8.9 million € accordingly in TV revenues with the new proposed model for the centralization scenario (Exhibit 30). Furthermore, we assumed for simplicity that those changes would affect directly the amount invested in salaries when calculating the new UEFA points according to our model. The conclusions that we have taken is that, for the top 4 clubs in Portugal the impact has been negative, with FC Porto, Sporting CP, SL Benfica, and SC Braga loosing 0.66, 0.74, 0.71 and 0.36 UEFA points, accordingly, turning into a total of 2.47 UEFA points lost by these four teams. On the other

hand, the two remaining European spots in the 2021-22 edition of the Portuguese league, which were awarded to Gil Vicente and Vitória SC accordingly, we have that those clubs benefitted from the changes by gaining 2.37 and 2.8 UEFA points, accordingly, amounting to a total of 5.18 UEFA points (Exhibit 30). The overall result for the Portuguese clubs is positive, with a net gain of 2.71 UEFA points. If we apply UEFA's method of calculation for Portugal's association coefficient, by dividing that gain by the European available spots for Portuguese clubs, we see that Portugal's association UEFA coefficient increases by 0.45 points (Exhibit 30).

So according to our model, using the annual salaries as the independent variable, we get to the conclusion that predicting the dependent variable, which is the UEFA points of all the Portuguese clubs that have achieved an European spot following the conclusion of the latest edition of the Portuguese league, the 2021-22 season, the top 4 clubs in Portugal loose UEFA points due to the negative impact of their TV revenues loss in decreasing their investment in salaries, however this loss is offset by the gains in UEFA points of the two other clubs that benefit from their TV revenues gains that increase their investments in salaries. The overall effect is positive for the Portuguese league's performance in European competitions according to our model using salaries as the variable, since this coefficient determines the country's football association place in UEFA's ranking, which is important to define how many European spots (either through direct entry or qualification stages) the domestic league will have for the following season, thus a gain could lead to an increase in the number of spots (or in the number of direct entries).

5.2.2. Transfermarkt: Annual Squad Value approach

In this approach, the source of our data was the website "*Transfermarkt*". *Transfermarkt* is a German-based website where we can find football information such as results, statistics, transfers news, forums, and the transfer market value of football players, which is the main feature of the website and the "game changer" when compared to other football websites.

The website started in May 2000, with the tracking of players and transfers of *SV Werder Bremen*, and after that, due to the success of the concept, it expanded to other teams. As it was said before, in the beginning the focus of the website was football players, but gradually expanded to include managers, agents and even other staff. The English-language version was out in 2009 and by now the website have a specific version for 23 countries, where we can find more easily news and content related with the specific country.

Focusing on the transfer market value of football players, the website uses a proprietary algorithm to estimate the market value of players based on several factors, including their age, position, performance in recent games, potential financial return, and experience. The algorithm also considers the player's contract situation, the level of competition they play in, and any transfer fees that have been paid for similar players in the past. *Transfermarkt* updates the transfer market value of players regularly, so they are a good source of information on the latest trends and developments in the transfer market. However, the regularity of those valuations is different between leagues. For example, Premier League players have a much more accurate estimate for their transfer market value when compared to players from less prestigious leagues since their value is revised much more frequently.

Even though we consider that the annual salary approach is the one that replicates better where Portuguese teams will be impacted by the change in revenues due to the centralization, we considered annual squad value as a good alternative, since we don’t have the problem that we had regarding data limitation. Furthermore, since we’re doing a regression model to analyze the impact of financial capacity on the performance of teams in international competitions, is also relevant to refer that the better and more experienced players are, the bigger their salaries will be, while annual squad value variable may be tricky due to the fact that players’ actual quality may not be as good as their transfer market value or a squad with a high number of players tends to have a higher annual squad value, not demonstrating the real squad value in quality.

Individual Part – Miguel Pereira

Our first step was collecting the annual squad value of clubs that played in international competitions for the seasons of 2020/21 and 2021/22 (including clubs that played the playoff of Europa Conference League) from *Transfermarkt*. We've obtained 198 observations, where 80 are from the season 2020/21 and the remaining 118 are from 2021/22 (this difference happens because 2021/22 was the first season of Europa Conference League). Since with *Transfermarkt* we don't have data limitation regarding our variable, we won't have a sample but actually the population of our study. We've filtered our data according to our criteria to replicate different scenarios. We've ended up with 7 multiple linear regressions.

For the first multiple linear regression, we've filtered our data to only account for teams that played in Champions' League Group Stage (Exhibit 43) over the two seasons to predict if Portuguese teams make it through next round or not. According to UEFA.com, the average points to reach round of 16 is at least 10.1 points in the group stage, the equivalent to 7 UEFA points (without counting with the 4 points teams get for reaching the group stage). In this data set we used UEFA points that clubs achieved during the group stage only. In this regression we accounted for 64 observations. The reason why we did a multiple linear regression just for Champions' League Group Stage is the same as for *Capology* approach.

Then we've filtered once again all the observations to only account for teams that played in Champions League (Exhibit 40) over both seasons, omitting the teams that dropped to Europa League (3rd place of each group) since we just wanted to consider how many points a Portuguese club is expected to do just in that specific competition. We accounted for 48 observations in our multiple linear regression.

For Europa League (Exhibit 41) we did the same filtration that we did for Champions League for the season of 2021/22, i.e., excluding the 8 teams out of the 32 that dropped to Europa Conference League in the group stage. Since in 2020/21 there was no Europa Conference League, Europa League had in the group stage 48 teams. We didn't include the 8 teams that dropped from Champions League

following the same reasoning as we did not for Champions League regression (Exhibit 77). We ran a multiple linear regression that accounted 72 observations.

For Europa Conference League (Exhibit 42) we just collected data from 2021/22 since was the first season this competition was held. We considered both group stage clubs and the clubs that did not passed the qualification playoff (explained in *Capology* approach). In this regression we had 54 observations.

As it was already said, the "Big-5" leagues usually have wealthier clubs than Portuguese league and others with similar characteristics, which lead to a very different reality. For that reason, we did 3 more multiple linear regressions, 1 more for each competition, where we capped the annual squad value. For Champions League (Exhibit 44) and Europa League (Exhibit 45), we capped the annual squad value by the average, which is €494.4 million and €172.34 million respectively. For Europa Conference League (Exhibit 46), since there were just 5 clubs with much higher annual squad value in comparison with the others, we capped the annual squad value by the value of the 6th higher value, which is €115.90 million. We obtained 3 multiple linear regressions that accounted 25 observations for Champions League; 49 observations for Europa League; and 49 observations for Europa Conference League.

In this approach to our model, the **intercept** represents the average UEFA points a Portuguese club do in 2021/22 season whilst having an annual squad value of 0€, according to the context of the regression. Regarding the **slope** of the regressions, we can say that when a Portuguese club increase its annual squad value by 1 million euros, the UEFA points are going to increase the value of the slope. Regarding the dummy variables, they work the same way as in *Capology* approach. To give you an example, if the dummy variable for the Premier League is -3.43 it means that in average, Portuguese clubs make more 3.43 UEFA points than English clubs holding all other independent variables constant.

Individual Part – Miguel Pereira

Considering the results obtained, we can look firstly for the regression of the Champions' League Group Stage (Exhibit 43). The intercept is 3.59 and the slop is 0.008. This means that in average, holding all other variables constant, if Portuguese teams invest 0€ in annual squad value, they are expected to do 3,59 UEFA points in Champions' League Group Stage, and for every 1 million euros they invest in their annual squad value that value increases by 0,008 points. This shows that points in Champions' League Group Stage UEFA points are very expensive for Portuguese teams. This happens because, in Champions League, Portuguese clubs compete against top tier teams, with annual squad values much higher. For example, using our multiple linear regression and "Goal Seek" in Excel, we have founded that for the season of 2021/22 it is expected that a Portuguese club must have at least an annual squad value of 451.67 million euros to reach the average 7 UEFA points needed to reach the next stage of the competition (UEFA.COM, 2015). Since both SL Benfica and Sporting CP reached the next stage with much lower squad values (310.18 million euros and 337.73 million euros, respectively), our model proves that Portuguese clubs overperformed in 2021/22, which has been something recurrent in other seasons.

Looking now individually for each competition, first we have two regressions for Champions League. For the first regression (Exhibit 40) we ran, we got a slope of 0.019 and an intercept of 13.39. We did a second regression for Champions League (Exhibit 44), where we have put a cap in the annual squad value, the slope was 0.026 and the intercept 11.62. This makes sense since in this data set we excluded the big "sharks", whose normally are the ones that make more UEFA points, so it is natural to have a lower intercept and a higher slope (if Portuguese clubs are competing with clubs with a more similar squad value, the points are going to be cheaper).

We can observe the same relationship in the regressions for Europa League (Exhibit 41 and 45) and Europa Conference League (Exhibit 42 and 46) as the one we observed for Champions League.

The first regression we ran for Europa League (Exhibit 41), the slope was 0.009 and the intercept 10.85. It was expected that the slope of this regression was bigger than the ones in Champions' League regressions (Exhibits 40 and 44), but this may had happened because we can often see big teams shifting this competition to a secondary priority to focus their resources on their main priority, which is their domestic league (to be able to play in Champions League next season) thus underperforming in Europa League. Nevertheless, in the regression where we have capped the annual squad value (Exhibit 45), the slope was 0.056 and the intercept 3.92. The reasoning is the same as the one for Champions League.

Finally, for the first regression of Europa Conference League (Exhibit 42), we obtained a slope of 0.067 and an intercept of 0.60. This low intercept is because our data set includes teams that just reached the qualification playoff, where the maximum points they were able to get was 2.5 UEFA points. For the regression with the cap (Exhibit 46), the slope was 0.081 and the intercept 0.20.

Comparing all competitions, like we observed in *Capology* approach, the slope increases as we decrease the level of the competition, which makes sense. A Portuguese club needs to invest less money in its annual squad value in Europa Conference League to get the same number of points as it would need in Champions League.

We did a simulation as we did for the other approach, with the exact same assumptions, being the only difference the regressions that we used, since our independent variable is different. For this simulation we used the regressions for each competition without the cap (Exhibit 40, 41 and 42), excluding only the clubs that dropped to other competition after group stage. Even though we consider that for Europa League we obtained a more reasonable slope for the regression (Exhibit 45), we believe that makes more sense to use regressions that include all teams, since Portuguese clubs may play against any team, not just the ones more similar them.

Furthermore, when we kept the same assumptions as the *Capology* approach, we assumed for simplicity that the losses/gains on revenue due to centralization on Portuguese clubs will directly

impact the annual squad value, this is, that amount will impact on how much will they invest/disinvest in transfers. In our simulation the top 4 clubs in Portugal lose revenues, so their impact on UEFA points has been negative, with FC Porto, Sporting CP, SL Benfica, and SC Braga loosing 0.39, 0.44, 0.42 and 0.03, respectively. On the other hand, Gil Vicente, and Vitória SC gain revenues, so the impact has been positive, gaining 0.50 and 0.60 UEFA points, respectively (Exhibit 38). The overall result for the Portuguese teams is negative, with a net loss of 0.18 UEFA points. If we apply UEFA's method to calculate Portugal's association coefficient, we see that the value decreases by 0.03 points (Exhibit 38). In conclusion, and according to our model, centralization had a negative impact for Portugal's association using squad value as the investment measurement variable, , since this coefficient determines the country's football association place in UEFA's ranking, which is important to define how many European spots (either through direct entry or qualification stages) the domestic league will have for the following season, thus a loss could lead to a decrease in the number of spots (or in the number of direct entries).

