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The Presence of Earnings Management After the Introduction of Financial Fair Play

The changes in financial reporting behavior in the Premier League

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Abstract

In this study we investigate whether earnings management has increased since the UEFA Financial Fair Play was introduced and if there is a relationship between clubs' earnings management and their on-field performance. We use two different models to identify earnings management in a sample of football clubs playing in the Premier League during the period 2004-2017. Our findings support an increase in earnings management after the regulation was implemented and show that there is a positive relationship between clubs' performance on the field and their manipulation of earnings. These results are in line with previous research on data on other national football leagues in Europe. Our findings also contribute to the concept of earnings management in a setting where firms are not necessarily profit maximizers.

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Keywords: *Earnings management, Premier League, UEFA, Financial Fair Play Regulation*

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Table of Contents

1. INTRODUCTION.....	3
2. THEORY AND PREVIOUS RESEARCH.....	5
2.1. Competing Logics of Professional European Football.....	5
2.2. Financial Doping and Generous Owners.....	7
2.3. The UEFA Financial Fair Play	8
2.4. Agency Problem and Earnings Management with Financial Fair Play.....	9
2.5. Documented Evidence of Earnings Management.....	11
2.6. Measuring Earnings Management	12
2.7. Hypotheses.....	15
3. METHOD.....	16
3.1. Research Design	16
3.2. Data.....	17
3.3. Earnings Management Metrics	18
3.4. Main Regression Models	20
4. RESULTS.....	22
4.1. Descriptive Statistics	22
4.2. Pearson Correlations.....	24
4.3. Regression Results.....	24
5. ANALYSIS AND DISCUSSION	26
5.1. Analysis of Results	26
5.2. Robustness Tests.....	29
5.3. Statistical Considerations	30
5.4. Validity and Reliability	32
6. CONCLUSION	33
6.1. Summary and Conclusion.....	33
6.2. Limitations and Suggestions for Future Research	34
REFERENCES.....	36
APPENDIX	42

1. INTRODUCTION

Background

The neoclassical school of economics would lead one to believe that profit maximizing is the sole goal of an organization. Alternative theories recognize that financial oriented objectives are not applicable to all organizations interested in creating value for its stakeholders, as operations may be mission oriented, rather than financial (Morrow, 2013). Profit seeking organizations are valued for their long-term efficiency, however, football clubs are primarily considered for their short-term performance, as clubs are measured by success in the yearly league and international competitions. When a club becomes successful on the football field it can attract more spectators, which increases the club's visibility, market size and consequently its value. A club's revenue potential is thus positively dependent on its sporting success (Sass, 2016).

The nature of professional football, that encourages short-term gain over long-term viability, in conjunction with the role of generous owners has led to the competing logic of spending power being equal to on-field success (Garcia-del-Barrio and Szymanski, 2009). In recent years, financial doping has become a concern amongst professional European football clubs. Similar to medical doping, the existence of financial doping has reduced the integrity of the game of football. Rather than competing on the football fields, clubs have moved the competition from the field to the wallets of their owners. Consequently, this has led to the development of poor financial management practices in modern day professional football, especially in Italy, Spain and England (Schubert and Könecke, 2015).

In an effort to lessen clubs' dependency on benefactors and protect the game of football, the governing body of European football, the Union of European Football Association (UEFA), has since the 2011/12 season incorporated financial criteria, commonly referred to as the UEFA Financial Fair Play Regulation (FFP). FFP sets out minimum requirements that clubs must adhere to (article 53-54) in order to participate in the UEFA Champions League and the UEFA Europa League. Currently, to get a UEFA club license, the license applicant must provide an independently audited consolidated financial statement prepared under applicable financial reporting framework (article 46bis) to the national football association, alongside additional financial information to assess the financial stability and financial fair play of the club (article 49-52 and 65-68) (UEFA Club Licensing and Financial Fair Play Regulations, 2018).

In the long run, FFP is thus meant to ensure financial stability and fairness amongst European football clubs, as well as increase the usefulness of financial reports for external stakeholders. Müller et al. (2012), theoretically justify the UEFA FFP from a sport economic perspective, yet, equally stress that the success of this regulation requires clubs' participation and commitment, given that the decision usefulness of clubs' financial reports (earnings) to UEFA is contingent on accurately reported figures. However, financial monitoring, contingent on self-reported financial reports, may lead to adverse behavior in the shape of deteriorate or changed accounting quality, which indirectly affects the reports negatively. Studies conducted just after the recognition of the UEFA FFP allude to this development (Dimitropoulos et al., 2016). Events in the English Premier League also support this notion since Manchester City has recently been sanctioned for attempting to circumvent FFP by falsely reporting their financial performance to UEFA (CAS 2019/A/6298; Sims, 2018). Given this example, UEFA (principal) faces an agency problem concerning earnings quality and ultimately decision usefulness of earnings from clubs (agents). Yet, the tendency to overstate earnings may not be uniform amongst clubs as better performing clubs are faced with greater regulatory and institutional monitoring, making them less inclined to overstate earnings.

Purpose

Based on the background of sport contest and agency literature, this study tests the claims that FFP may lead to adverse behavior from clubs through deteriorate or changed earnings quality. In view of this, our research questions are the following:

Has earnings management increased since FFP was introduced?

Is there a relationship between clubs' earnings management and their on-field performance?

Based on previous research, we expect to see an increase in earnings management and we also expect a negative relationship between clubs' earnings management and their on-field performance. In order to examine this, we perform a quantitative association study with data from the Premier League for the years 2004-2017. The motive for studying only the English Premier League, even though football clubs all over Europe are affected by FFP, is to isolate the data and only examine the increase in earnings management on a national level. The aim of our study is thus to provide a more in-depth analysis of the potential consequences of the UEFA FFP.

Contribution

This study contributes to the existing literature in two ways. Firstly, it increases the knowledge of institutional monitoring and financial reporting in a football context, as well as the consequences on accounting quality within the Premier League. By taking the break-even rule of the FFP into account, we find support for an increase in earnings management, which improves and contributes to existing research. Secondly, we employ the concept of earnings management in a setting where firms are not necessarily profit maximizers. This contributes to the current knowledge of firms that are not profit maximizers per definition, which in turn, facilitates the implementation of future regulations concerning football clubs and similar entities.

Structure

The following thesis consists of six sections. Section 2 introduces relevant theories and previous research regarding financial doping, FFP, agency theory and earnings management. The section will end with a presentation of our two hypotheses. Section 3 will describe our research method and data, followed by an explanation of our main regression models and variables. In section 4, our test results will be presented, including descriptive statistics and Pearson correlations. Section 5 will deepen our findings through an analysis and discussion connected to our hypotheses. Robustness tests and a discussion regarding the research method will also follow. Section 6 will conclude our study and present suggestions for future research.

2. THEORY AND PREVIOUS RESEARCH

In this section we will provide an overview of previous research relating to our study. First, an introduction to football, as well as an explanation of financial doping in football, will be given. Second, a review of FFP will follow. Third, a description as well as applicability regarding agency theory and earnings management will be explained. Lastly, the hypotheses of this research will be stated and clarified.

2.1. Competing Logics of Professional European Football

Building on the contrast of short-termism in professional football and long-termism between football clubs and profit seeking organizations, research (Rohde and Breuer, 2018; Garcia-del-Barrio and Szymanski, 2009) presents two dominating objectives of football clubs. Clubs' objectives are mainly considered in terms of win maximization or profit maximization. More

specifically, win maximizing clubs are mainly believed to pursue the non-financial benefits from sporting success, such as silverware, bragging rights, recreation etc., instead of financial benefits. Consequently, rather than seeing shareholder value as share price, win maximizing football clubs substitute share price with trophies, medals and athletic achievements as the determining factor of shareholder value.

In addition to recreational and athletic properties, professional sports also pose a commercial appeal as society at large economically benefits since football events attract customers to local businesses. The second view of clubs' objectives is that clubs are believed to be profit maximizers, namely maximize profit. The profit seeking clubs thus share more similarities with neoclassical theories of the firm, while the trophy seeking clubs do not fully fit the model. However, profit maximizing clubs are not directly comparable with profit maximizing firms, considering that profit maximizing firms strive to beat the competition and assert themselves as a monopoly supplier in order to reap the most profits. Yet, professional football clubs operate under a different model as their competitors are also their complementors given that their output, in terms of entertainment and recreation, are jointly produced. Nonetheless, sporting performance still constitutes an integral element for profit maximizing clubs considering that a club's revenue potential is positively dependent on its sporting success. Intuitively, as a club becomes successful on the football field it can attract more spectators, which increases the club's visibility, market size and consequently its commercial value (Sass, 2016).

Structural differences between win maximizers and profit maximizers are mainly that the first operates under a soft budget constraint and hence has the possibility of excessive external funding, that is financial means provided directly or indirectly by an external party being an investor, benefactor or creditor. Franck and Lang (2014) recognize that the presence of beneficiaries exist regardless of whether the club is owned privately, publicly or by foreign investors, making it difficult to define benefactors based on ownership structure. Determinants of clubs with beneficiaries are instead high player wages and transfer fees in relation to generated revenue. Ultimately, clubs that tend to overspend on transfer fees and player wages have beneficiaries to a greater extent than other clubs. Studies (Terrien et al., 2017; Késenne, 2006) also differentiate win maximizers and profit maximizers by recognizing that investments in clubs are the dominant driver of on-field success being team market value and quality. This in turn leads to win maximizers generally having a higher talent cost than profit maximizers.

When it comes to European football clubs, they have mainly been argued to share more similarities with win maximization, rather than profit maximization, as players in European football leagues are often paid above their marginal productivity compared to profit maximizing clubs found in the United States (Késenne, 2010; Fort and Quirk, 2004). In other words, the meaning of performance for European football clubs is to win games, collect league titles and play in the European leagues.

2.2. Financial Doping and Generous Owners

According to theory (Goodhart and Huang, 2005), clubs can even be considered too big to fail when their market size and drawing power is large enough, which leads to them being bailed out by their beneficiaries. However, bailouts are not guaranteed, making insolvency and bankruptcy a possible outcome where the cost of bankruptcy is not confined to the business entity (club). Clubs going bankrupt leads to canceled games and unfulfilled contractual obligations towards its stakeholders (Franck and Lang, 2014). Despite the possible externalities, supporters are neutral to this development as long as their teams remain competitive, although business partners are less appreciative of this development, considering that their relations are mainly economical and transactional (Humphreys and Miceli, 2019).

Drawing a parallel between medical doping and financial doping, Schubert and Könecke (2015) further argue for core values of sport being threatened by the existence of financial doping amongst European football clubs. Firstly, the going concern of the clubs is at risk as they are not self-sufficient enough to operate on their own means, yet, rather need to depend on an external party for financial support. In turn, this is violating the entity theory of accounting and business, which undermines the usefulness of financial statements to help stakeholders make informed business decisions. Secondly, the presence of financial doping dilutes the naturalness of sporting performance when a club can buy its way to success. The existence of beneficiaries further encourages clubs to engage in riskier investment strategies (Franck and Lang, 2014). Consequently, this may have a spillover effect on other clubs in the league as the behavior of the organization is the product of its environment, leading to the creation of win rather than profit maximizing leagues. However, all clubs being win maximizers incites a vicious circle as every team cannot win the league.

Ultimately, since clubs financially rely on their beneficiaries, they have changed how clubs compete in professional football (Lang et al., 2011), as the soft budget constraint within the

football industry helps to keep clubs alive (Storm and Nielsen, 2012). Despite the vital function of financial management in businesses (Thornhill and Amit, 2003), only when faced with the risk of bankruptcy does a club change their financial management practices to more sustainable ones (Emery and Weed, 2006). Empirical evidence even suggests that financially constrained firms rather than unconstrained firms, such as football clubs with beneficiaries, are more inclined to make the necessary changes needed to improve their financial position, such as not overspending on players (O'Connor Keefe and Tate, 2013).

Szymanski (2017), on the other hand, justifies the development of poor financial management and performance as he argues that the nature of the game of football results in a hyper competitive environment and financially vulnerable clubs, meaning that the game of football would need to change if clubs are to manage their finances better. Marchica and Mura (2010) suggest that the impact of generous owners should be appreciated, as it enables better financial flexibility and allows more and better investments. Contrasting evidence from Dietl et al. (2009) rather indicates that social welfare is better off when all clubs in a league adopt a profit maximizing objective.

2.3. The UEFA Financial Fair Play

Clubs no longer compete on the football fields, instead the competition is moved to the wallets of their owners which creates an imbalance between the clubs. In order to encourage better financial management practices, the UEFA FFP constitutes a break-even rule that requires clubs to report no greater football related operating loss than 5 MEUR (article 59, 61), which facilitates determining clubs' eligibility for the UEFA Champions League and the UEFA Europa League. The break-even components are presented in Appendix 1.

FFP is essentially a regulatory instrument meant to align two conflicting interests, the long-term perspective of UEFA and the short-term perspective of the clubs. The break-even rule thus forces clubs to live within their means, not overspend and contribute to the long-term sustainability of European football. However, sport literature (Preuss et al., 2014; Haugen, 2004) recognizes that rules and regulations create legitimacy for participants and stakeholders as it mitigates agency problem, information asymmetry and/or market inefficiency.

On the surface, FFP seems to have achieved its purpose of decreasing financial instability in professional European club football (Litvishko et al., 2019; UEFA, 2018). Yet, literature

(Schubert, 2014; Healy, 1985; Stigler, 1971) presents concerns of earnings overstatement, considering that the regulation is based on self-reported accounting figures. Further, Schubert (2014) recognizes that the relationship between UEFA and clubs form a classical principal-agent problem which may lead to suboptimal compliance, such as earnings management.

2.4. Agency Problem and Earnings Management with Financial Fair Play

The agency theory is a concept addressing a relationship between two parties where one party, the agent, represents the other party, the principal. This relationship could occur between one or several agents and principals, for the agent to act on the principal's behalf (Eisenhardt, 1989). The theory primarily considers the relationship between associated parties as a nexus of contracts (Walker, 2013).

A principal-agent problem (agency problem) takes place when the agent is motivated to act, via a hidden action, in their own best interest to the disadvantage of the principal. The hidden action is due to different goals and agendas among both parties. More precisely, there are two common problems that might occur according to the agency theory. The first is when there is a conflict concerning goals and desires between the principal and the agent because of different risk preferences. The second is when it is difficult and expensive for the principal to verify that the agent is not doing what it is delegated to do (Eisenhardt, 1989). By prescribing root causes to principal-agent problems, the theory simultaneously presents possible remedies and governance mechanics.

The theory further presents a multifaceted role in accounting literature. The positive agency theory recognizes the agency problem and its associated monitoring costs (Jensen and Meckling, 1976). There is also the principal-agent aspect that concerns efficient contracting and is thus more normative (Hölmstrom, 1979). Drawing on the contractual aspect of agency theory, Schubert (2014) simplifies the agency relationship between the clubs and UEFA by omitting other institutional actors, such as national football associations, involved in the enforcement of FFP. Schubert ultimately bases the agency relationship on the fact that UEFA incentivizes clubs to comply with the regulation by making their compliance with FFP a requirement to compete in the European leagues, which are primarily organized by UEFA. UEFA essentially leverages their position as the organizer of the European competitions and the monetary benefits for clubs, associated with competing in those leagues, to motivate them to comply with FFP. Considering

that UEFA is the owner of the European competitions and the advocator of FFP, UEFA becomes the principal and clubs become the agents in their relationship.

Regarding contractual similarities in the stakeholder-agent exchange and principal-agent relationship, Schubert (2014) further asserts that clubs also face conflicting demands from separate stakeholder groups. UEFA for instance, indirectly through FFP, advocates that clubs should lower their player costs while players favor the contrary (Nicolliello and Zampatti, 2016). Simultaneously, clubs may need to scrutinize overall expenses to follow FFP, which may affect sporting performance negatively and upset supporters. Clubs may even require a higher markup price from match day tickets to increase their margins, which also is not appreciated by supporters.

Furthermore, information asymmetry arises between UEFA and the clubs as UEFA cannot validate whether the break-even components of clubs' financial statements reflect a fair representation of the economic activities conducted by the club. The root cause of UEFA's and clubs' principal-agent problem stems from a conflict of interest, as well as the presence of asymmetric information. Building on agency theory, Schubert (2014) thus presents managerial incentives to induce in earnings management.

Two commonly contrasting reasons for earnings management are information enhancement and the opportunistic perspective. Healy and Wahlen (1999) argue that earnings management based on political processes, rather than actual business transactions, presents the opportunistic view of earnings management. Viewing the UEFA FFP as a performance measure that emphasizes financial metrics, Healy (1985) argues that financial performance measures may encourage opportunistic behavior such as adverse earnings management when the break-even target is not met. A review of earnings management literature (Dechow et al., 2010) also supports this notion by adhering that opportunistic earnings management increases when managers risk negative earnings and penalties for underperforming. Specifically, discretionary accruals enable managers to manipulate the timing of reported earnings by managing earnings between periods. Ultimately, allowing managers to employ accounting procedure that best further their interest, such as smooth earnings or report more persistent earnings over time. Both earnings smoothness and persistence allow for small profit and loss recognition to better align with performance targets, minimize tax effects etc.

2.5. Documented Evidence of Earnings Management

The presence of earnings management has been widely studied and documented. Regarding earnings management in FFP, Dimitropoulos et al. (2016) found evidence from a cross country study of football clubs from fifteen European countries where overall accrual management had increased post the implementation of FFP. Despite empirical support, as to there being an increase in earnings, the increase does not necessarily indicate opportunistic earnings management as earnings management is still important in order to give a fair representation of economic activity in the financial reports. However, supporting evidence from two additional determinants of earnings management, being auditor switching and accounting conservatism, allude to opportunistic earnings management rather than the contrary. Other studies (Dimitropoulos and Koronios, 2018; Dimitropoulos, 2016) also found that clubs reported more advantageous earnings figures post FFP. Following the evidence from these previous findings, football clubs' earnings management fits under the opportunistic view rather than the information enhancing view.

Extending the field of prior studies, research has documented robust evidence on some of the determining factors of earnings management which constitutes corporate governance mechanism, stakeholder relations and firm characteristics.

Firstly, corporate governance mechanism has been shown to be a factor that considerable influence earnings management behavior by firms. Better internal control mechanics lead to better managing of earnings management while evidence on governance mechanics such as dispersed ownership, managerial ownership and characteristics of board of directors are more mixed. Rohde and Breuer (2018) for instance argue that foreign private investors specifically reduce financial and sporting efficiency. On the contrary, Franck and Lang (2014) recognize that the presence of beneficiaries exist regardless of ownership structure. Rather than having governance structure determining firms' indulgent in earnings management, others have considered the size of a firm to be a predictor of earnings management behavior. Earlier research hypothesized that bigger firms will engage less in earnings overstatement due to a more extensive regulatory scrutiny and monitoring. However, more recent evidence suggests the opposite as the internal control processes are more fixed and less flexible, meaning that great efforts will need to be taken in order to fix potential flaws in the internal control mechanism (Dechow et al., 2010).

Secondly, stakeholder relations are an integral part in determining the earnings management behavior of firms, as accounting practices are influenced by contractual relations. Generally, upwards and downwards, namely earnings overstating and understating, earnings management are highly contingent on the firm's motive for earnings management. Primarily, upwards earnings management is more likely when there are capital market incentives and underlying contractual relations reliant on earnings figures, such as FFP, whereas stakeholders' relations generally lead to downwards earnings management (Walker, 2013). Despite some financial information, for instance applied accounting principles and policies, being disclosed in the financial reports, firms have private information about their accounting procedures. Decisions of estimates, accruals, cost allocation etc. are left out of the financial reports, allowing managers to employ accounting practices based on convenience. Consequently, it impacts the quality and usefulness of the financial reports.

Lastly, earnings manipulation is also influenced by firm characteristics. Common firm characteristics that have been proven to influence earnings management are firm profitability, growth and size. The general intuition behind firm characteristics as a determining factor of earnings management is that low performing firms have been identified to conduct in earnings management to a greater extent than good performing firms. Consequently, financially constrained or challenged firms thus engage in earnings management to a greater extent compared to firms that do not face the same difficulties or external pressure to perform. Firm indebtedness has also been identified to be a determinant for earnings management, where firms with a higher constraint are more inclined to participate in earnings management or similar adverse behavior. These challenged firms tend to mainly engage in upwards earnings management to beat performance targets and debt covenants (Dechow et al., 2012; Dechow et al., 2010).

2.6. Measuring Earnings Management

In the context of FFP, Sims (2018) presents possible means by which clubs could circumvent the UEFA FFP through earnings management. Based on earnings management literature, Sims's proposal of circumvention tactics can be divided into two domains, accrual-based earnings management and real earnings management. Methods for measuring earnings management have been developed for both models. Primary, the abnormal accrual model is used in research for detecting earnings management whilst the coverage of real earnings management detection is less extensive, as real earnings management is harder to decipher.

Accrual-Based Earnings Management

In accrual management, total discretionary accruals are mainly measured, rather than single component accrual, as total discretionary accruals capture earnings management to a greater extent. Discretionary accruals are mainly derived by considering the accruals related to firms' performance as normal and non-discretionary (Dechow et al., 2010). Since discretionary accruals are unobservable, researchers use a proxy. Proxies for accruals are based on the difference between total earnings and cash flow, considering that earnings are the sum of operating cash flows and accruals. In addition to the income statement approach of computing accruals, research (Dechow et al., 2010; Kothari et al., 2005; Dechow, 1994) also presents an indirect method following the balance sheet and changes in non-cash working capital. However, neither of these two estimates of accruals separate the level of discretionary accruals and non-discretionary accruals. Non-discretionary accruals can therefore be assumed constant over time to facilitate the measurement of discretionary as any change in total accruals must then stem from changes in discretionary accruals. More sophisticated methods of measuring earnings measurements are based on separating discretionary accruals from total accruals.

Jones (1991) relaxes the assumption of constant non-discretionary accruals by presenting a model that accounts for developments in organizations' business environment on non-discretionary accruals, given the assumption that revenue is non-discretionary. This assumption presents estimate errors in the model when revenue is discretionary. However, the modified Jones model (Dechow et al., 1995) takes this into consideration, that revenue may be discretionary, by adjusting for changes in accounts receivable. The modified Jones model thus emphasizes changes in accounts receivable in relation to revenue over the monitored period as indicative of earnings management, given that earnings is possible to manage through discretion over revenue on credit sales, rather than cash sales.

Studies (Francis et al., 2005; Dechow and Dichev, 2002; McNichols, 2002) further stress the importance of accrual quality by recognizing that accruals with low probability of realization into operating cash flow are of less quality than its counterpart. Dechow and Dichev (2002) for instance recognize that accruals of higher quality convey a more accurate picture of a firm's performance. Expressing accruals quality as a linear relationship between working capital accruals and operating cash flow, Dechow and Dichev present an expectancy model for measuring accruals quality. By defining the volatility of the standardized estimation errors from their model as indicative of accruals quality, Dechow and Dichev estimate accruals quality by

consider the extent to which working capital accruals are later realized as operating cash flow. Larger estimation errors are assumed to represent less qualitative accruals (Dechow et al., 2010), as larger estimation errors of accruals realization imply greater deviations between accruals and cash flow realization. Furthermore, hypothesizing that working capital accruals present a more considerable relationship with cash flow from operations (CFO) compared to non-current and total accruals, Dechow and Dichev's model becomes highly contingent on current accruals rather than long-term accruals, being the main means by which firms manage accruals (McNichols, 2002).

Building on Dechow and Dichev's model for estimating accruals quality, McNichols (2002) and Francis et al. (2005) further provide expectations models for measuring accruals quality that augments Dechow and Dichev's model with the Jones model and the modified Jones model. The respective model of McNichols and Francis et al. considers earnings management as a function of cash flow realization in conjunction with the balance sheet accounts presented in the Jones and modified Jones model. The extensiveness of their models results in a higher explanatory power of discretionary accruals as they consider the association between working capital accruals and immediate operating cash flow which otherwise yields measurement deficiencies when the Jones, modified Jones and Dechow and Dichev are standalone models.

Real Earnings Management

Real earnings management constitutes changes in business and accounting practices to influence the cash flow components of earnings. Primarily, managers seek to inflate operating cash flow by transferring cash inflows from investing and financing to operating cash flow and transferring cash outflows from the operating section to investing and financing. Cash flows are also inflated through unsustainable business practices as managers deflate discretionary expenditure to better their margins and employ discounts to inflate sales figures. According to findings from Graham et al. (2005), reduction of R&D expenditure and capital investment are also some of the more preferred real earnings management methods.

Findings from Cohen et al. (2008) recognize that managers have shifted from accrual earnings management to real earnings management, as accrual earnings management started to gain more notoriety. However, Zang (2012) presents a more nuanced view of findings from Cohen et al. (2008). Namely, that the trade-off between accruals and real earnings management is based on the relative cost of respective method of earnings management. Further, as real

earnings management is based on real activities it is more difficult to discern, compared to accruals, and thus draws less suspicion from auditors and stakeholders (Roychowdhury, 2006). Roychowdhury also finds empirical support for the notion of contracting incentives, such as FFP, influencing the level of real earnings management.

By investigating developments in CFO, discretionary expenses and production costs for zero earnings firms, Roychowdhury (2006) further presents three models for measuring real earnings management. Similar to accruals modelling, Roychowdhury's models derive normal levels in order to discern abnormal levels that are more indicative of earnings manipulation. The models take different aspects of real earnings management into account. Primarily, Roychowdhury models engagement in real earnings management based on findings that real earnings management is conducted through discounts to inflate sales, deflation of discretionary expenditures to inflate earnings and alteration of production levels, in order to report better margins (Graham et al., 2005; Dechow and Sloan, 1991). Ultimately, the first model is mainly reflective of the retail industry, the second one is more generalized, and the third model is applicable to manufacturing industries.

2.7. Hypotheses

Clubs' aspiration is to win their national league, as well as to win the UEFA Champions League, as it comes with bragging rights alongside financial benefits etc. Football clubs in the Premier League have mainly been argued to share more similarities with win maximization clubs (Késenne, 2010; Fort and Quirk, 2004) through their quest to win games, collect league titles and play in the European leagues. The competitive nature of European football leads to a rat race between clubs and making some teams willing to do everything in order to win. Due to the agency problem presented by Schubert (2014), some clubs might have incentives to overstate earnings in order to evade FFP and favor their position within the Premier League and UEFA's competitions. The agency theory thus presents managerial incentives for clubs to induce upwards earnings management. Furthermore, Healy (1985) argues that a financial performance measure, such as FFP, encourages opportunistic behavior, which leads us to our first hypothesis.

H1: Upwards earnings management has increased in the Premier League since FFP was introduced

Considering that a club's revenue potential is positively dependent on its sporting success we also ought to see a relationship between a club's league ranking and financial performance. Intuitively, as a club becomes successful on the football field it can attract more spectators, which increases the club's visibility, market size and consequently its value (Sass, 2016). In other words, there is an inherent relationship between sporting and financial performance which influences earnings overstatement by clubs. Better sporting performance yields more revenue, prize money etc. and less incentives to overstate earnings, although clubs with a higher league ranking are eligible for the UEFA Champions League and the UEFA Europa League. Incentives to overstate earnings becomes greater for clubs that are frequently at the top of the league. Yet, clubs at the top face more regulatory scrutiny and should therefore be less inclined to overstate earnings. Furthermore, larger clubs, that are often publicly listed, are also more often placed in the top half of the league table, which further supports our claims that those clubs are less inclined to manage earnings due to greater regulatory and institutional monitoring. We therefore expect firms at the top to overstate earnings less.

H2: There is a negative relationship between clubs' earnings management and their on-field performance since FFP was introduced

3. METHOD

In this section we will introduce and explain our research model that is used to examine our hypotheses. It will include a description of our sample and the collection of data. Further, we will continue with a deeper description of how to test our hypotheses, together with an explanation of our two regression models and the variables that are used.

3.1. Research Design

Considering the objective of this study, an association study is applied to help us explore and present possible relationships within our data. More specifically, we employ multivariate regression to estimate the relationship between our earnings management determinants and the magnitude of earnings management post the implementation of FFP. Furthermore, statistical theory helps us to objectively analyze the regression results and consequently draw inferences and conclusions about the association between earnings management and the implementation of FFP. Instrumental to regression analysis is that the model specification accurately encompasses the process under study.

Following previous studies, we employ the accrual model in our study because accruals are some of the more common and researched means by which firms manage their earnings. In most cases this provides no issues. However, considering that the increase in popularity and acknowledgment of accrual-based earnings management has led to more indulgent in real earnings management (Cohen et al., 2008), we also study real earnings management when testing for our hypotheses. We mainly consider the accruals management model by Francis et al. (2005) to estimate abnormal discretionary accruals (accruals quality) because it provides a higher explanatory power of accruals management than other models. As for real earnings management we primarily employ Roychowdhury's (2006) discretionary expense model, as the other two models are prominent of other aspects of real earnings management, not necessarily applicable in a football context. Our data availability further enables us to perform a time series analysis rather than a cross sectional approach, which otherwise is prone to measurement errors (Dechow et al., 2012).

3.2. Data

The study is based on twenty participating clubs in the Premier League for each season, although some clubs have not played in the league during all studied seasons. Additionally, accounting data from the Premier League clubs are used in order to test the hypotheses. The collection of data is made and compiled by the Center for Sports and Business at the Stockholm School of Economics. The analysis is thus limited to clubs participating in the Premier League. Besides the case of Manchester City, the reason why the Premier League is interesting to analyze, rather than any other league, is firstly, due to the accessibility of high-quality financial statements that have been externally audited. Secondly, because clubs playing in the Premier League, the highest English professional football division, are more likely to qualify for and participate in the UEFA leagues, rather than lower divisions in England, and are therefore consequently more affected by FFP. Thirdly, the bigger leagues, such as the Premier League, have also been shown to be more prone to earnings management than smaller leagues (Dimitropoulos and Koronios, 2018) and should therefore suffer most, if any, from earnings manipulation.

The time of observation for our study is limited to two periods in order to receive a more equal sample; before FFP was implemented in 2011 (the pre FFP period) and after it was implemented (the post FFP period). Thus, the time scale is seven years prior to the regulation (2004-2010), and seven years post the regulation (2011-2017). This is primarily done to balance between the

advantage of estimation efficiency from long time series and the increased likelihood of structural changes impacting the validity of our results negatively. Furthermore, clubs that have played in the Premier League, but for whom we do not have data to calculate our earnings management proxies are omitted from the sample. These are primarily the smaller clubs that do not often play in the Premier League. Appendix 6A and 6B specify which clubs that are participating each year. Our data selection process thus leads to survivorship bias as smaller clubs will be underrepresented in our sample compared to more prominent clubs. Consequently, the analysis is made during a total of fourteen years, on 38 clubs and the number of observations is 274.

3.3. Earnings Management Metrics

Considering that both discretionary accruals from the Francis model and abnormal discretionary expenses from the Roychowdhury model are unobservable, we outline the respective expectancy model by which discretionary accruals and abnormal discretionary expenses are derived from below. We firstly present the Francis model in equation (1) and thereafter illustrate the Roychowdhury model in equation (2).

$$TCA_t = \phi_0 + \phi_1 CFO_{t-1} + \phi_2 CFO_t + \phi_3 CFO_{t+1} + \phi_4 \Delta REV_t + \phi_5 PlayR_t + v_t \quad (1)$$

Equation (1) outlines the Francis model where TCA_t is working capital accruals in period t , defined as change in working capital excluding change in cash. CFO_t is cash flow from operations in period t , $t-1$ and $t+1$, defined as operating profit, non-cash expense minus increase in working capital. ΔREV_t is the change in sales ($\Delta REV_t = REV_t - REV_{t-1}$). $PlayR_t$ is the book value of player registration during period t . Additionally, the absolute value of v_t is estimated discretionary accruals. All variables are deflated by A_{t-1} .

Consistent with previous studies (Dechow et al., 1995; Jones, 1991), all variables in the Francis model (2005) are also scaled by lagged assets. Yet, the Francis model outlined above is not consistent with the original model as adjustments were necessary considering our research objective. Similarly, to Dimitropoulos et al. (2016), we substitute gross property, plant and equipment with intangible assets and player registrations. This have a more prominent role in the financial performance of football clubs as investment in player talent is a considerable determinant of on-field performance. The book value of player registration is therefore used to

control for the effects of player talent investment on performance. Additionally, our definition of CFO is slightly different from Francis's original definition in order to account for the differences in our data set, that is only using the break-even rule (football related) components. As we do not employ a cross sectional study, the subscripts for groups have therefore been excluded in our adjusted Francis model.

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1[I/A_{t-1}] + \alpha_2[S_{t-1}/A_{t-1}] + \varepsilon_i \quad (2)$$

Equation (2) further outlines the Roychowdhury model where $DISEXP_t$ is discretionary expenses, defined as the sum of R&D, advertising, selling, general and administrative expenses during period t. A_{t-1} is lagged total assets during period t-1 and S_{t-1} is sales during period t-1. Also, ε_i is estimated abnormal discretionary expense. Considering the model specification of both the Francis and the Roychowdhury model, the residual of current accruals and discretionary expenditure represents the level of abnormal discretionary accruals and expenditure, namely our earnings management metrics.

Furthermore, we condition our earnings management metrics to account for the direction of earnings management, as our first hypothesis stipulates an increase in upwards earnings management following the implementation of FFP. Consistent with previous studies (Roychowdhury, 2006; Dechow and Sloan, 1991), we presume that upwards earnings management is reflected by small abnormal discretionary expenditure, considering that a reduction of discretionary expenditure leads to higher short-term earnings. In turn, helping managers meet earnings requirements, such as the break-even requirement. Our indicators of upwards earnings management for discretionary expenditure are therefore small values of the estimated abnormal component from Roychowdhury's model. Compared to Roychowdhury, the Francis model does not explicitly express earnings management direction based on earnings management metric. Yet, we believe that less qualitative accruals in this context are the product of upwards earnings management given the background of agency theory and earnings management literature. Low accruals quality, constituting standardized absolute discretionary accruals, are therefore indicative of upwards earnings management.

3.4. Main Regression Models

The following regression models enable us to analyze the association between discretionary accruals and expenses, which constitute proxies for earnings management, and our test variables. Both hypotheses, *H1: Upwards earnings management has increased in the Premier League since FFP was introduced* and *H2: There is a negative relationship between clubs' earnings management and their on-field performance since FFP was introduced*, will be tested based on the regression models outlined below.

$$AQ_t = \alpha_0 + \alpha_1 PostFFP_t + \alpha_2 OnfieldP_t + \alpha_3 Leverage_t + \alpha_4 LogSize_t + \alpha_5 rGrowth_t + \alpha_6 ROA_t + \mu_t \quad (3)$$

$$DEXP_t = \alpha_0 + \alpha_1 PostFFP_t + \alpha_2 OnfieldP_t + \alpha_3 Leverage_t + \alpha_4 LogSize_t + \alpha_5 rGrowth_t + \alpha_6 ROA_t + \mu_t \quad (4)$$

Dependent Variables

Consistent with Francis et al. (2005), the dependent variable *AQ* constitutes the absolute value of the standardized absolute discretionary accruals and represents accruals quality. Equation (3) thus represents our estimates for accruals management following the earnings management metric of Francis et al. (2005). The dependent variable *DEXP* constitutes the residual and represents abnormal discretionary expenditure. Equation (4) thus illustrates our estimates for real earnings management following Roychowdhury's (2006) earnings management metric. Furthermore, similar to Zang (2012) and Cohen and Zarowin (2010), both our earnings management metrics are estimated so that higher discretionary values indicate greater earnings overstatement and presence of opportunistic earnings management. This is in order to create uniformity of upwards earnings management indicators between the two models. In turn, this means that a positive correlation between our estimated discretionary values and independent variables indicates greater earnings overstatement and presence of opportunistic earnings management for our qualitative variables.

Independent Variables

To study the association between our two earnings management metrics and the implementation of FFP, we employ a dummy variable as the pre and post FFP periods are qualitative variables.

In order to avoid the dummy variable trap, we solely consider the post FFP period through the dummy variable *PostFFP*, reflecting the time period post the regulation between 2011 and 2017. Given that the *PostFFP* variable reflects a hypothesized period of increased earnings management, we expect a positive correlation coefficient for *PostFFP* in both model (3) and (4). This is expected as a positive correlation coefficient for the dummy, which implies that the presence of earnings management is greater after the implementation of FFP compared to before.

The variable *OnfieldP* reflects the on-field sporting performance of clubs. Considering that league points, as a determinant for club performance, are highly regarded, *OnfieldP* is derived as clubs' percentage of all points distributed in the league for the specific season. Furthermore, the underlying logic of weighting a club's league points to the total points in the league is to have a more representative presentation of on-field performance, given that ratios reflect clubs' performance and competitive balance more precisely than absolute values. We are to some extent agnostic to the expected sign of *OnfieldP*. It is either the case where better firms face more regulatory scrutiny and thus engage less in earnings overstatement, or the case where the incentives to play in the European competitions outweigh the regulatory scrutiny. The phenomenon is also more complex as better performing clubs have less reasons to overstate earnings as they receive prize money for good performance, yet, simultaneously need to have invested accordingly in playing talent in order to play well. However, based on our second hypothesis and empirical support, we believe there to be a negative relationship between *OnfieldP* and earnings management.

Based on previous studies (Dechow et al., 2012; Dechow et al., 2010), our control variables are the following:

Leverage reflects end of year debt to assets of clubs. Based on previous evidence, higher leverage firms have been proven to be more likely to engage in earnings management. Therefore, we expect a positive association between leverage and upwards earnings management.

LogSize is the natural logarithm of end-of-year total assets. Firm size influences earnings manipulation given the structural and systematic differences faced by smaller and larger firms, such as possible accounting methods, governance, firm complexity and regulatory scrutiny.

Studies suggest that larger sized firms are less inclined to manipulate earnings due to extensive governance mechanics and regulatory scrutiny and thus hypothesized a negative association between earnings management and firm size. Similar to these precious findings, we expect a negative relationship between upwards earnings management and firm size.

rGrowth is the growth in revenue for clubs in year *t*, expressed as the relative change in revenue between year *t* and *t*-1. Previous researchers have found that firms with higher growth rate are more prone to restating their accounts and having less reliable earnings streams. Furthermore, the better the firm performs the higher will its non-discretionary accruals be, as working capital increases when firms indulge in more business transactions and prepare for future sales growth etc. A positive relation is thus expected between clubs' growth in revenue and upwards earnings management.

ROA reflects return on assets and the variable is expressed as net income over lagged total assets. Profitable clubs are generally viewed as being better positioned, rather than less profitable clubs, to make necessary investments in players and thus remain competitive in the league. This in order to guarantee revenue streams. Considering that firms with lower performance are more likely to inflate earnings numbers, we therefore expect a negative relationship between upwards earnings management and *ROA*.

4. RESULTS

In this section we report our results from our study. Firstly, we will present descriptive statistics for the variables in our main regression models. