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An analysis of club revenue sources and competitive balance in the Italian Serie A: Does financial inequality affect team performance?

Master Thesis in MSc in Sport Management

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Abstract

Introduction: Most studies on competitive balance focus on analysing its impact on ticket sales and TV audience, while few studies investigate the relationship between financial inequity and competitive balance. In the context of continuous financial growth in the European football landscape, with a steady increase in operating revenues and club expenditures, this research examines the concentration of revenues and points obtained by Serie A teams within the 2011 to 2021 timeframe. The main objective is to empirically assess whether Serie A seasons with a more equal distribution of revenues generate a more balanced competition than those with a less equal distribution. Furthermore, the aim is to assess the impact of European cups on revenues and the relationship between financial performance and sports performance.

Methods: The financial revenue data come from the official balance sheets of the Serie A clubs and were provided by the authoritative sports newspaper *La Gazzetta dello Sport*. The analysis concerning the impact of revenue concentration on point concentration is characterised by 11 observations per variable used. In contrast, for the panel analysis establishing the relationship between financial and sports performance, 219 observations per variable were used.

Results: The analysis shows a deterioration of the competitive balance over time. The concentration of revenues in Serie A significantly and positively influences the concentration of points. Prizes from European cups have a significant and increasing impact on club revenues, causing an increase in the competitive imbalance. The relationship between each operational revenue source and the points obtained by clubs is robust and statistically positive.

Discussion: The results significantly affect the FIGC, Lega Serie A and clubs. The research suggests that most clubs should pursue long-term growth, supported by revenue streams that are not exclusively controlled by centralised distribution mechanisms, thus promoting sustainable growth. Three case studies are proposed to diversify clubs' revenue sources and contribute to the revival of Italian football: the modern stadium and the case of the Allianz Stadium, the internationalisation of the brand with the case of AC Milan and the 'Atalanta model' and its capital gains.

Keywords: competitive balance, Serie A, broadcasting, commercial and matchday revenues, financial inequality, revenue concentration, UEFA prizes, transfer investment, capital gain.

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CB
: Competitive Balance

Big 5
: Premier League, Serie A, Bundesliga, LaLiga and Ligue 1

UEFA
: Union of European Football Associations

UCL
: UEFA Champions League

FIGC
: Federazione Italiana Giuoco Calcio

FIFA
: Fédération Internationale de Football Association

UEL
: UEFA Europa League

UECL
: UEFA Conference League

IFAB
: International Football Association Board

VAR
: Video Assistant Referee

COVID-19
: COronaVIrus Disease of 2019

BN
: billion

MLN
: million

B2B
: Business to Business

B2C
: Business to Consumer

AUDITEL
: Azienda per l'Ufficio, le Ricerche e gli Investimenti nel Mercato degli Spettacoli Televisivi

RTI
: Reti Televisive Italiane

CIES
: Centre International d'Étude du Sport

AVG
: Average

N/A
: not applicable

HHI
: Herfindahl Hirschman Index

CR
: Concentration Ratio

NAMSI
: National Measure of Seasonal Imbalance

DCB
: Distance to Competitive Balance

ACB
: Analysis of Competitive Balance

UOH
: Uncertainty of Outcome Hypothesis

CI
: Competitive Intensity

FFP
: UEFA Financial Fair Play

GDP
: Gross Domestic Product

EC
: European Competition

AIC
: Akaike Information Criterion

FC
: Football Club

VIP
: Very Important Person

1 Introduction

Football is a global phenomenon that exerts considerable fascination and unites millions of people worldwide. It is considered a true “element of popular culture” (Parker, 1995, p.107) and is consolidating itself as the most popular sport in the world, involving some 3.5 billion people and attracting more than 250 million players in over 200 countries (Calcio e Finanza, 2022). Among the most prominent football leagues in the world is Serie A, the top division of Italian football, which boasts a long and successful history of exciting competitions. The 1990s and early 21st century were undoubtedly one of its most illustrious periods, a golden era characterised by iconic teams, the best players in the game, and great success in European competitions. The likes of Juventus, AC Milan, Inter Milan, Roma, Lazio, and Fiorentina competed for the title of Italian championship and honoured themselves in the European cups, helping to create what was then considered the most popular and competitive league in the world. Today, however, the situation has changed radically, with Serie A playing a co-leading role in the European football landscape, struggling to keep up with the revenue growth of the other major European leagues and attracting top talent. In 2004, sixteen of the fifty players with the highest market value played in Serie A, while ten years later, in 2014, that number had fallen to just four (dataset edited by Transfermarkt).

Football clubs are known for their orientation towards maximising wins at the expense of maximising profits (Garcia-del-Barrio & Szymanski, 2006), although it is assumed that they have to maintain a balance between achieving sporting results and the sustainable management of financial resources (Ferri et al., 2017; Ghio et al., 2019). To generate revenues, these clubs rely on three main sources of income, which are considered operational: matchday revenues which include ticket sales and the consumption of hospitality-related goods and services; commercial revenues, which include revenues from advertising and sponsorship partnerships; and television broadcast revenues which include revenues from participation in national championships (Deloitte, 2022). In addition, a relevant financial activity is the process of buying and selling players, through which can generate capital gains. According to Binder & Findlay (2012), players represent highly significant assets and play a crucial role in determining the capital value of clubs and in influencing the financial equilibrium of organisations. Club revenues from Europe's top leagues in terms of finances, talent and sporting success, known as

the *Big 5*, which include Serie A, Premier League, La Liga, Bundesliga and Ligue 1, have experienced impressive growth over time, increasing by a total of 5.9 billion euros from the 2013/14 season to 2021/22 (Deloitte, 2023). However, professional clubs are mostly characterised by their financial instability and poor solvency, resulting from accumulated losses over the years (Wilson & Plumley, 2013; Morrow, 2014). Over the same period, salary-related costs increased by 5.6 billion euros (Deloitte, 2016 ; 2023), while total expenditure on player acquisitions peaked in 2019, exceeding 7.3 billion euros and registering an increase of 3.5 billion euros compared to 2013 (FIFA, n.d.). To explain this phenomenon, a report published by CIES (2023) describes the football market as an increasingly speculative environment in which an increase in player transfer costs can be observed.

One of the most significant contributions in the sports economics literature is the uncertainty of outcome hypothesis proposed by Rottenberg (1956), who argued that fan interest increases as the level of uncertainty regarding the outcome of the game increases. This theory introduced the concept of competitive balance (CB), defined by Papanikos (2004, p.132) as "the distribution of sporting quality between the teams in a league" and recognized by Szymanski (2010) as a key characteristic of attractiveness in team sports. A competitive league attracts fans' interest, as reflected in both stadium attendance and high television audiences, which Dobson & Goddard (2011) identify as essential sources of profit for football clubs. To ensure the long-term financial and sporting sustainability of competitions, Gerrard (2004) highlights the importance of maintaining an adequate level of CB. In this respect, one of the main objectives of leagues is to promote CB within their competition.

In the last decade, one of the main problems identified in Italy has been the poor level of competitiveness within Serie A (Il Sole 24 Ore, 2017), highlighted by the streak of nine consecutive titles won by Juventus between the 2011/12 season and the 2019/20 seasons. Caruso (2022) identifies a structural and economic problem within the league, noting a persistent disparity between teams in terms of sporting results and economic size. On the one hand, there are clubs with high turnover volumes and high team valuations, which have a greater financial capacity to acquire new players; on the other hand, there are smaller realities characterised by limited economic resources and unable to keep up with the top teams. As a result, clubs newly promoted in the previous season are often relegated back to Serie B (Caruso, 2022). In this context, the increasingly conspicuous prize money of the Union of European Football Associations (UEFA) competitions, which rewards participating teams, accentuates

the revenue gap between Serie A clubs. While financial polarisation and disparities in sporting performance between clubs are not new, the rate of growth of these disparities has raised crucial questions among football stakeholders and brought the issue of competitive balance into the spotlight (Gerstle, 2020).

1.1 Aim and structure of the research

This thesis aims to analyse the competitive balance within Serie A throughout eleven seasons, from 2011/12 to 2021/22. In particular, this research has three main objectives:

1. It aims to enrich the economic literature on team sports by analysing the evolution of Serie A's competitive balance over time.
2. It analyses the evolution over time of the concentration of the different revenue sources of the teams, i.e. matchday, commercial and TV broadcasting revenues, and determines the incidence of the UEFA Champions League (UCL) prizes on club revenues.
3. Through an empirical analysis, it aims to assess the impact of the concentration of clubs' revenue sources on the competitive balance and the relationship between financial and sporting performance.

Therefore, this study contributes to filling the gap in the literature regarding the impact of financial inequality on the competitive balance in the specific context of Serie A through an in-depth analysis based on financial data derived from the official balance sheets of the teams, suitably provided by the authoritative source represented by *La Gazzetta dello Sport*.

The research is structured as follows. The next chapter contextualises the design of the competition and the financial situation of Serie A. The third chapter provides an overview of the CB concept and reviews the contributions of the literature on the subject. Chapter four presents the dataset and methods used for this study. The results are presented in chapter five, followed by an analysis of the implications and limitations of the study in chapter six and ending with conclusions in chapter seven

2 Context: the Italian Serie A

This chapter aims to provide a contextualisation of Serie A. Firstly, a detailed description of the structure and design of the Italian top division is presented in order to understand its positioning within the European football landscape and to examine how it is regulated and managed by the Federazione Italiana Giuoco Calcio (FIGC) and the Lega Serie A. Secondly, the financial aspects of Serie A clubs are examined, with a detailed examination of the different sources of revenue and costs between 2011 and 2022. This financial analysis will provide a comprehensive view of the economic situation of Serie A, facilitating a deeper understanding of the arguments and analyses presented in this research.

2.1 Structure and organisation

2.1.1 Governance of European football

This chapter examines the governance context of Serie A within a pyramidal system that characterises the global football landscape. At the top of this structure is football's international governing body, the Fédération Internationale de Football Association (FIFA), which plays a key role in the regulation of the game, with which football clubs and affiliated associations must comply (IFAB, 2021). One level down is UEFA, the umbrella organisation of 55 national associations that governs football at the European level (UEFA, 2018b). It operates as an autonomous entity within the world football system, exercising financial and sporting powers in accordance with FIFA's statutes and regulations. Its main tasks include the regulation of European football and the organisation and management of major club football competitions, including the prestigious UEFA Champions League, the UEFA Europa League (UEL) and the UEFA Conference League (UECL), for which it controls the respective prize money, regulations and media rights (UEFA, 2018b).

Instead, the FIGC takes on the role of the highest governing body in Italy. Founded in 1898, it oversees both professional and amateur football through a central structure comprising the national professional leagues such as the Lega Serie A, Lega Serie B and Lega Pro, as well as the Lega Nazionale Dilettanti. The leagues operate as independent club associations within the

FIGC's regulatory framework, managing competitions and clubs within their respective leagues. In this way, the FIGC and the leagues work together interdependently to ensure the proper functioning of Italian football while respecting the guidelines and directives established by the FIGC. The Lega Serie A, therefore, has the central role of managing and organising the Serie A championship, supervising the registration of teams and verifying compliance with participation requirements. In addition, they play a key role in the negotiation and allocation of television and commercial rights in order to ensure the distribution of revenue among the participating clubs (FIGC, 2020).

2.1.2 Competition design

The competitive design of Serie A is characterised by several elements that define the structure and the dynamics of the competition. Serie A has a total of twenty teams, each of which comprises a wide range of professionals, including players, coaches, athletic trainers and other staff members. Throughout the season, each team plays a total of 38 matches, split evenly between nineteen home games and the same number of away games against the other teams, between mid-August and the end of May. Matches have a standard duration of 90 minutes, divided into two 45-minute halves, with any extra time added at the end of each half. The current scoring system awards three points for a win, one for a draw and zero for a defeat (FIGC, 2019; AIA, 2023). The team with the most points at the end of the season wins the championship, known in Italy as the *Scudetto*. The Serie A points record is held by Juventus, who finished the 2013-14 season with 102 points out of a maximum of 114 (Lega Serie A, n.d.). The possibility to make up to five substitutions per game, in a maximum of three stoppages of play, was introduced during the Covid-19 pandemic and ratified for the 2022/23 season by the International Football Association Board (IFAB) (La Gazzetta dello Sport, 2022). Since the 2017/18 season, the Video Assistant Referee (VAR) has been in force to assist the referee and match officials with complex decisions such as validating a goal, awarding a penalty or a red card (Lega Serie A, 2018).

When analysing the structure of European football leagues, the mechanism of access to competitions should be underlined. In Serie A, the dynamics of promotion and relegation ensure the mobility of teams: the top three teams in Serie B table are promoted to Serie A, while the last three positions in the latter category result in relegation to the Serie B. This fundamental

aspect leads to a variation in the identity of the clubs involved from season to season, which characterises the context of an open league. From this perspective, it is possible for a team from the amateur divisions to gradually progress within the sporting hierarchy, gaining access to the top division and, consequently, gaining the opportunity to participate in European competitions (Andreff, 2011).

Indeed, Peeters & Szymanski (2014) highlight how the promotion process traditionally relies exclusively on sporting merit. A similar argument can be made in relation to qualification for European competitions. UEFA member associations can enter a certain number of teams into European competitions through their top domestic league, based on the UEFA country ranking, which reflects the performance of all teams in each association in European competitions. The maximum number of teams that can qualify for the UCL through the national championship is set at four. Under the current regulations, the top four ranked nations, including Italy in third place, are entitled to enter four teams in the UCL, represented by the top four clubs in Serie A, and two teams from the UEL, placed fifth and sixth in the league (UEFA, 2023b; 2023c).

2.2 Serie A operating revenues

The landscape of professional football has evolved into a vast industry in which elements such as new sports facilities, television broadcasting networks, commercial products and the ever-increasing expectations of fans, including transfers of top players and sporting successes, have contributed to transforming the sport into a full-fledged entrepreneurial activity (Şener & Karapolatgil, 2015). This chapter aims to provide an overview of the main operational revenue sources of football clubs, with a particular focus on the Italian context. These sources are represented by matchday revenues, commercial revenues and broadcasting revenues. These three categories can be observed in the financial statements of any club. While broadcasting revenues are generally distributed centrally and are therefore largely outside the direct control of clubs, commercial and matchday revenues are managed by clubs and are therefore of paramount importance from the point of view of controlling their finances (Football Benchmark, 2017).

2.2.1 Matchday revenues

Matchday revenues represent a revenue source that refers to the total amount a club generates from organising matches in its stadium (Football Benchmark, 2015). These revenues are mainly derived from ticket sales but more broadly include all revenues generated by supporters during the match, such as the sale of merchandise, food and beverages. The management of these revenues is under the direct control of the clubs and depends on several factors. At a macroeconomic level, they are influenced by the catchment area and purchasing power. In contrast, at a club level, investment in infrastructure is crucial in order to offer new services that can attract more spectators and increase their spending during matches. In the context of the league, the overall quality of the game, the competitive balance and the presence of historic clubs and prominent players impact match revenues (Gerstle, 2020). Even though in the 2021/22 season, matchday revenues account for only 11.2% of the total revenues of the *Big 5* clubs (Deloitte, 2023), this revenue source remains undeniably important, even in the context of the most prestigious clubs (Quansah et al., 2021). In the 2021/22 Serie A season, these revenues represented 9.3% of total team income (FIGC ReportCalcio 2023, n.d.).

2.2.1.1 The critical situation of stadia in Italy

According to Nufer & Fischer (2013), ticket pricing emerges as a crucial factor for clubs in their efforts to increase matchday revenues, as it can influence demand. While some strategies are aimed at maximising profits, others are designed to encourage attendance at stadiums, thereby generating more revenue from ancillary services (Fort, 2004). In the specific context of Serie A, Antinoro (2020) emphasises the inadequacy of sports facilities as a cause of the modest matchday earnings. Indeed, the facilities are outdated and have remained largely unchanged since their construction/renovation for the World Cup in Italy in the 1990s. While clubs in other European leagues have taken steps over the past two decades to build several new sports facilities capable of stimulating fan attendance, Italian teams have preferred not to address this issue, directing their investments on other fronts. Between 2007 and 2022, eighteen new stadiums were built in Germany, twelve in France and twelve in England. In Italy, when considering the 2021/22 Serie A teams, only Juventus built a new stadium, the Allianz Stadium, in 2011, while Udinese and Atalanta underwent significant modernisation with the Dacia Arena and the Gewiss Stadium respectively (FIGC ReportCalcio 2023, n.d.).

In Italy, the concept of the stadium has its origins in a time when it was considered simply as a stage for football matches. From a managerial point of view, it was often considered a financial burden, especially as the facilities were publicly owned and belonged to municipalities or government institutions. For sports clubs, the stadium represented a constraint in their financial statements, as the rent for its use weighed on finances, and the lack of ownership limited the profitability prospects of the teams (Checchinato & Zucchetta, 2013). To complicate the picture, there was also the social and environmental aspect: the areas surrounding the stadiums, often neglected and abandoned outside match days, became fertile ground for security issues and clashes between rival fans, aspects that characterised Italian football in the new millennium (Di Domizio, 2012). As a result, an attitude of disinterest in the development of stadiums was established (Checchinato & Zucchetta, 2013).

Even today, the dynamic of stadium ownership remains largely unchanged, being limited to Juventus, Atalanta, Sassuolo and Udinese. Moreover, the average age of Serie A's stadiums, which stands at 61 years, and the average capacity utilisation of the stadiums, which was just over 57% between the 2011/12 and 2018/19 seasons, highlight a further lag compared to the *Big 5* (FIGC ReportCalcio 2023, n.d.). Thus, Serie A is in a situation characterised by outdated

stadiums that provide little comfort to fans (Doidge, 2015), whose ownership is mainly a matter of public domain. This lack of control over facilities prevents clubs from diversifying their revenue streams and making decisions about the use of their stadiums (Baroncelli & Lago, 2006).

2.2.1.2 The distribution of matchday revenues among Serie A clubs

Opportunities to increase matchday revenue and to have more control over their own income still need to be explored among Serie A clubs. Table 1 shows the 20 teams in Serie A in 2018/19, the last season considered in this research, without the impact of Covid-19 on attendance. The teams are ranked according to their position at the end of the season, and each team's stadium name, average number of spectators for home matches, stadium occupancy rate, matchday revenue in millions of euros and average money spent by spectator per match are provided.

Table 1: Overview of Serie A stadiums and matchday revenue of the season 2018/19. Data from Company financial statements edited by Gazzetta dello Sport & StadiaPostcards (n.d.).

Team (by rank)	Stadium name	Avg. spectators	Stadium filling (%)	Matchday revenues (mln €)	Avg spectator spending per match (€)
Juventus	Allianz Stadium	39244	0.945	74.4	1895
Napoli	Stadio Diego Armando Maradona	29003	0.481	15.9	548
Atalanta	Gewiss Stadium	18903	0.869	8.0	423
Inter	San Siro	61419	0.773	44.7	728
Milan	San Siro	54667	0.688	34.1	624
Roma	Stadio Olimpico	38622	0.527	33.7	873
Torino	Stadio Olimpico Grande Torino	21385	0.759	6.0	281
Lazio	Stadio Olimpico	37191	0.527	10.9	293
Sampdoria	Stadio Luigi Ferraris	20264	0.557	4.3	212
Bologna	Stadio Renato Dall'Ara	21237	0.582	5.8	273
Sassuolo	Mapei Stadium	12619	0.586	3.1	246
Udinese	Dacia Arena	20315	0.808	6.6	325
Spal	Stadio Paolo Mazza	13924	0.863	5.2	373
Parma	Stadio Ennio Tardini	16522	0.739	4.3	260
Cagliari	Unipol Domus	15399	0.938	5.1	331
Fiorentina	Stadio Artemio Franchi	31135	0.722	7.7	247
Genoa	Stadio Luigi Ferraris	21632	0.595	4.6	213
Empoli	Stadio Carlo Castellani	9506	0.479	2.5	263
Frosinone	Stadio Benito Stirpe	13454	0.829	4.6	341
Chievo	Stadio Marcantonio Bentegodi	13138	0.423	2.8	213

2.2.1.3 Matchday revenue trend in Serie A

Figure 1 illustrates the evolution of matchday revenues, expressed in millions of euros, and the average filling rate of Serie A stadiums between the 2011/12 and 2021/22 seasons. These revenues showed a modest growth of 17% between the 2011/12 and 2021/22 seasons, increasing from 186 mln to 218 mln euros. Furthermore, a close correlation with the number of spectators in the stadiums can be observed. Between the 2011/12 season and the 2016/17 season, a slight but steady increase in revenue can be observed, culminating in the following season when the 300 mln euros mark is surpassed for the first time, coinciding with a stadium occupancy rate of over 60%. This increase is mainly attributable to the significant increase in attendance at Inter and Milan matches (Deloitte, 2019).

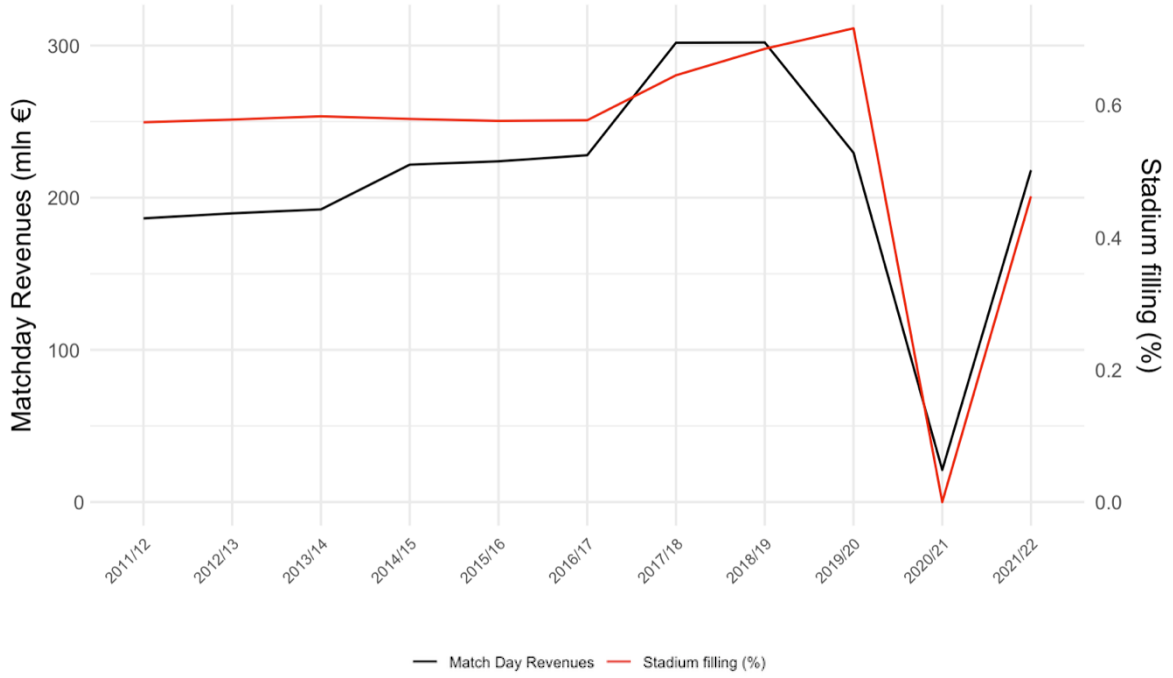

Figure 1: *Evolution of aggregate matchday revenue and stadium filling rates in Serie A from season 2011/12 to 2021/22. Data from StadiaPostcards (n.d.) & FIGC ReportCalcio (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

The impact of the COVID-19 pandemic is also noticeable. The first decline in matchday revenue occurred in the 2019/20 season when matches were played behind closed doors from matchday 26. Until then, stadium occupancy had been above 70%, but this was not enough to prevent an overall decrease in matchday revenue. The 2020/21 season was played entirely behind closed doors, except for a few matches where a maximum of 1000 people were allowed to attend, thus explaining the 25 mln euros matchday revenue recorded. In the 2021/22 season, the COVID-19 restrictions limited stadium capacity to 50% until 10/10/21, 75% until 05/01/22,

again 50% until 18/02/22, and 75% until 31/03/22. As of 1 April 2022, all restrictions related to COVID-19 were lifted, allowing free access to stadiums again (StadiaPostcards, n.d.). However, these restrictions have prevented matchday revenues from returning to pre-pandemic levels.

2.2.2 Commercial revenues

A further source of revenue concerns commercial revenue, which is mainly derived from club sponsorship deals and income from retail, merchandising, clothing and licensing activities such as stadium naming rights. These revenues are also directly managed by the clubs, whose success in generating commercial revenues is explained by their ability to capitalise on the economic opportunities available to them (Gerstle, 2020). The football sponsorship sector has experienced significant growth in recent decades, and given the variety of activities related to it, there is still considerable potential for growth of this revenue source (Football Benchmark, 2021a). In the 2021/22 Serie A, commercial revenues contributed 24.5% of the total revenue (FIGC ReportCalcio 2023, n.d.).

2.2.2.1 Sponsorship and brand image

Commercialisation has played a significant role in the world of football in recent decades, extending into a variety of sectors and services (Dubal, 2010). This trend has been driven by the interest of sponsors (Woisetschläger et al., 2014), the evolution of ownership structures (Mason, 1999), increasingly conspicuous broadcast contracts (Merkel, 2012) and the clubs' desire to increase their revenues by engaging a wider audience (Numerato & Giulianotti, 2018). These changes have benefited not only the teams but also the athletes, contributing to the growth of profits in sports.

Sponsorship in sports can be defined as a contractual arrangement in which one party, called the *sponsor*, offers monetary compensation or provides goods and services to the other party, called the *sponsee*, in exchange for promotional services. Such services commonly involve a sports-related entity, such as an athlete or a team, charged with promoting the brand and the name of the sponsoring company. Football enjoys the remarkable ability to be broadcast through a wide range of media, including television, press, radio and the web, allowing the

message of sponsors to reach both the audience directly present at events, known as the direct audience and a much wider audience not physically present during matches, known as the indirect audience (Napoleone, 2017). The main obligation of the sports clubs is to ensure the visibility of the sponsor's brand through the placement of the sponsor's brand on sports clothing, equipment and infrastructure, respecting the dimensions established by the regulations of the sports federations, which differentiate the dimensions for the brand of the main sponsor and for the brand of the technical sponsor (Napoleone, 2017).

Commercial revenues show considerable variation depending on the brand's attractiveness, as the notoriety and image of a particular club justify controlling a larger market share and maintaining a higher profit margin, leading to higher earnings (ESSEC Sports Chair, n.d.). The American Marketing Association defines a brand as "a name, term, sign, symbol, design or any combination of these elements used to identify the goods or services of a seller or group of sellers and to distinguish them from competitors." (Branding Archives, n.d.). Generally, commercial revenues are derived from two distinct channels and treatments of the club brand: Business-to-Business (B2B) and Business-to-Consumer (B2C). B2B channels focus on the rights and brand-related agreements concluded between the club and other commercial entities, aiming to build mutually beneficial strategic relationships: the sponsor benefits from the association with the club, while the club receives revenue from the sponsorship agreements. B2C channels, on the other hand, concern the application of the brand and are of crucial importance for a football club as they directly involve the end consumers, i.e. the fans and, in general, those interested in products or services related to the club. Managing these relationships is crucial for building a positive brand and keeping supporters loyal. The distinction between these two channels is key as it separates what the club can manage directly, i.e. interaction with the fanbase, from what is outside its control, i.e. the value proposition provided by the sponsor (Thomas, 2015).

2.2.2.2 The distribution of commercial revenues among Serie A clubs

Concerning Serie A specifically, in the 2021/22 season, revenues from sponsors amount to 401 mln euros, while those from other commercial activities amount to 175 mln euros, bringing total commercial revenues to 576 mln euros (FIGC ReportCalcio 2023, n.d.). Table 2 shows the teams that participated in the 2021/22 Serie A sorted according to their final ranking, together with their total commercial revenues, the sponsors on the teams' official jerseys, their

financial contributions and their incidence on commercial revenues. Regarding the latter category, of interest are the high percentages of Fiorentina and Sassuolo, which can be attributed to the direct involvement of their respective owner companies, i.e. Mediacom for Fiorentina and Mapei for Sassuolo.

Table 2: Clubs' commercial revenues and jersey sponsors of the season 2021/22. Data from Company financial statements edited by Gazzetta dello Sport & Social Media Soccer (2022).

Team (by rank)	Commercial revenues (mln €)	Jersey sponsors	Sponsor contributions (mln €)	% of commercial revenues
Milan	82.9	Emirates, BitMex and Wefox	15	18.1
Inter	88.9	Socios, DigitalBits and Lenovo	26	29.2
Napoli	38.7	Lete, Amazon and Floki	11	28.4
Juventus	173.9	Jeep, Bitget and Cygames	57	32.8
Lazio	25.8	Binance and Frecciarossa	8	31.0
Roma	38.5	DigitalBits and Hyundai	8	20.8
Fiorentina	37.6	Mediacom, Estra and Prima.it	26.2	69.7
Atalanta	30.4	Plus500, Automha and Gewiss	7	23.0
Hellas Verona	10.4	Sinergy Luce e Gas, Restructure 5.0 and Vetrocar	1.5	14.4
Torino	11.2	Suzuki, Beretta and EdiliziAcrobatica	4	35.7
Sassuolo	27.1	Mapei	18	66.4
Udinese	8.9	Dacia, Bluenergy and Prosciutto di San Daniele	1.9	21.3
Bologna	12.9	Facile Ristrutturare, Illumia and Scala	3	23.3
Empoli	4.5	Computer Gross, Sammontana and Pediatrica	1.6	35.6
Sampdoria	7.6	Banca Ifis, IBSA and Evo	1.9	25.0
Spezia	3.9	Distretti Ecologici, Iozzelli Piscine and Bitici.com	1	25.6
Salernitana	5.7	Caffè Motta, Supermercati Eté and Distretti Ecologici	1	17.5
Cagliari	12.4	Regione Sardegna, Arborea and Ichnusa	4	32.3
Genoa	6.3	MG.K Vis, Synlab and LeasePlan	1	15.9
Venezia	8.8	Becher and DR Automobiles	0.6	6.8

2.2.2.3 Commercial revenues trend in Serie A

Figure 2 shows the evolution of the aggregate commercial revenues of Serie A clubs between the 2011/12 season and the 2021/22 season. During this time interval, commercial revenues increased by 67.3% from 344 mln to 576 mln euros. In the first three seasons under consideration, commercial revenues remained stable, while in the following seasons, until the advent of the pandemic, there was an exponential increase (77%) of this revenue stream, from

361 mln euros in the 2013/14 season to 638 mln euros in the 2018/19 season. The first season impacted by COVID-19 (2019/20) saw a significant decrease in commercial revenue, mainly attributable to the decrease of FC Internazionale's revenue (Deloitte, 2021), while the increase in the following season (2020/21) comes from the fact that fourteen Serie A clubs increased their revenue thanks new commercial agreements and some back payments from the previous season, which itself explains the decrease in the 2021/22 season (Deloitte, 2022).

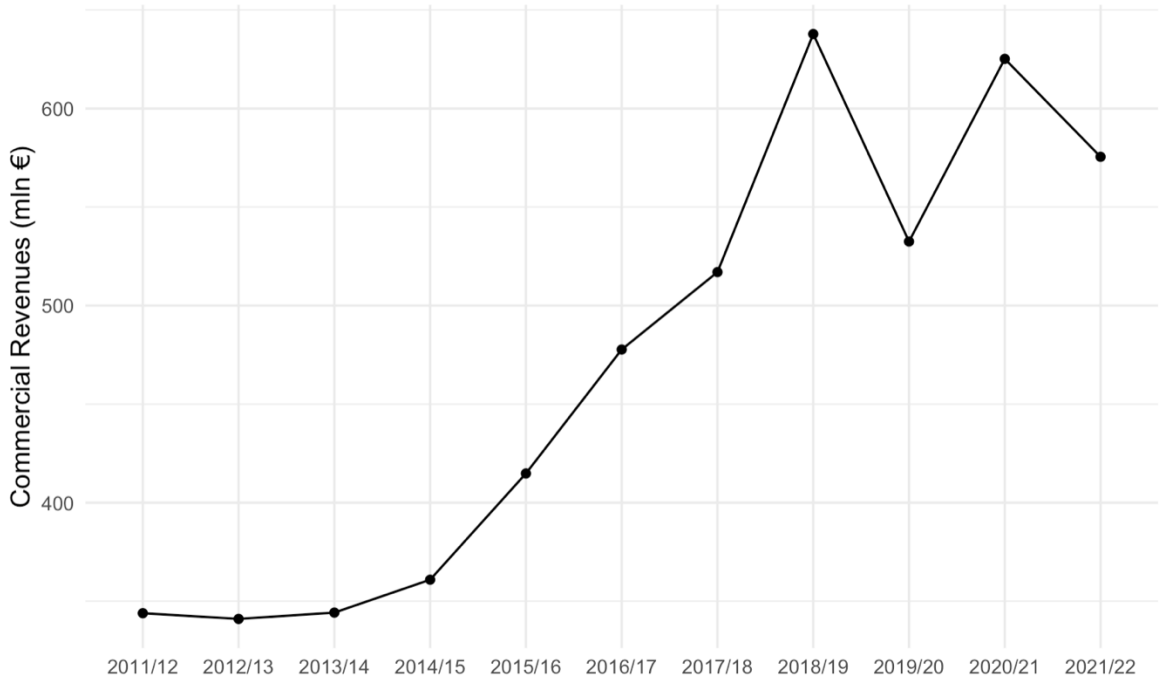

Figure 2: *Evolution of aggregate commercial revenues in Serie A from season 2011/12 to 2021/22. Data from ReportCalcio FIGC (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

2.2.3 TV broadcasting revenues

Revenues from TV rights represent the total amount clubs earn through TV broadcasting agreements to transmit matches. These revenues constitute a centralised source of revenue, which is not directly under the control of individual clubs. The value of broadcasting rights is influenced by many socio-economic and cultural factors, including the popularity of football, the size of the domestic market, the professionalisation of the league, the attractiveness of the league and teams, and competition in the media market and international interest (Gerstle, 2020). These revenues constitute the main source of revenue for Serie A teams. In the 2021/22

season, broadcasting revenues accounted for 51.6% of total revenues (FIGC ReportCalcio 2023, n.d.).

2.2.3.1 The rise of pay TV and pay-per-view

The turning point that transformed TV rights revenues into the main source of income for football clubs was the introduction of pay TV and pay-per-view in 1993 and 1996, respectively. This change had a significant impact on the economic growth and internationalisation of Serie A and European football (Baroncelli & Caruso, 2011). Proceeds from television broadcasting have grown considerably, from 93 mln euros in the 1993/94 season to 231 mln euros in the 1998/99 season. The Lega Calcio played a central role as an intermediary in negotiating the clubs' TV rights, working with both public and pay-TV broadcasters. However, in the following championship, a series of events led to a drastic change in the dynamic between football and broadcasters, creating a rift between an elite group of Serie A clubs and the weaker clubs. The Decree Law No. 15 passed in 1999[1] allowed football clubs to deal directly with broadcasters for TV rights and prompted the Italian Antitrust Authority to force the Lega Calcio to revise its regulations. Since the 1999/00 football season, pay-TV and foreign rights have been the subject of individual negotiations without the intermediation of the Football League. This regulatory development, accompanied by increasing competition between television channels, led to a significant increase in revenue for football clubs during the 1999/00 and 2000/01 football seasons, raising revenues from 231 mln to 511 mln euros (Baroncelli & Lago, 2006).

2.2.3.2 The Melandri Law and the change in the TV rights distribution system

Individual negotiations between Serie A clubs continued until the entry into force of the *Melandri Law*, Legislative Decree No. 9 of 9 January 2008[2]. Article 19 entitled *Criteria for the allocation of revenues from the commercialisation of audiovisual rights* de facto assigned the Lega Serie A the task of setting the guidelines for the commercialisation of audiovisual rights, establishing rules for the offer and assignment of such rights and the criteria for the formation of packages (Tari, 2012). The advent of new technologies made it profitable to split the rights into several packages instead of assigning them to a single buyer, thus maximising

[1] Decree-Law No 15 of 30 January 1999: 'Urgent provisions for the balanced development of television broadcasting and to avoid the creation or maintenance of dominant positions in the broadcasting sector'.
[2] Legislative Decree No. 9 of 9 January 2008: 'Regulation of the ownership and marketing of sports audiovisual rights and related allocation of resources'.

profits from a single event with licensing contracts lasting a maximum of three years. According to the *Melandri Law*, the League had to prepare several packages, balanced with each other, which cannot all be acquired by a single operator (Sport Business Management, 2017). Table 3 shows how and according to which criteria the TV rights were allocated.

Table 3: Broadcasting revenue distribution criteria (in %) until the 2017/18 season. Data from Sport Business Management (2017)

1.	Equal parts	40%	
2.	Sporting results	30%	
	Current year		5%
	Previous five years		15%
	Sporting tradition		10%
3.	Catchment area	30%	
	Supporters of each club		25%
	Municipality population		5%

The situation changed further as of the 2018/19 season following an amendment to the *Melandri Law*, decreeing new allocation criteria depicted in detail in Table 4. The then Minister of Sports Luca Lotti stated that "the share to be divided equally is raised from 40% to 50% and the remaining part will be allocated based on certain and measurable criteria" (Calcio e Finanza, 2018, p.1), giving importance to the points collected for which there will no longer exist "useless end-of-season matches" (Calcio e Finanza, 2018, p.1), to the number of spectators who purchased tickets to attend home matches played in the last three championships, and to the television audience certified by the *Azienda per l'Ufficio, le Ricerche e gli Investimenti nel Mercato degli Spettacoli Televisivi* (Auditel). These measures were implemented to "reduce the historic gap between the top of the class and the so-called small ones, bringing Serie A closer to the Premier League and the Bundesliga" (Calcio e Finanza, 2018, p.1).

Table 4: Broadcasting revenue distribution criteria (in %) from the 2018/19 season. Data from Tonucci & Partners (2018)

1.	Equal parts	50%	
2.	Sporting results	30%	
	Points & rank current year		15%
	Previous five years		10%
	Sporting tradition		5%
3.	Catchment area	20%	
	Nr. of paying spectators last 3 years		12%
	TV audience certified by Auditel		8%

2.2.3.3 The distribution of broadcasting in the 2017/18 and 2018/19 seasons

In order to obtain a detailed understanding of the dynamics of TV rights revenue sharing after the change to the *Melandri Law*, Table 5 compares the revenues earned by Serie A teams for the 2017/18 and 2018/19 seasons. The teams have been listed according to the final standings of the respective season, while the revenues earned by the teams in the European cups have been removed from the broadcasting revenues. It can be seen that Juventus and Napoli, who came first and second respectively in both seasons, saw their broadcasting revenues decrease by 9.1 and 6.7 mln euros. Notable is the 11.9 mln euros increase achieved by Atalanta, which improved its ranking by four positions in the 2018/19 season. Spal's growth is inflated because it follows a financial statement model aligned with the civil calendar, closing its accounting year on 31 December instead of at the end of the football season. As a newly promoted club, the 15 mln euros of the 2017/18 season considers the half season gains achieved in Serie B.

Table 5: Distribution of broadcasting revenue (mln €) in the 2017/18 and 2018/19 season. Data from Company financial statements edited by Gazzetta dello Sport

2017/18		**2018/19**		
Team (by rank)	**TV broadcasting revenues (mln €)**	**Team (by rank)**	**+/- rank (season 2017/18)**	**+/- TV broadcasting revenues season 2017/18 (mln €)**
Juventus	120.1	Juventus	-	- 9.1
Napoli	81.4	Napoli	-	- 6.7
Roma	83	Atalanta	+ 4	+ 11.9
Inter	94.6	Inter	-	+ 7.3
Lazio	67.9	Milan	+ 1	+ 3.7
Milan	95.4	Roma	- 3	+ 3.8
Atalanta	41.5	Torino	+ 2	+ 2.9
Fiorentina	60.7	Lazio	- 3	- 1.6
Torino	52.3	Sampdoria	+ 1	+ 5.4
Sampdoria	42.3	Bologna	+ 5	+ 8
Sassuolo	33.7	Sassuolo	-	+ 1.4
Genoa	37.5	Udinese	+ 2	+ 2.7
Chievo	33.7	Spal	+ 4	+ 20.5
Udinese	38	Parma	newly-promoted	n/a
Bologna	36.1	Cagliari	+ 1	+ 3.6
Cagliari	35.6	Fiorentina	- 8	- 0.3
Spal	15	Genoa	- 5	+ 8.4
Crotone	28.3	Empoli	newly-promoted	n/a
Hellas Verona	30.9	Frosinone	newly-promoted	n/a
Benevento	25.4	Chievo	- 7	+ 7.6

2.2.3.4 Broadcasting revenues trend in Serie A

Figure 3 shows the development of the broadcasting revenues received by Serie A between the seasons 2011/12 and 2021/22. During this period, the allocation of TV rights passed from *Sky* and *Reti Televisive Italiane* (RTI) for the seasons 2011/12 - 2014/15 (Il Sole 24 Ore, 2011; Quotidiano Nazionale, 2009) to *Sky* and *Mediaset* for the three years 2015/16 - 2017/18 (Il Sole 24 Ore, 2015), then to *Sky* and *DAZN Group* for the period 2018/19 - 2021/22 (La Gazzetta dello Sport, 2018; Il Sole 24 ORE, 2021). A steady growth in broadcasting revenue was observed from 2011/12 to 2018/19, rising from 913 mln to 1357 mln euros. It is clear from the various reports published by Deloitte (2016, 2017, 2022) that revenue growth over time was mainly driven by the increase in television revenue rather than by commercial and matchday revenue. This eloquently underlines how strongly Serie A clubs depend on this specific centralised source of revenue, which is controlled and managed by the Lega Serie A.

However, this source of revenue was also affected by the COVID-19 pandemic. In the 2019/20 season, there was a 19% decrease, with aggregated broadcasting revenues of 1.2 billion euros, mainly due to the postponement of payments to the 2020/21 season (Deloitte, 2021). Because of this, revenues grew by 48% in the following season (Deloitte, 2022), but in the 2021/22 season, revenues returned to similar levels as in the 2017/18 season.