5.3. Statistical limitations and choice of the best approach

Now that we have made the practical conclusions about both approaches of our model, we will briefly describe the statistical limitations of both approaches and make a conclusion about the model. We'll start with the *Capology* approach. In statistics, the p-value allows us to prove if the variable observed is statistically significant or not (meaning if it is different from 0 or not). In our case, since most of our variables are dummy variables that take the value of 0 by default, the p-value of those variables becomes irrelevant, for that reason we'll only investigate the p-values of the intercepts and the slopes of our regressions. The overall conclusion is positive, with only one intercept (UECL 2021-22) and one slope (UECL 2021-22) of our 6 regressions having high p-values, meaning that those variables might not be statistically significant. Regarding our approach with *Transfermarkt*, we consider that the p-values aren't relevant since we use the whole population of our observed data

instead of a sample. “The adjusted R-squared compares the descriptive power of regression models that include diverse numbers of predictors. (…) In finance, an R-Squared above 0.7 would generally be seen as showing a high level of correlation, whereas a measure below 0.4 would show a low correlation. This is not a hard rule, however, and will depend on the specific analysis.” (Fernando, 2021). Regarding our *Capology* approach, only 2 regressions out of the 6 we’ve made have an adjusted R-squared inferior to 0.4, with the remaining ones with values between 0.4 and 0.6, which is an acceptable goodness of fit. Regarding our *Transfermarkt* approach, despite having 3 adjusted

R-squared that aren’t fit, being inferior to 0.4, we have two adjusted R-Squareds that are deemed as very good being above 0.7, the remaining 2 are between 0.5 and 0.6 which is also a good measure. Furthermore, the average adjusted R-squared of the *Transfermarkt* approach is higher than the one of *Capology* approach, with with 0.49 against 0.46 accordingly, combining that reason with the data limitation constraint of the *Capology* approach, we conclude that the *Transfermarkt* approach of our model is the most suitable for our overall conclusion.

On a final note, one should be careful in interpreting these coefficients as they are mere correlations and may not reflect causal relationships between the variables under analysis. Also, pvalues in some cases lead as not to be able to reject the null hypothesis that there is no correlation between the variables.

6. Conclusions, Limitations and Future Research

Conclusions

Based on the analysis performed, we imagined 3 viable scenarios to summarize the possible effects of collective bargaining in the competition for football broadcasting rights, and its impact on the financial structure of clubs. We defined our focal issue as - What will be the impact of collective bargaining on competition in the telecommunications market regarding the broadcasting of football matches? - and the time horizon 2028/29.

For the conception of the scenarios we identified as key uncertainties, the impact of the OTT model and the financial structure of the clubs. The first one refers to the way fans experience the games, as result of an increasing tendency model that challenges the traditional way of watching them. On the other hand, the financial structure of the clubs since it's affected not only by the way the revenue distribution is made through the collective bargaining model, but also for the competition that exists between those interested in acquiring the broadcasting rights of the games. A conservative scenario was created, a neutral one, and lastly, an optimistic one.

In the conservative scenario, the current market values for the broadcasting rights of football games remain unchanged (172 million). The number of consumers (i.e., those who pay to access premium sports content) may decrease due to external context influences and it may consequently, incite the resort to illegal practices. To compensate this decrease, applying higher prices is not viable. Thus, this scenario can lower the premium sporting channels number accesses and lead to a decrease in broadcasting revenues, having even more drawbacks in the clubs' financial structure. Although, if the number of consumers remains equal as it is nowadays, the financial capacity of the big three will be affect as well.

In this scenario, it is difficult for new broadcast models to incorporate the market, since bidders for broadcasting rights would compete for ownership. This may lead to the formation of a cartel and consequently only a few players (the current rightsholders- operators) are able or willing

to pay high prices. This limitation of competition would also have a negative impact on the end consumer.

Another consequence would be the possibility of Portuguese clubs losing points in European competitions due to a lower investment capacity by the clubs that are usually part of them.
Portuguese football may damage its image and discourage foreign investment, thus contributing to the non-growth of the market.

In the neutral scenario, the market value of the broadcasting rights of the game increases in comparison with the current value. Nevertheless, the financial structure of SC Braga, Vitória SC and the big three, continues to be negatively affected.
However, if the league were to become more competitive, (i.e. the games more balanced and with the gameplay levelled up) it may lead to more consumers willing to pay and consequently generate more revenue.

If the League would become the rightsholder and the unique entity to represent all the clubs and to negotiate with the secret licitors in an auction type bid, it could mean a decrease in the power of the Sport TV monopoly. This would give an opportunity for other forms of broadcasting to incorporate themselves in the market, and it would also provide a bigger range of options to the costumers, to fulfill their requirements. Consequently, it might reduce piracy and increase market value.

In the optimistic scenario, the total value of the market is sufficient so that no club would suffer from the implementation of the centralized model. This value would be achieved by rising the competition among rightsholders, allowing to sell rights at a higher price due to the increase of clubs' bargaining power.

This competitive dynamic leads to a greater offer diversity and consequently, allows an adjustment to the consumers' interests and presents them with different price ranges, consequently this could mean a decrease in illegal practices.

One could argue that the Centralization might be beneficial in its overall to the Portuguese league, since with the negative impact of the change in TV revenues according to the *Transfermarkt* approach being so close to 0, and the positive impact of the latter according to the *Capology* approach being more considerable than the former approach, the overall effect would most probably be positive. However, since statistically we see that the *Transfermarkt* approach is better fitted to predict the values, even though the impact is extremely small, we cannot forget that good performances in Champions League are much more important to increase Portuguese League's reputation and notability than good performances in the other two competitions. This last argument is particularly relevant since it will for example impact the value of Portuguese League's TV rights attractiveness in the future and the transfer market value of players (since *Transfermarkt* includes the competition where players are playing as one factor for their algorithm).

Limitations

The limitations of the study were identified in the primary and secondary research, in the realization of the financial model, and in the proposal of a centralized model.

In primary and secondary research, the sample obtained by the questionnaire is not as comprehensive and diverse in terms of geographic location and age, this is due to the fact that the respondents are limited to the scope of the group members. Regarding the interviews, it would have been an added value to have obtained an interview with Sport TV, in order to understand their position and forecasts on the subject under study. It would also have been worthwhile, an interview with one of the Portuguese telecom operators, due to its great influence on the competitive dynamics in this market.

The analysis of the current situation and its comparison with the hypothetical and proposed models is limited by the lack of official and/or reliable information on the contracts currently

employed by the Portuguese League teams. While approximations were used, the correct values would allow for a more accurate depiction of the situation.

Despite the analytical standpoint made, further analysis of the indicators within the proposed distribution models and current models employed by other countries and leagues comes up against the "philosophical" notions of equality and/or fairness, where equality of opportunity and equality of outcomes are put into perspective. Although this paper was, for the most part, focused on the teams themselves, this limitation arises on the sense that fans of the teams with the most support (which, if we consider it to be the Big-3 teams in Portugal) would, most likely, be harmed, while a small percentage of fans that supports bottom-tier teams would benefit from it. Unfortunately, it is not a question that we can answer, and it leaves space for different conclusions.

Future research

A potencial idea for future research would be to understand whether international rights are worth enough that investing in this market to expand justifies the implementation of the collective bargaining model. It would be valuable to investigate the weight of these international TV rights in some of European top leagues such as the English or the Spanish league and use it to compare with the Portuguese situation. Another alternative could be to create a benchmark about the Eastern tendency interest regarding professional football (a huge and fast-growing emerging market, such as the Asian one), and use that benchmark to learn if Portuguese football has or could have a place in that market in the future. Finally, it would also be worth understanding the consequences of this on the OTT model, to comprehend what the advantages and disadvantages are in relation to consumers valuing the "view in time" of matches.

The data manipulation done for the points prediction model in the Squad value approach, was established by convention, using the arithmetic average as a criterion. Instead of using this criterion, to mitigate the effect of major European teams despising Europe League in detriment of their domestic

competitions (to focus on qualifying to the next season of Champions League) a further approach that could be done to filter the data with a better criterion, would be to create a performance ratio. This could be accomplished by dividing the number of UEFA points by the value of the squad and eliminating observations that were underperforming other teams based on that ratio. And finally, calculate a linear regression based on that data set. That would possibly give us a more accurate summary output of the regression, and consequently, a better fitted for the purpose of our study.

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8. Appendix

Exhibit 1: Distribution of Broadcasting Revenues for the Premier League in 2020/21

Premier League | 2020/21 Payments to Clubs

Club Name	Live	UK Equal Share	UK Facility Fees	UK Merit Payment	International Equal Share	International Merit Payment	Central Commercial	Total Payment
Manchester City	27	31,375,697	24,424,705	34,961,500	47,541,599	8,325,500	5,924,232	**152,553,233**
Manchester United	28	31,375,697	25,291,836	33,213,425	47,541,599	7,909,225	5,924,232	**151,256,014**
Liverpool	29	31,375,697	26,158,967	31,465,350	47,541,599	7,492,950	5,924,232	**149,958,795**
Chelsea	30	31,375,697	27,026,098	29,717,275	47,541,599	7,076,675	5,924,232	**148,661,576**
Leicester City	22	31,375,697	20,089,050	27,969,200	47,541,599	6,660,400	5,924,232	**139,560,178**
West Ham United	22	31,375,697	20,089,050	26,221,125	47,541,599	6,244,125	5,924,232	**137,395,828**
Tottenham Hotspur	25	31,375,697	22,690,443	24,473,050	47,541,599	5,827,850	5,924,232	**137,832,871**
Arsenal	24	31,375,697	21,823,312	22,724,975	47,541,599	5,411,575	5,924,232	**134,801,390**
Leeds United	24	31,375,697	21,823,312	20,976,900	47,541,599	4,995,300	5,924,232	**132,637,040**
Everton	24	31,375,697	21,823,312	19,228,825	47,541,599	4,579,025	5,924,232	**130,472,690**
Aston Villa	19	31,375,697	17,487,657	17,480,750	47,541,599	4,162,750	5,924,232	**123,972,685**
Newcastle United	18	31,375,697	16,620,526	15,732,675	47,541,599	3,746,475	5,924,232	**120,941,204**
Wolverhampton Wanderers	17	31,375,697	15,753,395	13,984,600	47,541,599	3,330,200	5,924,232	**117,909,723**
Crystal Palace	14	31,375,697	13,152,002	12,236,525	47,541,599	2,913,925	5,924,232	**113,143,980**
Southampton	14	31,375,697	13,152,002	10,488,450	47,541,599	2,497,650	5,924,232	**110,979,630**
Brighton & Hove Albion	15	31,375,697	14,019,133	8,740,375	47,541,599	2,081,375	5,924,232	**109,682,411**
Burnley	11	31,375,697	10,550,609	6,992,300	47,541,599	1,665,100	5,924,232	**104,049,537**
Fulham	15	31,375,697	14,019,133	5,244,225	47,541,599	1,248,825	5,924,232	**105,353,711**
West Bromwich Albion	11	31,375,697	10,550,609	3,496,150	47,541,599	832,550	5,924,232	**99,720,837**
Sheffield United	11	31,375,697	10,550,609	1,748,075	47,541,599	416,275	5,924,232	**97,556,487**
All figures in £		627,513,940	367,095,760	367,095,750	950,831,980	87,417,750	118,484,640	2,518,439,820

Source: *Premier League*

Exhibit 2: Merit- Based Payments in the Premier League for 1st and last place

National	International	Total	% Total
£ 34 961 500,00	£ 8 325 500,00	£ 43 287 000,00	9,524%
£ 1 748 075,00	£ 416 275,00	£ 2 164 350,00	0,476%

Exhibit 3: La Liga Broadcasting Revenues 2020/21

Source: *LaLiga*

LaLiga Santander

	Income	Obligations
ATHLETIC CLUB	72,2	-6,1
FUTBOL CLUB BARCELONA	165,6	-14,1
REAL MADRID CLUB DE FUTBOL	163,0	-13,9
CLUB ATLETICO DE MADRID, S.A.D.	130,1	-11,1
SEVILLA FUTBOL CLUB, S.A.D.	84,2	-7,2
REAL BETIS BALOMPIE, S.A.D.	59,5	-5,1
REAL SOCIEDAD DE FUTBOL, S.A.D.	66,4	-5,6
LEVANTE UNION DEPORTIVA, S.A.D.	50,3	-4,3
CADIZ CLUB DE FUTBOL, S.A.D.	47,3	-4,0
VALENCIA CLUB DE FUTBOL, S.A.D.	73,3	-6,2
CLUB ATLETICO OSASUNA	49,7	-4,2
DEPORTIVO ALAVES, S.A.D.	51,1	-4,3
ELCHE CLUB DE FUTBOL, S.A.D.	47,3	-4,0
VILLARREAL CLUB DE FUTBOL, S.A.D.	73,3	-6,2
REAL CLUB CELTA DE VIGO, S.A.D.	53,3	-4,5
REAL VALLADOLID CLUB DE FUTBOL, S.A.D.	48,5	-4,1
GRANADA CLUB DE FUTBOL, S.A.D.	52,5	-4,5
SOCIEDAD DEPORTIVA EIBAR S.A.D.	51,8	-4,4
SOCIEDAD DEPORTIVA HUESCA, S.A.D.	46,8	-4,0
GETAFE CLUB DE FUTBOL, S.A.D.	58,5	-5,0
TOTAL:	1.444,7	-122,8

SEASON - 2020/21 -

LaLiga SmartBank

	Income	Compensation for relegation	Income and compensation	Obligations
R.C.D. ESPANYOL DE BARCELONA, S.A.D.	10,4	30,5*	40,9	-0,9
CENTRE D'ESPORTS SABADELL F.C., S.A.D.	5,8		5,8	-0,5
REAL SPORTING DE GIJON, S.A.D.	7,6		7,6	-0,6
REAL CLUB DEPORTIVO MALLORCA, S.A.D.	9,5	9,9*	19,4	-0,8
SOCIEDAD DEPORTIVA PONFERRADINA, S.A.D.	6,0		6,0	-0,5
CLUB DEPORTIVO CASTELLÓN, S.A.D.	6,1		6,1	-0,5
CLUB DEPORTIVO TENERIFE, S.A.D.	6,9		6,9	-0,6
RAYO VALLECANO DE MADRID, S.A.D.	7,4		7,4	-0,6
REAL OVIEDO, S.A.D.	6,8		6,8	-0,6
CLUB DEPORTIVO MIRANDES, S.A.D.	6,4		6,4	-0,5
CLUB DEPORTIVO LEGANES, S.A.D.	9,8	16,1*	25,9	-0,8
GIRONA FUTBOL CLUB, S.A.D.	7,8		7,8	-0,7
REAL ZARAGOZA, S.A.D.	9,4		9,4	-0,8
ALBACETE BALOMPIE, S.A.D.	6,2		6,2	-0,5
UNION DEPORTIVA LAS PALMAS, S.A.D.	8,0		8,0	-0,7
CLUB DEPORTIVO LUGO, S.A.D.	6,2		6,2	-0,5
AGRUPACION DEPORTIVA ALCORCON, S.A.D.	6,4		6,4	-0,5
CLUB DE FUTBOL FUENLABRADA	6,7		6,7	-0,6
UNION DEPORTIVA ALMERIA, S.A.D.	8,0		8,0	-0,7
MALAGA CLUB DE FUTBOL, S.A.D.	7,2		7,2	-0,6
FUTBOL CLUB CARTAGENA, S.A.D.	6,0		6,0	-0,5
UNION DEPORTIVA LOGROÑES, S.A.D.	5,9		5,9	-0,5
TOTAL:	160,5	56,5	217,0	-13,6

Figures in millions of euros

Exhibit 4: Budesliga Broadcasting Revenues 2020/21

		Total			% Total	% Average
1.	Bayern München	105 400 000,00 €	74 300 000,00 €	31 100 000,00 €	8,9%	59,6%
2.	Borussia Dortmund	94 950 000,00 €	73 340 000,00 €	21 610 000,00 €	8,0%	43,8%
3.	Bayer 04 Leverkusen	88 070 000,00 €	70 050 000,00 €	18 020 000,00 €	7,4%	33,4%
4.	RB Leipzig	81 690 000,00 €	69 300 000,00 €	12 390 000,00 €	6,9%	23,7%
5.	Bor. Mönchengladbach	77 600 000,00 €	67 950 000,00 €	9 650 000,00 €	6,5%	17,5%
6.	Eintracht Frankfurt	75 690 000,00 €	63 850 000,00 €	11 840 000,00 €	6,4%	14,6%
7.	FC Schalke 04	75 250 000,00 €	59 300 000,00 €	15 950 000,00 €	6,3%	14,0%
8.	TSG 1899 Hoffenheim	71 980 000,00 €	66 780 000,00 €	5 200 000,00 €	6,1%	9,0%
9.	VfL Wolfsburg	69 020 000,00 €	58 380 000,00 €	10 640 000,00 €	5,8%	4,5%
10.	Hertha BSC	66 510 000,00 €	61 970 000,00 €	4 540 000,00 €	5,6%	0,7%
11.	SC Freiburg	57 760 000,00 €	54 090 000,00 €	3 670 000,00 €	4,9%	-12,5%
12.	Werder Bremen	55 920 000,00 €	52 900 000,00 €	3 020 000,00 €	4,7%	-15,3%
13.	FSV Mainz 05	54 760 000,00 €	48 920 000,00 €	5 840 000,00 €	4,6%	-17,1%
14.	FC Augsburg	49 730 000,00 €	45 180 000,00 €	4 550 000,00 €	4,2%	-24,7%
15.	1.FC Köln	47 040 000,00 €	43 140 000,00 €	3 900 000,00 €	4,0%	-28,8%
16.	VfB Stuttgart	45 710 000,00 €	41 400 000,00 €	4 310 000,00 €	3,8%	-30,8%
17.	1.FC Union Berlin	37 070 000,00 €	34 690 000,00 €	2 380 000,00 €	3,1%	-43,9%
18.	Arminia Bielefeld	34 310 000,00 €	31 930 000,00 €	2 380 000,00 €	2,9%	-48,0%
		1 188 460 000,00 €	1 017 470 000,00 €	170 990 000,00 €		

Source: *Football – Finan*

Exhibit 5: Revenue Distribution Serie A 2020/21

80% Revenues	
Atalanta	54,6
Benevento	30,3
Bologna	37,6
Cagliari	34,1
Crotone	29,5
Fiorentina	39,7
Genoa	36,8
Inter	65
Juventus	62,7
Lazio	48,3
Milan	57,8
Napoli	54,9
Parma	31,6
Roma	49,7
Sampdoria	40,4
Sassuolo	40,2
Spezia	31,5
Torino	36,7
Udinese	35,8
Verona	37,1

Exhibit 5: Revenue Distribution Eredivisie 2019/20

1	Ajax (1)	12.95	10 295 250,00 €
2	PSV (2)	11.65	9 261 750,00 €
3	Feyenoord (3)	10.35	8 228 250,00 €
4	AZ (4)	9.05	7 194 750,00 €
5	Vitesse (5)	8.0	6 360 000,00 €
6	Utrecht (6)	6.95	5 525 250,00 €
7	FC Groningen (8)	5.9	4 690 500,00 €
8	SC Heerenveen (7)	4.85	3 855 750,00 €
9	Heracles Almelo (10)	4.05	3 219 750,00 €
10	ADO Den Haag (9)	3.7	2 941 500,00 €
11	FC Twente (-)	3.45	2 742 750,00 €
12	PEC Zwolle (11)	3.2	2 544 000,00 €
13	Willem II (12)	3.0	2 385 000,00 €
14	VVV Venlo (15)	2.8	2 226 000,00 €
15	RKC Waalwijk (-)	2.6	2 067 000,00 €
16	Sparta Rotterdam (-)	2.55	2 027 250,00 €
17	FC Emmen (18)	2.5	1 987 500,00 €
18	Fortuna Sittard	2.45	1 947 750,00 €

Source: *afc-ajax.info*

Exhibit 6: Audiovisual rights framework

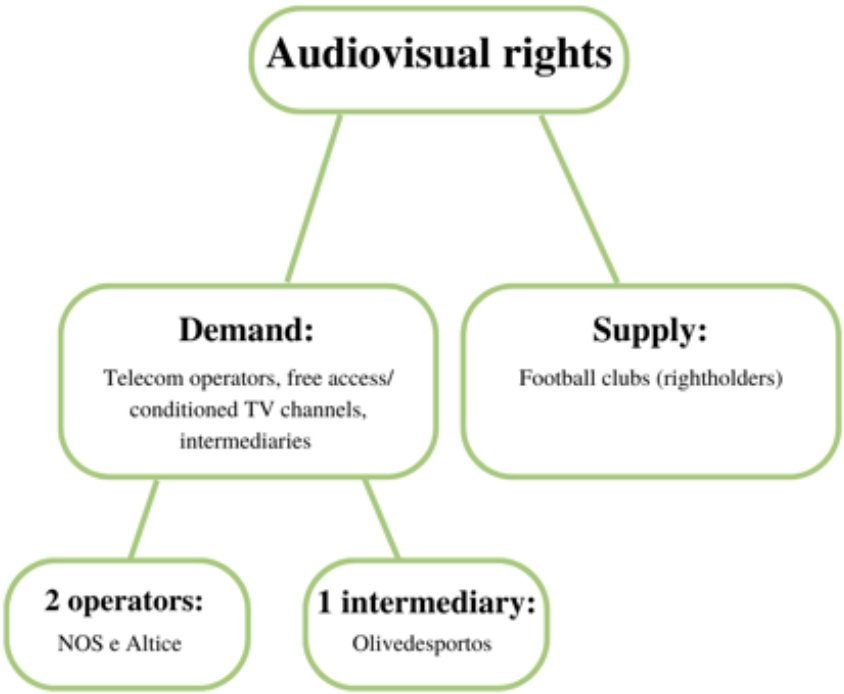


Exhibit 7: Potential situation in the competition between the players in Portugal

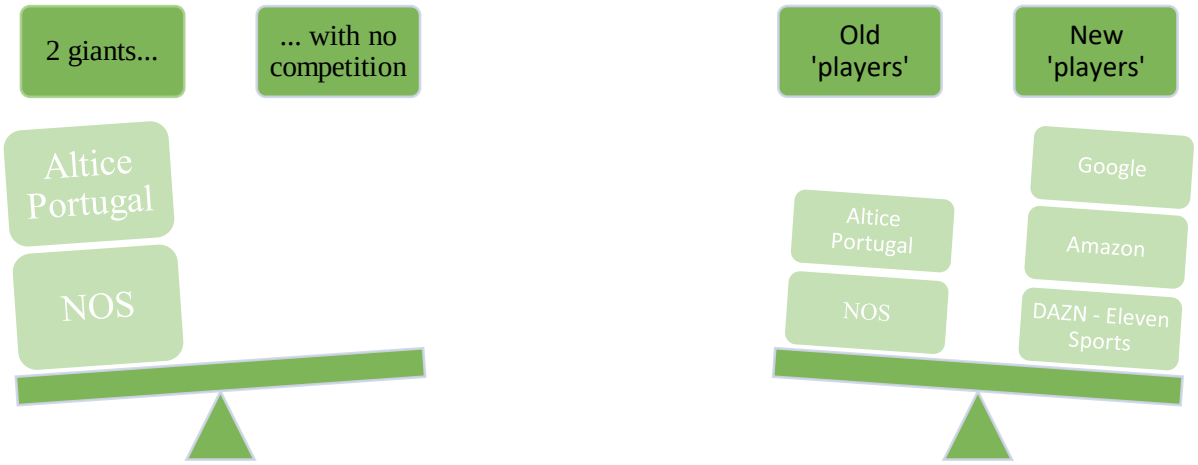


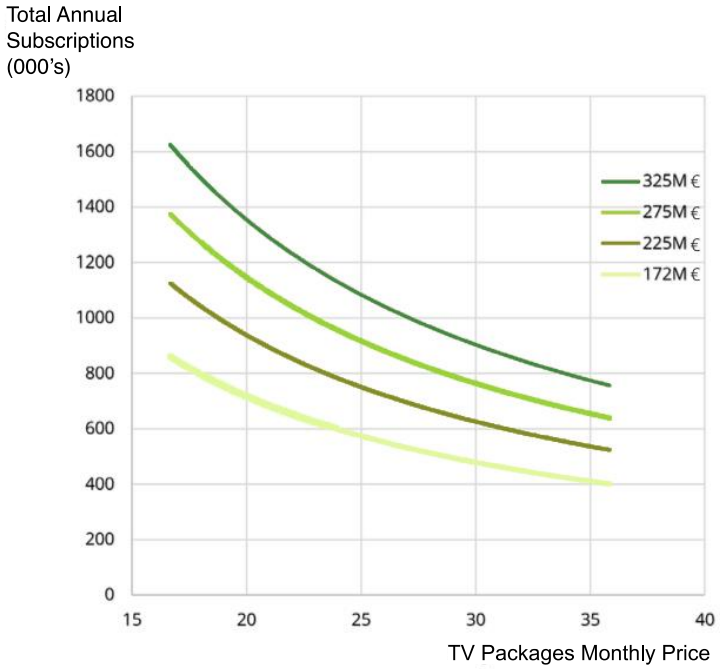
Exhibit 8: Sensitivity analysis of individual club revenues relative to total revenues 2018/19

	Situação Atual	Modelo Potencial								
Posição na tabela	**172**	**172**	**250**	**275**	**285**	**295**	**305**	**310**	**325**	**350**
SL Benfica	41,9	23,1	33,6	36,9	38,3	39,6	41	41,6	43,7	47
FC Porto	41,9	19,8	28,7	31,6	32,7	33,9	35	35,6	37,3	40,2
Sporting CP	41,9	17,3	25,1	27,6	28,6	29,6	30,6	31,1	32,6	35,1
SC Braga	15,5	12	17,4	19,2	19,9	20,6	21,3	21,6	22,6	24,4
Vitória SC	2,2	12,4	18	19,8	20,5	21,3	22	22,3	23,4	25,2
Moreirense FC	2,2	8,3	12	13,2	13,7	14,2	14,7	14,9	15,6	16,8
Rio Ave FC	2,2	7,7	11,2	12,3	12,7	13,2	13,6	13,9	14,5	15,6
Boavista FC	2,2	8	11,6	12,7	13,2	13,7	14,1	14,4	15,1	16,2
Belenenses SAD	2,2	6,7	9,7	10,7	11,1	11,5	11,8	12	12,6	13,6
CD Santa Clara	2,2	6,8	9,9	10,9	11,3	11,7	12,1	12,3	12,8	13,8
CS Marítimo	2,2	7,2	10,5	11,5	12	12,4	12,8	13	13,6	14,7
Portimonense SC	2,2	6,4	9,4	10,3	10,7	11	11,4	11,6	12,2	13,1
Vitória FC	2,2	6,6	9,6	10,6	11	11,4	11,8	12	12,5	13,5
CD Aves	2,2	6	8,8	9,7	10	10,4	10,7	10,9	11,4	12,3
CD Tondela	2,2	6	8,7	9,6	9,9	10,3	10,6	10,8	11,3	12,2
GD Chaves	2,2	6,3	9,1	10	10,4	10,7	11,1	11,3	11,8	12,7
CD Nacional	2,2	5,8	8,4	9,2	9,5	9,9	10,2	10,4	10,9	11,7
CD Feirense	2,2	5,7	8,3	9,2	9,5	9,8	10,2	10,3	10,8	11,7
Total Liga NOS		172	250	275	285	295	305	310	325	350

*all values in M€

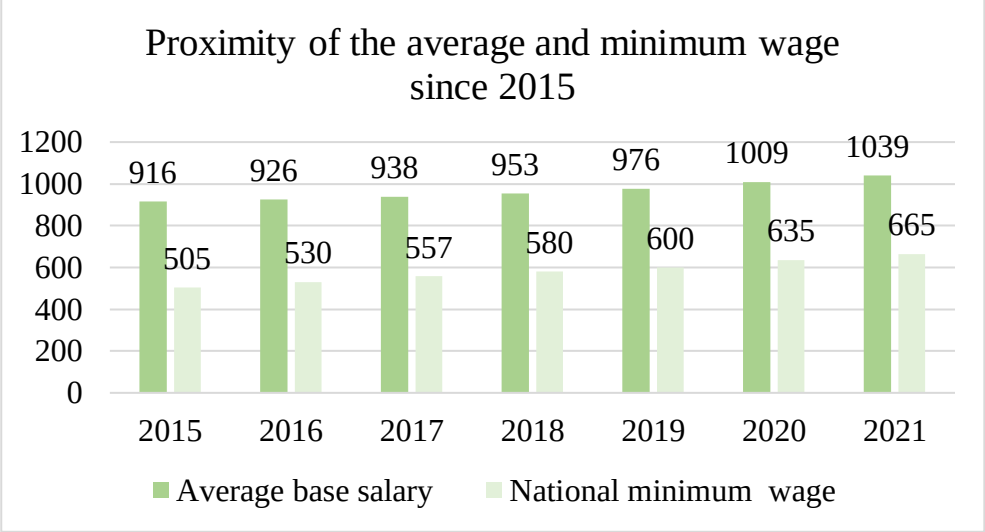
Source: *Estudo sobre o impacto da negociação centralizada dos direitos televisivos em Portugal*, Servir o Benfica (2022)

Exhibit 9: Total subscribers, in thousands, and monthly price per TV package for different levels of global revenue/year, M€ and thousands of subscriptions



Source: *Estudo sobre o impacto da negociação centralizada dos direitos televisivos em Portugal*, Servir o Benfica (2022)

Exhibit 10: Proximity of the average and minimum wage since 2015



Source: *Dinheiro Vivo* (2022)

Exhibit 11: Quantitative Research- Questionnaire

Section 1. Personal information

Age

- Under 18
- 18-35
- 35-65
- Over 65

Gender

- Female
- Male

Are you currently living in Portugal?

- Yes
- No

What is your residential district? (Select option)

Section 2. Filter Question

Do you watch football games?

- Yes:
- No: Stop survey

Section 3. Football tastes and stadium assiduity

1. Which football team you support?
    - Sporting Clube de Portugal
    - Sport Lisboa e Benfica
    - Futebol Clube do Porto
    - Other

2. Which football team do you support?

3. Do you have a season ticket?
    - Yes
    - No

4. How frequently do you watch games at the stadium?
    - Never
    - Rarely
    - Occasionally
    - Frequently
    - Always

5. Which football competitions do you follow?
    - Premier League (England)
    - German League
    - Italian League
    - French League
    - International club competitions (e.g: UEFA Champions League)
    - Other leagues (Turkish League, Belgium League, Swiss League, Dutch League…)
    - Portuguese League

6. Which football competitions do you follow? (Sort them according to your preference, leaving the ones you do not follow for the end.)

   Premier League (England)

   Spanish League

   German League

   Italian League

   French League

   International club's competitions (e.g.: UEFA Champions League)

   Other leagues (Dutch League, Turkish league Belgian League, Swiss League…)

   Portuguese League

7. Sort, in descending order (from most important to least important), the importance of the following factors regarding the attractiveness of football

   Competitive equilibrium

   Signing of world class players

   Fans presence in the stadium

   Investment in the youth teams

   Playing with a team of superior quality

8. Do you consider that, in football, competition is correlated with attractiveness of the game?
   - Yes
   - No (Move to section 5)
   - I do not have an opinion (Move to section 5)

9. Would you change your answer if both teams played a football of a low quality?

- Yes
- No
- I do not have an opinion

Section 5. Football in other channels

1. Do you prefer to watch matches on TV box or in other channels stated above?
   - TV box
   - Other channels
2. What features make you prefer the channel(s) that you have selected previously?

   From the following factors please choose up to 3.

   Practical

   Image quality

   Screen size

   Mobility

   More privacy

   Liberty of choice regarding content

Section 6. Premium sports channels in Portugal

1. Is there a subscription of a Portuguese premium paid sports channel in your household?
   - Yes (Move to question 3)
   - No
2. If the Portuguese League was to be more competitive, would you be willing to acquire a subscription?
   - Yes (Move to section 8)

- No (Move to section 8)
- Yes, if the football practiced is better (Move to section 8)
- No, if the football practiced is worse (Move to section 8)

3. Who pays the subscription?
    - Respondent
    - Family member (Move to question 5 and 6)

4. What is your monthly revenue?
    - Under 500€
    - 500€-849€
    - 850€-1249€
    - 1250€-2000€
    - Over 2000€

5. How old is your family member (that pays for the subscription)?
    - 18-35
    - 35-65
    - Over 65
6. What is the monthly revenue of your family member?
    - Under 500€
    - 500-849€
    - 850-1249€
    - 1250-2000€
    - Over 2000€

Section 7. Respondents with premium paid Portuguese sports channels

1. Which sports channel(s) are you subscribed to?
    - Sport TV
    - Eleven Sports
    - BTV

2. Were your subscriptions done through your TV operator?
    - Yes
    - No, I am only subscribed directly to Eleven Sports
    - Yes and no, I am subscribed through the TV operator, and directly through Eleven

3. Does your subscription have a multiscreen feature?

    Note: a multiscreen feature can be described as the possibility to watch the same sporting event in different devices at the same time (eg: it allows to watch the same event on TV and also on a smartphone/tablet/PC).
    - Yes
    - No

4. What is the value of your subscription package?

    Note: If you have more than 1 subscription package, please state the total monthly value of all packages.
    - 0-15€
    - 15-30€

- Over 30€

5. Would you be willing to pay a superior value to what you pay currently so that the Portuguese League becomes more competitive between all clubs?
    - Yes
    - No
    - Yes, if the football practiced is better
    - No, if the football practiced is worse

6. If you could watch football matches through an OTT model, would you choose this channel instead of a Portuguese premium sports channel?

   Note: OTT model consists of transmitting content directly to the consumer over the internet. To gain access, a subscription fee is usually paid. The kind of content transmitted by this model is On-Demand, which means that the viewer can watch the available content wherever and whenever he or she wants. Examples: DAZN, Amazon Prime Video, Disney +.
    - Yes
    - No

7. Which factors do you consider as disadvantages in an OTT model?
    - Access to Internet
    - Not having all the contents in the same platform
    - Do not think it has disadvantages
    - Other(s) (Move to question 9)

8. Which one(s)?

9. Besides premium channels, do you use illicit channels to watch sporting events?
    - Yes (illegal streaming or account sharing) (Move to section 9)
    - No (Stop survey)

Section 8. Respondents without Portuguese premium sports channels

1. Where do you watch football matches?
    - Restauration establishments
    - House of a friend/ family member
    - Online streaming, account sharing

2. In the case of the Portuguese League allowing for their first division matches to be broadcasted in different paid channels, would you be willing to subscribe those channels?
    - Yes, even if the price increase
    - Yes, if the price remains the same
    - Yes, but only if the price decrease
    - Only the channels that broadcast the matches of the club I support

3. Would you be willing to subscribe to different channels to obtain access to foreign leagues?
    - Yes
    - No (Move to question 6)

4. Which ones?
    - Premier League
    - Spanish League
    - German League
    - Italian League
    - French League
    - International club's competitions (Champions League, Europe League…)
    - International national team's competitions (World Cup, European Championships…)
    - Other leagues (Turkish League, Belgian League, Swiss League…)
    - Dutch League
5. If you could watch the matches through an OTT model, would you choose this option instead of a premium paid sports TV channel?

    Note: OTT model consists of transmitting content directly to the consumer over the internet. To gain access, a subscription fee is usually paid. The kind of content transmitted by this model is On-Demand, which means that the viewer can watch the available content wherever and whenever he or she wants. Examples: DAZN, Amazon Prime Video, Disney +.
    - Yes
    - No

6. Which factors do you consider drawbacks in the subscription of an OTT model?
    - Access to internet
    - Not having all the contents in the same platform
    - Do not think that it has disadvantages
    - Other(s) (Move to question 8)

7. Which one(s)?

8. What is/are the reason(s) that would make you pay more to have access to a paid TV channel?
    - Access to personalized content (in line with my interests)
    - More practical
    - I am already familiarized with the functioning of my TV box
    - More attractive price
    - Other(s)

Section 9. Illegal streaming and account sharing

1. Please select any illicit channel that you have ever used to watch a sporting event, such as a football match.
    - IPTV
    - Online streaming
    - Account sharing

2. Do you have a VPN service?
    - Yes
    - No (Move to question 4)

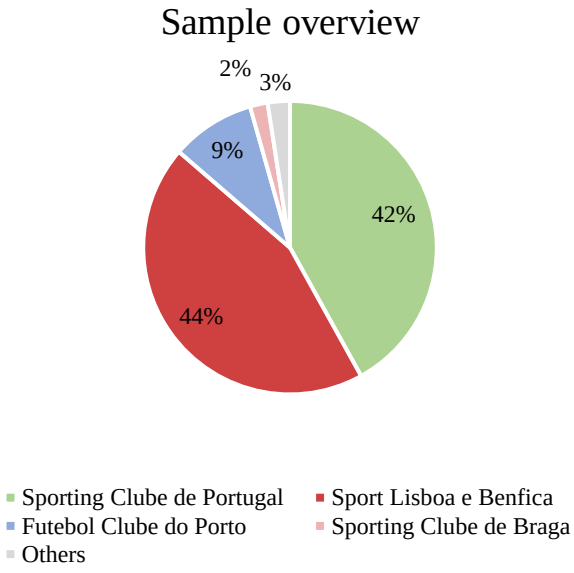
3. Why did you acquire a VPN?
    - To protect my internet connections and keep my online privacy

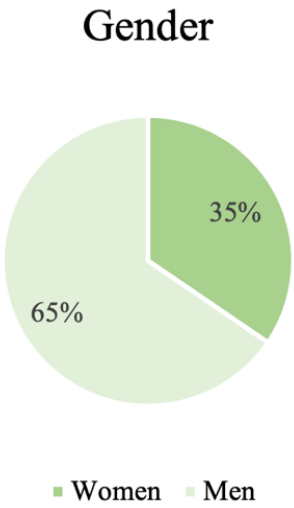
- To improve my stream quality, allowing me to bypass any obstacles that my interest supplier could impose to my connection

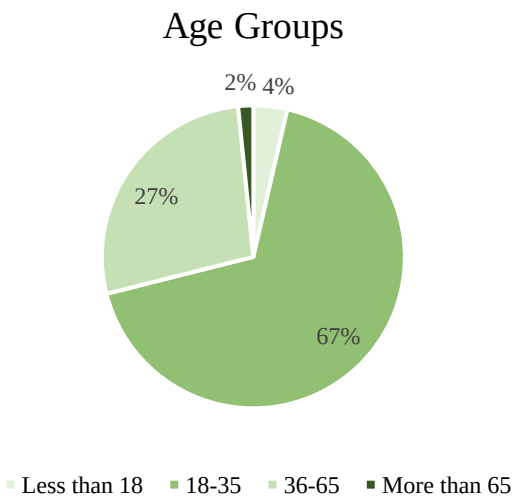
4. Sort, in descending order, the reasons that make you resort to illegal channels to watch sporting events instead of subscribing to a paid channel.
    - Price
    - I only have a Wi-Fi package
    - Quality of image
    - Format of the available subscription packages
    - Do not have a TV

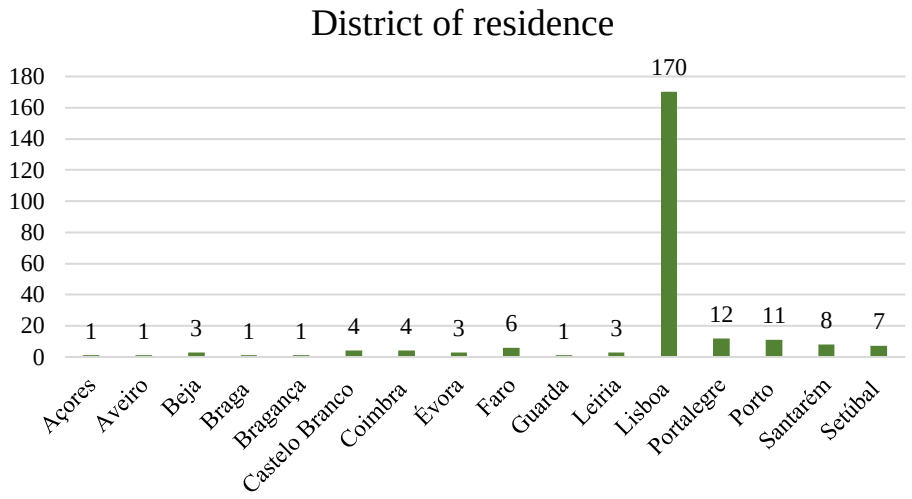
5. If new packages of subscription would become available, would you acquire them instead of using illicit channels?
    - Yes, if it is through an OTT model, with a lower fee than the present prices
    - Yes, if it is through an TV channel, with a lower fee than the present prices
    - Yes, at a very low fee (does not matter if it is through a TV channel or an OTT model)
    - No

Exhibit 12: Quantitative Research- Sample Overview








District of residence
180
160
140
120
100
80
60
40
20
0
1
1
3
1
1
4
4
3
6
1
3
170
12
11
8
7
Açores
Aveiro
Beja
Braga
Bragança
Castelo Branco
Coimbra
Évora
Faro
Guarda
Leiria
Lisboa
Portalegre
Porto
Santarém
Setúbal

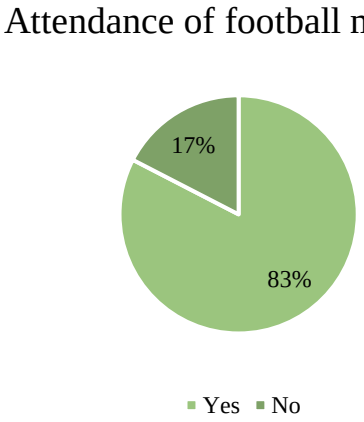

Attendance of football matches
17%
83%
Yes
No

Exhibit 13: Merged data

	Coefficients	Dummy
Intercept	11,230507	
Annual salary (M€)	0,03060161	€11,80
Premier League	5,54147437	0
La Liga	1,7458874	0
Serie A	0,35671154	0
Ligue 1	-2,6588085	0
Bundesliga	2,75883964	0
Eredivisie	-1,0480566	0
Jupiler Pro League	-4,4404423	0
Scottish premiership	-1,3053208	0
Turkish Süper Lig	-5,4209956	0
UCL	3,47345344	1
UEL	-1,9145542	1
21-20	-1,280828	0
20-19	-1,4653171	0

Predicted UEFA points	13,15

Source: *Capology*

Exhibit 14: 2021-22 Season UCL

	Coefficients	Dummy
Intercept	18,3243811	
Annual salary (M€)	0,03264402	€19,16
Premier League	0,24861999	0
La Liga	-5,1978974	0
Serie A	-6,3159246	0
Ligue 1	-7,5961047	0
Bundesliga	-1,4344418	0
Eredivisie	2,50271932	0
Jupiler Pro League	-13,577787	0
Turkish Süper Lig	-15,135096	0
21-20	0,83786253	0
20-19	1,34631653	0

Predicted UEFA points	18,95

Source: *Capology*

Exhibit 15: 2021-22 Season UCL group stage

	Coefficients	Dummy
Intercept	6,25252768	
Annual salary (M€)	0,01432717	€52,00
Premier League	0,14568389	0
La Liga	-1,7940963	0
Serie A	-0,7581435	0
Ligue 1	-3,0294808	0
Bundesliga	0,09370167	0
Eredivisie	2,47423681	0
Jupiler Pro League	-2,4770788	0
Turkish Süper Lig	-5,8411029	0
UEL	-2,268346	0
21-20	0,51078798	0
20-19	0,39054348	0

Predicted UEFA points	7,00

Source: *Capology*

Exhibit 16: 2021-22 Season UEL

	Coefficients	Dummy
Intercept	11,4805325	
Annual salary (M€)	0,10171509	€5,33
Premier League	-3,4569064	0
La Liga	1,60584363	0
Serie A	-5,5597024	0
Ligue 1	-4,6116084	0
Bundesliga	-0,3216863	0
Eredivisie	-1,5992784	0
Jupiler Pro League	-4,459665	0
Scottish premiership	1,38881433	0
Turkish Süper Lig	-3,3827837	0
21-20	-4,0057263	0
20-19	-5,0718107	0

Predicted UEFA points	12,02

Source: *Capology*

Exhibit 17: 2022-21 Season UECL

	Coefficients	Dummy
Intercept	1,523575	
Annual salary (M€)	0,3144686	€10,42
Premier League	-35,019992	0
Serie A	-9,8289241	0
Ligue 1	4,95433609	0
Bundesliga	-3,2689265	0
Eredivisie	10,9323706	0
Jupiler Pro League	0,41191074	0
Austrian Bundesliga	11,6870987	0
Scottish premiership	-0,2173718	0
Russian PL	-3,3931111	0
Swiss Super League	1,4208469	0
Turkish Süper Lig	-5,2516256	0

Predicted UEFA points	4,80

Source: *Capology*

Exhibit 18: Merged data filter high AS

	Coefficients	Dummy
Intercept	11,2922179	
Annual salary (M€)	0,09306854	€29,61
Premier League	0,9780536	0
La Liga	1,22332724	0
Serie A	-2,9319895	0
Ligue 1	-4,0658445	0
Bundesliga	-0,4132957	0
Eredivisie	-0,5563761	0
Jupiler Pro League	-3,991113	0
Scottish premiership	-0,983008	0
Turkish Süper Lig	-6,0112175	0
UCL	1,96500654	0
UEL	-2,344718	0
21-20	-2,5252583	0
20-19	-2,1016665	0

Predicted UEFA points	14,05

Source: *Capology*

Exhibit 19: Changes in TV Revenues for season 2021-22 according to the proposed model of collective bargaining

	TV Revenues		
	Original	Proposed model	Changes
FC Porto	41,9	21,7	-20,2
Sporting CP	41,9	19,0	-22,9
SL Benfica	41,9	20,2	-21,7
SC Braga	15,5	11,9	-3,6
Gil Vicente	2,2	9,7	7,5
Vitória SC	2,2	11,1	8,9

Social impact factor		
Home matches attendance	Season 21/22	%
SL Benfica	543257	23%
FC Porto	529149	22%
Sporting CP	427698	18%
Vitória SC	183057	8%
SC Braga	134270	6%
Boavista FC	88000	4%
CS Marítimo	64728	3%
Gil Vicente FC	60175	3%
FC Famalicão	54543	2%
FC Vizela	51331	2%
FC Paços Ferreira	45552	2%
BSAD	30974	1%
Moreirense FC	29766	1%
CD Tondela	29357	1%
Estoril Praia	24143	1%
FC Arouca	23968	1%
Portimonense	23399	1%
Santa Clara	21292	1%
Total LIGA NOS	**2364659**	**100%**

Equitative distribution
4,8

	Proposed model		
	Equitative	Social impact	Performance
TV Revenues	50%	25%	25%
172(M€)	86	43	43

Performance factor	
Classification	% Allocated
1	17%
2	15%
3	13%
4	11%
5	9%
6	7%
7	5%
8	4%
9	3%
10	3%
11	3%
12	2%
13	2%
14	2%
15	2%
16	1%
17	1%
18	1%

*all values in M€

Exhibit 20: Changes in UEFA Points (*Capology*)

