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

The Impact of Majority Investors on the Financial and Sporting Performance of Football Clubs: Empirical Evidence from the First and Second German Bundesliga.

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22/01/2025

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List of Abbreviations

BSC	Berliner Sport-Club
BVB	Ballspielverein Borussia (Borussia Dortmund)
CEO	Chief Executive Officer
COVID-19	Coronavirus Disease 2019
DFB	Deutscher Fußball Bund (German Football Association)
DFL	Deutscher Fußball Liga (German Football League)
e.V.	Eingetragener Verein (Registered Association)
FC	Football Club
GmbH	Gesellschaft mit beschränkter Haftung (Limited liability Company)
KGaA	Kommanditgesellschaft auf Aktie (Partnership limited by Shares)
MD	Managing Director
PE	Private Equity
RB	Red Bull
ROS	Return on Sales
SC	Sport Club
SSV	Spiel- und Sportverein (Play and Sports Club)
TSG	Turn- und Sportverein (Gymnastics and Sports Club)
US	United States
VIF	Variance Inflation Factor
VfL	Verein für Leibesübungen (Club for Physical Exercise)

Abstract: This paper investigates how German football clubs circumvent the '50+1 rule' by decoupling voting rights from economic ownership, to attract majority investors. It introduces a novel categorisation of clubs and analyses the financial and sporting impact of majority investors using panel data (2017/18-2022/23). The results show that clubs circumventing the rule experience lower profitability and sporting performance, with no significant revenue advantage, challenging assumptions about investor benefits. The study highlights the unintended consequences of rule circumvention and provides actionable recommendations, urging either stricter enforcement or reform of the rule to enhance Bundesliga governance and ensure sustainable financial and sporting competitiveness.

Keywords: Football governance, German first and second Bundesliga, ownership structure, majority investors, financial performance, sporting performance, 50+1 rule.

Acknowledgements: I would like to thank my supervisor, Prof. Francisco Queiró, for his guidance and feedback throughout the course of this thesis.

1. Introduction

Football is more than just a sport; it is a global phenomenon that unites cultures, fuels economies, and inspires unparalleled passion among millions of people worldwide. With billions of fans, billions in revenues, and a global reach, football represents one of the most influential industries (Bason and Senaux 2023). However, the sport is not immune to the forces of commercialization, globalization, and financial complexities that characterise modern business landscapes.

In recent decades, the business model of football clubs (FCs) has undergone significant transformations (Zülch et al. 2022). Historically operated as member-controlled organizations rooted in community values, football clubs are increasingly embracing corporate structures, attracting external investors, and navigating the tension between financial sustainability and competitive ambition (Budzinski and Kunz-Kaltenhäuser 2020). This evolution raises pressing questions about the governance of clubs, especially in leagues such as the German Bundesliga, which operates under a unique regulatory framework (Wagner et al. 2022). The so-called '50+1 rule', designed to safeguard community ownership and prevent excessive commercialization, has always sparked considerable debates (Ingerfurth 2024). It regulates the investment practices of clubs in the first and second divisions by limiting the amount of outside capital that teams can attract. In essence, the original non-profit club is required to retain at least fifty percent plus one of the voting rights in the commercial entity (unbundled corporation) representing the professional team in the league (Dietl and Franck 2007). Existing literature consistently found evidence that German clubs show superior financial health in terms of profitability compared to other top 5 leagues (Premier League, La Liga, Serie A, and Ligue 1). For instance, Acero et al. (2017) argue that the 50+1 ruling prevents excessive ownership concentrations and identify the German governance model as the main driver for better profitability figures. On the contrary, according to Rohde and Breuer, (2016a), investors are also positively associated with revenues and sporting performance. Consequently, there is a trade-off between the positive

consequences (e.g. better sporting performance and more revenue) and undesired consequences of lower profits (Rohde and Breuer 2017). Until today, the Bundesliga has distinguished itself as a league that prioritizes fan engagement and financial stability, contrasting sharply with leagues such as the English Premier League, where private and often foreign ownership dominates. Nonetheless, the Bundesliga faces challenges in maintaining competitiveness on the international stage (Roedel 2022).

In order to increase competitiveness, clubs found ways to circumvent the 50+1 rule by decoupling economic ownership from voting power (Bauers et al. 2024). As the rule only regulates voting power, clubs may sell more than 50% of the football club in economic terms, which results in indirect influence by investors (Adam et al. 2020). Today, five clubs in the first or second Bundesliga are owned by a majority investor while conforming with the rule (not including the formal exceptions from the rule). These developments set the stage for a critical examination of the role of economic majority investors in the context of the German Bundesliga. Hence, the following research question arises:

How do economic majority investors influence the financial and sporting performance of football clubs in the first and second Bundesliga?

This research question gains urgency in light of the ongoing debate about the future of the 50+1 rule, reignited by the recent collapse of the investor deal between US PE firm Blackrock and the German Football Association (DFB). This study advances existing literature on football governance by proposing a novel categorisation of ownership structures and providing new empirical evidence on their financial and sporting implications in the Bundesliga. In order to analyse the differences between club types and their impact on performance, FCs will be grouped into the following four categories: ‘Registered member association or fully owned spin-off corporation’, ‘Minority investor’, ‘Majority investor’, or ‘Exception’. As German clubs face international competitiveness challenges, understanding the complex impact of investor models is critical to shaping future governance policies. This thesis aims to provide

actionable insights and recommendations for the German Football League (DFL) to maintain or abolish the rule.

The remainder of this thesis will be structured as follows: In section two, important facts about the football industry will be introduced as well as existing literature on ownership types and their impact on performance will be reviewed. Based on this, FCs will be categorised in two ways, and new hypotheses will be formulated. The third section will discuss the data and methodology of the study. Chapter four contains the empirical results of the regression analysis. Finally, the fifth section will discuss the main findings and provide practical recommendations for the DFB. The thesis will conclude with limitations and potential for future research.

2. Literature Review

2.1 The '50+1 rule'

The 50+1 rule is a regulatory intervention introduced in 1998 in the first two German football divisions to limit the negative effect of commercialisation (Becher and Burbach 2018). It stipulates that the membership organisation, usually a registered association (e.V.), must hold the majority of voting rights in the unbundled corporation (Ingerfurth 2024). Consequently, clubs can only spin-off below 50% of the voting shares to investors which prevents externals from pursuing purely economic interests. This regulation is unique in the international context and is often associated with advantages but also certain disadvantages. On the one hand, the rule centres the community spirit and the fans (Wagner et al. 2022). Moreover, there is empirical evidence that German clubs are financially healthier and more stable than clubs from other leagues (Acero et al 2017). On the other hand, the governance system is often criticized because it prevents investment opportunities, and clubs fall behind in international comparison (Bauers and Hovemann 2019). Today, there are two formal exceptions from 50+1: Bayer 04 Leverkusen and VfL Wolfsburg. As former factory clubs from chemical company Bayer and car manufacturer Volkswagen, they were granted an official exception status by the DFL because

they have received financial support for more than 20 years (Bauers et al. 2020). TSG Hoffenheim used to be another 50+1 exception until SAP-founder Dietmar Hopp transferred the majority of voting rights back to TSG 1899 Hoffenheim e.V. in 2023 ("TSG Hoffenheim ist wieder '50+1'-Regelklub" 2023).

2.2 Deregulation of Football with a Special Emphasis on the DFL

Rohde and Breuer (2017) have identified three core trends within the football industry: professionalisation, commercialisation, and internationalisation. First, the DFL allowed clubs to legally unbundle from member associations and become for-profit organisations. Consequently, more and more clubs decided to outsource their professional football team into an incorporated subsidy (Budzinski and Kunz-Kaltenhäuser 2020). While English clubs pushed this transformation forward early on, Germany was the last to start this first phase in 1998 (Dietl and Franck 2007). Since then, football clubs may be incorporated as separate legal entities to accommodate the professional football team. In the same year, the 50+1 rule was introduced. Following the unbundling as a precondition, the second trend has been characterised by the entry of private investors. While in other leagues these investors are mostly majority investors, the 50+1 rule limited the influence of investors in Germany to minority control. The final phase was marked by the entry of foreign investors. While many of the English Premier League clubs are owned by foreign investors nowadays, this trend was also limited in the German Bundesliga through the 50+1 rule (Rohde and Breuer 2017). Comparing the two leagues today, English clubs are evidently more competitive in paying wages to players which attracts better talent and leads to better sporting performance (Rohde and Bruer 2016a).