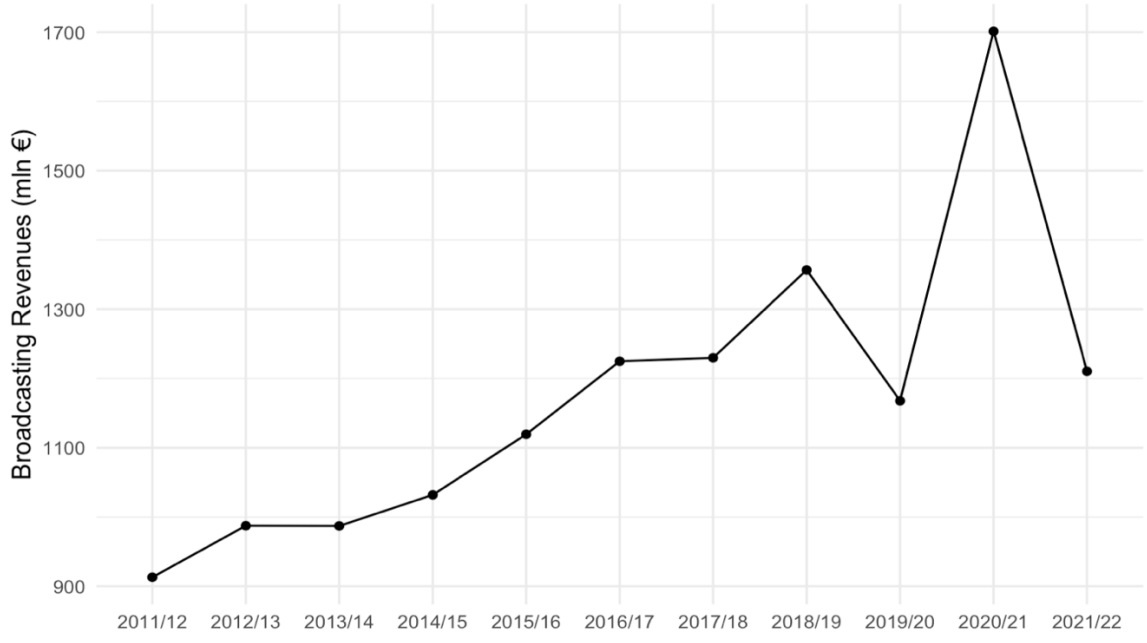

Figure 3: *Evolution of aggregated broadcasting revenues in Serie A from season 2011/12 to 2021/22. Data from ReportCalcio FIGC (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

2.2.3.5 Revenues from European competitions

Revenues generated through the European competitions organised by UEFA do not represent a category of operating revenues itself but are instead accounted for in company balance sheets under broadcasting revenues. Participation in these competitions is of primary importance for all top-tier clubs as it not only allows them to benefit from economic revenues that can be invested in the transfer market but also constitutes a prime showcase for attracting talented players. Indeed, the UCL is considered by Zambom-Ferraresi et al. (2017) to be the best club football competition in the world, in which the most prestigious teams and the best players worldwide participate. Although its appeal remains unchanged over time, the business surrounding it has undergone significant changes. Figure 4 illustrates the evolution of the total prize money provided by UEFA to clubs participating in the UCL, which increased from 834 mln euros in the 2011/12 season to 2035 mln euros for the 2021/22 season.

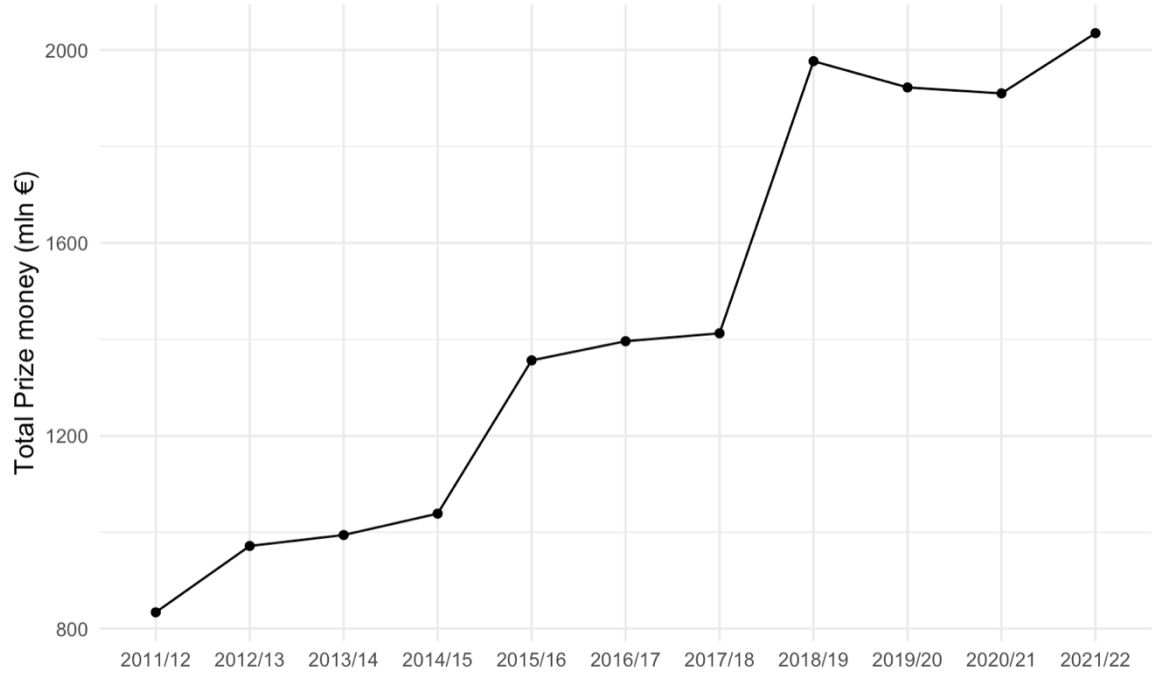

Figure 4: *Evolution of UCL prizes in mln € from season 2011/12 to 2021/22. Data from UEFA (2013, 2014, 2015, 2016, 2017, 2018c, 2019, 2020 ,2021, 2022, 2023a)*

UEFA, as the organiser of its competitions, has control over media rights and prize money (UEFA, 2018a). All gross media and commercial rights revenues from the Champions League, Super Cup and Europa League are centralised in a common fund, from which fixed percentages are deducted to cover competition costs and solidarity payments. The remaining net balance is then divided among the clubs participating in UEFA competitions (UEFA, 2019). From the

2011/12 season to 2017/18, the distribution system for the UCL included a fixed amount, a performance-related bonus and a significant portion of the income distributed through the market pool concept. The shares of the market pool allocated to clubs were proportional to the value of television rights revenues in their respective national associations (UEFA, 2014; 2019). From the 2018/19 season, the system was changed, introducing the ten-year performance-based coefficient ranking and a variable market pool based on the proportional value of the domestic TV market of the participating clubs from the group stage onwards (UEFA, 2020). For a more detailed view of the amounts received according to the described criteria and the stage reached in the competition, reference can be made to Annex 1, which shows data for the seasons 2011/12 to 2021/22.

With regard to the performance of Italian teams, Figure 5 presents the clubs that participated in the UCL, indicating the stage of the competition reached and the aggregate amount of winnings in terms of prizes. A steady increase in financial revenues was observed in the years prior to the outbreak of the pandemic, with a notable increase in the three years covering the 2016/17 and 2018/19 seasons, despite the involvement of only two clubs (2015/16 - 2016/17) and three clubs (2017/18) in the UCL. However, COVID-19 negatively influenced the premium trend, as a portion was retained to address health challenges (UEFA, 2021). This financial decline has coincided with a decline in sporting performance, as in the last two seasons, no Italian team has managed to reach the quarter-finals.

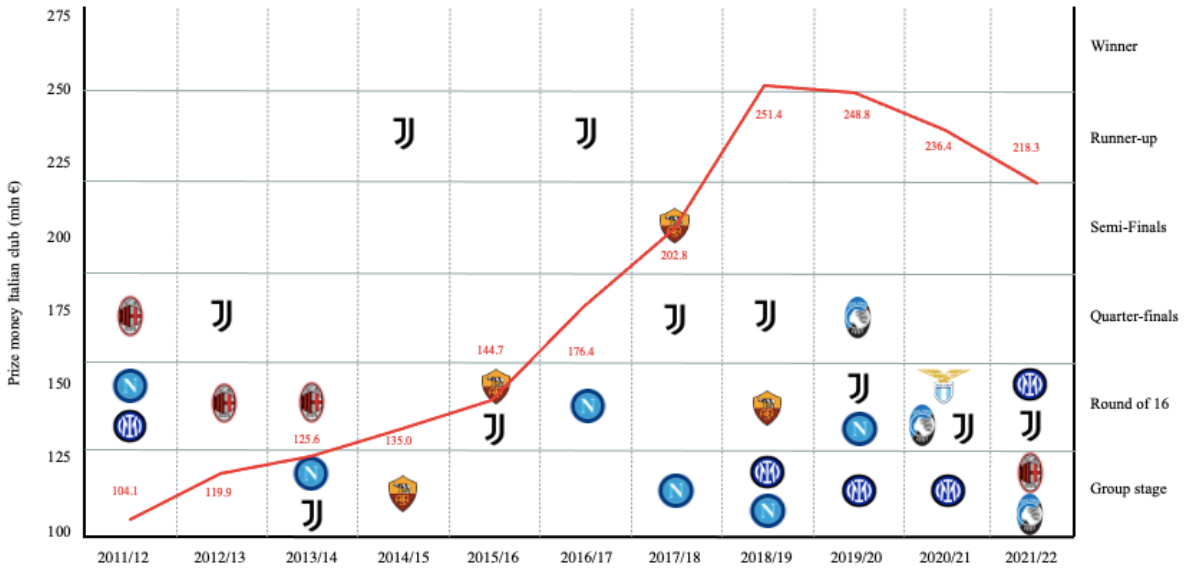

Figure 5: *Evolution of UCL prizes distributed to Serie A clubs and stage of the competition reached. Data from UEFA (2013, 2014, 2015, 2016, 2017, 2018c, 2019, 2020 ,2021, 2022, 2023a)*

In summary, although since 2018/19, UEFA's ranking by nations has allowed four Italian teams to participate in the competition, they have struggled to progress in the major stages of the tournament. While such performances have been enough to create a significant gap in earnings between Serie A teams, they certify a lag against prestige clubs from other European leagues that have achieved better results and larger prize money from the UCL.

2.3 Income from capital gains

Capital gains represent a source of income resulting from the trading of players. Each club exercises control over this type of income, as they can decide which players to sell and which to keep on the roster ahead of the football season, in line with the sporting objectives set by management and the coach. In Italy, capital gains is widely exploited and has been the subject of much controversy and discussion. In the 2021/22 Serie A, gains totalling 541 mln euros were generated (FIGC ReportCalcio 2023, n.d.). The following chapter aims to define the concept of capital gains, distinguishing between real and fictitious ones.

2.3.1 Subjectivity of a player's market valuation

In order to fully understand the concept of capital gains, it is important to know the dynamics around which the economic valuation of a player is given. Market values are commonly determined to assess transfer fees (Müller et al., 2017) by comparing players' characteristics and performances with recent similar transactions and their respective transfer fees. Therefore, the market value of the player is closer to a price estimate rather than a valuation (Quansah et al., 2021). Caruso (2022) points out that player transactions are often based on arbitrary and subjective assessments by the teams involved in the negotiation. The lack of objective criteria to determine the fairness or distortion of such transactions prevents control bodies from applying sanctions. This situation has generated financial instability within the football system, leading to the creation of a speculative bubble in market prices.

The CIES (2016) report identified several factors that influence the determination of players' transfer values. There are variables related to players' characteristics such as age, role, remaining contract length and residual book value; variables related to players' performance, such as international status and level of experience in domestic leagues, European cups and national teams, as well as their recent performances reflecting the player's current state of form. Finally, the last category considers the level of the leagues in which a player has played and the sporting successes achieved by clubs.

Although many of these variables are objective and quantifiable, Caruso (2022) notes that there are factors to consider that cannot be objectively assessed due to their complexity and lack of direct correspondence. These factors involve different stakeholders, such as the club owning the player, the purchasing club, the sponsors, the players' agents and the media, and include market parameters such as demand, supply and bargaining power of the different parties, which in turn are influenced by the social prestige and bargaining power of the player. This explains why sometimes players with similar objective parameters and sporting achievements can have totally different economic valuations. Within the market dynamics, the boost of visibility given by the mass media, the emergence of greater supply and demand in the market venues, the creation of fictitious auctions through fake news on social media and websites, and the ability of agents to defend the interests of their clients make the evaluation of a player a highly subjective process (Caruso, 2022). Therefore, even if one can rely on objective variables such as those proposed by CIES (2016), there will always be uncontrollable factors that leave room for speculative dynamics. This leads to situations where players can be bought and sold at prices that may deviate significantly from the initial objective valuations.

2.3.2 Real and fictitious capital gains

In football, a capital gain is defined as the difference between the price at which a player is sold and the residual value he had in the balance sheet under the heading 'players' rights'. Initially, the cost of a player corresponds to the purchase price, but this amount is amortised over a number of accounting periods equivalent to the years of the player's contract. As a result, the residual value in the balance sheet is gradually reduced by the amount of depreciation as the years of the contract progress (La Repubblica, 2023). The cost of a player paid 50 mln who signs a five-year contract will be amortised over five years, with a depreciation of 10 mln euro per year. If this player is sold after one year for the same sum of 50 mln, he will generate a capital gain of 10 mln on the balance sheet, as his residual value will have fallen to 40 mln. Otherwise, if the player is sold for less than his residual value, the club will generate a capital loss. These calculations are made regardless of the player's performance on the pitch during those seasons. In other words, the book value of the player does not take into account on-field performance but is mainly based on his contractual valuation and depreciation terms. The revenues from the sales are fully accounted for in the balance sheet (La Repubblica, 2023). In

the case of the example described, the 10 mln capital gain generated in a specific season will be recorded in the balance sheet of the same season.

Therefore, two distinct financial aspects emerge: on the one hand, the effective flow of money from real purchases and sales and, on the other hand, the process of valuations on the balance sheet. When buying a football player, there is no objective estimate of its value, as in the case of real estate, since the price is determined by negotiation between the companies involved (La Repubblica, 2023). The capital gain is considered positive and virtuous if it is real since it represents the discovery of talent, its growth and development, followed by the subsequent sale of the player with the consequent economic gain to be recorded in the balance sheets. Many teams, even top-level ones, make player trading and capital gains their core business, most notably Benfica, Ajax and, more recently, Brighton. Different is the case of fictitious capital gains, i.e. transactions created to fix the balance sheets without moving real money flows. Such capital gains arise when an exchange of players is made, especially if that exchange is made on equal terms, without a financial settlement, where the issue of player valuation arises. (Sky Sport, 2023). In these situations, two clubs choose two players with a relatively low residual value and decide to make an exchange by over-valuing them. This creates a positive value in the balance sheet, proportional to the overvaluation of the players involved. However, this practice entails several costs for future budgets, which can burden for clubs in the long run. In some cases, this situation forces clubs to constantly look for new capital gains to restore the current financial situation without considering future impacts, creating a vicious cycle (Bellinazzo, 2023; Sky Sport, 2023).

2.3.3 Capital gains revenue trends in Serie A

The source of income from capital gains can be a risk for football clubs if used inappropriately. According to expert sports journalist Marco Iaria, quoted in Caruso (2022), they have become particularly important among clubs whose overall increase in operating revenues is not comparable to that found in clubs in other European leagues. He continues by saying that "Italian clubs have tried to make up for this deficit or, in any case, an unremarkable growth in other characteristic revenue sources by using the financial leverage of player trading characterised by football market transactions" (Marco Iaria in Caruso, 2022, p.40). Figure 6

illustrates the trend of the overall utilisation of capital gains among Serie A teams from 2011/12 to 2021/22.

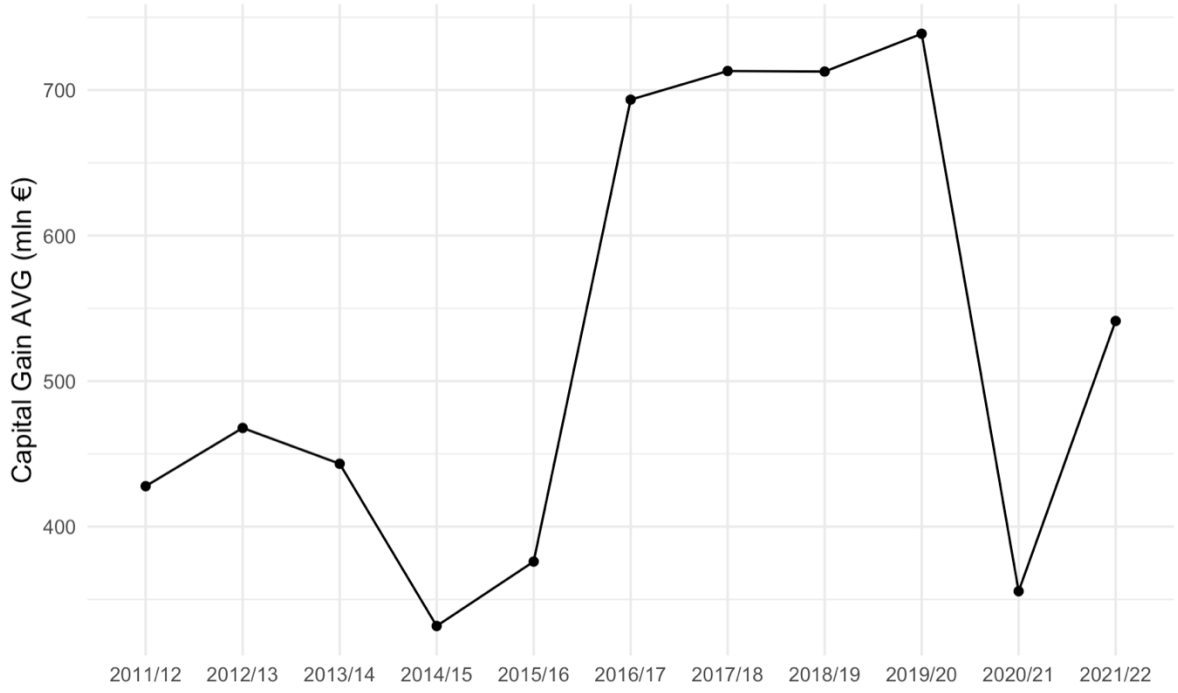

Figure 6: *Evolution of aggregate capital gains in Serie A from season 2011/12 to 2021/22. Data from Report Calcio FIGC (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

One can denote a massive use of player trading and capital gains in the four seasons prior to the pandemic, which in turn led to a significant contraction of football market transactions. This notable increase, from 376 mln euros in the 2015/16 season to 693.4 mln euros in the following season, can be explained by the fact that even prestigious clubs, such as Juventus, Inter, Roma and Napoli, adopted capital gains as a source of income. The incidence of capital gains on the value of production in Serie A reached its peak in the 2019/20 season, when it represented 25% of the total (FIGC ReportCalcio 2022, n.d.), compared to 20% in the 2011/12 season and 12% in the 2007/08 season (Regoliosi, 2016). In Serie A, the need to conduct football market operations in order to rebalance budgets has become a relevant strategy not only for clubs that were traditionally considered *sellers* of talent, such as Atalanta, Udinese and Sassuolo but also for clubs that were mainly *buyers* and destinations for top international talent in the past, such as Juventus, Milan and Inter (Marco Iaria in Caruso, 2022).

2.4 The costs of Serie A teams

So far, the main sources of income of clubs have been examined and how they evolved in the period between the 2011/12 and 2021/22 seasons. During this time, operating revenues increased significantly, from 1696 mln to 2346 mln euros, recording an increase of 138%. At the same time, operating costs accelerated even more, rising from 1853 mln to 2838 mln euros, with an increase of 153% (FIGC ReportCalcio 2013 and 2023, n.d.). In Italy, as Regoliosi (2016) points out, the cost/revenue ratio is judged to be high, thus underlining the context of financial instability in which Serie A operates and the crucial importance of controlling player-related expenses as a key element in improving the economic and financial performance of Italian clubs.

In this chapter, the two main cost items for professional football clubs will be examined: the expenses related to player transfers and the wages paid to players. Andreff (2018) highlights the influence of soft budget constraints, commonly adopted by many clubs in the major European leagues, on the player labour market. Clubs managed with soft budget constraints, able to subsist despite persistent deficits and growing debts (Storm & Nielsen, 2012), develop excess demand for player talent, especially superstars. This scenario perpetuates a state of constant excess demand in the player market. The limited availability of talented players and the intense competition between teams drive the latter to pay stratospheric sums for transfers and player salaries (Andreff, 2018).

2.4.1 Player trading expenses

When referring to player trading expenses, reference is made to transfer expenditure for the purchase of players, which has grown over the years as increased operating revenues have fueled it (Frick, 2007). In the Italian Serie A, these expenses reached 1460 mln euros in the 2019/20 season, with nine purchases exceeding 30 mln euros (Transfermarkt, n.d.). These expenditures represent payments made to release players from their contracts before they expire to allow the selling club to offset financial losses due to the early termination of contracts (Quansah et al., 2021). While the previous chapter examined how the valuation of a player influences the transfer cost and how the latter is accounted for in the balance sheet, this chapter

aims to define the factors and events that contributed to the increase in transfer prices. Next, the development of these prices in both Serie A and the major European leagues will be analysed, and in the final stage, how these costs were distributed among Serie A clubs before and after the arrival of the Covid-19 pandemic.

2.4.1.1 The Bosman ruling

The first crucial event occurred between 1995 and 1996 when European football underwent a profound regulatory transformation that led to what is now known as modern football. This transformation was triggered by the so-called *Bosman ruling*, which revolutionised both the national and international legal system, opening up new opportunities for both players and clubs across Europe (Mancin, 2009).

The *Bosman ruling* simplified the bureaucratic and economic rules of the football market by removing restrictions related to the laws of the individual countries of residence of players and submitting these rules to the authority of a single supervisory body such as UEFA. This ruling resulted in the lifting of the ban on limiting the number of foreign players in UEFA's national football leagues and the removal of restrictions on the number of non-EU players allowed in European competitions. As a result, players gained the freedom to move between EU countries, and football clubs were no longer forced to pay compensation when they lost a player whose contract had expired (Ericson, 2000; Frick, 2009). The *Bosman rule* revolutionised the market strategies of European clubs in a radical way. Instead of focusing on the development of their youth sectors, as had been the case until then, many clubs began to favour the acquisition of foreign players. This approach opened up new perspectives in the football landscape, effectively giving birth to the modern football market. The liberation from existing bureaucratic constraints accelerated the process of transferring players, allowing them to move more easily between European clubs. As a result, football market transactions multiplied rapidly in number and terms of the amounts involved (Mastini, 2017).

2.4.1.2 The transfer inflation

A further factor explaining the increase in player acquisition costs is transfer price inflation, a topic explored in the report conducted by CIES (2023), which examined the expenses incurred by football clubs worldwide between the 2013/14 and 2022/23 seasons. During this decade, player transfer price inflation of 116% (considering add-ons) or 90% (excluding conditional

payments) was recorded, with an average annual growth of 9.0%. Since the purchase price of a player is closely related to his market value (Bhilawa & Fahriansyah, 2022), the analysis conducted by CIES (2023) investigated this issue further, considering various factors that may influence this value. Concerning player positions, a significant price increase was noted compared to the 2013/14 season, especially about central defenders, with an annual inflation rate of 12.5%, followed by full-backs with an increase of 11.1%. A less pronounced increase was seen in goalkeepers, with an inflation rate of 5.2%, while both midfielders and forwards experienced a similar inflation rate of slightly over 8%. Regarding the age of players, there is a gradual decline in inflation as the age of the players being transferred increases. Thus, the prices of players aged 21 and under at the time of transfer have shown an average increase of 12.8% per year over the last decade. This percentage drops to 9.8% for players transferred between the ages of 22 and 25, to 7.0% for those aged between 26 and 29 and, finally, to 3.6% for players aged 30 and above. The latter category also experienced the highest post-pandemic deflation.

2.4.1.3 Trend in player trading expenses in the Big 5

Figure 7 shows the evolution of money spent on player acquisitions across the *Big 5*. It is possible to observe a general increase in investment in transfers before the onset of the health crisis, while it was concentrated at the Premier League level after the pandemic. The 2022/23 season set a record, with clubs in England's top division accounting for 40.2% of overall transfer spending, a marked increase from the 25.4% average recorded between 2013/14 and 2019/20 (CIES, 2023). These figures highlight the Premier League's dominance in investing in the transfer market and attracting top talent due to its ability to generate revenue.

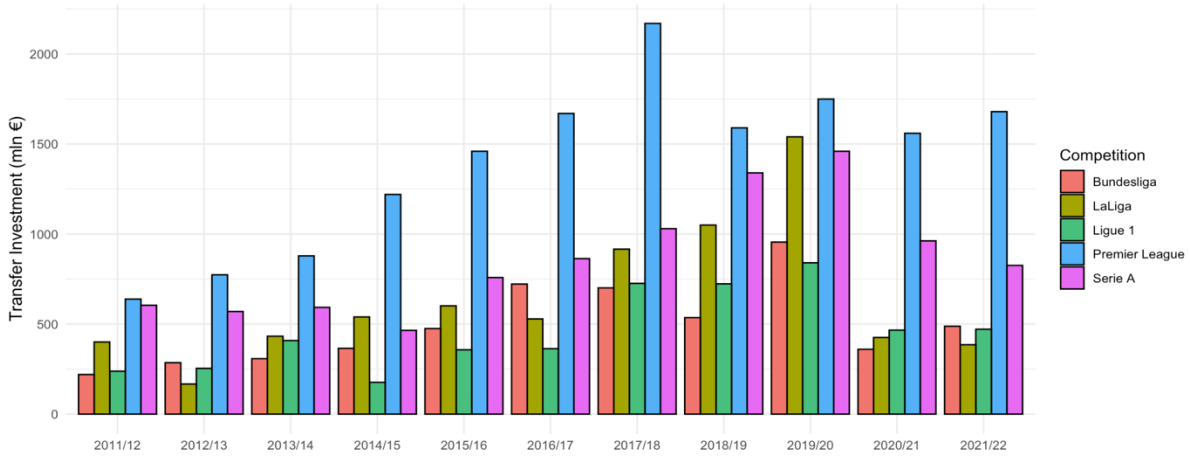

Figure 7*: Evolution of Big 5 investments in the transfer market from season 2011/12 to 2021/22. Data from transfermarkt.it*

Compared to the summer of 2019, there was a significant decline in investment in the transfer market for Europe's *Big 5* leagues during the 2020/21 season, with a decrease of 43%. This trend showed significant variations between countries, with England experiencing the smallest decline (-10%) and Spain recording the sharpest drop (-75%), while Italy reported a decrease of 46% (CIES, 2020). In absolute terms, the total number of transfers fell from 1302 to 1037, a decrease of 20% (Football Benchmark, 2021b). This contraction led to a percentage increase in free transfers for players permanently acquired by clubs (from 26.2% to 32.2%) and loaned players (from 23.1% to 30.0%). In addition, a growing trend has emerged among clubs to include conditional payments and sales quotas in transactions (CIES, 2020). This strategy allows buying clubs to mitigate the financial costs and risks associated with transfers while offering selling clubs the opportunity to receive more funding than they could immediately obtain from a traditional sale (CIES, 2023). In Italy, this trend persisted in the following two seasons, with total investments for the 2022/23 season decreasing to 762.9 mln euros.

2.4.1.4 The distribution of transfer fees in Serie A

Figure 8 provides an overview of the average expenditure on the transfer market of Serie A teams, categorised into three tiers according to their position in the league table at the end of the season: avg. *top 7* clubs, avg. *middle table* (10 clubs) and avg. *relegation* (3 clubs). Significant disparities emerge in terms of millions of euros spent on the purchase of players among Serie A teams over the period considered. An exponential increase in the expenditure of the *top 7* can be observed starting from the 2015/16 season onwards, from an average of 35.3 mln euros in the 2014/15 season to a peak of 139.2 mln euros in the 2019/20 season. This significantly widened the gap between the other two categories. The *middle table* category topped out at an average of 43.5 mln euros in the 2019/20 season, while the *relegation* category peaked at 40.5 mln euros in the 2020/21 season, influenced by Parma's pharaonic but unsuccessful 104.3 mln euros buying campaign (Data from Company financial statements edited by Gazzetta dello Sport). The pandemic abruptly interrupted this upward trend, with a more cautious club's attitude toward the market noticeable, leading to a decline in spending on the *top 7*, which fell to 72.1 mln euros in the last season considered, the lowest figure since 2014/15. This decline is reflected in the aggregate data, with total spending by Serie A clubs falling from 1370 mln euros in the 2018/19 season and 1460 mln euros in the 2019/20 season to 992 mln euros in the 2020/21 season and 845 mln euros in the 2021/22 season. This decline

is also reflected in the transfer balance figures, which went from - 467 mln euros (2018/19) and - 395 mln euros (2019/20) to - 171 mln euros in the 2020/21 season and - 122 mln euros in the 2021/22 season (Transfermarkt, n.d.).

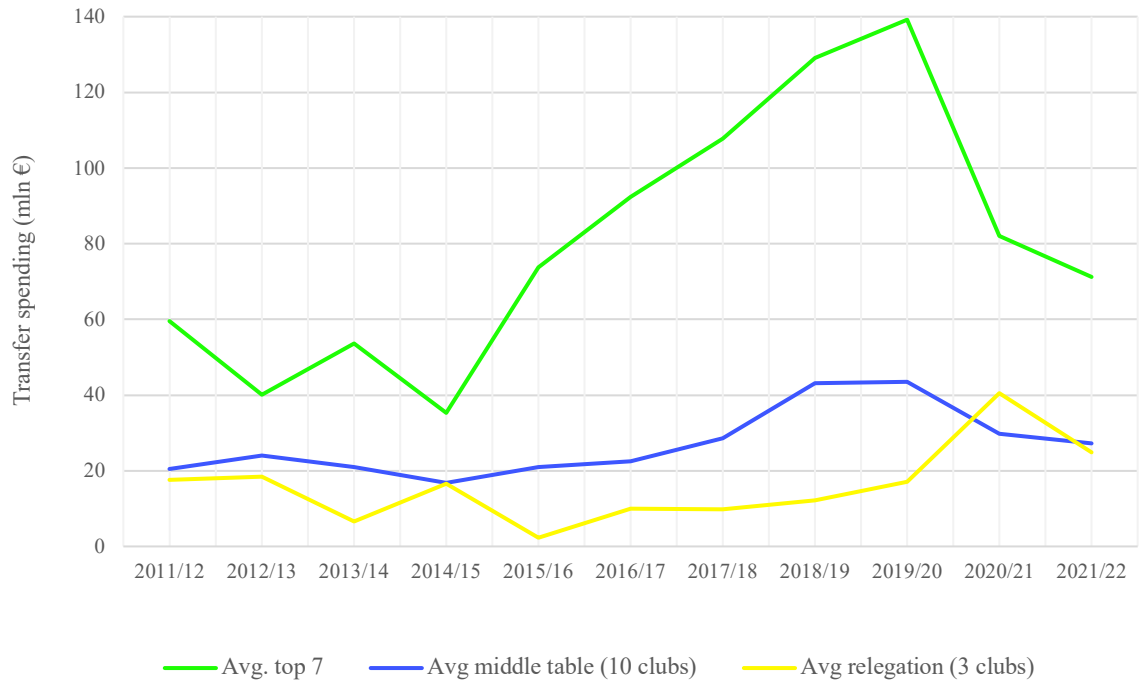

Figure 8: *Serie A transfer expenses by club tier 2011/12 – 2021/22. Data from transfermarkt.it*

2.4.1.5 The trend of player amortization in Serie A

Figure 9 depicts the costs associated with player amortisation, i.e. the transfer costs that are accounted for annually in football clubs' balance sheets. Between the 2011/12 and 2015/16 seasons, amortisation costs remained almost constant, only to increase by 112% in the following four seasons. During the period under consideration, these costs increased by 82%, from 428 mln euros in the 2011/12 season to 778 mln euros in the 2021/22 season, with a peak of 913 mln euros reached in the 2019/20 season. The sharp contraction of market activities caused by the pandemic led to a significant decrease in the amortisation costs of players' rights, which were reduced by 17%.

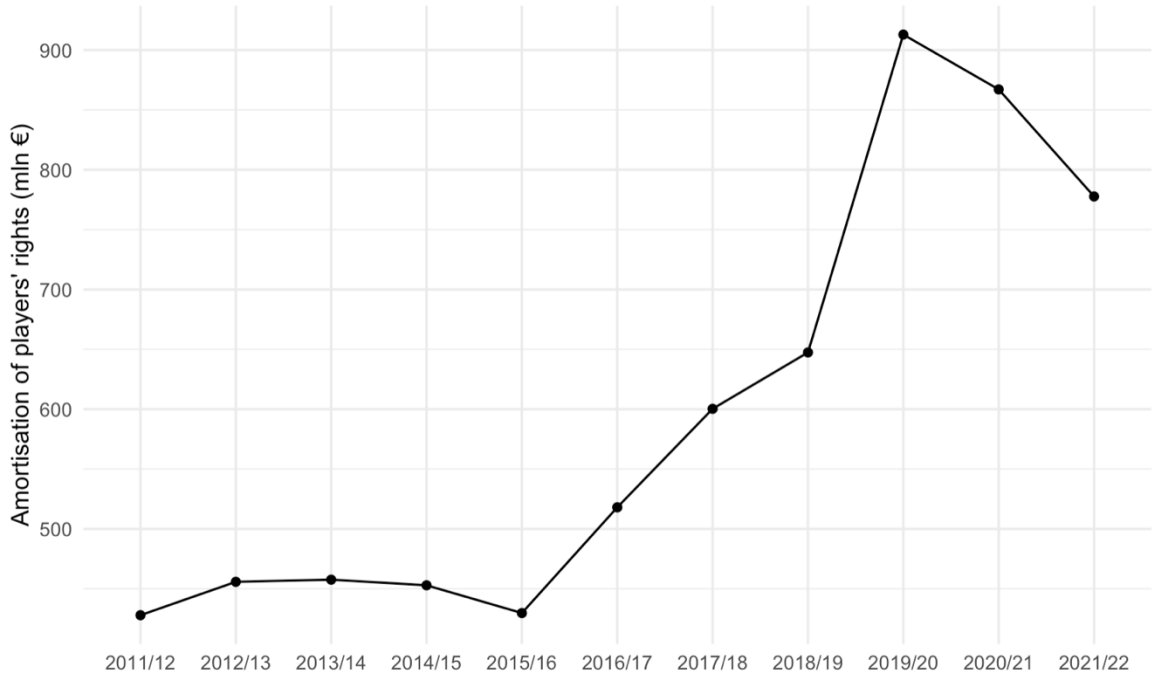

Figure 9: *Evolution of aggregate amortization recorded by Serie A clubs from season 2011/12 to 2021/22. Data from ReportCalcio FIGC (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

2.4.2 Wages of players

Many football clubs focus primarily on maximising sporting performance rather than profits, and this is reflected in their reluctance to contain player salaries (Kesenne, 2007; Sloane, 1969), which have inevitably increased in the major European leagues as a result of the considerable increase in operating revenues (Frick, 2007). Competition for the acquisition of players is thus driven by the quest for success on the pitch and the goal of maximising victories (Garcia-del-Barrio & Szymanski, 2009), contributing to making salaries the main cost item for football clubs. In Serie A, wages for registered personnel amount to 1765 mln euros for the 2021/22 season, with a 74% share of operating revenues (FIGC, 2023).

The elimination of transfer fees for out-of-contract players and the liberalisation of the player market as a consequence of the *Bosman ruling* has considerably strengthened the bargaining power of players, leading to an increase in their salaries (Frick, 2007; Kesenne, 2007). In addition, it is important to emphasise the specific characteristics of players that can influence their salaries, including measures of performance and talent, such as age, position, goals scored and number of appearances. Since past performance is an indicator of future performance, an

athlete's recent sporting performance and talent are decisive in wage setting (Frick, 2011). The specialisation of the player's position has a significant impact on salary, with goalkeepers, being highly specialised, earning lower salaries, while midfielders, being less specialised and more versatile, usually receive higher salaries (Frick, 2007). Furthermore, an inverted U-shaped relationship between age and wages is observed, with wages continuing to rise even after the productivity peak before dropping sharply at the end of the career. The wage peak generally occurs between the ages of 28 and 31 (Scarfe et al., 2023). The popularity of players, regardless of their performance, also significantly and positively influences their salaries (Franck & Nüesch, 2012).

2.4.2.1 Salaries of registered personnel in Serie A

Considering the lack of reliable data on the payroll of each Serie A club between 2011/12 and 2021/22, Figure 10 illustrates the overall trend of the salaries of registered personnel, which includes players, coaches and other staff members, within Serie A clubs. It shows a steady increase in total salaries from 1110 mln euros in the 2011/12 season to 1765 mln euros in the 2021/22 season. This increase was particularly significant in the 2018/19 season, with an increase of 24.6 % (1608 mln euros) and in the 2020/21 season, with an increase of 18.8 % (1807 mln euros) compared to the respective previous seasons. While previous analyses have shown how the impact of the COVID-19 pandemic has caused a reduction in revenue sources, this impact does not seem to be as evident in total wage costs.

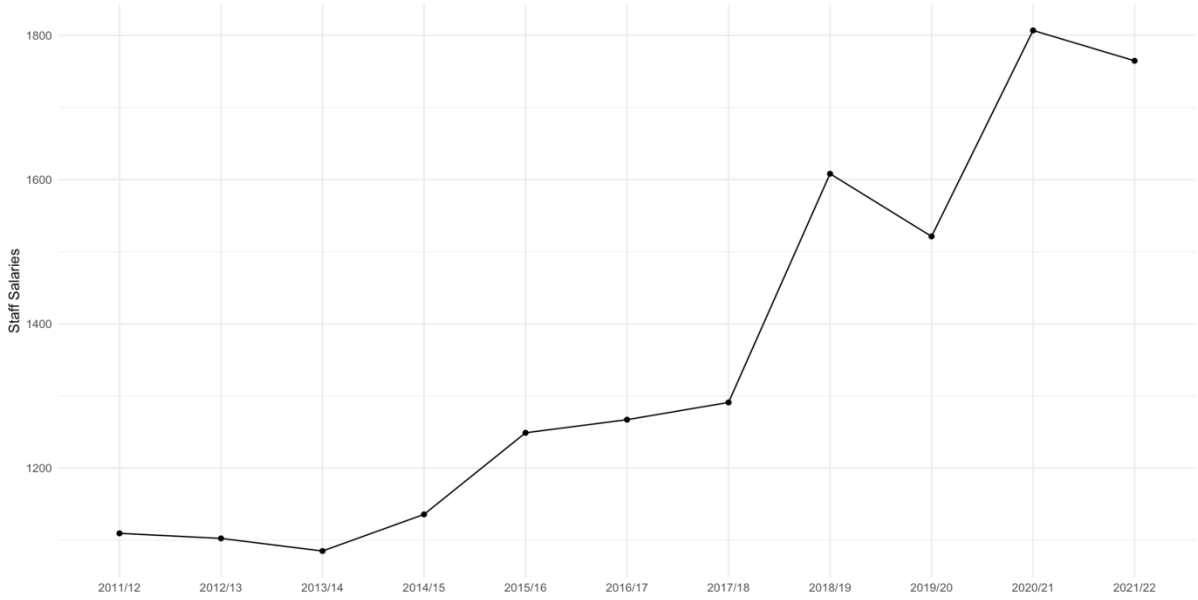

Figure 10: *Evolution of aggregate staff salaries (mln €) of Serie A clubs from season 2011/12 to 2021/22. Data from Report Calcio FIGC (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023)*

3 Theoretical background

3.1 The economics of professional sporting leagues

The economic analysis of professional team sports differs from the typical models of traditional companies. Whereas in the latter, the success of an organisation is closely linked to its ability to reduce competitive forces and establish itself as the sole supplier in a monopolistic environment, this logic is inapplicable in the sporting context (Dobson & Goddard, 2011; Ramchandani et al., 2023). The research of Neale (1964), entitled *The peculiar economics of professional sport's*, represents one of the earliest efforts to explain these dynamics, describing the economic characteristics of sports leagues in the context of professional team sports. The author states that "the first peculiarity of the economics of professional sports is that receipts depend upon competition among the sporters or the teams, not upon business competition among the firms running the contenders, for the greater the economic collusion and the more the sporting competition, the greater the profits" (Neale, 1964, p.2). This quote reflects a fundamental principle by which the economic success of sports leagues is intrinsically linked to the competitive interaction between the teams in the league. The author then continues by asserting that "a business firm (…) cannot produce any of these utilities alone" (Neale, 1964, p.4), emphasising that these economic benefits do not derive from the supremacy of a single team over the others but rather from the joint nature of production between the teams. In other words, in the context of professional team sports, it emerges that each performance is intrinsically linked to the existence of an opponent, reflecting an interdependence between competitors within sports leagues. Thus, output production cannot occur in isolation but requires mutual cooperation.

3.2 The concept of competitive balance

The concept of competitive balance originates in Rottemberg's (1956) pioneering study of the outcome uncertainty hypothesis, which argued that sports fans are more interested in watching competitions with unpredictable outcomes. His theory not only represents one of the most relevant contributions to the economic literature of sport but also offers an initial justification for the focus on CB. By demonstrating how the inequality between strong and weak clubs influenced the decline of the first professional baseball league in the United States, the research prompted leagues to undertake regulatory measures in the labour market and incentivised numerous researchers to delve deeper into the subject of CB. Quirk & Fort (1997, p. 243) suggested that "one of the key ingredients of fans demand for team sports is the excitement generated because of the uncertainty of outcome of leagues games". Since the degree of outcome uncertainty of a game is determined by the level of competitive balance (Kringstad & Gerrard, 2004), research has identified CB as a central element in ensuring the financial stability of a sports league.

Although the importance of CB for sports leagues is widely acknowledged as "Nothing is more important to pro leagues than competitive balance, or the lack thereof" (Fort & Fizel, 2004 cited in Kringstad & Gerrard, 2004, p.115), it is still difficult to find a universally agreed definition of the term. Indeed, Bennett & Fizel (1995, p.187) believe that "competitive balance is a term that refers to a number of aspects of competition". The numerous definitions proposed by scholars highlight the complexity of this concept, also due to the different dimensions that characterise it. However, the literature agrees that CB is closely linked to the differences in quality between the teams in a league. This premise underlies the definition chosen for this article, which coincides with the one used by Kringstad & Gerrard (2004, p. 118): "Competitive balance is the distribution of sporting quality between the teams in a league/tournament".

In addition to the usual understanding of CB as a present (ex-post) assessment of quality distribution, the literature has also examined this concept in relation to future (ex-ante) expectations. Kringstad & Gerrard (2004) provide a comprehensive distinction between ex-ante and ex-post CB, helping to identify the main aspects studied in the literature. Ex-ante CB is related to the distribution of talent among teams and the probability of who will become the winner within a league. In contrast, ex-post CB is used to denote the distribution of performance

(Hall et al., 2002), the distribution of team wins (Depken, 1999), the distribution of winning percentages (Marburger, 2002) or the distribution of league titles (Bennett & Fizel, 1995). The interrelation between ex-ante CB and ex-post CB lies in the idea that past information can influence the CB of subsequent seasons.

It is of common interest among researchers to investigate what is the appropriate level of competitive balance to maintain within a sports competition. In this regard, Zimbalist (2002, p.111) compares CB to the concept of wealth to illustrate the challenge in answering this question: "Competitive balance is like wealth. Everyone agrees it is a good thing to have, but no one knows how much one needs". For a better understanding, it is crucial to distinguish between open and closed leagues, as the appropriate level of CB can vary depending on the competition. In the context of major North American professional sports, CB plays a key role in increasing the attractiveness of competitions. The US leagues adopt a closed and centralised system, without promotions and relegations, in order to protect franchises financially. This peculiarity is one of the reasons why franchise owners are considered profit maximisers. Within this context, regulations such as revenue sharing, salary cap and the draft system introduced to foster CB have proven highly effective in improving the appeal of leagues (Peeters & Szymanski, 2014).

However, this picture differs significantly in European football leagues, where the CB takes on a different function. The structure of open leagues, characterised by annual promotions and relegations, the presence of multiple competitions (national and international), and the clubs' objectives mainly oriented towards sporting success (maximisation of wins within budgetary constraints), hinder the effective application of typical regulations adopted in American leagues. As pointed out by Buzzacchi et al. (2003), revenue sharing is significantly lower in Europe than in the United States since, in open-system European football leagues, the strongest teams have less incentive to share earnings. This framework contributes to the formation of significant gaps in financial resources between teams belonging to the same league, generating different budgets and turnover ranges that are also reflected in different sporting objectives. This diversity gives rise to multiple sub-competitions, such as the fight for the title, qualification for European competitions and the battle to avoid relegation. Buzzacchi et al. (2003) argue that as long as the competition remains tight within each season, fans can tolerate the dominance of a small number of teams for many seasons.

Although establishing the ideal level of competitive balance is a complex task, the literature agrees that it is one of the main elements of attractiveness in professional sports competitions. Gerrard (2004, p. 44) argues that "maintaining sufficient uncertainty of outcome is often seen as a necessary requirement for the long-term sporting and financial viability of tournaments and requires that tournament organizers foster a relatively high degree of competitive balance". Therefore, a league must create the necessary conditions to foster CB within the league. However, it is equally important to understand that CB alone does not represent the whole picture and that other factors contribute to increasing the attractiveness of competition, such as the overall quality of the players and the presence of superstars (Brandes et al., 2008). In the process of designing a championship, it is crucial for a league to find a trade-off between maintaining competitive balance and including elements that generate public interest.

3.3 Measuring competitive balance

Given the various interpretations of CB, the literature has also proposed different measures to quantify it. According to Evans (2014), the research aims to measure two central elements of CB: concentration and dominance. Concentration reflects the level of closeness between teams within a league in a given season, while dominance represents the degree to which the same teams continue to succeed over several seasons. In the present study, the focus is on analysing the concentration of teams within a league. For this reason, the measures most commonly used to assess this aspect in the football context will be presented below.

A standard approach widely adopted by sports economists is the standard deviation, a statistical measure of dispersion associated with the mean and serving as an indicator of central tendency. In the context of a sports league, this technique assesses the concentration of teams during a competition period. In general, the standard deviation is calculated in the following way:

$$\sigma_L = \sqrt{\frac{\Sigma_{i=1}^{N}\left(X_i - \frac{\Sigma_{i=1}^{N} X_i}{N}\right)^2}{N}}$$

where N represents the number of teams i in the league and X_i the variable used which, in the context of European football, can be represented by the absolute number of points awarded to

each team. The maximum value depends on the number of teams in a league and the number of matches played by each team in the competition. In the case of a 20-team league, where each team faces all other teams twice during the competition period, an approximate maximum value of 3.8 occurs (Evans, 2014). This measure was used by Koning (2000) to measure CB in the Netherlands and Szymanski & Kuypers (1999) in post-war football (1946-1995), finding lower average standard deviations in Italy and Spain than in England.

The Herfindahl Hirschman Index (HHI) represents another approach frequently adopted in the research field (Betta & Amenta, 2010; Carreras & Garcia, 2018; Martinez & Willner, 2017) to express CB concentration. This index is obtained by squaring the share of each team's results (whether championships, wins or points) over a specific period (a season or several seasons) and then summing these values for all teams. The higher the index value, the higher the concentration of results and, consequently, the lower the CB in the league. The formulation of the HHI can be expressed as follows:

$$HHI = \sum_{i=1}^{N} s_i^2$$

where *N* are the number of teams in a competition and s_i is the share of the result of team i in a given league (Humphreys, 2019). A problematic aspect of this metric is its correlation with the number of teams in a league, which is especially evident in the case of the lower bound. This occurs because a league with a larger number of teams may produce a lower index value than a league with fewer teams (Evans, 2014).

A third measure of concentration is the Concentration Ratio (CR), an index commonly used (Carreras & Garcia, 2018; Curran et al., 2009) to measure the share of points obtained by the top K clubs within a competition. The number of teams to be included in the CR index is a rather arbitrary decision. However, it is common preference to consider a small number of clubs in order to highlight a league dominated by a few clubs. The mathematical expression takes the following form:

$$CR = \sum_{i=1}^{K} S_i$$

where S_i indicates the market share of the team *i*th. As with the measures described above, the CR index also varies in relation to the number of teams N in a league. In the case of perfect balance, K teams score the same number of points as the other teams. Consequently, the lower limit is set at K/N, while the upper limit is reached in the case of absolute dominance of the top K teams, i.e. when they win against every lower-ranked team. Therefore, using the CR index in team sports presupposes a clear definition of the limits based on the selected K and N parameters (Manasis et al., 2011).

The Gini coefficient is a statistical index widely used in macroeconomics to quantify economic inequality and the distribution of wealth within a specific population. The index is measured using the Lorenz curve, which represents the cumulative share of a variable in relation to the deviation from the perfect distribution line, otherwise called the 45-degree line. Each point along this line corresponds to an equal distribution of that variable (Alwell, 2020). The downward trend of the Lorenz curve indicates an accentuation of inequality within the population. The value of the index ranges between 0 and 1, where zero represents a perfectly equal distribution, and one indicates a maximum inequality between the values considered (Alwell, 2020). Figure 11 offers a graphical representation of the Gini coefficient of the 2021/22 Serie A. On the y-axis is the cumulative percentage of points obtained by the teams, and on the x-axis is the cumulative percentage of the clubs. The coefficient is calculated through the ratio between the area above the Lorenz curve (zone A) and the total area below the perfect distribution line (zone B).

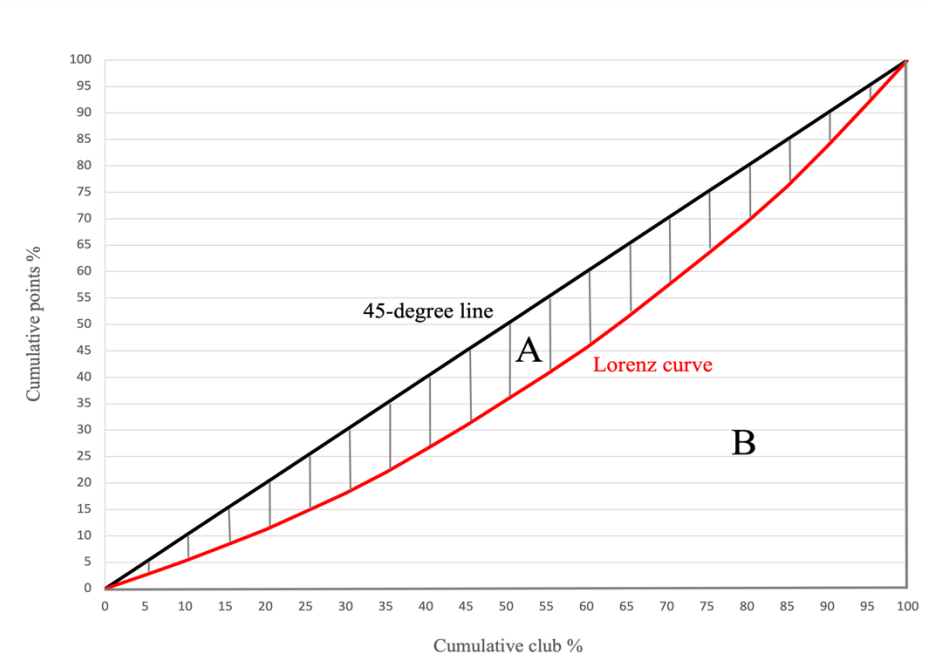

Figure 11: *Graphical representation of the Gini coefficient of Serie A 2021/22.*

From a sports perspective, the hypothetical line of perfect distribution shows a situation where all teams in a league have the same points (Evans, 2014). In team sports leagues such as football, the maximum coefficient limit is less than 1, as this situation would imply that a single team wins all matches and the others only suffer defeats. The maximum value of the Gini index for points scored at the end of the season is influenced by the number of teams participating in the competition. In a league with 20 teams, the maximum attainable Gini coefficient is 0.350. This situation occurs in the case where the champion club wins all 38 matches, the second 36 by suffering two defeats from the winner, the third 34 by losing both direct clashes with the first two finishers and so on (Frick et al., 2023). In the case of the 2021/22 Serie A example depicted in Figure 11, the Gini index has a value of 0.197.

In summary, the wide range of approaches available to measure CB in football should be noted. Two additional indices often mentioned in recent literature but will not be addressed in detail are the National Measure of Seasonal Imbalance (NAMSI) and the Distance to Competitive Balance (DCB). In this study, the Gini index will be adopted to measure Competitive Balance for the different seasons considered.

3.4 Literature review

This chapter has described the intrinsically collaborative nature of the production process that characterises professional team sports, as well as how fostering an appropriate level of CB within the league is a critical factor of success in terms of attractiveness and profit. From such considerations, a competitive league can raise the quality of its clubs. Vice versa, a lack of balance can negatively affect demand, both considering spectators (Soebbing, 2008) and commercial and broadcast partners (Plumley et al., 2018; Scelles, 2017).

The research conducted by Fort & Maxcy (2003) identifies two distinct strands within the academic research concerning CB. The first line of investigation focuses on the analysis of competitive balance (ACB), which focuses on the temporal evolution of CB following changes in the business practices of sports leagues. The second investigates the uncertainty of outcome hypothesis (UOH) and its impact on sports demand, manifested through spectator involvement in stadiums or television audiences. From an econometric analysis perspective, the ABC literature is characterised by using univariate time series analysis, whereas in the UOH study contexts, CB emerges as a cause of the investigated phenomena and as an explanatory variable (Rappai & Furész, 2022). Cairns et al. (1986) instead distinguish three temporal measures of competitive balance: short-, medium- and long-term. Short-term competitive balance deals with the uncertainty associated with individual matches or events, medium-term competitive balance focuses on uncertainty within a season, while long-term competitive balance measures the level of dominance of one or a few teams across multiple seasons. This research aligns more closely with the ABC literature as it examines the impact of revenue distribution among Serie A clubs on CB over 11 seasons and is interested in the medium-term measure of CB.

Most surveys on European football focus on the *Big 5*, whose results often differ from each other and do not allow an unequivocal and definitive picture to be drawn. Goossens (2005) detects a decline of CB in England and Italy between 1963/64 and 2004/05, without significant changes in Spain, Germany and France. Similar conclusions emerge from Groot (2008), who identifies a decline in CB in England, Italy and Germany but not in France and Spain between 1946 and 2006. A more recent study by Triguero-Ruiz & Avila-Cano (2018), using the standardised Herfindahl-Hirschman Index, reveals a decreasing trend in competitive balance in the major European leagues over the period 1997/98 - 2016/17, except for Italy. Wagner et al.

(2021), using a Competitive Intensity (CI) index, note a general lowering of CB in the *Big 5* (1998/99 - 2018/19), including Italy.

A particular focus of the ACB literature has been on the relationship between revenue sharing and CB. While the analyses conducted by Kesenne (2006) and Szymanski & Kesenne (2010), aimed at investigating whether the implementation of a single market regulation can have a relevant impact on CB, conclude that gate revenue sharing leads to a reduction in the level of CB; Dietl et al. (2011) argue that revenue sharing enhances investment incentives and improves CB. These contrasting results can be explained by the fact that the relationship between revenue sharing and CB depends on multiple factors, such as club objectives, the supply of talent and the specifications of the revenue functions (Frick et al., 2023). Closely related to revenue sharing is the important matter of broadcasting rights. Peeters (2011) argues that monopolising broadcasting rights for collective sale does not promote CB in European football. Meanwhile, Andreff & Bourg (2006) conclude that TV rights redistribution mechanisms improved CB in England and France during the 1990s.

Another relevant subject examined in the literature concerns the impact of financial regulatory systems, in particular, the UEFA Financial Fair Play (FFP). Plumley et al. (2018) underline a negative impact of FFP on CB in Spain, Germany and France, but not in England and Italy. Using a game theory model, Grabar & Sonin (2018) instead identify a positive effect of financial restrictions on CB, associated with a reduction in net debt (and thus insolvency risk) and an encouragement of investment in second-tier clubs. Peeters & Szymanski (2014), through various simulations of the effect of FFP on CB, note improvements in England, Italy and France but not in Spain. However, they point out that the break-even rule could solidify competition within a league by protecting big market teams from challenges from teams that aspire to grow, e.g. with the help of foreign investors.

A further research element is the talent pool and its evolution over time. Flores et al. (2010) note an increase in CB in European football following the introduction of the Bosman rule. The authors argue that the talent disparity between teams within a league influences CB. When there is a limited availability of players, a wider skill gap develops between players. Otherwise, with an increase in eligible players, a more balanced distribution of talent is generated, leading to improved CB.

Important findings were also found concerning the competition context and format. Significant impacts on CB have been identified by Buzzacchi et al. (2003) in relation to the promotion and relegation system, by Haugen & Heen (2018) with regard to the new scoring system (3-1-0), and by Groot (2008) concerning the number of competitors in the competition. Other elements influencing CB emerge from research that has examined its determinants. In a study by Scelles et al. (2022), gross domestic product (GDP) was used as a variable to express the economic strength of a league, revealing positive effects on CB. In contrast, performance in European competitions (UEFA points of the league at t-1) and the coefficient of variation of average attendance found a negative correlation. On the other hand, Sanderson (2002) identifies several factors that may indirectly influence CB, including differences in access to technology, the integrity of a league, disparities in the national taxation system and the regulation of property rights, such as the 50+1 rule in the Bundesliga.

The central aspect of this research deals with financial inequality, an issue explored in depth by Szymanski (2006, 2010) and closely related to UEFA competitions, particularly the UCL. The analysis by Goossens (2005) noted an increasing commercialisation of the competition already in the early 1990s. The consequent increase in revenues received by the participating teams contributed to a widening of the budget gap between national league teams. This trend has become even more pronounced over time, drawing the attention of several scholars to this research field. Pawlowski et al. (2010) point to a lowering of the CB in the *Big 5* following changes to the UCL prize distribution system since the 1999/00 season. Given the interdependence between economic and sporting performance (Dietl & Franck, 2000), Dessus & Raballand (2020) suggest that the UCL amplifies revenue inequalities between clubs and reduces CB in domestic leagues. Rocaboy (2017) adds to previous results the finding that, in case one league is economically more prosperous than the others, its clubs perform better on average in international competitions.

Other studies have used the market value of players as a measure of the absolute quality of a league, defined as the sum of the total revenues of individual clubs within the same league (Kesenne, 2015). Rappai & Furész (2022) showed a significant impact of talent concentration on the distribution of points at the end of the season, suggesting that a more equal distribution of talent between teams favours CB. Frick et al. (2023) found a contrasting result as by adding divisional dummy variables in their model, the impact of talent concentration on points concentration was statistically non-significant, confirming the findings of Szymanski (2010), who observed a relatively stable CB over time despite increasing financial inequality among

English professional clubs. The study by Carreras & Garcia (2018) found that the financial inequality predicted by the increase in TV rights revenue leads to increased financial inequality between clubs. By using an econometric model, it was found that these differences are correlated with a decrease in balance within the competition. Likewise, Szymanski (2003) states that an unequal distribution of resources within a league leads to an unbalanced competition between teams.

In summary, CB in European football has been the subject of in-depth investigations within various previous studies conducted within different research fields. Although the results reported in the literature are heterogeneous, recent research has provided empirical evidence suggesting a decline of CB in European leagues. In this sense, the literature lacks insight into the relationship between club financial inequality and CB. This research attempts to fill this gap by extending the work of Carreras & Garcia (2018). While their analysis focused on the differences in TV rights revenues in the English Premier League and the Spanish La Liga, this study analyses the Italian Serie A at 360 degrees, considering total revenues, matchday revenues, commercial revenues and TV rights revenues. Initially, it intends to show the evolution of CB and revenues over time. Subsequently, it is intended to highlight the magnitude of the effect of UCL participation on club revenues. In the third step, the impact of the concentration of each revenue source on the competitive equilibrium will be assessed. Finally, an attempt will be made to establish whether there is a correlation between these revenues and sporting performance. From these considerations, the following research hypotheses emerge:

H1: There is a decline in the competitive balance over time
H2: UCL participation has a significant increasing impact on club revenues
H3: The concentration of revenues has a negative impact on the competitive balance.
H4: There is a positive correlation between sports performance and financial performance with each revenue source

4 Methods

4.1 Data

The data used in this study covers eleven years, from the 2011/12 season to the 2021/22 season. It includes information on league rankings and points accumulated by Serie A clubs, extracted from the Lega Serie A official website (Lega Serie A, n.d.) and necessary to measure CB. The transfer fees incurred by each club were taken from the website transfermarkt.it, while the data on the prizes from European competitions (UCL, UEL and UECL) were retrieved from the UEFA Financial reports published annually by UEFA. Annexes 2, 3, and 4 depict the amounts received by Italian clubs in the three European competitions.

The financial data relating to the budgets of each team were obtained from *Gazzetta dello Sport*, an authoritative newspaper of reference in the Italian sports information scene, which carefully processed the balance sheets of the clubs. The financial parameters considered include total revenues net of capital gains and revenues from capital gains on player sales. Total revenues were broken down into the main channels of operating income: matchday, commercial, broadcasting, and the category of other revenues. The latter includes revenues not included in the three macro-areas, such as Lega Serie A and FIGC contributions, UEFA/FIFA contributions for the release of players, contingent assets, and revenues from the football market (excluding capital gains). The item broadcasting revenues include UEFA prizes earned by teams involved in European competitions. All financial indicators are expressed in millions of euros and reflect the financial balance sheets of football clubs at the end of 30 June of each season. However, it is relevant to note that some clubs follow a budget model aligned with the calendar year, closing their accounting periods on 31 December. For the 2014-2015 season, Parma's data are not available due to the bankruptcy of the club, which did not make its financial data public. The research will use data on total revenues, matchday revenues, commercial revenues and television rights revenues to examine the effect of their level of concentration on CB.

4.2 Methodology

4.2.1 Descriptive statistic

The descriptive statistics are divided into two parts. The first, in order to present an accurate picture of the evolution of the competitive balance and the distribution of revenue sources within the league, a calculation of the Gini coefficients was conducted. For the Gini of points, it should be recalled that the value can range from 0 to 0.35 and that 0.2 represents a relatively high level of concentration (Frick et al., 2023). In addition, Gini indices were determined for each season for the different revenue sources considered: Gini total revenues, Gini total revenues no UEFA prizes, Gini matchday revenues, Gini commercial revenues, Gini TV broadcasting revenues and Gini TV broadcasting revenues no UEFA prizes. The objective is to analyse the concentration trend over time for each variable. The Gini value of matchday revenues of the 2019/20 and 2020/21 seasons is not considered due to the strong influence of the COVID-19 pandemic on attendance. Concerning the distribution of revenues, a similar reasoning as the one carried out for the Gini index of points is applied. Since even teams with lower appeal and limited financial resources are able to generate revenues, a Gini coefficient of 1 is not expected. A high concentration value of total revenues is estimated with a Gini coefficient 0.4. The Gini coefficient for TV rights is assumed to have a lower value than other revenue sources since a significant part of the TV rights revenue is distributed equally among the teams. At the same time, the Gini coefficient related to commercial revenues is expected to be the most concentrated, mainly due to the significant disparities between the teams' brands.

The second part of the analysis is dedicated to the evolution of the average revenues of Serie A teams over time, divided into three categories according to their position in the standings at the end of each season. The first category includes the top seven ranked teams, which compete for access to European competitions. The second category includes the ten mid-table teams, positioned from eighth to seventeenth place, while the last category concerns the teams relegated to Serie B. The objective of this analysis is to observe the difference in revenues between teams and to evaluate the incidence of UCL prizes on the total revenues of the teams.

4.2.2 Econometric models

Regarding the analysis of the relationships between the Gini index variables calculated on the different revenue sources (independent variables) and the Gini index calculated on the points over the years (dependent variable), both simple and multiple linear regression models were used. These models were constructed using a dataset containing 11 observations for these indices. In addition, the following variables were taken into account: the average transfer expenditure, the average capital gains, the total sum of prizes earned by Italian clubs in the UCL and UEL, and the dummy variable *revenue sharing*, which identifies the change in the (more equal) distribution system of TV rights that took place as of the 2018/19 season. Given the small number of observations, a significance level of 0.10 was chosen to assess the efficiency of the models. For each model, the R^2 index was calculated, which measures the percentage of variability of the dependent variable explained by the independent variables in the model, and the adjusted R^2 index, which represents a correction of the R^2 index, taking into account the number of variables included in the model.

Subsequently, a panel analysis was conducted to examine and strengthen the relationship between the sporting and financial performance of the teams, in particular between the points obtained and the revenue derived from the different revenue sources in the different years considered. Given the longitudinal nature of the data, random-effects models were created on the panel data of the 2011/12 -2021/22 seasons, using the different participating teams as fixed effects. This procedure is suitable for multiple observations for different teams and years (219 observations per variable). In addition, the capital gains revenue of each team and the dummy revenue sharing and COVID-19 variables were considered explanatory variables. In order to improve the linearity between the variables, some revenue items were subjected to a logarithmic transformation. A significance level of 0.01 was chosen to assess the effectiveness of this model.

5 Results

This section presents the results of the research. It will be structured as follows: first, the evolution of the competitive balance in Serie A over time is examined; second, the evolution of the concentration of revenue sources over time is analyzed. Next, the incidence of the UCL on average revenues per club is illustrated. Fourth, an analysis is made between financial inequality and competitive balance. Finally, a relationship between sports performance and financial performance is established.

5.1 The evolution of points concentration in the Serie A

Figure 12 illustrates the concentration level of points obtained by Serie A clubs. The y-axis shows the values of the Gini coefficients, while the x-axis shows the 11 seasons examined. It denotes a decrease in the competitive balance during the analysis period, from a Gini index of 0.154 in the 2011/12 season to 0.197 in the 2021/22 season. The trend line suggests a tendency towards a declining situation regarding competitiveness within Serie A. The 2011/12 season was the most balanced, while the least competitive was the 2020/21 season with a Gini index of 0.216. It is also noteworthy that in three of the eleven seasons analysed, there is a high Gini coefficient value, exceeding the threshold of 0.2 (2016/17, 2017/18 and 2020/21).

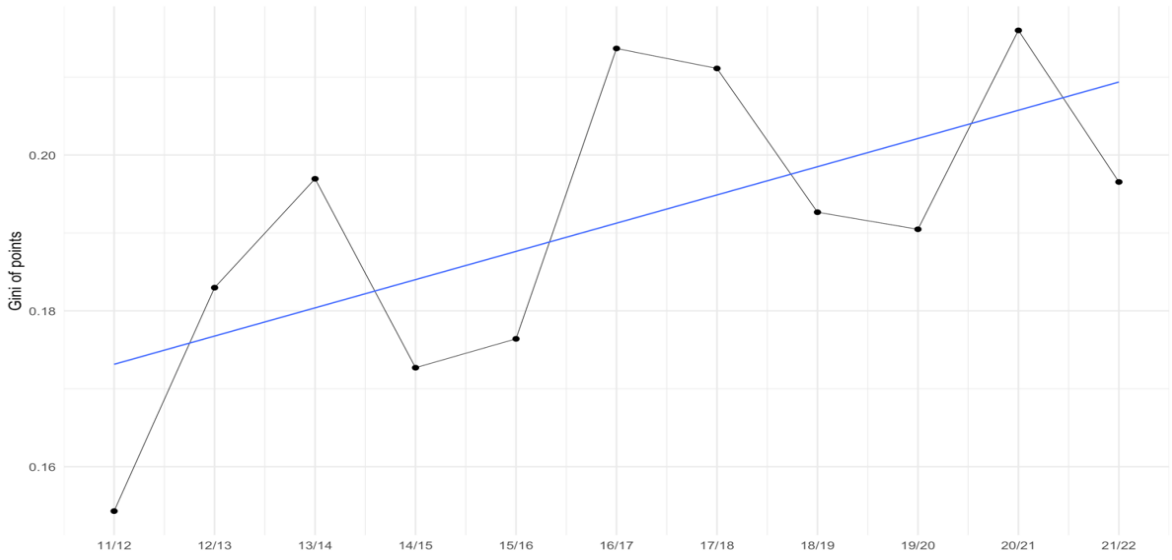

Figure 12: *Evolution of the Gini index of points from season 2011/12 to 2021/22*

5.2 The evolution of revenue sources concentration

The presented graphs provide an overview of the evolution of the concentration of the different revenue sources, including total, broadcasting, matchday and commercial revenues. Concerning total and broadcasting revenues, two additional graphs were developed that exclude UEFA prizes from the teams' revenues. There are clear signs of increasing concentration in total revenues, with the Gini index rising from 0.387 in the 2011/12 season to 0.409 in the 2021/22 season. The highest peak of concentration occurred in the 2017/18 season with an index of 0.423, while the average across the eleven seasons examined is 0.404. If European Cup prizes are excluded, this average drops significantly to 0.368, and there is a much less marked difference in the concentration between the different seasons. The 2017/18 season records the highest value of the Gini index (0.390), while the lowest is found in the 2019/20 season (0.340).

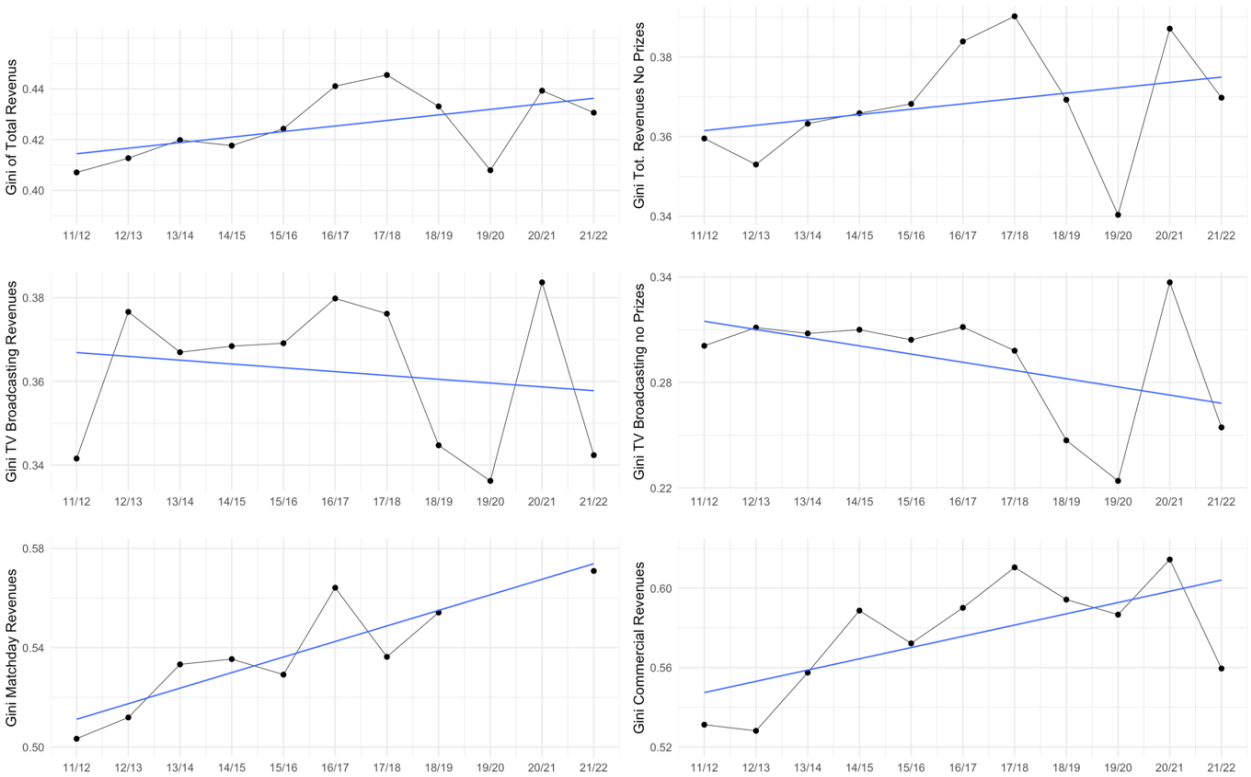

Figure 13*: Evolution of the Gini index of different revenue streams from season 2011/12 to 2021/22*

As regards the concentration of broadcasting revenue, a decreasing trend can be observed over the seasons, a trend that becomes even more pronounced when excluding UEFA prizes. The difference between the Gini values for broadcasting revenue with and without prizes is remarkable: the two lowest values of the index, considering prizes, are 0.336 (2019/20) and

0.341 (2011/12), while the two highest values, excluding prizes, are 0.320 (2020/21) and 0.296 (2016/17).

The analysis of the concentration of matchday revenues reveals a significant and constant upward trend, except for a decrease in the Gini index observed during the 2017/18 season. The concentration of matchday revenues increased from 0.503 in the 2011/12 season to 0.571 in the 2021/22 season, the latter marking the highest value recorded. The average of the Gini index during the eleven seasons is 0.538.

Among the revenue sources considered, commercial revenues are the most concentrated component, with an average Gini index of 0.578. Their growth trend is similar to that of matchday revenues. However, it is slightly less pronounced and characterised by fluctuations, with a reduction in concentration in 2015/16, 2018/19, 2019/20 and especially in the 2021/22 season, in which a level similar to the 2013/14 season was reached. The lowest concentration level is found in the 2012/13 season, with a Gini index of 0.528, while the highest peak is observed in the 2020/21 season, with a value of 0.614.

5.3 Revenue trends and the incidence of UCL

Figure 14 shows the eleven seasons taken into consideration on the x-axis. It indicates the values of the average revenue per club on the left y-axis and the values of the prize money distributed for the UCL on the right y-axis. Both values are measured in millions of euros. The coloured lines categorise the average revenues per club of the Serie A teams into three different tiers: green represents the *top 7* teams in the league, blue the *mid-table* teams and yellow the *relegation* teams. The red dotted line indicates the evolution of the prize money made available by UEFA to be distributed to all clubs participating in the Champions League.

Figure 14 shows the evolution over time of the average operating revenues for clubs belonging to the different tiers. The average difference in revenue over the eleven seasons shows significant gaps between clubs in the different brackets: 128.6 mln euros between *top 7* and *mid-table*, 154.5 mln euros between *top 7* and *relegation*, and 25.9 mln euros between *mid-table* and *relegation*. During the period of analysis, there was an increase in average revenue per club: from 152.2 mln to 237.3 mln euros for *top 7* teams, from 48.4 mln to 74.3 mln euros for *mid-table* teams and from 30 mln to 56.4 mln euros for *relegation* teams. The highest figures for each tier can be found in the 2020/21 season for *top 7* (253.9 mln), in the 2014/15 season for *mid-table* clubs (78.9 mln) and in the 2021/22 season for *relegation* clubs (56.4 mln). Instead, the UEFA prizes for the UCL increased from 834 mln to 2035 mln euros.

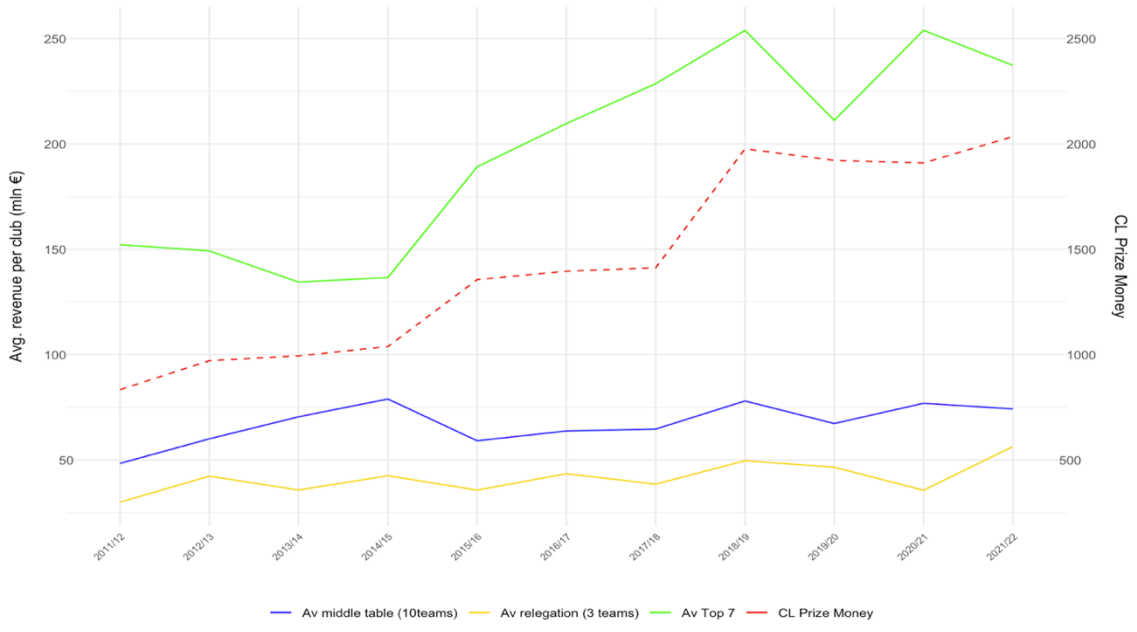

Figure 14: *Evolution of average revenues per club classified by tier from season 2011/12 to 2021/22*

In the 2014/15 season, the difference in average *top 7* revenues (136.6 mln) with the other categories is less pronounced: 57.6 mln compared to *mid-table* and 94 mln compared to *relegation*. Between the 2014/15 and 2015/16 seasons, UCL premiums increased from 1.038bn to 1.356bn euros and between the 2017/18 and 2018/19 seasons from 1.413bn to 1.977bn euros. At the same time, average *top 7* revenues increased from 136.6 mln to 189.2 mln euros and from 228.6 mln to 253.9 mln euros, widening the gap with *mid-table* and *relegation*.

5.4 Models linking revenue concentration and competitive balance

5.4.1 Model total revenues without UEFA prizes

In the analysis of the models with the Gini index on points as the dependent variable, a significance emerged with the same index calculated on Total Revenue without UEFA prizes. In the first model, the index of 0.79 indicates an increase in the Gini index on points of 0.79% for each percentage increase in the index on total revenue without prizes. In the remaining models, positive relationships with significance levels of 0.1 were found with the average transfer investment, where a unit increase in this variable corresponds to a 5% increase in the Gini index on points with a p-value of 0.093 (model 2) and with the variable UEFA prizes, where a unit increase in this variable corresponds to a 2% increase in the Gini index on points with a p-value of 0.060 (model 5). Increases in the Gini index were also observed in relation to capital gains (model 3) and the presence of revenue sharing (model 4). However, the coefficients associated with these variables were not statistically significant. Given the small number of observations, greater significance is likely to emerge with an increase in the number of seasons considered in the analysis. In terms of the explanatory capacity of the dependent variable, the best-performing model was the one that includes the Gini index relative to total revenue without the prizes and the variable UEFA prizes, with a percentage of variability explained equal to 61.8% ($R^2 = 0.618$).

Table 6: Model tot revenues no UEFA prizes

	mod.1		**mod.2**		**mod.3**		**mod.4**		**mod.5**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	-10.13	0.429	-12.44	0.283	-11.93	0.327	-12.16	0.319	-9.91	0.362
Gini Index - Tot. Revenues no UEFA Prizes	0.79	**0.040**	0.80	**0.026**	0.78	**0.035**	0.84	**0.027**	0.72	**0.034**
Transfer Investment AVG			0.05	0.093						
Capital Gain AVG					0.09	0.159				
Revenue Sharing 0/1							1.41	0.159		
UEFA Prizes									0.02	0.060
Observations	11		11		11		11		11	
R^2 / R^2 adjusted	0.389 / 0.321		0.580 / 0.475		0.530 / 0.413		0.531 / 0.413		0.618 / 0.523	
AIC	44.747		42.618		43.855		43.849		41.570	

5.4.2 TV broadcasting models

The differences between the models with regressors for the Gini index on TV revenues with prizes and without prizes show how it is precisely the presence of prizes that leads to an increase in the Gini index on points and, thus, to a general lower competitiveness. In particular, considering within the regressor, the prizes derived from the European cups, a statistical significance of 0.05 is found in model 2, model 3 and model 4, which include the variables Capital gains and Revenue Sharing. In terms of the explanatory power of the dependent variable, the best-performing model is model 4, which is able to explain the variability of the concentration of points with a percentage of 84.3% ($R^2 = 0.843$). The lack of significance in the variable for the Gini index of television revenue without prizes confirms that it is precisely the 'prize' component that is decisive in negatively affecting competitiveness. The variable's coefficient is only significant in the last model considering all variables. It is presumable that the other variables somehow explain the prize effect.

Table 7: Model TV broadcasting

	mod.1		**mod.2**		**mod.3**		**mod.4**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	0.95	0.936	-9.81	0.375	-13.16	0.228	-21.18	**0.022**
Gini Index - TV Broadcasting Revenues	0.50	0.148	0.70	**0.033**	0.86	**0.013**	1.00	**0.001**
Capital Gain AVG			0.14	**0.047**			0.12	**0.014**
Revenue Sharing 0/1					2.64	**0.024**	2.38	**0.008**
Observations	11		11		11		11	
R^2 / R^2 adjusted	0.217 / 0.130		0.536 / 0.421		0.602 / 0.502		0.843 / 0.775	
AIC	47.473		43.713		42.047		33.833	

Table 8: Model TV broadcasting no UEFA prizes

	mod.1		**mod.2**		**mod.3**		**mod.4**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	17.75	**0.009**	6.20	0.435	11.32	0.126	-4.32	0.550
Gini Index - TV Broadcasting Revenues no UEFA Prizes	0.05	0.803	0.29	0.187	0.24	0.296	0.59	**0.016**
Capital Gain AVG			0.17	0.086			0.21	**0.018**
Revenue Sharing 0/1					2.18	0.173	2.79	**0.031**
Observations	11		11		11		11	
R^2 / R^2 adjusted	0.007 / -0.103		0.329 / 0.161		0.224 / 0.031		0.670 / 0.529	
AIC	50.089		47.786		49.373		41.972	

5.4.1 Gate revenues Model

A positive relationship emerges between the Gini index on matchday revenues and the Gini index of points only when taking into account the COVID-19 effect for the 20/21 season. The statistical model shows that a percentage increase in the Gini index concerning matchday revenues is associated with a 0.59% increase in the Gini index concerning points, and this relationship is statistically significant, with a p-value of 0.035. As far as the coefficient for the COVID-19 effect is concerned, it is positive but does not reach statistical significance.

Table 9: Model matchday revenues

	mod.1	
Predictors	*Estimates*	*p*
Intercept	-13.09	0.323
Gini Index - Matchday Revenues	0.59	**0.035**
COVID 0/1	2.98	0.155
Observations	10	
R^2 / R^2 adjusted	0.492 / 0.346	
AIC	40.254	

5.4.2 Commercial revenue model

An increase in the concentration of commercial revenues is associated with a clear increase in the Gini index on points and, consequently, lower competitiveness. According to the model, a percentage increase in commercial revenue concentration corresponds to a 0.43% increase in point concentration, with a p-value = 0.025. This model shows a good fit, as the variable can explain 44.4% of the variability of the dependent variable.

Table 10: Model commercial revenues

	mod.1	
Predictors	*Estimates*	*p*
(Intercept)	-5.89	0.544
Gini Index - Commercial Revenues	0.43	**0.025**
Observations	11	
R^2 / R^2 adjusted	0.444 / 0.382	
AIC	43.714	

5.5 Panel model: relationship between sports and financial performance

The different models indicate a general significance of 0.01 for the different revenue components, which all have a positive impact on the points obtained by the teams. The best-performing model includes total revenues (model 1), which is able to explain 41.8% of the variability of the point variable. Among the individual revenue sources, the best model considers TV revenues without prizes, due to which, following a logarithmic transformation, approximately 35.3% of the variability of the dependent variable is explained. According to this model, a percentage increase in TV revenues without prizes leads to an increase of 0.225 points. Interestingly, model 2 shows an increase of 0.203 points at the percentage increase of total revenues without prizes, whereas model 3 shows that the increase in matchday revenues is almost nullified in the case of COVID-19. Capital gains show a positive relationship with the dependent variable, with a p-value < 0.001 in models 3, model 4 and model 5, whereas in the presence of Revenue Sharing, a significant decrease in points was observed, with a p-value < 0.001 in models 1, model 2 and model 4.

Table 11: Model panel data

	mod.1		**mod.2**		**mod.3**		**mod.4**		**mod.5**		**mod.6**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	-33.75	**<0.001**	-36.61	**<0.001**	29.34	**<0.001**	-34.63	**<0.001**	24.03	**<0.001**	-31.59	**<0.001**
log(Tot. Revenues)	19.53	**<0.001**										
Revenue Sharing 0/1	-5.83	**<0.001**	-5.82	**<0.001**			-6.04	**<0.001**	-4.64	**0.002**		
Capital Gain	0.06	**0.020**	0.08	**0.003**	0.12	**<0.001**	0.12	**<0.001**	0.11	**<0.001**	0.09	**0.003**
log(Tot. Revenues no UEFA Prizes)			20.30	**<0.001**							18.59	**<0.001**
log(Matchday Revenues)					9.13	**<0.001**						
Covid 0/1					17.47	**<0.001**						
log(Matchday Revenues) * Covid2021					-9.27	**<0.001**						
log(TV Broadcasting Revenues no UEFA Prizes)							22.52	**<0.001**				
log(Commercial Revenues)									10.23	**<0.001**		
Observations	219		219		219		219		219		219	
R^2 / R^2 adjusted	0.426 / 0.418		0.353 / 0.344		0.150 / 0.134		0.361 / 0.353		0.213 / 0.202		0.316 / 0.310	
Deviance	17262.355		17596.638		22341.997		18861.428		20450.526		19272.796	
AIC	1587.914		1592.115		1646.403		1607.316		1625.031		1610.041	

6 Discussion

6.1 Discussion of findings

The analysis focuses on the evolution of the competitive balance and the different revenue sources of Serie A teams over time, as well as the effect of the concentration of these sources on the competitive balance between the 2011/12 and 2021/22 seasons. The first finding concerns a decrease in the competitive balance across the seasons considered, a result that aligns with the study conducted by Wagner et al. (2021), which showed a decreasing trend in Serie A between 1998 and 2019. Figure 12 shows an oscillating trend, a sign that a less-balanced season is followed by a more-balanced one. In fact, significant improvements in CB compared to the previous season emerged in the seasons 2014/15, 2018/19 and 2021/21, with a slight but noticeable improvement in the 2019/2020 season as well. The 2011/12 season was the most balanced, with a Gini index of points of 0.154, with Juventus winning the head-to-head for the *Scudetto* with AC Milan, scoring 84 points, four lengths more than their rivals. In this season, the distribution of points is particularly balanced in the middle lower part of the standings, where there is a margin of seven points between Chievo (10th) and Genoa (17th), and for the fight for places in European competitions, with Udinese (3rd) and Parma (8th) separated by 8 points. Despite the record 102 points obtained by Juventus in the 2013/14 season, this was not the most unbalanced season due to an intense relegation battle. Instead, the highest Gini indices occurred in the 2016/17 season (0.214), characterised by low competition for qualification for the European cups and the fight for safety, and in the 2020/21 season (0.216), with Inter dominating the championship by twelve points over AC Milan and with Benevento, Crotone and Parma relegated to Serie B well in advance.

The second finding concerns the trend of increasing total revenue concentration over time. Interestingly, the growth of the competitive imbalance coincides with an increasing trend in total revenue concentration. When an increase in point concentration is observed within Serie A, there also tends to be an increase in revenue concentration, except for the 2017/18 season, in which there was a slight decrease in point concentration but a slight increase in revenue concentration. The 2011/12 season, characterised by a greater competitive balance, coincides

with a less concentrated distribution of total revenues, while the three less balanced seasons (2016/17, 2017/18 and 2020/21) coincide with a greater concentration of total revenues. From a financial point of view, the 2019/20 season represents an anomaly due to the impact of COVID-19, with restrictions affecting spectator attendance at stadiums, leading to a decrease in matchday revenues, along with delays in payments from TV broadcasters and commercial partners (Deloitte, 2022). This situation resulted in a lower Gini index of total revenues of 0.388. However, the average of the index during the eleven seasons exceeds the threshold of 0.4, a value that expresses a high level of concentration

If total revenues are broken down into the three macro-areas of operating revenues, significant differences emerge between these categories in terms of concentration and trends over time. The trend of the Gini index of broadcasting revenues is in countertendency with that of total revenues, showing a decrease in concentration even though average broadcasting revenues per club increased considerably from 46.0 mln euros in the 2011/12 season to 68.1 mln euros in the 2021/22 season (Data from Company financial statements edited by Gazzetta dello Sport). Excluding UEFA prizes, it is interesting to note that between the first season and 2017/18, the graph remains essentially flat, indicating stability in the distribution of broadcast TV revenues among Serie A teams. However, the following season showed a sharp drop in concentration due to changes to the *Melandri Law*, which led to a more equal distribution of revenues between clubs. The graph trend would have shown an even greater slope without the impact of the COVID-19 pandemic. Delays in payment by broadcasters during the 2019/20 season significantly increased the concentration level in the 2020/21 season. In the last season considered, with the effects of the pandemic all but disappearing, the concentration level returned to a similar level as in the 2018/19 season, with a Gini TV broadcasting no UEFA prizes of 0.242. The downward trend in TV broadcasting revenues highlights the Lega Serie A's efforts to balance the distribution of shares between teams in order to promote competitive balance. However, it is relevant to note a decrease in aggregated broadcasting revenues (Figure 3), which, on the one hand, highlights the League's struggle to sell the Serie A product and, on the other, the urgency for clubs to develop other revenue sources in order to ensure financial growth.

As far as matchday revenue is concerned, a slight increase in average revenue per club was observed over the period considered, from 9.7 mln euros in the 2011/12 season to 10.1 mln euros in the 2021/22 season (Data from Company financial statements edited by Gazzetta dello

Sport). This almost imperceptible increase was influenced by the pandemic, which limited the filling of stadiums in the last three seasons considered. However, it is interesting to note that this source of revenue increased significantly in its concentration, reaching its peak in the last season examined, with a Gini index of 0.571. From this, it can be deduced that the more high-profile clubs were better able to recover from the impact of COVID-19, in terms of spectator attendance. For example, matchday revenues in the 2021/22 season for teams such as AC Milan (32.5 mln), Inter Milan (37.7 mln), Lazio (10.5 mln) and Fiorentina (7.9 mln) were similar to or slightly lower than in the season before the pandemic (2018/19). On the other hand, teams such as Torino (1.4 mln), Sassuolo (0.9 mln), Sampdoria (1.0 mln) and Genoa (0.9 mln) were not able to come anywhere near the pre-pandemic values. However, the team that suffered the hardest blow in this respect was Juventus, whose matchday revenue was more than halved, from 74.4 mln in the 2018/19 season to 34.3 mln euros in the 2021/22 season (Data from Company financial statements edited by Gazzetta dello Sport). This significant decrease can be attributed to two main factors. Firstly, the restrictions on stadium occupancy imposed by the Lega Serie A had a more significant impact on Juventus, as the only team with an average occupancy rate above 90% in the seasons from 2011/12 to 2018/19 (StadiaPostcards, n.d.), with an average of 94.3%. Secondly, the team's disappointing performance on the field may have contributed to the drop in revenue. After winning nine consecutive *Scudetto*, Juventus achieved two fourth-place finishes in the last two seasons, with the last one ending 16 points behind arch-rivals Inter Milan.

In general, the high level of concentration observed can be attributed to the heterogeneity in stadium capacity and filling rate. There are too many Serie A teams that need to reach a 60 % filling rate, unable to exploit the potential to generate matchday revenue fully. The comparison with the *Big 5* regarding the number of total unsold seats in the 2018/19 season is emblematic: 7.1 mln in Serie A, 4.9 mln in Ligue 1 and LaLiga, 1.9 mln in Bundesliga and 1.6 mln in the Premier League (FIGC ReportCalcio 2020, n.d.). These figures did not significantly improve in subsequent seasons, keeping Serie A in last place in this ranking. In this sense, an increase in new and owned stadiums can only be a good omen, as certified by Juventus and Udinese, capable of doubling revenues with their new facilities.

Regarding commercial revenues, if the average revenue per club has almost doubled from 16.9 mln euros in the 2011/12 season to 31.8 mln euros in the 2021/22 season (Data from Company financial statements edited by Gazzetta dello Sport), the level of concentration has also shown an upward trend. There are huge disparities in the brand values of Serie A teams, which are

reflected directly in sponsor contributions (Table 2). For example, in the 2021/22 season, revenues from jersey sponsors ranged from a minimum of 0.6 million euros for Venezia and 1 million euros for Genoa, Salernitana and Spezia to considerably higher figures such as Inter's 26 mln, Fiorentina's 26.2 mln and Juventus' 57 mln euros (Social Media Soccer, 2022).
The two highest concentration peaks were recorded in the 2017/18 and 2020/21 seasons, respectively, with Gini indices of 0.610 and 0.614, reflecting two seasons with a high Gini index of points and, therefore, unbalanced. While payment delays due to COVID-19 impacted the 2020/21 season, the value of the 2017/18 season can be explained by the exponential increase in Inter's commercial revenues, which rose from 48.7 mln (2015/16) to 112.2 mln (2016/17) and to 138.8 mln euros (2017/18). This growth can be attributed to the work carried out by the new Chinese ownership *Suning Holdings Group*, which, for the 2017/18 season, closed three new commercial agreements in the Asian market with the companies *Fullshare Holding, Donkey Mother* and *iMedia*, for a total value of 37 mln euros (De Santis, 2018). Juventus and Roma also managed to increase their revenues, respectively by, 22 mln of the total 126 mln euros and 9.1 mln of the total 33.4 mln euros (Data from Company financial statements edited by Gazzetta dello Sport).

The third finding relates to the impact of UCL participation on club revenues and the impact of European Cup prize money on Serie A's competitive balance. Figure 14 shows that teams with higher average revenues occupy the top positions in the league table and qualify for European competitions, while teams with lower revenues tend to be relegated, indicating a close correlation between sporting and financial performance. Furthermore, it is clearly illustrated how the increase in UCL prizes corresponds to an increase in the average revenues of the top seven ranked clubs and, consequently, an increase in their difference with the other teams in the league. Juventus' excellent performance in the UCL, having reached the finals in the 2014/15 and 2016/17 seasons, allowed them to benefit from 89.1 mln and 110.4 mln euros (UEFA, 2016; 2018c), respectively, impacting broadcasting revenues by 45.8% and 47.4%, respectively. Truly considerable rewards if we consider that only six Serie A clubs generated total revenues of 89.1 mln euros or more in the 2014/15 season and five of them of 110.4 mln euros or more in the 2016/17 season. The same applies to Roma, who reached the competition's semi-finals in the 2017/18 season, earning 83.8 mln euros (UEFA, 2019), representing 50.2% of broadcast revenues.

The rise in broadcasting and commercial rights, along with the UEFA prizes granted to teams engaging in European cups, has sparked concerns regarding the potential negative effects on the competitive balance within national leagues (ESPN, 2023). The results of this study confirm these concerns. Despite the limited number of observations, prize money in European competitions shows a statistically positive relationship with the Gini index of points. This indicates that the distribution of UEFA's prize money has a distorting effect on Serie A, as an increase in prize money corresponds to an increase in the competitive imbalance in Serie A. The different values of the TV Broadcasting Gini index with and without UEFA prizes, depicted in Figure 13, as well as the significant differences between the broadcasting Gini models with (Table 8) and without UEFA prizes (Table 9), highlight on the one hand the specific weight of UEFA prizes on club revenues, and the other hand that it is precisely the latter that negatively affects the competitive balance within Serie A.

These findings coincide with the results obtained by Pawlowski et al. (2010), Rocaboy (2017) and Dessus & Raballand (2020) that showed an amplification of revenue differences between clubs within a league, resulting in a lowering of the competitive balance. However, Frick et al. (2023) find that increasing UCL revenues do not necessarily lead to a decrease in CB. This discrepancy highlights the need for further research in this area, especially considering of the expected change in the format of the UEFA Champions League 2024/25, in which further premium increases are expected (ESPN, 2023). Future studies could examine the increasing impact of European Cup premiums on clubs' behaviour in the transfer market or on the investment and utilisation of youth sectors. This would contribute to a deeper understanding of the financial and competitive dynamics within European football leagues.

The fourth major finding concerns the effect of the concentration of the different revenue sources on the competitive balance. Total revenues emerge as a significant factor at the 0.05 level in all examined models (Table 6), indicating that a higher degree of concentration is associated with a deterioration of the competitive balance. European Cup prizes, as well as the investment amount for acquiring players also appear to affect the competitive balance. Given that transfer spending shows an unbalanced distribution, with the top teams investing significantly more than the others, as evidenced in the 2019/20 season, in which Juventus, Inter, Napoli, Roma and AC Milan covered 60 % of the total investments, amounting to 870 mln of the 1460 mln euros spent by all Serie A clubs (Transfermarkt, n.d.), it could suggest that a higher concentration of playing talent hurts the competitiveness of the league. The results of the regression analysis confirm recent studies by Rappai & Furész (2022) and Carreras & Garcia

(2018), which respectively showed a significant impact on talent concentration and financial inequality on competitive balance.

When analysing the different components of total revenues, the concentration of matchday and commercial revenues have a significant impact on the competitive balance, respectively registering p-values of 0.035 and 0.025. With regard to broadcasting revenues, significant levels of correlation could only be detected when the averages of capital gains and the dummy revenue-sharing variable were included in the models. Both of these variables have a positive relationship with the Gini index of points, suggesting that an increase in the generation of capital gains and the seasons following the reform to the *Melandri Law* (2018/19 - 2021/22) results in a reduction of the competitive balance within Serie A. This finding contrasts with the study's results by Kesenne (2006), who argues that revenue sharing in a league improves competitive balance. However, further research should be conducted regarding the effects of the change in the broadcasting revenue distribution system on the competitive balance in Serie A, as COVID-19 and the subsequent payment delays have compromised the data for two of the four post-Melandri reform seasons (2019/20 and 2020/21).

Lastly, the panel data model revealed a close correlation between financial and sporting performance among Serie A teams, confirming the existence of the vicious circle proposed by Assetta (2013), in which good sporting performance leads to greater revenue and more financial resources that can be reinvested to improve sporting performance further. This is confirmed by the statistically positive correlation between all sources of revenue and the points obtained by teams. These results, in addition to the increasing trend in total revenue concentration observed in Figure 13, reinforce the conclusions of the regression analysis (Table 6), according to which a greater concentration of revenues is associated with a decrease in competitive balance. Another important consideration relates to the revenue-sharing variable, which produces contrasting results to the previous analyses (Tables 7 and Table 8), as it is associated with a decrease in points scored, suggesting the possibility of an improvement in competitive balance.

6.2 A future of opportunities for Serie A

Over the years, Serie A clubs have grown their revenues mainly due to increased centralised revenues, i.e. revenues from TV rights and European competition prizes, individual sponsorship revenues and capital gains. Although Serie A has become more profitable in recent years, many clubs still operate in deficit and struggle to comply with FFP rules. In the 2018/19 season, only seven of twenty clubs ended the year with a positive financial result. This situation worsened further with the arrival of the pandemic as in the 2021/22 season, only Atalanta (+35.1 mln) and Fiorentina (+46.8 mln) ended the season in profit (Data from Company financial statements edited by Gazzetta dello Sport). The staggering increase in wages and the inflation of transfer prices only solidify this negative trend.

The top Serie A clubs struggle to compete in the transfer market with the other top teams of the *Big 5*, which have stronger business models and more buying power. Caruso (2022) identified several factors as causes of Serie A's backwardness compared to other top European leagues. One of these factors is bureaucracy, which hinders the construction of new sports facilities, jeopardising the growth of matchday and commercial revenues and causing a greater dependence on player trading leverage (through sales and capital gains). In addition, there is a lack of sporting appeal for high-level players, who prefer to land in other leagues rather than in the Italian one. Finally, a lack of valorisation of the youth academy emerges, as the big Italian clubs prefer to invest abroad instead of focusing on domestic resources (Caruso, 2022). Future studies could examine this last aspect since it could also have repercussions on the competitive balance, as the increasing transfer spending of top clubs tends to support the financial ecosystem of smaller Serie A clubs less and less.

The findings of this study carry significant implications for football stakeholders, ranging from the Lega Serie A to the FIGC, but place particular emphasis on individual Serie A clubs. There is a clear need to address challenges and exploit opportunities to improve the clubs' financial situation. Each club takes a unique approach to its business model, which is based on its specific sources of revenue. The ideal model for clubs should aim for a balanced mix of revenues, reducing dependence on broadcasting only. Most clubs should pursue long-term growth, supported by revenue streams that are not exclusively controlled by centralised distribution mechanisms, thus allowing the opportunity to promote sustainable revenue growth (Football

Benchmark, 2017). In this way, it will be easier to comply with the FFP break-even rule without necessarily having to rely on the sales of top players, as recent seasons have shown.
Next, possible solutions to diversify clubs' revenue sources and contribute to a revival of Italian football will be examined, with the aim of promoting competitive balance. These solutions can be adapted to each club according to its budget and business model. However, it is crucial that football stakeholders make bold and difficult decisions, always guided by the best interests of the game and the community, in order to ensure the sustainable development of Italian football.

6.2.1 The challenge: fostering competitive balance

The decline of the competitive balance that has been manifested over the last decade in Serie A could lead to a reduction in fan interest and undermine the attractiveness of the league. The Lega Serie A and the FIGC must, therefore, make the promotion of competitive balance within Serie A their primary objective. As the manager and organiser of the league, Lega Serie A must pay particular attention to the main source of revenue under its control: broadcasting revenues.

According to Deloitte (2018), Serie A's international TV rights are significantly lower than those of the Premier League and La Liga, indicating ample room for improvement to increase international appeal. The panel analysis conducted in this study confirms that a fairer distribution of TV rights has led to a decrease in the points obtained by teams. Therefore, it is justified to explore solutions in this direction. However, it is crucial to emphasise that an excessive financial weakening of the top teams, which would result in a strengthening of the weaker teams, could have negative repercussions on the attractiveness of Serie A. This would result in less buying power on the transfer market, thus reducing the ability to attract stars and creating a competitive disadvantage in international competitions compared to top clubs in other leagues. This could affect the performance of Italian teams in the UCL and UEL, competitions that help increase the appeal and promote Italian football worldwide. However, the results achieved in the 2022/23 season represent a positive sign, with AC Milan reaching the semi-finals and Inter in the final of the UCL. Similarly, Roma reached the UEL finals and Fiorentina the UECL final. These successes suggest a more promising future in terms of the attractiveness of Italian football.

Therefore, it is up to the governing bodies of Italian football, in cooperation with the individual clubs, to find solutions to increase league's attractiveness and, consequently, broadcasting revenues both domestically and internationally. With more overall revenues, weaker clubs could be given more purchasing power to build more competitive teams without reducing the share of Italy's top clubs.

6.2.2 Case study Juventus: the modern Allianz Stadium

This research highlighted the ageing of the facilities in Serie A and the consequent difficulty in generating matchday revenue. Aggregate values for the 2021/22 season reveal alarming discrepancies between the major European leagues: 231 mln euros for Serie A, 277 mln euros for the Bundesliga, 409 mln euros for LaLiga and 901 mln euros for the Premier League (Deloitte, 2023). The words of UEFA president Aleksander Čeferin are an unequivocal reminder of this situation: "The infrastructure in Italy, compared to the level of its football and the size of the country, is very poor. (...) There is so much passion for football in this country, and for sport in general, more needs to be done" (Tuttosport, 2023, p.1).

The opportunities offered by a modern, multifunctional stadium for increasing revenue are many and varied, with the main objective being to optimise the utilisation of the facility, extending its operations beyond match days by, for example, hosting sporting events, entertainment events (concerts) and economic events (fairs). New stadiums have seen the development of VIP areas for business and commercial partners, the introduction of elements such as entrance facilitation, advanced Wi-Fi and state-of-the-art technology, as well as specially designed areas for children. At the same time, facilities such as museums with guided tours for tourists were integrated, symbolising the prestige and history of the club. Similarly, hotels, bars and restaurants have been introduced, operating seven days a week and often managed by the same company responsible for catering in the stadium. These services go hand in hand with shops and commercial areas, which offer a wide range of products using the internal and external spaces of the infrastructure. Thus, instead of purchasing these products elsewhere, fans can consume them inside the stadium, generating matchday revenue. All of these initiatives are focused on building fan loyalty and enhancing the fan experience, bringing tangible benefits in terms of image and financial revenues not only from the main core business,

i.e. football but also from ancillary activities and services (Checchinato & Zucchetta, 2013; Doidge, 2015).

In this context, the Juventus Stadium represents the first owned stadium in Italy comparable in size, characteristics, commercial offer and modernity to the most important facilities already existing in other leagues. In operation for the 2011/12 season, it has a capacity of 41,475 seats, 64 SkyBoxes at a minimum distance of 7.5 metres from the pitch, 4,000 parking spaces, 21 bars and eight catering areas, commercial areas and the Jmuseum (Palumbo, 2015). The 155 mln euros invested in the new stadium had a significant impact on Juventus' business model. Firstly, there has been a reorganisation of human resources: while the old stadium was managed in outsourcing, in the new Juventus Stadium it has been necessary to redefine and reorganise the resources and processes related to matchday entertainment and hospitality services offered, as well as other non-football events. Secondly, there was a significant increase in average spectators per match and average revenue per spectator. Between the 2010/11 season and the 2011/12 season, there was a 56% increase in average spectators, while revenue per spectator increased by 59%, from 528 to 889 euro. Finally, there was a general increase in the offer. In addition to the museum and non-match-related events, important business offers have been implemented: 8,000 seats in the West Sector are dedicated to the Juventus Premium Club, a VIP area mainly for companies and business operators to facilitate networking (Palumbo, 2015).

Juventus was able to significantly increase its matchday revenue from 11.6 mln euros in the 2010/11 season (Palumbo, 2015) to 31.8 mln in the 2011/12 season and to 74.4 mln in the 2018/19 season. In the pre-pandemic season, the runner-up in matchday revenue was Inter Milan with 44.7 mln euros, followed by AC Milan with 34.1 mln euros and Roma with 33.7 mln euros (Data from Company financial statements edited by Gazzetta dello Sport). These wide differences in revenue are even more surprising if we consider that the average number of spectators per match for Juventus (39244) is significantly lower than for Inter (61419) and Milan (54667). This remarkable difference highlights both the profitability of a modern-owned stadium and the need for other clubs to undertake a similar solution to that of Juventus. An increase in matchday revenue allows them to gain more control over their finances and reduce the financial gap with the Turin team. While bureaucratic constraints have so far hindered the construction of new stadiums in Italy (Casini, 2023), there seems to be a movement underway, with AC Milan (Sacchi, 2023), Roma, Fiorentina e Bologna showing a strong interest in

building or renovating their stadiums (*Quotidiano Nazionale*, 2023). From this perspective, the awarding of the 2032 European Championships to Italy and Turkey is a positive sign, and it is hoped that, with the support of the Italian government, it will lead to a revolution in Italian stadiums similar to what happened at the 1990 World Cup.

6.2.3 Case study Milan: brand internationalisation

Brand internationalisation is a complex process driven by the clubs' need to increase profits and gain a competitive advantage. Football clubs have, therefore, started to exploit all opportunities to generate commercial revenues, such as acquiring players or coaches from foreign countries, organising marketing tours abroad or collaborating with foreign clubs. In addition, clubs can capture the attention of foreign owners and sponsors. All these initiatives are aimed at enhancing the club's global brand recognition and catalyse the interest of fans in both established and newly developing markets (Dolles & Söderman, 2005; Maderer & Holtbrügge, 2019). Since Figure 13 shows that commercial revenues are the most concentrated source of revenue, small and medium-sized Serie A clubs should develop specific strategies to increase this revenue stream and reduce the gap with the top clubs in the league.

Technological progress, mass media and globalisation have greatly expanded the ability of professional football clubs to explore new markets. Nowadays, fans can access foreign leagues and their teams to an unprecedented extent, allowing them to establish connections with teams and players from all around the world, regardless of where they are geographically located (Maderer & Holtbrügge, 2019). In this regard, sports managers often seek to expand the global reach of their team's brand through the acquisition of high-profile foreign players or players with potentially significant media impact. These players can act as ambassadors of their home country and increase the club's popularity outside their home market, attracting the support of passionate fans in the foreign players' home countries. In particular, players from emerging markets offer considerable potential to gain fans abroad (Kerr & Gladden, 2008; Maderer & Holtbrügge, 2019). In the context of Serie A, there is a tangible example reported by Deloitte (2019), which cites the *Ronaldo effect* to describe the impact on Juventus' revenues (and not only), evidenced by increased spectators at the stadium, increased followers on social media and merchandising sales. While it is true that the one of the Portuguese superstars is an extreme example that no other team in Serie A could afford, similar reasoning can be applied on a

smaller scale. More recent examples include players such as Khvicha Kvaratskhelia, a Georgian talent who was unknown upon his arrival in Naples but became a national hero within a year thanks to his performances on the pitch, leading Napoli to the victory of the *Scudetto* and earning the support of an entire nation, or the acquisitions of Christian Pulisic and Yunus Musah, players of the United States national team, coming from a brilliant World Cup in Qatar and purchased in the summer of 2023 by AC Milan, whose owner, *RedBird Capital Partners*, is also American. This type of targeted investment can incentivise the creation of fan clubs, the opening of official stores abroad to increase merchandising sales, and of official club football schools to expand the catchment area from which to discover and grow talent, as well as the organisation of international friendlies or summer pre-season tournaments in the countries where the players or team owners belong.

Milan's pre-season tour 2023, held between Los Angeles and Las Vegas, represented a significant step in the club's development, focusing on the commercial aspect. During this tour, Milan actively worked on consolidating partnerships with important global sponsors, including Principal Partners *Emirates* and *Puma*, to further strengthen the Milan brand internationally. The high-profile friendly matches against the likes of Barcelona, Real Madrid and Juventus were organised to create a spectacular experience in a context primarily oriented towards off-field aspects. The trip to the United States represented an important opportunity to organise a series of commercial and fan engagement initiatives, as well as institutional and business meetings, with the aim of further strengthening its presence in a region where interest in football is steadily increasing (*AC Milan*, 2023). During the tour, the new Sleeve Partner *MSC Crociere* and the new *Puma* away jersey were presented, celebrated with an exclusive event in Los Angeles that highlighted the strong link between football and fashion, with the participation of some AC Milan players and local celebrities. The tour also strengthened the connection between the club and the United States, where AC Milan is considered the strongest Italian football brand, as confirmed by a survey conducted by international market research firm *YouGov*, which found more than 43 million Milan fans across the country. This link was further strengthened through an innovative partnership with the *New York Yankees*, bringing together two of the world's most iconic sports brands, culminating in a long-standing relationship between *Yankee Global Enterprises* and *RedBird Capital Partners* (*AC Milan*, 2023).

It is important to underline that the proposed solution represents only one of several commercial opportunities for Serie A clubs. However, it aligns with one of the distinctive characteristics of

Serie A clubs, namely the extensive use of player trading. Given the precarious financial environment in which clubs operate, leveraging the commercial potential of players could be an effective strategy. In this context, the role of scouts and sports directors is crucial, as they are responsible for identifying players from non-prime markets with the necessary growth potential to compete in Italian football, all while operating with limited financial resources.

6.2.4 Case study Atalanta: youth sector and capital gains

Atalanta represents a remarkable example of sustainable economic and sporting growth, the result of a strategy based on investments in the youth sector, which the club has been able to exploit effectively to increase its social prestige through sporting results, as well as to consolidate itself as a stable economic reality within Serie A. Regarding sporting results, between the 2011/12 and 2015/16 seasons, Atalanta achieved an average of 43.6 points per season, consistently ranking in the lower part of the league table. In the following years, this average increased significantly, reaching 69.3 points per season, allowing the club to qualify for the UEFA Europa League in the 2016/17 season and for the UEFA Champions League for three consecutive seasons in 2018/19, 2019/20 and 2020/21 vintages. In just a few years, Atalanta has gone from a team struggling for salvation, risking relegation in 2014/15 with 37 points, to a team that regularly qualifies for European competitions. These improvements in sporting performance have been directly reflected in the club's financial results, confirming the findings of the panel analysis in this study. Total revenues increased from 35.2 mln euros in the 2011/12 season to 189.1 mln euros in the 2021/22 season (Data from Company financial statements edited by Gazzetta dello Sport). This constant growth over time becomes even more significant if we consider that, throughout the eleven seasons, the net transfer balance was a total of +55.4 mln euros (Transfermarkt, n.d.) and the overall financial results were a positive +146.5 mln euros (Data from Company financial statements edited by Gazzetta dello Sport), with peaks reached in the 2020/21 (+51.7 mln) and 2021/22 seasons (+35.1mln).

The *Atalanta model* is mainly based on three key factors: the enhancement of the youth sector, investment in scouting, and the acquisition of resources in an “underground” market. Over the last ten years, the youth sector of the Bergamo team has been a real formation school, capable of growing, launching into the first team and selling numerous talents that have generated enormous capital gains (Caruso, 2022). For example, Alessandro Bastoni, Roberto Gagliardini

and Andrea Conti were sold to Inter and AC Milan for 31.1 mln, 24 mln and 20.5 mln euros in 2017, respectively, Frank Kessie sold to AC Milan for 25 mln euros in 2019, and Amad Diallo to Manchester United for 21.3 mln euros in 2021 (Transfermarkt, n.d.). The sales of internally formed players allow the club to maximise the leverage gained from player trading. Since there are no acquisition costs associated with players from the youth sector, the entire profit can be recorded at 100% of its value in the club's balance sheets (Caruso, 2022). Thanks to the examples mentioned above, Atalanta generated 45.5 mln euros in capital gains in the 2017/18 season, 38.4 mln in the 2019/20 season and 68.2 mln in the 2020/21 season (Data from Company financial statements edited by Gazzetta dello Sport). In order to understand the prosperity of the youth sector, Figure 15 shows how Atalanta is first in the ranking of the market value in millions of euros of players in the youth sector in Serie A, ahead of all the top Italian clubs.

Figure 15: *Transfer value of academy graduates in Italy. Data from CIES Football Observatory social*

Atalanta's economic and sporting growth is also the result of exceptional scouting work in non-traditional markets compared to those usually explored to acquire players, such as the Spanish, English, German and French markets (Caruso, 2022). Scouts have identified players with considerable potential, buying them at a relatively low cost and then developing and selling them at a higher price, generating significant capital gains. Some examples of this approach include the purchase of Robin Gosens for 1.17 mln euros from Heracles (Netherlands) and Timothy Castagne for 6.5 mln euros from KRC Genk (Belgium) in 2017, and then reselling them for 27.4 mln euros in 2022 to Inter Milan and 20.9 mln euros in 2020 to Leicester City, respectively. Among the many successful market transactions, the incredible case of Rasmus Højlund stands out. He was bought at only 19 years old in the summer of 2022 from Sturm Graz (Austria) for 20 mln euros, made his debut and played one season, only to be sold in the summer of 2023 to Manchester United for 75 mln euros (Transfermarkt, n.d.).

Through its investment in the youth sector and an accurate scouting strategy in unconventional markets, Atalanta has shown that it can consolidate its position as a solid reality in Italian football. This growth is a tangible example of how crucial a shrewd management of resources and a commitment to talent development is, all supported by a first-class managerial structure. This strategy enabled the club to achieve positive financial results in all three seasons marked by the COVID-19 pandemic when football market operations and incoming transfer budgets were severely constrained due to decreasing operating revenues. Having positive leverage from transfer budgets gives Atalanta a solid financial base and greater control over their finances, peculiarities that are difficult to achieve in general within the football business where volatility and uncertainty reign due to external dynamics and, in particular in Italy, where slow and cumbersome bureaucracy obstructs the construction of owned stadiums that would guarantee a high level of income from matchday revenues (Caruso, 2022).

Atalanta has founded much of its business model on the ability to develop young talent and generate capital gains. This strategy has been further consolidated by renovating the Gewiss Stadium (Atalanta, n.d.-a) and registering its second team, Atalanta U23, in the Lega Pro championship in the 2023/24 season (Atalanta, n.d.-b). Together with Juventus, the team from Bergamo is the only one with a second team registered in the professional ranks. This move represents a significant step forward as the Lega Pro represents an important stage for the numerous young talents in the youth sector to debut, grow and develop. Given the general financial situation of Serie A and the clubs' difficulties in competing on the transfer market, more Italian teams should consider a similar and sustainable path as the one undertaken by Atalanta.

6.3 Limitations

Regarding the limitations of this study, it is important to point out that the financial statements of Atalanta, Genoa, Sampdoria, Torino, Sassuolo, Fiorentina (2011/12 – 2019/20), Milan (2011/12 – 2017/18), Novara (2011/12), Livorno (2013/14) and Spal (2018/19 – 2019/20) follow a budget model aligned with the civil calendar, closing their accounting periods on 31 December instead of at the end of the football season, as most other teams do. Therefore, although covering a 12-month time span, this time discrepancy could affect the accuracy of the analyses. In addition, delays in commercial and TV rights payments caused by COVID-19 negatively affected the data quality, as the revenue and concentration levels of the 2019/20 and 2020/21 seasons may not accurately reflect the actual values each club should have received.

A further limitation of the research concerns the variety of approaches to measuring competitive balance in football. If one focuses on competitive balance within a single season, introducing additional measures such as the HHI index or the Distance to Competitive Balance could provide more precise results. Furthermore, the statistical analyses conducted in this research on the relationship between revenue concentration and point concentration included a limited number of observations equal to the number of seasons considered. Therefore, future research should include more Serie A seasons or examine more European leagues to ensure more robust and meaningful results. A further opportunity to increase the number of observations could be to consider short-term competitive balance by measuring the level of uncertainty in individual matches.

7 Conclusion

This research initially explored the economic context characterising European football in general and Italian football in particular. This context has been characterised by a significant increase in business volume over time, with costs and revenues growing exponentially, however differentially among Serie A clubs. This scenario has placed the issue of financial inequality at the centre of attention. Since the economic success and attractiveness of sports leagues are intrinsically linked to competitive balance, this study aimed to examine the relationship between the latter concept and financial concentration in Serie A between the 2011/12 and 2021/22 seasons. Firstly, a deterioration of the competitive balance over time was discovered. The analysis of the Gini index revealed an increase in inequality in the distribution of points between teams, signalling a decrease in competitiveness and, consequently, in the competition's appeal.

Secondly, the evolutions in the clubs' operational revenue sources concentrations were analysed. The exceptional increase in turnover in recent decades has been accompanied by an increase in the level of revenue concentration. The main cause of this phenomenon lies in the UEFA prizes, which increasingly amplify the revenue difference between Serie A clubs. In general, when an increase in the concentration of points is noticed, there is also an increase in the concentration of revenues. Commercial revenues are the most concentrated, a sign that big clubs can better capitalise on commercial opportunities related to their brand than smaller clubs. Matchday revenues also show high levels of concentration as well as the strongest growth trend, which can be attributed to the heterogeneity in terms of stadium capacity but, above all, to the fact that few teams own a modern stadium. Broadcasting TV revenues, on the other hand, are the least concentrated, thanks to the decision taken by the Lega Serie A to adopt a more balanced distribution among the teams, trying to lower the growth trend of the concentration of the other revenue sources. In the 2019/20 and 2020/21 seasons, a significant impact of COVID-19 was observed on each revenue source, both in terms of aggregate values and concentration.

Thirdly, statistical analyses regarding the impact of revenue concentration on the competitive balance have shown that a higher concentration level of each source of operating revenue is associated with a deterioration of the competitive balance. European Cup prizes and the amount

of investment to acquire players also affect the concentration of points. Therefore, this study provides scientific evidence that financial inequality negatively affects the competitiveness of Serie A.

Finally, the research examined the relationship between financial and sporting performance. The panel analysis clearly showed a strong correlation between each revenue source, including capital gains revenues, and the points obtained by the teams at the end of the championship. Clubs with higher revenues occupy the top positions in the league table and qualify for the European cups, while clubs with lower revenues struggle to compete and tend to be relegated. Good sporting performance, therefore, leads to higher revenues that can be reinvested to further improve sporting performance. In addition, it is observed that in the years following the change in the TV rights distribution system, which saw the share to be shared equally increase from 40% to 50%, led to a decrease in the points obtained by teams.

In order to promote the attractiveness of the Serie A championship, it is therefore necessary to take concrete measures to address the urgent problem of the growing disparity in revenues between clubs. This research has shed light on the challenge that Lega Serie A, FIGC and clubs face, i.e. to promote the competitive balance and appeal of Serie A in order to increase TV rights deals both domestically and internationally. Furthermore, the study proposed concrete solutions for clubs aimed at increasing revenues and reducing financial disparity. The first solution is the construction of new stadiums, for which the positive impact on Juventus' finances of the Allianz Stadium was explored. The second explores the brand's internationalisation through the purchase of players and the exploitation of their commercial potential, for which the recent case of AC Milan was treated. The third instead analysed Atalanta's successful model centred on investment and exploitation of the youth sector and the scouting of players in "underground" markets.

However, it is crucial to emphasise that there are numerous opportunities to increase club revenues, especially in the commercial sphere, and to promote competitive balance, as emerged from the literature review. Serie A has a promising future as there is a basis for implementing economically sustainable strategies that strengthen clubs' business models by reducing dependence on centralised revenue sources. A reduction in financial inequality would result in an improvement in the competitive balance and attractiveness of Serie A, thus ensuring a long-term perspective of success.

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Annexes

Annex 1: Distribution criteria and money allocated to participating clubs for the 2011/12 - 2021/22 editions of the UEFA Champions League.

Season	Total prize money (mln €)				Partecipation bonus	Performance bonus (mln €)							
	Fixed amount (partecipation e performance)	Market pool	10-year performance-based coefficient ranking	Total	Minimum fees	Group stage win	Group stage draws	Round of 16	Quarter-finalist	Semi-finalist	Runner-up	Winner
2011/2012	455	379	0	834	3.9	0.8	0.4	3	3.3	4.2	5.6	9
2012/2013	537	434.6	0	971.6	8.6	1	0.5	3.5	3.9	4.9	6.5	10.5
2013/2014	537	457.3	0	994.3	8.6	1	0.5	3.5	3.9	4.9	6.5	10.5
2014/2015	545.7	492.9	0	1038.6	8.6	1	0.5	3.5	3.9	4.9	6.5	10.5
2015/2016	778.7	577.7	0	1356.4	12	1.5	0.5	5.5	6	7	10.5	15
2016/2017	816.1	580	0	1396.1	12.7	1.5	0.5	6	6.5	7.5	11	15.5
2017/2018	816.4	596.2	0	1412.6	12.7	1.5	0.5	6	6.5	7.5	11	15.5
2018/2019	1099.9	292	585	1976.9	14.5	2.7	0.9	9.5	10.5	12	15	19
2019/2020	1045.4	292	585	1922.4	15.3	2.7	0.9	9.5	10.5	12	15	19
2020/2021	1033.1	292	585	1910.1	15.3	2.7	0.9	9.5	10.5	12	15	19
2021/2022	1031.1	300.3	600.6	2035	15.6	2.8	0.9	9.6	10.6	12.5	15.5	20

Source: UEFA (2013; 2014; 2015; 2016; 2017; 2018c; 2019; 2020; 2021; 2022; 2023a)

Annex 2: Competition stage reached and money distributed to Italian clubs in the 2011/12 - 2021/22 UEFA Champions League editions.

Champions League	Team	Round reached	Total (mln €)
2010/2011	Inter	Quarter - finals	39.6
	Milan	Round of 16	26.9
	Roma	Round of 16	31.4
2011/2012	Milan	Quarter - finals	41.9
	Inter	Round of 16	33.2
	Napoli	Round of 16	29.1
2012/2013	Juventus	Quarter - finals	67.1
	Milan	Round of 16	52.8
2013/2014	Milan	Round of 16	39.6
	Juventus	Group stage	45.4
	Napoli	Group stage	40.6
2014/2015	Juventus	Runner - up	89.1
	Roma	Group stage	45.9
2015/2016	Roma	Round of 16	68.5
	Juventus	Round of 16	76.3
2016/2017	Juventus	Runner - up	110.4
	Napoli	Round of 16	66
2017/2018	Roma	Semi - finals	83.8
	Juventus	Quarter - finals	80.1
	Napoli	Group stage	39
2018/2019	Juventus	Quarter - finals	95.6
	Roma	Round of 16	57.7
	Napoli	Group stage	49.9
	Inter	Group stage	48.3
2019/2020	Atalanta	Quarter - finals	56.5
	Juventus	Round of 16	84.1
	Napoli	Round of 16	63.7
	Inter	Group stage	44.5
2020/2021	Atalanta	Round of 16	50.7
	Lazio	Round of 16	53.5
	Juventus	Round of 16	82.9
	Inter	Group stage	49.3
2021/2022	Juventus	Round of 16	77.4
	Inter	Round of 16	62.7
	Atalanta	Group stage	33
	Milan	Group stage	45.3

Source: UEFA (2013; 2014; 2015; 2016; 2017; 2018c; 2019; 2020; 2021; 2022; 2023a)

Annex 3: Competition stage reached and money distributed to Italian clubs in the 2011/12 - 2021/22 UEFA Europa League editions. In red are the clubs relegated from the CL.

Europa League	Team	Round reached	Total (mln €)
2010/2011	Napoli	Round of 32	2.4
	Juventus	Group stage	1.9
	Palermo	Group stage	1.9
	Sampdoria	Group stage	1.8
2011/2012	Udinese	Round of 16	3.4
	Lazio	Round of 32	2.9
2012/2013	Lazio	Quarter - finals	10.3
	Inter	Round of 16	7.2
	Napoli	Round of 32	7.5
	Udinese	Group stage	4.4
2013/2014	Juventus	Semi - finals	7.6
	Napoli	Round of 16	1.7
	Fiorentina	Round of 16	9.1
	Lazio	Round of 32	10.6
2014/2015	Fiorentina	Semi - finals	10.5
	Napoli	Semi - finals	12.3
	Inter	Round of 16	6.9
	Torino	Round of 16	6.6
2015/2016	Lazio	Round of 16	15.4
	Napoli	Round of 32	12.5
	Fiorentina	Round of 32	11.2
2016/2017	Roma	Round of 16	14.2
	Fiorentina	Round of 32	11.5
	Inter	Group stage	8.2
	Sassuolo	Group stage	8
2017/2018	Napoli	Round of 32	1.2
	Lazio	Quarter - finals	17.3
	Milan	Round of 16	13.9
	Atalanta	Round of 32	12.3
2018/2019	Napoli	Quarter - finals	6.7
	Inter	Round of 16	3.2
	Lazio	Round of 32	15.3
	Milan	Group stage	14.7
2019/2020	Inter	Final	16.9
	Roma	Round of 16	17
	Lazio	Group stage	13.8
2020/2021	Roma	Semi - finals	24.1
	Napoli	Round of 32	14.6
	Milan	Round of 16	16.3
2021/2022	Atalanta	Quarter - finals	7.3
	Napoli	Round of 32	16.7
	Lazio	Round of 32	15.9

Source: UEFA (2013; 2014; 2015; 2016; 2017; 2018c; 2019; 2020; 2021; 2022; 2023a)

Annex 4: Competition stage reached and money distributed to Italian clubs in the 2021/22 UEFA Europa Conference League edition.

Conference League	Team	Round reached	Total (mln €)
2021/2022	Roma	Winner	19.168

Source: UEFA (2023a)