Using the linear regressions of specific competitions								
Top 4	Original	New	Change		Clubs with european spots in 21-22	Original	New	Change
FC Porto	19,37	18,7	-0,66		Gil Vicente	2,43	4,80	2,37
Sporting CP	19,06	18,3	-0,74		Vitória SC	3,41	6,22	2,80
SL Benfica	19,66	18,9	-0,71					
SC Braga	12,4	12,0	-0,36					

UEFA Points lost	-2,47
UEFA Points won	5,18
Net gain/loss	2,71

Points obtained Portugal's coefficient	0,45	
Number of spots for international competitions	6	**21-22 season*

Exhibit 21: UCL group stage

	Coefficients	Dummy
Intercept	3,59144558	
Annual squad value (M€)	0,00754652	€310,18
Premier League	-1,43915705	0
La Liga	-1,29497168	0
Bundesliga	-0,30583677	0
Serie A	-0,66707648	0
Ligue 1	-2,15506745	0
Eredivisie	1,72311097	0
Other leagues	-1,68730879	0
20/21	0,22688797	0

Predicted UEFA points	5,93

Source: *Transfermarkt*

Exhibit 22: UCL

	Coefficients	Dummy
Intercept	13,3911143	
Annual squad value (M€)	0,01924657	€288,53
Premier League	-3,43167862	0
La Liga	-4,16063543	0
Bundesliga	-5,23557033	0
Serie A	-8,3014223	0
Ligue 1	-8,98356669	0
Eredivisie	1,17874813	0
Other leagues	-9,02828662	0
20/21	0,05143757	0

Predicted UEFA points	18,94

*all values in M€

Source: *Transfermarkt*

Exhibit 23: UEL

	Coefficients	Dummy
Intercept	10,8472709	
Annual squad value (M€)	0,00874091	€155,43
Premier League	2,92560285	0
La Liga	1,84816211	0
Bundesliga	3,21421883	0
Serie A	-0,87615533	0
Ligue 1	-1,18393955	0
Eredivisie	-3,74745402	0
Other leagues	-3,6680288	0
20/21	-1,73988682	0

Predicted UEFA points	12,21

Source: *Transfermarkt*

Exhibit 24: UECL

	Coefficients	Dummy
Intercept	0,59741857	
Annual squad value (M€)	0,06722903	€29,73
Premier League	-41,9417475	0
Bundesliga	-3,38926266	0
Serie A	-3,22848466	0
Ligue 1	-7,1258016	0
Eredivisie	7,41444976	0
Other leagues	2,37776819	0

Predicted UEFA points	2,60

Source: *Transfermarkt*

Exhibit 25: UCL with filtered ASV

	Coefficients	Dummy
Intercept	11,6202073	
Annual squad value (M€)	0,02551245	€288,53
La Liga	-0,29738265	0
Bundesliga	-7,01775692	0
Serie A	-3,51984966	0
Ligue 1	-9,06570666	0
Eredivisie	0,53071053	0
Other leagues	-7,69435325	0
20/21	-0,74827412	0

Predicted UEFA points	18,98

Source: *Transfermarkt*

Exhibit 26: UEL with filtered ASV

	Coefficients	Dummy
Intercept	3,91928634	
Annual squad value (M€)	0,05609674	€155,48
La Liga	1,97911427	0
Eredivisie	-5,9818985	0
Other leagues	-1,07052724	0
20/21	0,22133454	0

Predicted UEFA points	12,64

Source: *Transfermarkt*

Exhibit 27: UECL with filtered ASV

	Coefficients	Dummy
Intercept	0,1993202	
Annual squad value (M€)	0,08129611	€76,92
Bundesliga	-4,62153889	0
Eredivisie	4,8526502	0
Other leagues	2,5941372	0

Predicted UEFA points	6,45

*all values in M€

Source: *Transfermarkt*

Exhibit 28: Changes in UEFA Points (*Transfermarkt*)

Using the linear regressions of specific competitions								
Top 4	Original	New	Change		Clubs with european spots in 21-22	Original	New	Change
FC Porto	21,16	20,77	-0,39		Gil Vicente	2,60	3,10	0,50
Sporting CP	19,89	19,45	-0,44		Vitória SC	5,17	5,77	0,60
SL Benfica	19,36	18,94	-0,42					
SC Braga	12,24	12,21	-0,03					

UEFA Points lost	-1,28
UEFA Points won	1,10
Net gain/loss	-0,18

Points obtained Portugal's coefficient	-0,03	
Number of spots for international competitions	6	**21-22 season*

Exhibit 29: P- Values of our model *(Capology)*

P- Values of our model					
Merged data		Merged data UCL		Merged data UEL	
Intercept	4,92835E-05	Intercept	7,2932E-06	Intercept	1,65655E-05
Annual salary (M€)	0,000119758	Annual salary (M€)	0,001498154	Annual salary (M€)	0,005060237
Premier League	0,014091247	Premier League	0,953752165	Premier League	0,450151276
La Liga	0,428103325	La Liga	0,255272963	La Liga	0,579711264
Serie A	0,863981126	Serie A	0,141408539	Serie A	0,139984667
Ligue 1	0,232024578	Ligue 1	0,090155885	Ligue 1	0,138013749
Bundesliga	0,183331586	Bundesliga	0,739341373	Bundesliga	0,914362487
Eredivisie	0,655327491	Eredivisie	0,7262761	Eredivisie	0,566787858
Jupiler Pro League	0,048292825	Jupiler Pro League	0,020608363	Jupiler Pro League	0,115245411
Scottish premiership	0,60289974	Turkish Süper Lig	0,00439359	Scottish premiership	0,648483632
Turkish Süper Lig	0,019347481	21-20	0,685595952	Turkish Süper Lig	0,270832541
UCL	0,049823108	20-19	0,519594936	21-20	0,024456893
UEL	0,290882244			20-19	0,004353573
21-20	0,300898748				
20-19	0,234809666				

P- Values of our model					
2021-22 UECL		Merged data filtered high AS		Meged data UCL Group stage	
Intercept	0,676681279	Intercept	0,000263513	Intercept	2,08417E-08
Annual salary (M€)	0,364500496	Annual salary (M€)	0,018257252	Annual salary (M€)	1,29208E-05
Premier League	0,400899376	Premier League	0,816152516	Premier League	0,900230428
Serie A	0,767768935	La Liga	0,646311057	La Liga	0,140552526
Ligue 1	0,59615424	Serie A	0,284947264	Serie A	0,497556688
Bundesliga	0,706791635	Ligue 1	0,069362618	Ligue 1	0,015839945
Eredivisie	0,048821232	Bundesliga	0,863902907	Bundesliga	0,932324912
Jupiler Pro League	0,948894745	Eredivisie	0,803817001	Eredivisie	0,098656865
Austrian Bundesliga	0,079981491	Jupiler Pro League	0,063658513	Jupiler Pro League	0,072265102
Scottish premiership	0,96141537	Scottish premiership	0,681567135	Turkish Süper Lig	0,000221772
Russian PL	0,563958728	Turkish Süper Lig	0,007814856	UEL	0,001051932
Swiss Super League	0,76246574	UCL	0,316109839	21-20	0,386997155
Turkish Süper Lig	0,489599136	UEL	0,259403808	20-19	0,502338369
		21-20	0,078962524		
		20-19	0,146792394		

Exhibit 30: Adjusted R Squareds of our model *(Capology)*

Adjusted R Squareds of our model	
Merged data	0,55065604
Merged data UCL	0,412980613
Merged data UEL	0,366260788
2022-21 UECL	0,527443508
Merged data filtered high AS	0,371097744
Merged data UCL Group stage	0,54490065

Average adj R Squared	**0,46**

Exhibit 31: P- Values of our model *(Trasnfermarkt)*

P- Values of our model									
UCL			UEL			UECL			
Intercept	0,000130402		Intercept	0,008232671		Intercept	0,811152294		
Annual squad value (M€)	0,000154485		Annual squad value (M€)	0,354423976		Annual squad value (M	0,000101425		
Premier League	0,427039435		Premier League	0,574463907		Premier League	0,000537622		
La Liga	0,257655479		La Liga	0,652001724		Bundesliga	0,450768193		
Bundesliga	0,148876594		Bundesliga	0,458940048		Serie A	0,646918885		
Serie A	0,020140483		Serie A	0,846681818		Ligue 1	0,248044925		
Ligue 1	0,016057735		Ligue 1	0,786297509		Eredivisie	0,034565059		
Eredivisie	0,830537836		Eredivisie	0,41687051		Other leagues	0,346373759		
Other leagues	0,007259712		Other leagues	0,316414349					
20/21	0,971000793		20/21	0,222269304					

P- Values of our model									
UCL group stage			UCL filter ASV			UEL filter ASV			UECL filter ASV	
Intercept	0,006652411		Intercept	0,045666982		Intercept	0,321805344		Intercept	0,931307956
Annual squad value (M€)	0,00029676		Annual squad value (M€)	0,098514793		Annual squad value (M€)	0,000661418		Annual squad value (M	4,58749E-05
Premier League	0,405865372		La Liga	0,936615186		La Liga	0,696087529		Bundesliga	0,276097312
La Liga	0,364179645		Bundesliga	0,059389697		Eredivisie	0,154536564		Eredivisie	0,145157555
Bundesliga	0,826132144		Serie A	0,360071926		Other leagues	0,740114334		Other leagues	0,263965195
Serie A	0,627424937		Ligue 1	0,010466411		20/21	0,873818153			
Ligue 1	0,152653155		Eredivisie	0,905680842						
Eredivisie	0,360236886		Other leagues	0,058506904						
Other leagues	0,186269736		20/21	0,664117051						
20/21	0,677762114									

Exhibit 32: Adjusted R Squareds of our model *(Transfermarkt)*

Adjusted R Squareds of our model	
UCL	0,711759928
UEL	0,272404566
UECL	0,565088728
UCL group stage	0,54232059
UCL filter ASV	0,704753785
UEL filter ASV	0,26125017
UECL filter ASV	0,340254717

Average Adj R squared	0,49

REGRESSION ANALYSIS

Exhibit 33: Merged data

Merged data

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,769093942
R Square	0,591505491
Adjusted R Square	0,55065604
Standard Error	5,782497763
Observations	155

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	14	6778,467844	484,1762746	14,48013	6,02978E-21
Residual	140	4681,219253	33,43728038		
Total	154	11459,6871			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	11,23050701	2,68079708	4,189241734	4,93E-05	5,93042717	16,53058685	5,93042717	16,53058685
Annual salary (M€)	0,03060161	0,007731768	3,957905952	0,00012	0,01531549	0,045887731	0,01531549	0,045887731
Premier League	5,541474375	2,228980698	2,48610245	0,014091	1,134659794	9,948288955	1,134659794	9,948288955
La Liga	1,745887404	2,196771571	0,794751456	0,428103	-2,597248002	6,08902281	-2,597248002	6,08902281
Serie A	0,356711544	2,07845045	0,17162379	0,863981	-3,75249665	4,465919738	-3,75249665	4,465919738
Ligue 1	-2,658808476	2,214998954	-1,20036557	0,232025	-7,037980398	1,720363446	-7,037980398	1,720363446
Bundesliga	2,75883964	2,063173308	1,337182693	0,183332	-1,320164823	6,837844104	-1,320164823	6,837844104
Eredivisie	-1,048056618	2,342911297	-0,4473309	0,655327	-5,680118113	3,584004876	-5,680118113	3,584004876
Jupiler Pro League	-4,440442281	2,228902117	-1,99221054	0,048293	-8,847101504	-0,033783059	-8,847101504	-0,033783059
Scottish premiership	-1,305320814	2,503407573	-0,52141762	0,6029	-6,254692068	3,64405044	-6,254692068	3,64405044
Turkish Süper Lig	-5,420995617	2,29112105	-2,3660887	0,019347	-9,950665011	-0,891326223	-9,950665011	-0,891326223
UCL	3,473453435	1,755507438	1,978603656	0,049823	0,002720925	6,944185945	0,002720925	6,944185945
UEL	-1,914554236	1,805853719	-1,06019342	0,290882	-5,484824048	1,655715575	-5,484824048	1,655715575
21-20	-1,280827994	1,233526463	-1,03834659	0,300899	-3,719576076	1,157920089	-3,719576076	1,157920089
20-19	-1,465317071	1,228057747	-1,19319883	0,23481	-3,893253207	0,962619065	-3,893253207	0,962619065

Exhibit 34: Merged data UCL

Merged data UCL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,725441284
R Square	0,526265056
Adjusted R Square	0,412980613
Standard Error	6,125086321
Observations	58

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	11	1917,129159	174,284469	4,645519211	9,68902E-05
Residual	46	1725,767392	37,5166824		
Total	57	3642,896552			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	18,32438113	3,624595308	5,05556609	7,2932E-06	11,02844918	25,62031307	11,02844918	25,62031307
Annual salary (M€)	0,032644018	0,00966597	3,37721079	0,001498154	0,01318743	0,052100606	0,01318743	0,052100606
Premier League	0,248619994	4,263567842	0,05831266	0,953752165	-8,333496952	8,830736939	-8,333496952	8,830736939
La Liga	-5,19789743	4,512061302	-1,1520006	0,255272963	-14,28020577	3,884410907	-14,28020577	3,884410907
Serie A	-6,315924644	4,221059655	-1,4962889	0,141408539	-14,81247705	2,180627759	-14,81247705	2,180627759
Ligue 1	-7,596104664	4,388285014	-1,7309962	0,090155885	-16,42926426	1,237054928	-16,42926426	1,237054928
Bundesliga	-1,434441788	4,285216699	-0,3347419	0,739341373	-10,06013562	7,191252046	-10,06013562	7,191252046
Eredivisie	2,502719315	7,105400099	0,35222778	0,7262761	-11,79970927	16,8051479	-11,79970927	16,8051479
Jupiler Pro League	-13,57778681	5,66256243	-2,3978167	0,020608363	-24,9759338	-2,179639814	-24,9759338	-2,179639814
Turkish Süper Lig	-15,13509616	5,05139578	-2,9962206	0,00439359	-25,30302849	-4,967163821	-25,30302849	-4,967163821
21-20	0,837862526	2,056553352	0,40741103	0,685595952	-3,301764665	4,977489717	-3,301764665	4,977489717
20-19	1,346316532	2,074593661	0,64895433	0,519594936	-2,829623917	5,522256981	-2,829623917	5,522256981

Source: *Capology*

Exhibit 35: Merged data UEL

Merged data UEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,695168179
R Square	0,483258796
Adjusted R Square	0,366260788
Standard Error	5,154530442
Observations	66

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	1316,924153	109,7436794	4,13048738	0,000150976
Residual	53	1408,166756	26,56918408		
Total	65	2725,090909			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	11,48053253	2,422972435	4,738201874	1,6565E-05	6,620665275	16,34039979	6,620665275	16,34039979
Annual salary (M€)	0,101715093	0,034774615	2,924981134	0,00506024	0,031966048	0,171464137	0,031966048	0,171464137
Premier League	-3,456906361	4,543809025	-0,76079482	0,45015128	-12,5706331	5,656820394	-12,57063312	5,656820394
La Liga	1,605843632	2,881795767	0,55723714	0,57971126	-4,17430669	7,385993951	-4,174306686	7,385993951
Serie A	-5,559702393	3,710640235	-1,49831351	0,13998467	-13,0023042	1,882899398	-13,00230418	1,882899398
Ligue 1	-4,61160841	3,062231179	-1,50596351	0,13801375	-10,7536663	1,530449515	-10,75366633	1,530449515
Bundesliga	-0,321686264	2,977143751	-0,10805198	0,91436249	-6,29308042	5,649707892	-6,29308042	5,649707892
Eredivisie	-1,599278379	2,774620149	-0,57639543	0,56678786	-7,16446163	3,965904872	-7,164461631	3,965904872
Jupiler Pro League	-4,459664979	2,784953893	-1,60134248	0,11524541	-10,0455751	1,126245138	-10,0455751	1,126245138
Scottish premiership	1,388814331	3,029184614	0,458477943	0,64848363	-4,68696058	7,46458924	-4,686960579	7,46458924
Turkish Süper Lig	-3,382783652	3,039989493	-1,11276163	0,27083254	-9,4802304	2,7146631	-9,480230403	2,7146631
21-20	-4,005726277	1,729576763	-2,31601532	0,02445689	-7,47481794	-0,53663461	-7,474817942	-0,53663461
20-19	-5,071810723	1,70241306	-2,97918927	0,00435357	-8,4864189	-1,65720255	-8,4864189	-1,65720255

Source: *Capology*

Exhibit 36: 2021-22 UECL

2021-22 UECL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,893014999
R Square	0,797475789
Adjusted R Square	0,527443508
Standard Error	4,786844013
Observations	22

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	812,0478468	67,6706539	2,953261	0,055991657
Residual	9	206,2248804	22,9138756		
Total	21	1018,272727			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	1,523574998	3,535845809	0,430894072	0,676681	-6,475063925	9,52221392	-6,475063925	9,52221392
Annual salary (M€)	0,3144686	0,32927001	0,955047803	0,3645	-0,430391912	1,059329112	-0,430391912	1,059329112
Premier League	-35,01999236	39,72101868	-0,8816489	0,400899	-124,8751793	54,83519455	-124,8751793	54,83519455
Serie A	-9,828924111	32,29307488	-0,30436631	0,767769	-82,88093475	63,22308653	-82,88093475	63,22308653
Ligue 1	4,954336094	9,019133807	0,549313959	0,596154	-15,44836205	25,35703424	-15,44836205	25,35703424
Bundesliga	-3,268926464	8,417716457	-0,38833887	0,706792	-22,31112404	15,77327111	-22,31112404	15,77327111
Eredivisie	10,93237065	4,801743083	2,276750434	0,048821	0,070073139	21,79466816	0,070073139	21,79466816
Jupiler Pro League	0,411910739	6,250132048	0,065904326	0,948895	-13,72687024	14,55069172	-13,72687024	14,55069172
Austrian Bundesliga	11,68709867	5,924127937	1,972796468	0,079981	-1,714209778	25,08840712	-1,714209778	25,08840712
Scottish premiership	-0,217371787	4,370093256	-0,04974077	0,961415	-10,10320955	9,668465974	-10,10320955	9,668465974
Russian PL	-3,393111119	5,664842251	-0,59897716	0,563959	-16,20787459	9,421652356	-16,20787459	9,421652356
Swiss Super League	1,420846897	4,560318747	0,311567453	0,762466	-8,895310821	11,73700461	-8,895310821	11,73700461
Turkish Süper Lig	-5,251625617	7,290458004	-0,72034235	0,489599	-21,74378741	11,24053618	-21,74378741	11,24053618

Source: *Capology*

Exhibit 37: Merged data filtered high AS

Merged data filtered high AS

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,67166945
R Square	0,45113985
Adjusted R Square	0,371097744
Standard Error	5,480375199
Observations	111

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	14	2369,961592	169,282971	5,636281655	7,9415E-08
Residual	96	2883,313183	30,0345123		
Total	110	5253,274775			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	11,29221788	2,979929397	3,78942464	0,000263513	5,377104779	17,20733098	5,377104779	17,20733098
Annual salary (M€)	0,093068545	0,038755637	2,40141953	0,018257252	0,016139212	0,169997877	0,016139212	0,169997877
Premier League	0,978053599	4,19521425	0,23313555	0,816152516	-7,34938087	9,305488069	-7,34938087	9,305488069
La Liga	1,223327239	2,657425412	0,46034302	0,646311057	-4,051620513	6,498274991	-4,051620513	6,498274991
Serie A	-2,931989494	2,726737854	-1,0752737	0,284947264	-8,344521355	2,480542368	-8,344521355	2,480542368
Ligue 1	-4,065844486	2,213782419	-1,8366053	0,069362618	-8,460167856	0,328478884	-8,460167856	0,328478884
Bundesliga	-0,413295671	2,404724088	-0,1718682	0,863902907	-5,18663526	4,360043918	-5,18663526	4,360043918
Eredivisie	-0,556376114	2,233561458	-0,2490982	0,803817001	-4,989960567	3,877208338	-4,989960567	3,877208338
Jupiler Pro League	-3,991112958	2,127172851	-1,8762523	0,063658513	-8,213517694	0,231291778	-8,213517694	0,231291778
Scottish premiership	-0,983007979	2,388395421	-0,4115767	0,681567135	-5,72393542	3,757919461	-5,72393542	3,757919461
Turkish Süper Lig	-6,011217493	2,212427911	-2,717023	0,007814856	-10,40285219	-1,619582799	-10,40285219	-1,619582799
UCL	1,965006541	1,949903028	1,00774578	0,316109839	-1,905520379	5,835533461	-1,905520379	5,835533461
UEL	-2,344718007	2,066715352	-1,1345142	0,259403808	-6,447115557	1,757679544	-6,447115557	1,757679544
21-20	-2,525258305	1,422174961	-1,7756313	0,078962524	-5,348253291	0,297736681	-5,348253291	0,297736681
20-19	-2,101666517	1,43675654	-1,4627854	0,146792394	-4,953605708	0,750272675	-4,953605708	0,750272675

Source: *Capology*

Exhibit 38: Merge data UCL Group stage

Meged data UCL Group stage

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,788554912
R Square	0,62181885
Adjusted R Square	0,54490065
Standard Error	1,994565418
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	385,9335965	32,16113304	8,08415759	1,07925E-08
Residual	59	234,7191813	3,978291208		
Total	71	620,6527778			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	6,25252768	0,965723187	6,474451234	2,0842E-08	4,320120046	8,184935314	4,320120046	8,184935314
Annual salary (M€)	0,014327167	0,00300947	4,760694134	1,2921E-05	0,008305231	0,020349103	0,008305231	0,020349103
Premier League	0,145683892	1,157038267	0,125911041	0,90023043	-2,16954433	2,460912117	-2,169544332	2,460912117
La Liga	-1,794096291	1,20101465	-1,49381716	0,14055253	-4,19732106	0,609128473	-4,197321055	0,609128473
Serie A	-0,758143484	1,110736574	-0,68255922	0,49755669	-2,98072223	1,464435266	-2,980722235	1,464435266
Ligue 1	-3,02948077	1,219467243	-2,4842658	0,01583995	-5,46962909	-0,58933245	-5,469629088	-0,58933245
Bundesliga	0,093701665	1,098710579	0,085283301	0,93232491	-2,10481312	2,292216455	-2,104813125	2,292216455
Eredivisie	2,474236806	1,474603413	1,677899823	0,09865687	-0,47643781	5,42491142	-0,476437809	5,42491142
Jupiler Pro League	-2,477078762	1,35340997	-1,83025012	0,0722651	-5,18524586	0,231088332	-5,185245856	0,231088332
Turkish Süper Lig	-5,841102921	1,484347316	-3,9351322	0,00022177	-8,81127504	-2,8709308	-8,81127504	-2,8709308
UEL	-2,268346007	0,658107765	-3,44676986	0,00105193	-3,5852166	-0,95147541	-3,585216603	-0,95147541
21-20	0,510787976	0,586081447	0,871530704	0,38699716	-0,66195829	1,683534242	-0,66195829	1,683534242
20-19	0,390543485	0,578618064	0,674959026	0,50233837	-0,76726859	1,548355556	-0,767268587	1,548355556

Source: *Capology*

Exhibit 39: Merged data

Merged data

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,786707957
R Square	0,61890941
Adjusted R Square	0,59419002
Standard Error	4,936767868
Observations	198

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	7322,443042	610,203587	25,0374066	1,09215E-32
Residual	185	4508,760241	24,371677		
Total	197	11831,20328			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	10,10318989	2,411239662	4,19003969	4,3147E-05	5,346127632	14,8602522	5,34612763	14,8602522
Annual squad value (M€)	0,018280117	0,003396264	5,38241929	2,2074E-07	0,01157973	0,0249805	0,01157973	0,0249805
Premier League	-1,247537737	2,796504575	-0,4461061	0,65604229	-6,76467757	4,26960209	-6,76467757	4,26960209
La Liga	-0,92598048	2,395604143	-0,38653318	0,69954605	-5,6521959	3,80023494	-5,6521959	3,80023494
Bundesliga	-1,462831502	2,374850902	-0,61596772	0,53867294	-6,14810347	3,22244047	-6,14810347	3,22244047
Serie A	-3,164342397	2,380823564	-1,32909571	0,1854532	-7,86139765	1,53271286	-7,86139765	1,53271286
Ligue 1	-3,217254263	2,438406663	-1,31940841	0,18866319	-8,02791348	1,59340496	-8,02791348	1,59340496
Eredivisie	0,680517975	2,537093344	0,26822741	0,78882313	-4,32483724	5,68587318	-4,32483724	5,68587318
Other leagues	-3,844487289	2,047560009	-1,87759444	0,06201044	-7,88405689	0,19508232	-7,88405689	0,19508232
UCL	0,13950863	1,321483937	0,10556968	0,91603816	-2,46760731	2,74662457	-2,46760731	2,74662457
UEL	-0,805931023	1,144039531	-0,70446082	0,4820317	-3,06297223	1,45111019	-3,06297223	1,45111019
UECL	-1,740730669	1,482400344	-1,17426488	0,24179831	-4,66531376	1,18385242	-4,66531376	1,18385242
20/21	-0,561599233	0,878811831	-0,63904378	0,52358488	-2,29538068	1,17218222	-2,29538068	1,17218222

Source: *Transfermarkt*

Exhibit 40: UCL

UCL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,875759576
R Square	0,766954835
Adjusted R Square	0,711759928
Standard Error	4,71430147
Observations	48

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	9	2779,380409	308,820045	13,8953913	1,5132E-09
Residual	38	844,5362573	22,2246383		
Total	47	3623,916667			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	13,39111426	3,144956634	4,25796468	0,0001304	7,02448241	19,7577461	7,02448241	19,7577461
Annual squad value (M€)	0,019246568	0,004580578	4,20177688	0,00015448	0,00997367	0,02851946	0,00997367	0,02851946
Premier League	-3,431678618	4,274229521	-0,80287654	0,42703944	-12,0844039	5,22104668	-12,0844039	5,22104668
La Liga	-4,160635432	3,620461586	-1,14920027	0,25765548	-11,4898767	3,16860587	-11,4898767	3,16860587
Bundesliga	-5,235570334	3,553369978	-1,47340985	0,14887659	-12,4289918	1,95785111	-12,4289918	1,95785111
Serie A	-8,301422303	3,422387794	-2,42562293	0,02014048	-15,2296842	-1,37316043	-15,2296842	-1,37316043
Ligue 1	-8,983566689	3,564924712	-2,51998777	0,01605774	-16,2003795	-1,76675391	-16,2003795	-1,76675391
Eredivisie	1,178748125	5,470084803	0,21548992	0,83053784	-9,89485963	12,2523559	-9,89485963	12,2523559
Other leagues	-9,028286619	3,182035236	-2,83726796	0,00725971	-15,4699802	-2,58659306	-15,4699802	-2,58659306
20/21	0,051437571	1,405652783	0,03659337	0,97100079	-2,79415772	2,89703286	-2,79415772	2,89703286

Source: *Transfermarkt*

Exhibit 41: UEL

UEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,60385012
R Square	0,36463497
Adjusted R Square	0,27240457
Standard Error	5,52116729
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	9	1084,647242	120,51636	3,95352232	0,000507874
Residual	62	1889,963869	30,4832882		
Total	71	2974,611111			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	10,8472709	3,973286131	2,73005029	0,00823267	2,904785145	18,7897568	2,90478514	18,7897568
Annual squad value (M€)	0,00874091	0,009368304	0,93302987	0,35442398	-0,00998607	0,02746788	-0,00998607	0,02746788
Premier League	2,92560285	5,18282559	0,56448028	0,57446391	-7,43471788	13,2859236	-7,43471788	13,2859236
La Liga	1,84816211	4,078214026	0,45317928	0,65200172	-6,30407157	10,0003958	-6,30407157	10,0003958
Bundesliga	3,21421883	4,312974203	0,74524416	0,45894005	-5,40729375	11,8357314	-5,40729375	11,8357314
Serie A	-0,87615533	4,512436979	-0,19416456	0,84668182	-9,89638832	8,14407767	-9,89638832	8,14407767
Ligue 1	-1,18393955	4,347951536	-0,27229824	0,78629751	-9,87537083	7,50749173	-9,87537083	7,50749173
Eredivisie	-3,74745402	4,585003302	-0,81732853	0,41687051	-12,912745	5,41783699	-12,912745	5,41783699
Other leagues	-3,6680288	3,631662614	-1,01001365	0,31641435	-10,9276189	3,59156132	-10,9276189	3,59156132
20/21	-1,73988682	1,411220546	-1,23289505	0,2222693	-4,56087649	1,08110286	-4,56087649	1,08110286

Source: *Transfermarkt*

Exhibit 42: UECL

UECL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,7890056
R Square	0,62252984
Adjusted R Square	0,56508873
Standard Error	3,45835943
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	907,351652	129,621665	10,8377053	5,5363E-08
Residual	46	550,171496	11,9602499		
Total	53	1457,52315			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,59741857	2,48596032	0,24031702	0,81115229	-4,40656001	5,60139715	-4,40656001	5,60139715
Annual squad value (M€)	0,06722903	0,01579761	4,25564503	0,00010142	0,03543008	0,09902797	0,03543008	0,09902797
Premier League	-41,9417475	11,269288	-3,7217744	0,00053762	-64,6256477	-19,2578473	-64,6256477	-19,2578473
Bundesliga	-3,38926266	4,45594806	-0,76061539	0,45076819	-12,3586209	5,58009558	-12,3586209	5,58009558
Serie A	-3,22848466	7,00211049	-0,46107308	0,64691888	-17,323002	10,8660327	-17,323002	10,8660327
Ligue 1	-7,1258016	6,0906588	-1,1699558	0,24804492	-19,3856619	5,13405868	-19,3856619	5,13405868
Eredivisie	7,41444976	3,40415482	2,17805892	0,03456506	0,56224151	14,266658	0,56224151	14,266658
Other leagues	2,37776819	2,49923064	0,95140007	0,34637376	-2,65292216	7,40845854	-2,65292216	7,40845854

Source: *Transfermarkt*

Exhibit 43: UCL group stage

UCL group stage

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,77955331
R Square	0,607703363
Adjusted R Square	0,54232059
Standard Error	2,146125138
Observations	64

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	9	385,2839321	42,8093258	9,29454865	2,34984E-08
Residual	54	248,7160679	4,60585311		
Total	63	634			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	3,591445583	1,272318076	2,82275765	0,00665241	1,040601425	6,14228974	1,04060142	6,14228974
Annual squad value (M€)	0,00754652	0,001950716	3,86858987	0,00029676	0,00363557	0,01145747	0,00363557	0,01145747
Premier League	-1,439157051	1,717889323	-0,83774725	0,40586537	-4,88331777	2,00500367	-4,88331777	2,00500367
La Liga	-1,294971682	1,415032067	-0,91515359	0,36417965	-4,13194016	1,5419968	-4,13194016	1,5419968
Bundesliga	-0,305836772	1,38554538	-0,22073385	0,82613214	-3,08368801	2,47201446	-3,08368801	2,47201446
Serie A	-0,667076479	1,366559761	-0,48814293	0,62742494	-3,40686384	2,07271088	-3,40686384	2,07271088
Ligue 1	-2,155067448	1,485556049	-1,45068067	0,15265315	-5,133428	0,82329311	-5,133428	0,82329311
Eredivisie	1,723110972	1,867344012	0,92276033	0,36023689	-2,02068836	5,4669103	-2,02068836	5,4669103
Other leagues	-1,687308785	1,260386661	-1,33872314	0,18626974	-4,2142319	0,83961433	-4,2142319	0,83961433
20/21	0,226887966	0,543075603	0,41778339	0,67776211	-0,86191306	1,31568899	-0,86191306	1,31568899

Source: *Transfermarkt*

Exhibit 44: UCL filter ASV

UCL filter ASV

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,896197071
R Square	0,80316919
Adjusted R Square	0,704753785
Standard Error	3,735021242
Observations	25

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	910,7938611	113,849233	8,16101085	0,00020912
Residual	16	223,2061389	13,9503837		
Total	24	1134			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	11,62020728	5,362236033	2,16704509	0,04566698	0,2527747	22,9876399	0,2527747	22,9876399
Annual squad value (M€)	0,025512452	0,014543121	1,75426253	0,09851479	-0,00531759	0,05634249	-0,00531759	0,05634249
La Liga	-0,297382652	3,681183032	-0,08078453	0,93661519	-8,10114207	7,50637677	-8,10114207	7,50637677
Bundesliga	-7,017756918	3,45801251	-2,02941918	0,0593897	-14,348416	0,31290213	-14,348416	0,31290213
Serie A	-3,519849657	3,735552239	-0,94225684	0,36007193	-11,4388666	4,39916733	-11,4388666	4,39916733
Ligue 1	-9,065706657	3,127368621	-2,89882894	0,01046641	-15,695432	-2,43598134	-15,695432	-2,43598134
Eredivisie	0,530710534	4,408627124	0,12038	0,90568084	-8,81516147	9,87658254	-8,81516147	9,87658254
Other leagues	-7,694353246	3,776651652	-2,03734788	0,0585069	-15,7004971	0,3117906	-15,7004971	0,3117906
20/21	-0,748274123	1,691371725	-0,44240666	0,66411705	-4,333822	2,83727376	-4,333822	2,83727376

Source: *Transfermarkt*

Exhibit 45: UEL filter ASV

UEL filter ASV

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,58155247
R Square	0,33820328
Adjusted R Square	0,26125017
Standard Error	4,07321617
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	364,5831331	72,9166266	4,39492685	0,002549034
Residual	43	713,4168669	16,5910899		
Total	48	1078			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	3,91928634	3,910288048	1,00230118	0,32180534	-3,96656106	11,8051337	-3,96656106	11,8051337
Annual squad value (M€)	0,05609674	0,015277732	3,67179749	0,00066142	0,025286255	0,08690722	0,02528625	0,08690722
La Liga	1,97911427	5,032881124	0,39323684	0,69608753	-8,17065783	12,1288864	-8,17065783	12,1288864
Eredivisie	-5,9818985	4,127730636	-1,44919788	0,15453656	-14,3062607	2,34246368	-14,3062607	2,34246368
Other leagues	-1,07052724	3,206597119	-0,33385149	0,74011433	-7,53724664	5,39619216	-7,53724664	5,39619216
20/21	0,22133454	1,385418082	0,15976011	0,87381815	-2,5726273	3,01529638	-2,5726273	3,01529638

Source: *Transfermarkt*

Exhibit 46: UECL filter ASV

UECL filter ASV

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,62867598
R Square	0,39523349
Adjusted R Square	0,34025472
Standard Error	3,17084267
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	289,113299	72,2783246	7,1888379	0,00015187
Residual	44	442,386701	10,0542432		
Total	48	731,5			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,1993202	2,29911922	0,08669415	0,93130796	-4,43425013	4,83289052	-4,43425013	4,83289052
Annual squad value (M€)	0,08129611	0,01797707	4,52221188	4,5875E-05	0,04506571	0,1175265	0,04506571	0,1175265
Bundesliga	-4,62153889	4,19062427	-1,10282827	0,27609731	-13,0671872	3,82410937	-13,0671872	3,82410937
Eredivisie	4,8526502	3,2718117	1,48316916	0,14515756	-1,741253	11,4465534	-1,741253	11,4465534
Other leagues	2,5941372	2,29260997	1,13152138	0,2639652	-2,0263146	7,21458899	-2,0263146	7,21458899

Source: *Transfermarkt*