Over time another new trend could be identified that has not yet been analysed in depth: More and more German clubs have attracted external majority investors while officially remaining in line with the 50+1 ruling, by decoupling economic ownership from voting power. It is important to note that the ruling only regulates voting rights but does not limit capital

investments (Budzinski and Kunz-Kaltenhäuser 2020). For instance, FC Augsburg sold more than 99% of its shares to an investor group. Besides, there is Hertha BSC, Hannover 96, TSG 1889 Hoffenheim, and Red Bull Leipzig, which all circumvent the rule (Adam et al. 2020).

FC Augsburg: In 2015 Klaus Hofmann became the majority investor in the football club (Kennedy 2015). Since then, the 'Hofmann Investoren GmbH' holds 99.38% in the outsourced incorporation 'FC Augsburg 1907 GmbH & CO. KGaA' ("Orbis" n.d.). The 'FCA Beteiligungs GmbH' is the holding company in control of the voting majority which makes this case compliant with the 50+1 rule. Notably, Klaus Hofmann was the CEO of that subsidy. After finishing the season 2013/14 in eighth position, the club even managed to finish the subsequent season (2014/15) in fifth position, qualifying for the international competition. This indicates that the FC was not at risk of relegation to the second division before the investors stepped in.

Hertha BSC: In 2019, Lars Windhorst ('Peil Investment B.V.'), injected 394 million euros into 'Hertha BSC GmbH & Co. KGaA' (Siethoff 2023). At first, he held below 50% of the club but soon his investment firm became the majority shareholder with 64.7% ("Orbis" n.d.). After years in mid-table in the Bundesliga, there was no acute danger of relegation, but as a club based in the German capital, the team fell short of expectations. In 2023, the partnership was terminated due to missing sporting success, and Hertha BSC was overtaken by the American PE-Firm '777 Partners' (Smith and Agini 2023). According to Siethoff (2023), the FC desperately needed financial support for the DFL-license which was at risk due to the high debt levels. Moreover, the sporting performance decreased drastically. After avoiding relegation in 2021 through the relegation play-off, Hertha was relegated the following season, which also indicates the urge for new capital from a sporting perspective (Eckner 2021).

Hannover 96: In this case, the direct subsidiary 'Hannover 96 Sales and Service GmbH' owns the outsourced spin-off. Martin Kind holds the largest individual share (around 53%) in this company via 'Marniccam GmbH' - as he is the sole shareholder he is also a majority investor

in the FC ('Orbis' n.d.). Despite Martin Kind's long-term financial support, the DFL decided not to grant him exception status ("Explanation of the Bundesliga's 50+1 rule" 2023).

RB Leipzig: The story of Leipzig is a little different from the previous examples, which are rather traditional clubs with the need for capital in order to improve performance. RB Leipzig is a young club, that rebranded a fifth division club (former SSV Markranstädt) into what is known today (Penke 2020). With additional clubs in Salzburg or New York, it is an example of multi-club ownership with the clear goal of increasing the brand awareness of Red Bull at the highest sports level possible (Breuer 2024). Although 99% of 'Rasenballsport GmbH' is owned by Red Bull, the member association holds most of the voting rights ("Orbis" n.d.). Hence, Leipzig officially conforms to the 50+1 rule. However, while other clubs have six-digit membership figures, Leipzig only has 21 voting members who are affiliated with Red Bull. In this ownership structure, ordinary fans are not eligible to get voting rights (Ford 2023).

TSG 1889 Hoffenheim: As previously explained, Hoffenheim used to be an exception from the 50+1 rule, just like Leverkusen and Wolfsburg. While nothing has changed in the economic ownership, Dietmar Hopp transferred his voting rights back to the club members in 2023 ("TSG Hoffenheim ist wieder '50+1'-Regelklub." 2023). Thus, the 'sugar daddy' owns 96% of the club without having the respective voting rights (Rohde and Breuer, 2017).

2.3 Concepts of Club Ownership

Existing literature on sports governance has focused on analysing the effect of ownership structure on FCs performance. For this Rohde and Breuer (2017) have summarised existing literature on incorporations and investors in the Big Five Leagues, highlighting the history and market situation from 2003 to 2014 as well as suggesting research gaps. The authors differentiated between "member associations", "incorporated clubs fully owned by the member association", "incorporated clubs with private minority investors", "incorporated clubs controlled by domestic private majority investors", and "incorporated clubs controlled by

foreign private majority investors" (Rohde and Breuer 2017, 270). While the first represents the status before 1998, the second reflects the idea of professionalisation. The third and fourth group contain commercialised FCs, and the last category reflects the phase of internationalisation. With a specific focus on Germany and the time that has passed since Rohde and Breuer's (2017) study, this research adopts a slightly adjusted categorisation. The first two groups are merged, as both represent clubs that are fully owned by their members, regardless of whether they are incorporated or remain as registered associations. Furthermore, the origin of the investors is not taken into account, as the internationalisation phase observed elsewhere is not applicable to the German context. Lastly, it will account for formal exceptions from the 50+1 rule, which represent a special kind of majority investors only existent in Germany. Table 1 summarises all categories.

Table 1: *Explanation of club categorisation and number of clubs in each category in 2022/23*

	Club type	Definition	# of Clubs	50+1 rule
	Reg. association or fully owned spin-off corporation	Either this club has not yet professionalised by unbundling the club from the registered association or its corporation is fully owned by the registered association.	19	Conforms
	Economic Minority Investor	The club has professionalised by founding a separate legal entity in charge of the professional football team with one or more external investor with an equity stake below 50%.	7	
Majority Investors	Economic Majority Investor	The club has professionalised by founding a separate legal entity in charge of the professional football team with one external investor owning more than 50% of the club but without holding the majority voting rights. The club officially conforms to the 50+1 rule.	5	
	Formal Exception from 50+1	These clubs were granted an official exception status from the 50+1 rule by the DFL because they have received long-term financial support from an investor.	2	

Source: Own creation

Some studies argue that even with economic majority investors, clubs are still in control of the voting power and hence investors cannot exercise any influence on decision-making. Budzinski and Kunz-Kaltenhäuser (2020) state that "voting rights and ownership of capital are, more often than not, closely related, so de facto it limits equity investments as well" (Budzinski

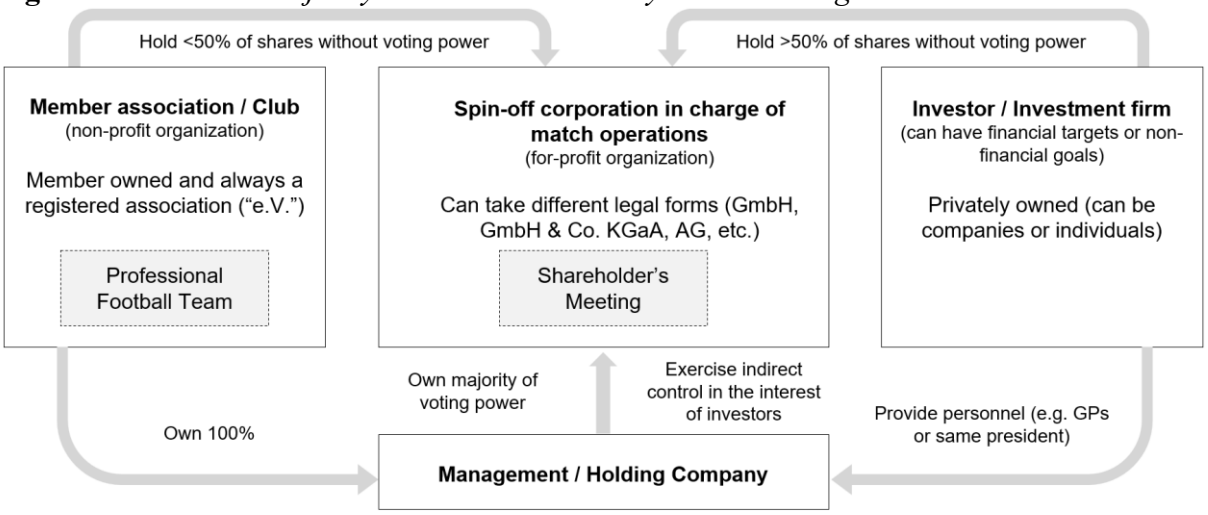
and Kunz-Kaltenhäuser 2020, 12). However, the authors also claim whoever injects capital into a club, gains influence. This influence often appears in different formats and is rarely officially communicated. The following two examples evidence that economic majority investors influence a club's decision-making, nevertheless.

FC Augsburg: Until May 2022 Klaus Hofmann used to be the president of 'FC Augsburg 1907 e.V.' and managing director (MD) of 'FC Augsburg 1907 GmbH & Co. KGaA'. Moreover, he was and is still today, the CEO of 'Hofmann Investoren GmbH', which holds 99.4% of the football club. Even though the club's ownership structure is in line with the 50+1, there is inevitably an unhealthy dependency and personal entanglement. This may result in a conflict of interest as Hofmann was supposed to represent the members of the club while simultaneously pursuing the financial interests of his investors (Poppe 2021).

Hannover 96: A similar intertwining of interests and negative consequences can be seen at the second-division club (Bauers 2020). Martin Kind was Chairman of the Executive Board of 'Hannover 96 e.V.' and MD of the club's own 'Hannover 96 Management GmbH'. The negative effects of this conflict of interest can be seen in his recent choice to vote for an investor deal at the league level: On December 11th, 2023, 24 out of 36 representatives of the 1st and 2nd Bundesliga clubs opted for an external investor deal and thus laid the groundwork for the next step of the commercialization of the German Football League (Ford 2024a). This was an attempt by the DFL to make the league more competitive internationally and, above all, to shift investments from the club level to the league level. After most clubs publicly declared their position, it became evident that Martin Kind must have voted against the instructions of the parent club 'Hannover 96 e.V.' to vote against the entry of investors, which was needed to reach the required two-thirds majority (Ford 2024b). As a result of massive fan protests in February 2024, the last two interested parties, Blackrock and CVC, withdrew from negotiations with the DFL (Veth 2024). In July 2024, Kind was removed from his position as MD following a lengthy legal dispute (Schneider 2024).

These are valid examples of how differentiating between economic ownership and voting power in football can lead to indirect influence from investors (Adam et al. 2020). Thus, this study assumes that majority investors exercise control despite they do not possess the majority voting power. Figure 2 generalises the relationship between the different stakeholders

Figure 1: *Economic Majority Investors in Germany circumventing the 50+1 rule*



Source: Own creation inspired by Bauers (2020)

of clubs with majority investors in the first or second Bundesliga. As described, despite the majority of voting rights being formally in the hands of the members, economic ownership provides inevitable indirect influence, often through personal.

2.4 Relevance of Club Ownership from a Financial and Sporting Perspective

After having discussed the different ownership types in the existing literature and how this study aims to categorise FCs, this part will summarise how ownership structure impacts financial and sporting performance. Based on previous findings, new hypotheses will be formulated for the effect of the above-mentioned ownership types on performance.

Revenue implications: Research consistently shows that clubs owned by majority investors tend to have an enhanced ability to generate revenue. This is attributed to increased capital inflows, access to global markets, and a focus on commercialisation strategies. For example, Van de Rakt (2024) found that majority-owned clubs generated higher revenues by capitalising on strategic investments and operational efficiencies, allowing them to outperform

member-controlled clubs (Van de Rakt 2024). Similarly, studies of the English Premier League and other European leagues highlight that foreign private ownership has significantly improved commercial revenues through expanded global reach and professionalised club management (Da Silva Pereira, 2022; Rohde & Breuer, 2017).

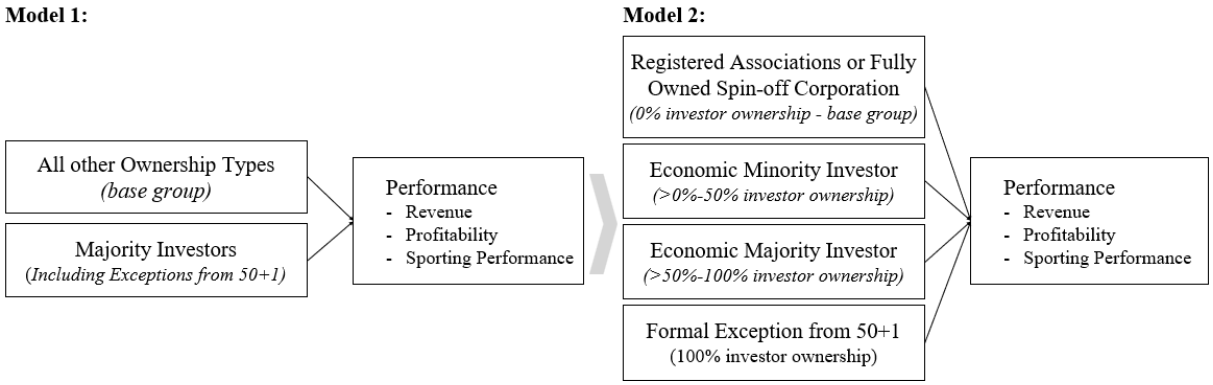
Profitability implications: Revenue growth does not always translate into profitability. Privately owned clubs often overinvest, particularly in player acquisitions and wages, driven by the desire to maximise sporting success. This phenomenon is consistent with Acero et al. (2017), who found an inverted U-shaped relationship between ownership concentration and profitability: beyond a certain threshold, the benefits of increased revenue are outweighed by the costs of overspending (Acero et al. 2017). This dynamic can be further explained through the agency conflict that arises when private owners prioritize immediate competitive success, often at the expense of long-term financial stability. Such conflicts occur as owners pursue their personal goals, such as prestige or visibility while neglecting the financial sustainability of the club. The concept of the expropriation effect is particularly relevant here. Acero et al. (2017) noted that in scenarios where ownership is highly concentrated, owners may 'expropriate' financial resources for personal projects, such as high-profile player signings, even when such decisions undermine profitability. Da Silva Pereira (2022) similarly found that private investors, particularly in the English Premier League, often sacrifice profitability to achieve immediate competitive success. In contrast, member-controlled clubs governed under Germany's 50+1 rule mitigate these agency conflicts through democratic governance structures, which distribute decision-making power among a broader base of stakeholders. This system inherently reduces the risk of expropriation while emphasizing financial stability and long-term sustainability over short-term revenue growth (Bauers et al. 2020; Budzinski & Kunz-Kaltenhäuser 2020).

Sporting implications: Sporting performance is closely linked to financial investment, with the ownership structure influencing the level and focus of investment. Research shows that majority investors often drive significant team investment, which directly improves sporting

outcomes. Rohde and Breuer (2016a) argue that foreign private investors prioritise resource allocation to strengthen squads, a strategy that correlates with improved rankings and international competitiveness (Rohde & Breuer 2016a). This is particularly evident in leagues such as the Premier League, where private investment has propelled clubs to dominant positions in both domestic and international competitions (Da Silva Pereira 2022).

This study follows a two-stage approach. It starts by analysing the general impact of majority investors (including formal exceptions) on the three performance measures mentioned above. To do this, it will merge the last two groups from Table 1 and regress them against all other ownership types (first two groups). In a second model, it will differentiate between all ownership types from Table 1 to investigate the effect of separating economic ownership from voting power on the performance of FCs. The difference between the coefficients of economic minority and majority investors will be tested in order to draw conclusions about clubs circumventing the 50+1 rule. This approach results in the following concepts:

Figure 2: *Conceptual Models*



Source: Own creation

Based on previous findings, the following hypothesis can be formulated:

H1a: The presence of a majority investor leads to higher revenue.
H1b: The presence of a majority investor leads to lower profitability.
H1c: The presence of a majority investor leads to higher sporting performance.

H2a: Economic majority investors lead to higher revenues than economic minority investors.
H2b: Economic majority investors lead to lower profitability than economic minority investors.
H2c: Economic majority investors lead to higher sporting performance than economic minority investors.

3. Data and methodology

3.1 Data

The objective of this study is to investigate (1) how majority investors influence performance and (2) how investors with an economic majority stake influence the performance of clubs in the first and second German Bundesliga in contrast to economic minority investors. To provide empirical evidence, an unbalanced panel data regression with 33 clubs from 2017/18 to 2022/23 was assembled for each model. The full sample is expected to comprise 36 clubs (18 for each division). The sample was reduced because the third division is governed by the DFB and not the DFL. The two governance systems result in significant financial differences as well as different regulatory compliance. For instance, clubs in the third division do not need to conform with the 50+1 rule. Following the approach of van der Rakt (2024), it only contains clubs that were active in the first or second division for at least 50% of the time. If a club only participated in two out of six seasons in the first or second division, the club was not added to the data set. Consequently, the analysed dataset contains 186 out of 216 possible observations. Moreover, the analysis includes the seasons impacted by the COVID-19 virus. Although some studies (e.g. Roedel 2022) decide to exclude Corona observations due to the significant income slump, using the fixed effects model allows to account for these effects.

The quantitative data was collected with desk research. Due to the different legal club structures, there are different regulatory requirements which results in a general lack of transparency within the football industry (Bachmaier et al. 2018). For instance, registered associations are not required to publish any financial data (Rohde and Breuer 2017). In order to provide robust results, each data category was only gathered from one reliable source. Orbis database was used for the ownership structure, financial statements published by the DFL for all financial metrics (revenue, profit/loss, assets, debt, etc.) and Transfermarkt.com for all sporting figures.

Dependent variable: As revenue and sporting success tend to reinforce each other, it is important to differentiate between revenue and profitability when measuring financial performance (Ahtiainen, 2018). Revenue will be measured by applying the logarithm to revenue, which is a common approach in existing literature. Following Wilson et al. (2017), profitability will be calculated by taking the after-tax return as a fraction of turnover. Taking the return on sales (ROS) was proven to be the most applicable indicator for profitability in Germany (Acero. et al. 2017). The third dependent variable is sporting performance, which is a weighted average of several factors. While previous studies either solely used a win ratio (Plumley et al. 2017) or "a ratio of points acquired divided by the total possible points obtainable" (van der Rakt 2024, 18), this study captures more aspects that represent the sporting success of a FC. Besides the league performance, sporting performance incorporates international, national, and title performance. Detailed definitions and calculations for each factor are shown in appendix 1. Inspired by Zülch et al.'s (2022) prioritisation of factors contributing to the sporting performance metric, this study also uses a descending weighted average. To account for FCs that compete in the second division, which is de facto inferior to the first division, the league performance metric is divided by the division. This avoids inflated sporting success ratios for clubs that are at the top of the second division in comparison to FCs fighting against relegation in the first division. Consequently, the results between the two divisions become comparable.

Independent variables: As previously mentioned, this study categorises all clubs into four groups namely 'registered associations or fully owned spin-off corporation', 'economic minority investors', 'economic majority investors', and 'formal exceptions from 50+1'. The existence of an economic minority/majority investor or the exception status is each measured as a dummy variable. As this categorisation is mutually exclusive and collectively exhaustive each club can only be categorised into one of the groups. A club with a zero for all independent

dummy variables represents a club from the group 'Registered association or fully owned spin-off corporation', which serves as the base group.

Control variables: According to previous literature, the following control variables were included to increase the validity of this study. Dimitropoulos and Tsagkanos (2012), Wilsen et al. (2013), Acero et al. (2017) and da Silva Pereira (2022) have all identified club size and debt as significant determinants of club performance. Club size is measured with the natural logarithm of total FC's assets and is positively related to firm performance. Debt is calculated as a ratio of liabilities to assets and is negatively associated with performance (Acero et al. 2017). Additionally, this study will include stadium capacity to account for the revenue expectation of a club. This makes particular sense in this study due to the large differences between clubs in the first and second division. The average stadium capacity for the current Bundesliga clubs is 47622 people compared to 30051 fans in the second division, indicating a significant difference in ticket revenue. Furthermore, there will be a division and year dummy. Table 2 summarises the variables used in this study.

Table 2: *Variable overview*

Type	Variable	Description	Scale
Dependent	Revenue	Logarithm of revenue	Metric
	Profitability	After-tax profit or loss divided by revenue	Metric
	Sporting Performance	Weighted average of 4 metrics accounting for 60% achieved points, 20% UEFA Coefficient, 10% titles won, and 10% rounds played in DFB Pokal	Metric
Independent	Economic Minority Investor	Dummy whether there is an investor with less than 50% economic ownership	Dummy
	Economic Majority Investor	Dummy whether there is an investor with more than 50% economic ownership	Dummy
	Exception	Dummy whether the club has a formal exception status	Dummy
Control	Club Size	Logarithm of assets	Metric
	Stadium Capacity	Logarithm of the maximum stadium capacity	Metric
	Debt Ratio	Total liabilities divided by total assets	Metric
	Division	Dummy whether the club played in the first division	Dummy
	Year	Dummy indicating the year of interest	Dummy

Source: Own creation

3.2 Methodology

The data analysis will begin with presenting the descriptive statistics including the number of observations, the mean, the maximum- and minimum value as well as the standard deviation. Thereafter, the relationship between the explanatory variables used in the regression will be analysed and expressed in Spearman's correlation matrix. To check for a multicollinearity bias, the Variance Inflation Factor (VIF) will be used. Finally, for each model, three separate regressions are run in Stata for the dependent variables (a) revenue, (b) profitability and (c) sporting performance.

$$Revenue_{c,t} = \beta_0 + \beta_1 Maj\_Inv_{c,t} + \beta_2 Club\_Size_{c,t} + \beta_3 Stadium\_Cap_{c,t} + \beta_4 Debt\_Ratio_{c,t} + \beta_5 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(1a)}$$

$$Profitability_{c,t} = \beta_0 + \beta_1 Maj\_Inv_{c,t} + \beta_2 Club\_Size_{c,t} + \beta_3 Stadium\_Cap_{c,t} + \beta_4 Debt\_Ratio_{c,t} + \beta_5 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(1b)}$$

$$Sporting\_Perf_{c,t}\beta_0 + \beta_1 Maj\_Inv_{c,t} + \beta_2 Club\_Size_{c,t} + \beta_3 Stadium\_Cap_{c,t} + \beta_4 Debt\_Ratio_{c,t} + \beta_5 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(1c)}$$

$$Revenue_{c,t} = \beta_0 + \beta_1 Eco\_Min\_Inv_{c,t} + \beta_2 Eco\_Maj\_Inv_{c,t} + \beta_3 Exception_{c,t} + \beta_4 Club\_Size_{c,t} + \beta_5 Stadium\_Cap_{c,t} + \beta_6 Debt\_Ratio_{c,t} + \beta_7 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(2a)}$$

$$Profitability_{c,t} = \beta_0 + \beta_1 Eco\_Min\_Inv_{c,t} + \beta_2 Eco\_Maj\_Inv_{c,t} + \beta_3 Exception_{c,t} + \beta_4 Club\_Size_{c,t} + \beta_5 Stadium\_Cap_{c,t} + \beta_6 Debt\_Ratio_{c,t} + \beta_7 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(2b)}$$

$$Sporting\_Perf_{c,t}\beta_0 + \beta_1 Eco\_Min\_Inv_{c,t} + \beta_2 Eco\_Maj\_Inv_{c,t} + \beta_3 Exception_{c,t} + \beta_4 Club\_Size_{c,t} + \beta_5 Stadium\_Cap_{c,t} + \beta_6 Debt\_Ratio_{c,t} + \beta_7 Division_{c,t} + Year_t + Club_c + \varepsilon_{c,t} \quad \textbf{(2c)}$$

Whereby c = 1, …, 33 indexes clubs and t =2018, …, 2023 indexes years

This study uses an unbalanced panel data analysis because it investigates several clubs over time with certain observation gaps. In line with previous authors who conducted the Hausman test for random effects the fixed effects model will be used to account for the within variation between clubs. In doing so, it is possible to control for club-specific aspects.

4. Empirical results

4.1 Descriptive Statistics

Appendix 2 presents the descriptive statistics for the key variables used in the analysis. On average, the clubs in this study generated revenues of 4.949 (in log terms), with a range from 4.213 (SC Paderborn in 2021) to 5.910 (FC Bayern Munich in 2023). Profitability, as

measured by the return on sales (ROS), has a mean of -2.66%, indicating a slight negative profitability across the sample. The lowest efficiency in managing the club´s revenues to generate earnings was achieved by Hertha BSC in 2023 with a negative ROS of 82.95%; in contrast, the highest profitability to the club´s sales was generated by TSG Hoffenheim in 2020 with a ROS of 25.31% mainly driven by the high transfer revenues in that year ("Frank Briel: 'This remains a record-breaking season.'" 2020). The negative mean is consistent with findings from previous studies that report a general financial struggle among football clubs, even when generating substantial revenues (van der Rakt 2024). In terms of sporting performance, the mean value of 0.2913, with the minimum value observed at 0.1226 by Greuther Fürth in 2022 and the maximum at 0.8366 by FC Bayern Munich in 2022. Greuther Fürth managed to get promoted the previous year but then lost most of its games in the first division. FC Bayern Munich achieved the highest value in 2020 in which it won the treble (all three titles). This wide range points to significant variation in the performance of clubs across two divisions. Regarding investments, economic minority and majority investors averaged 25.58% and 11.83% respectively, suggesting that more than a quarter of clubs in the sample benefit from minority investors, while a smaller number are supported by majority investments. The exception variable, which only captures Bayer Leverkusen, VfL Wolfsburg, and TSG Hoffenheim (until 2022), has a mean of 9.14%, indicating that such occurrences are relatively infrequent. Regarding club size, the first and second Bundesliga clubs' assets (log) range between 3.7 and 5.9 with a mean of 4.9 across both divisions. Considering that 57.53% of the clubs in the analysed sample competed in the first division, explains that the average is slightly closer to 5.9 than to 3.7. Stadium capacities vary between 4.18 and 4.91 representing the logged capacity of FC Heidenheim's and BVB's stadiums respectively. Finally, the average debt-to-assets ratio is 53.22%, which indicates that the clubs are, on average, highly leveraged. This reflects the common financial structure in professional football, where clubs frequently rely on debt to fund player acquisitions and other operational expenditures (Acero et al. 2017).

Appendices 3 and 4 present the Spearman's correlation matrix calculated for each pair of variables for both models respectively. The strong positive correlation (0.823) between revenue and sporting performance indicates that clubs with better sporting success tend to generate higher revenues. This aligns with the reinforcement theory in football management literature: successful sporting performance can drive revenue growth through increased ticket sales, sponsorships, and media rights (Rohde and Breuer 2016b). Besides that, several values reveal a high correlation between explanatory variables suggesting a multicollinearity bias. However, due to the average VIF of 1.95 and 1.90 (appendices 5 and 6), it is reasonable to consider that there are no major problems regarding collinearity.

4.2 Regression Results

Appendix 7 holds the regression results for Model 1, evaluating the impact of majority investors on club performance metrics: revenue, profitability, and sporting performance.

Model 1a examines the effect of majority investors on club revenue, yielding an overall R^2 of 0.8609, indicating that 86.09% of the variation in revenue across clubs is explained by the included variables. The coefficient for the majority investor variable is negative (-0.1173) and statistically significant ($p = 0.021$). This suggests that clubs with majority investors tend to experience reduced revenue. This finding is not consistent with prior literature arguing that the presence of majority investors may lead to new revenue sources. All control variables show significant and expected effects, with club size and stadium capacity being positively associated with revenue, whereas the debt ratio shows a negative relationship (see appendix 7).

Profitability, measured by return on sales (ROS), is evaluated in Model 1b. The regression analysis reveals that majority investors have a significant negative impact on profitability, with a coefficient of -0.4974 ($p = 0.000$). The overall R^2 for this model is 0.0337, indicating that a small portion of the variation in profitability is explained by the included variables. These results align with existing literature emphasizing that majority investors

prioritize win-maximization over profit-maximization, often resulting in overspending on player acquisitions and wages at the expense of financial sustainability (Acero et al. 2017). Among control variables, only the division dummy is statistically significant ($p = 0.037$), implying that FCs in the first division are marginally more profitable than second division FCs.

Model 1c assesses the impact of majority investors on sporting performance. The overall R^2 of 0.2810 demonstrates that the model captures 28.10% of the variation in sporting performance across clubs. The results indicate a significant negative association between majority investors and sporting success, with a coefficient of -0.1222 ($p = 0.029$). This finding contradicts the common assumption that majority investors improve sporting success through enhanced financial resources. Instead, it suggests that the long-term strategic priorities of majority investors may not always align with immediate sporting achievements. Among the control variables, stadium capacity and division are positively significant, reflecting that larger stadiums and participation in the first division contribute positively to sporting success.

Appendix 8 shows the results of the panel regression analysis for the second model. Model 2a examines the relationship between club type and club revenue, which has an overall R^2 of 0.7887, indicating that 78.87% of the variation in revenue over time is explained by the model. This relatively high R^2 suggests that the selected variables effectively capture revenue fluctuations within clubs. Both economic minority and majority investors have negative coefficients (-0.181 and -0.255, respectively) and are significant at any conventional level ($p = 0.000$), indicating that both minority and majority investments are associated with reduced revenue within clubs, contradicting the expectation. When testing for a difference between the coefficients of economic minority and majority investors, their impacts on revenue are not significantly different from each other ($p = 0.143$). This implies that whether a club has a minority or majority investor, the effect on revenue is statistically similar. All coefficients of control variables are significant, and impact revenue as expected (see appendix 8).

Model 2b investigates the influence of economic majority investors on profitability, as proposed by H2. Only 3.97% (overall R^2) of the variation in profitability is explained, showing that additional unobserved variables may play a role. Similar to the revenue model, economic majority investors are associated with a significant, negative impact on profitability (-0.624) at the 1% level (p = 0.000). Clubs with majority investors appear to experience lower profitability compared to those without, consistent with previous literature suggesting that majority investors may prioritize sporting performance and revenue growth over profit maximization. This aligns with the 'win-maximization' model often observed in football club management, where investment is channelled towards acquiring talent and enhancing competitiveness rather than improving profit margins (Sloane 1971). Testing for a notable difference between minority and majority investors in terms of profitability suggests that majority investors lead to significantly lower profitability than minority investors (p = 0.000). Club size, debt ratio, and stadium capacity are all insignificant. The division is positively significant with a coefficient of 0.061 (p = 0.038), indicating that FCs in the first division tend to be 6.1% more profitable than clubs in the second division.

In model 2c, the impact of majority investors on sporting performance is assessed, which addresses H3. The sporting performance model yields an overall R^2 of 0.2865, meaning that 28.65% of the variation in sporting performance is explained, indicating a moderate fit. The coefficient for majority investors is negative (-0.173) and significant at the 5% level (p = 0.013), suggesting that economic majority investors are associated with lower sporting performance, contrary to H3. The test comparing economic minority and majority investors is significant at the 10% level (p = 0.0599). This provides evidence that majority investors have a different effect on sporting performance than minority investors. This outcome implies that while economic minority investors reduce a club's sporting success, the presence of a majority investor even worsens the clubs sporting performance. Club size reveals a positive coefficient

(0.064) but is not statistically significant (0.268). All other control variables are significant and impact sporting performance as expected (see appendix 8).

5. Conclusion

5.1 Summary and Discussion

This section will interpret the results and puts them into the context of the research question: *How do economic majority investors influence the financial and sporting performance of football clubs in the first and second Bundesliga?*

In summary, the coefficient for majority investors in model 1a is significantly negative, providing evidence to reject H1a. For profitability (model 1b), the results show a highly significant and negative relationship between majority investors and profitability. This result matches the hypothesised expectations and fails to reject H1b. For sporting performance (model 1c), the majority investor coefficient is significantly negative, rejecting H1c. Contrary to expectations, this suggests that the presence of majority investors is associated with lower sporting performance. In model 2a both minority and majority investors reveal significant negative coefficients. However, they do not show significant differences. The profitability and sporting performance models (2b & 2c) show a substantial difference between economic minority and majority investors, with economic majority investors impacting profitability and sporting performance more negatively. Hence, this study finds evidence to reject H2c but fails to reject H2a and H2b.

The results of model 1 and 2 show a high degree of consistency. Both models show significant negative effects of majority investors on revenues, profitability and sporting performance. While model 2 differentiates between economic minority and majority investors, model 1 provides a broader view of the overall impact of majority investors on performance. Despite these differences in approach, the overall conclusions remain similar. Considering that the research design is similar to most previous studies conducted on this topic and that the

hypotheses were derived from those findings, raises the question for the underlying reason of the results, which will be discussed below:

Revenue: The significant coefficient results contradict existing literature, which proves that majority investors are positively associated with revenue (Rohde and Breuer 2016a). This may be attributed to the fact that investors might not be willing to inject as much capital into a club if uncertain about decision-making. Evidence was provided supporting the assumption that investors exercise indirect influence on the clubs despite not possessing the majority of the voting rights. However, financial decisions often require approval by the board of directors (Adam et al 2020). Hence, even though these investors certainly have power in some situations they might fear to be overruled by member associations. Besides, there is empirical evidence proving that member associations are the most favourable legal structure with regard to sponsorship (Dietl and Weingärtner 2011). The authors argue that non-profit clubs constantly outperform incorporated clubs in terms of sponsorship revenue because investors aim for profit maximisation which is not in line with the sponsor's goals. Sponsors prefer clubs with fans in control because this increases fan engagement and loyalty, which results in more spectators and greater media attention. Hence, the existence of an investor hinders sponsorship revenue (Dietl and Weingärtner 2011). Next to this Rohde and Breuer (2017) found that private majority investors significantly enhance sponsorship and broadcasting revenues by leveraging global market opportunities (Rohde & Breuer 2017). As most investors in Germany are national investors, the missing access to global markets could be an explanation for the lack of revenue compared to other leagues with foreign investors.

Profitability: The fact that majority investors negatively influence clubs' profitability may be attributed to the 50+1 rule. "Member associations have the motivation and dedication to safeguard the long-term interests of the clubs and deter any misappropriation of funds; more so than the private owners." (Acero et al. 2017, 518). As this governance model allows football fans to participate, they might prevent decisions that could risk the financial performance and

sustainability of the club. Overall, this verifies existing literature that investors have a negative impact on clubs' profitability and provides evidence that circumventing the 50+1 rule by decoupling economic ownership from voting power also harms profitability.

Sporting Performance: This study suggests that economic majority investors negatively affect FC's sporting performance. This contradicts literature that suggests that majority investors positively impact sporting performance. As revenue and sporting success reinforce each other, they tend to move simultaneously (Wilkesmann 2014). To understand these findings, it is essential to keep in mind that this study introduced a new way of categorising clubs, resulting in groups of football clubs that might differ in many regards. For instance, the group of majority investors includes very different clubs in terms of their history, their development, the investment horizon, and the motivation for selling a majority stake. As explained above some clubs did not fear any risk of being relegated into the second division, while others were forced to attract external capital to be able to survive. Some clubs received short-term investments and experienced regular changes in their ownership structure while others were supported by one investor for more than 20 years pursuing long-term goals. Lastly, some clubs are rather traditional clubs with a large fan base, while other clubs are young and built from scratch. Consequently, the new method of categorisation might cause the results.

5.2 Managerial Implications and Recommendations to DFB

Literature has shown that clubs must either decide for majority investors to generate more revenue and improve team performance or against majority investors and thus higher profitability (Rohde and Breuer 2017). With the 50+1 rule, the DFL introduced an attempt to limit the general influence of external investors. So far, there was no empirical evidence for the effectiveness or efficiency of the rule in terms of limiting external influence (Budzinski and Kunz-Kaltenhäuser 2020). This study has shown that decoupling economic ownership from voting power and thus circumventing the 50+1 rule does not lead to better performance figures.

As there are loopholes to circumvent the rule, external investment is not generally restricted, but it appears that capital injections from foreign investors, that have proven to increase revenues and sporting performance are prevented. Consequently, the rule seems to influence the nature of majority investors. While national majority investors negatively influence sponsorship revenues (Dietl and Weingärtner 2011), foreign investors would outweigh this effect by providing access to global markets and new commercialisation strategies. Therefore, the rule fails to limit external influence while preventing the positive impact of foreign investors on revenue and sporting performance. Consequently, there are two options the DFL should consider in light of the recent controversies about the existence of the rule:

Option 1: Abandon the exceptions status and ensure that clubs hold more than 50% of the economic shares in a spin-off corporation. This would truly prevent external influence and would not give certain clubs a competitive advantage within the league (Budzinski and Kunz-Kaltenhäuser 2020). In this way, the Bundesliga would continue to pursue its path against the general trend in football and ensure the financial stability of all clubs.

Option 2: Abolish the 50+1 rule to become internationally competitive and attract foreign investors. These investors will have a positive impact on revenues by opening doors to new markets, followed by improved sporting performance.

The DFL should reconsider its current position and opt for one of the options presented, both of which are more comprehensive than the status-quo. The current approach of banning foreign investment but allowing exceptions and loopholes to circumvent the rule does not create international competitiveness or fair competition at the national level.

5.3 Limitations and Future Research

The main limitation of this study is the availability and scope of data. Financial and ownership data for football clubs is often inconsistently reported, and this study is constrained by its reliance on publicly available information. This study chose to prioritise data quality over

data quantity by only analysing seasons from 2017/18 to 2022/23. This was done because this was the longest period for which FC financial data was available from a single source ("Finanzkennzahlen der Proficlubs | DFL" 2024). Extending the dataset to more years would mean merging different sources. This would reduce the quality of the dataset. Future studies should increase the sample size and run the same regressions to draw better conclusions.

In addition, financial performance in this study was measured using two key KPIs. Other studies, such as Plumley et al. (2017), have taken a broader approach by including liquidity as an indicator of financial health. Liquidity is particularly relevant in times of crisis, such as the COVID-19 pandemic, when maintaining a stable cash flow is critical to the survival of clubs. Future research should aim to include additional financial measures such as liquidity, or solvency efficiency to provide a more comprehensive assessment of financial health.

Another limitation is the short-term assessment of sporting performance in this study. Focusing on the success of the current season may not fully capture the long-term sporting success of football clubs. Sporting success depends on many more aspects, such as the success of competitors, team chemistry, or player injuries, which are difficult for clubs to influence or predict. Expanding the scope of sporting success metrics to include performance over multiple seasons could provide a more holistic understanding of club performance.

Lastly, the categorisation of club types used in the study may oversimplify the complex realities of football club governance. By broadly categorising clubs into the four groups, the study has introduced a novel categorisation framework. However, as outlined in the discussion section, this approach does not consider nuanced distinctions such as the reasoning to bring in external investors. It might be the case that poor financial and sporting performance forces clubs to seek external investors, rather than investors being the cause of these outcomes. This raises the possibility of reverse causation in the study's findings. To address this limitation, future research could leverage more comprehensive data to compare performance impacts before and after the introduction of the rule in 1998, thereby providing deeper insights into these dynamics.

References

Adam, Sandy, Sebastian B. Bauers, and Gregor Hovemann. "Inevitable need for change–identifying and removing barriers to supporter participation in German professional football." Sport in Society (2020).

Ahtiainen, S. (2018). Top 5 European football leagues–The association between financial performance and sporting success.

Acero, Isabel, Raúl Serrano, and Panagiotis Dimitropoulos. 2017. “Ownership Structure and Financial Performance in European Football.” *Corporate Governance* 17 (3): 511–23. https://doi.org/10.1108/cg-07-2016-0146.

Bachmaier, Birgit, Joachim Lammert, Daniel Plumley, Robert Wilson, and Gregor Hovemann. 2018. “Regulatory Intensity in English and German Professional Football.” *Sport Business and Management an International Journal* 8 (3): 276–97. https://doi.org/10.1108/sbm-02-2017-0012.

Bason, Tom, and Benoit Senaux. "The football industry." In Research Handbook on the Law of Professional Football Clubs, pp. 7-28. Edward Elgar Publishing, 2023.

Bauers, Sebastian Björn, and Gregor Hovemann. "Regulation von beherrschendem Einfluss im deutschen Profifußball–Eine empirische Vergleichsanalyse von Faninteressen der Jahre 2011 und 2017." Sport und Gesellschaft 16, no. 2 (2019): 155-180.

Bauers, Sebastian Björn, Joachim Lammert, Axel Faix, and Gregor Hovemann. "Club members in German professional football and their attitude towards the ‘50+ 1 Rule’–A stakeholder-oriented analysis." Soccer & Society 21, no. 3 (2020): 274-288.

Bauers, Sebastian Björn. "Regulation von beherrschendem Einfluss im deutschen Profifußball–Eine regulations-und stakeholderorientierte Untersuchung zur 50+ 1-Regel und deren Zukunft." (2020).

Bauers, Sebastian Björn, Sandy Adam, Michael Fuchs, Leon Piotrowski, and Gregor Hovemann. "Conceptualizing sustainable participation in the context of German football supporters." German Journal of Exercise and Sport Research 54, no. 1 (2024): 86-96.

Becher, C., & Burbach, H. (2018). Die 50+1-Regel im Fokus der Kartellbehörden: Droht die komplette Kommerzialisierung des deutschen Profifußballs? Bonner Rechtsjournal, 108–114.

Budzinski, Oliver, and Philipp Kunz-Kaltenhäuser. 2020. “Promoting or Restricting Competition? – the 50plus1-Rule in German Football.” *SSRN Electronic Journal*, January. https://doi.org/10.2139/ssrn.3623779.

da Silva Pereira, João Pedro. "The Financial Impact of Private Investors on European Football Clubs: Empirical Evidence from the English Premier League." Master's thesis, Universidade do Porto (Portugal), 2022.

Dietl, Helmut M., and Christian Weingaertner. 2011. “The Effect of Professional Football Clubs’ Legal Structure on Sponsoring Revenue.” *SSRN Electronic Journal*, January. https://doi.org/10.2139/ssrn.2493130.

Dimitropoulos, Panagiotis E., and Athanasios Tsagkanos. 2012. “Financial Performance and Corporate Governance in the European Football Industry.” *International Journal of Sport Finance* 7 (4): 280–308. https://econpapers.repec.org/article/jsfintjsf/v_3a7_3ay_3a2012_3ai_3a4_3ap_3a280-308.htm.

Eckner, Constantin. 2021. “Hertha Berlin’s Windhorst promised Bundesliga glory. So what went wrong?” ESPN. September 23, 2021. Accessed November 16, 2024. https://www.espn.com/soccer/story/_/id/37620918/hertha-berlin-windhorst-promised-bundesliga-glory-went-wrong.

"Explaining the Bundesliga's 50+1 rule." 2023. Bundesliga. March 3, 2023. https://www.bundesliga.com/en/faq/what-are-the-rules-and-regulations-of-soccer/50-1-fifty-plus-one-german-football-soccer-rule-explained-ownership-22832.

"Finanzkennzahlen der Proficlubs | DFL." 2024. DFL Deutsche Fußball Liga GmbH - dfl.de. May 29, 2024. https://www.dfl.de/de/hintergrund/lizenzierungsverfahren/finanzkennzahlen-der-proficlubs/.

Ford, Matt. 2023. "Bundesliga: 50+1 rule set to stay — but no more exemptions." *Dw.Com*, July 14, 2023. https://www.dw.com/en/bundesliga-501-rule-set-to-stay-but-no-more-exemptions/a-66232342.

Ford, Matt. 2024a. "Bundesliga: Blackstone considering dropping investment bid." *Dw.Com*, February 13, 2024. https://www.dw.com/en/bundesliga-blackstone-considering-dropping-investment-bid/a-68249259.

Ford, Matt. 2024b. "Bundesliga Scraps Major Investment Deal Amid Fan Revolt." Deutsche Welle. February 26, 2024. Accessed November 16, 2024. https://www.dw.com/en/bundesliga-scraps-major-investment-deal-amid-fan-revolt/a-68330351.

Franck, Egon. "Private firm, public corporation or member's association–Governance structures in European football." International Journal of Sport Finance 5, no. 2 (2010): 108-127.

"Frank Briel: 'This remains a record-breaking season.'" 2020. September 7, 2020. Accessed October 16, 2024. https://www.tsg-hoffenheim.de/en/news/overview/2020/07/frank-briel-this-remains-a-record-breaking-season.

Ingerfurth, Stefan. 2023. "The Special Thing of Clubs in the German Football Bundesliga – About the Legal Forms of the Clubs and the Resulting Consequences." *Accounting*

Auditing & Accountability Journal 37 (2): 707–10. https://doi.org/10.1108/aaaj-06-2022-5837.

Kennedy, Mike. 2015. “Klaus Hofmann acquires majority stake in Augsburg.” Sportspromedia. May 27, 2015. https://www.sportspromedia.com/news/report_klaus_hofmann_acquires_majority_stake_in_augsburg/.

Müller, Thiemo. 2022. “50+1: Warum Martin Kind am längeren Hebel zu sein scheint.” *Kicker*, October 11, 2022. https://www.kicker.de/verstoss-gegen-50-1-warum-kind-am-laengeren-hebel-zu-sein-scheint-920958/artikel.

“Orbis” n.d. https://orbis-r1.bvdinfo.com/version-20240919-6-0/Orbis/1/Companies/Search.

Penke, Lars. "Red Bull Gaining Momentum in European Club Football: the competitive advantage of Rasen Ballsport Leipzig eV." PhD diss., 2020.

Plumley, Daniel, Rob Wilson, and Girish Ramchandani. "Towards a model for measuring holistic performance of professional Football clubs." Soccer & Society 18, no. 1 (2017): 16-29.

Poppe, Thorsten. 2021. “Fußball-Bundesliga - Neuer Investor beim FC Augsburg sorgt für Diskussion.” Deutschlandfunk. February 5, 2021. https://www.deutschlandfunk.de/fussball-bundesliga-neuer-investor-beim-fc-augsburg-sorgt-100.html.

Roedel, Philipp. "Staying competitive in European club football nowadays–a case study on the German Bundesliga." PhD diss., 2022.

Rohde, Marc, and Christoph Breuer. "The financial impact of (foreign) private investors on team investments and profits in professional football: Empirical evidence from the premier league." Applied Economics and Finance 3, no. 2 (2016a): 243-255.

Rohde, Marc, and Christoph Breuer. "Europe's elite football: Financial growth, sporting success, transfer investment, and private majority investors." International Journal of Financial Studies 4, no. 2 (2016b): 12.

Rohde, Marc, and Christoph Breuer. "The market for football club investors: a review of theory and empirical evidence from professional European football." European Sport Management Quarterly 17, no. 3 (2017): 265-289.

Schneider, Christoph. 2024. "BGH: Martin Kind nicht mehr Geschäftsführer bei Hannover 96." *ZDFheute*, July 16, 2024. https://www.zdf.de/nachrichten/sport/martin-kind-abberufung-urteil-bgh-100.html.

Siethoff, Paul. 13AD. "Abschied von Windhorst: Private Equity übernimmt Mehrheit an Hertha." March 23, 13AD. Accessed November 8, 2024. https://www.finance-magazin.de/deals/private-equity/private-equity-haus-777-partners-uebernimmt-mehrheit-an-hertha-bsc-146973/.

Sloane, Peter. "The Economics of Professional Football: The Football Club as a Utility Maximiser." Scottish Journal of Political Economy 18, no. 1 (1971): 121–46.

Smith, Robert, and Samuel Agini. 2023. "Lars Windhorst discloses multimillion loss on sale of Hertha Berlin football club." Financial Times. July 22, 2023. https://www.ft.com/content/60d28cb2-bcd7-4351-8bf4-443d321d129e.

"Transfermarkt.de" n.d. "Bundesliga - Stadium Overview.". https://www.transfermarkt.com/bundesuriga/stadien/wettbewerb/L1.

"TSG Hoffenheim ist wieder „50+1"-Regelklub." 2023. tsg-hoffenheim.de. November 29, 2023. https://www.tsg-hoffenheim.de/aktuelles/news/2023/11/tsg-hoffenheim-ist-wieder-50-1-regelklub.

van de Rakt, Bas BJH. "The effect of ownership structure on financial and sporting performance for Eredivisie football clubs." (2024).

Veth, Manuel. 2024. “After fan protests, Blackstone withdraws from Bundesliga investor deal.” *Forbes*, February 20, 2024. https://www.forbes.com/sites/manuelveth/2024/02/13/after-fan-protests-blackstone-withdraws-from-bundesliga-investor-deal/.

Wagner, Fabio, Mathias Schubert, Holger Preuss, and Thomas Könecke. "Competitive intensity in differently regulated men's football leagues: evidence from English premier league and German Bundesliga." Sport, Business and Management: An International Journal 12, no. 5 (2022): 580-597.

Wilkesmann, Uwe. "Geld schießt Tore? Zur sozialen Ungleichheit im Fußball." Wissen–Methode–Geschlecht: Erfassen des fraglos Gegebenen (2014): 107-124.

Wilson, Robert, Daniel James Plumley, and Girish Ramchandani. 2013. “The Relationship Between Ownership Structure and Club Performance in the English Premier League.” *Sport Business and Management an International Journal* 3 (1): 19–36. https://doi.org/10.1108/20426781311316889.

Zülch, Henning, Moritz Palme, and Benedikt Kirsch. "Management Quality of Professional Football Clubs: The Football Management (FoMa) Q-Score 2022." (2022).

Appendices

Appendix 1: Sporting performance calculation

KPI	Calculation	Reason for inclusion	Weight
League Performance	Points accrued in the current season divided by 102 (maximum potential points obtainable)	Indicates the FC's performance in the current season	60%
International performance	UEFA coefficient is divided by the highest coefficient in each season	Indicates the FC's performance in international competitions	20%
DFB-Pokal performance	Number of DFB-Pokal matches played in the current season divided by 6 (total number of rounds)	Indicates the FC's performance in national competitions	10%
Title performance	Number of titles won in the current season divided by 3 (maximum number of titles)	Indicates the FC's performance in terms of title wins	10%

Source: Own creation inspired by Zülch et al. (2022)

Appendix 2: Descriptive Statistics

Variable	N	Mean	Min.	Max.	Std. dev.
Revenue	186	4.949	4.213	5.910	.4093
Profitability	186	-.0266	-.8395	.2561	.1472
Sporting_Perf	186	.2913	.1226	.8366	.1538
Eco_Min_Inv	186	.2258	0	1	.4192
Eco_Maj_Inv	186	.1183	0	1	.3238
Exception	186	.0914	0	1	.2890
Club Size	186	4.880	3.704	5.946	.5094
Stadium_Cap	186	4.544	4.176	4.910	.2262
Debt_Ratio	186	.5322	.0563	1.699	.3184
Division	186	.5753	0	1	.4956

Source: Own creation

Appendix 3: Spearman's correlation matrix model 1

Variable	1	2	3	4	5	6	7	8
Revenue	1							
Profitability	-.037	1						
Sporting_Perf	.823	-.010	1					
Maj_Inv	.337	-.095	.256	1				
Club Size	.927	-.117	.788	.456	1			
Stadium_Cap	.666	-.239	.447	-.002	.125	1		
Debt_Ratio	.035	-.412	-.037	-.108	-.057	0.097	1	
Division	.801	-.019	.745	.336	0.725	.459	-.033	1

Source: Own creation

Appendix 4: Spearman's correlation matrix model 2

Variable	1	2	3	4	5	6	7	8	9	10
Revenue	1									
Profitability	-.037	1								
Sporting_Perf	.823	-.010	1							
Eco_Min_Inv	.254	.003	.221	1						
Eco_Maj_Inv	.127	-.088	.052	-.198	1					
Exception	.334	-.036	.305	-.171	-.116	1				
Club Size	.927	-.117	.788	.248	.227	0.390	1			
Stadium_Cap	.666	-.239	.447	.423	.125	-.143	.622	1		
Debt_Ratio	.035	-.412	-.037	-.089	-.065	-.080	-.057	.097	1	
Division	.801	-.019	.745	.100	0.180	.273	.725	.459	-.033	1

Source: Own creation

Appendix 5: Variance Inflation Factor model 1

Variable	VIF
Club_size	3.62
Stadium_cap	2.15
Division	2.10
Maj_Inv	1.39
Debt_Ratio	1.11
Year	1.03
Mean VIF	**1.90**

Source: Own creation

Appendix 6: Variance Inflation Factor model 2

Variable	VIF
Club_size	4.18
Stadium_cap	2.67
Division	2.12
Exception	1.69
Eco_Min_Inv	1.45
Eco_Maj_Inv	1.29
Debt_Ratio	1.17
Year	1.04
Mean VIF	**1.95**

Source: Own creation

Appendix 7: Regression results model 1

	Dependent Variables		
Independent Variable	**Revenue (1)**	**Profitability (2)**	**Sporting Performance (3)**
Maj_Inv	-0.1173 (0.0504) 0.021	-0.4974 (0.0851) 0.000	-0.1222 (0.0556) 0.029
Club Size	0.2844 (0.0518) 0.000	0.0283 (0.0874) 0.747	0.0641 (0.0570) 0.263
Stadium Cap	0.6469 (0.3047) 0.036	0.1638 (0.5144) 0.751	1.0612 (0.3357) 0.002
Debt Ratio	-0.0700 (0.0320) 0.030	-0.0486 (0.0540) 0.370	-0.0640 (0.0352) 0.071
Division	0.1810 (0.0172) 0.000	0.0613 (0.0290) 0.037	0.0486 (0.0190) 0.011
Within R^2	0.6926	0.3817	0.1779
Between R^2	0.8736	0.0023	0.3293
Overall R^2	0.8609	0.0337	0.2810

Source: Own creation

Appendix 8: Regression results model 2

	Dependent Variables		
Independent Variable	**Revenue (1)**	**Profitability (2)**	**Sporting Performance (3)**
Min_Inv	-0.1813 (0.0472) 0.000	-0.1671 (0.0827) 0.045	-0.0653 (0.0541) 0.229
Maj_Inv	-0.2546 (0.0602) 0.000	-0.6244 (0.1052) 0.000	-0.1732 (0.0695) 0.013
Exception	-0.2563 (0.0850) 0.003	-0.5874 (0.1485) 0.000	-0.0741 (0.0972) 0.447
Club Size	0.3043 (0.0501) 0.000	0.0437 (0.0875) 0.618	0.0638 (0.0573) 0.268
Stadium Cap	0.6379 (0.2921) 0.031	0.1598 (0.2105) 0.451	1.0591 (0.3342) 0.002
Debt Ratio	-0.0999 (0.0311) 0.004	-0.0698 (0.0545) 0.207	-0.0746 (0.0357) 0.039
Division	0.1799 (0.0165) 0.000	0.0666 (0.0288) 0.038	0.0488 (0.0189) 0.011
Within R^2	0.7216	0.3995	0.1969
Between R^2	0.7961	0.0061	0.3319
Overall R^2	0.7887	0.0397	0.2865
Min_Inv – Maj_Inv	.1433	.0000	.0599
Min_Inv – Exception	.3340	.0027	.9228
Exception – Maj_Inv	.9782	.7327	.1637

Source: Own creation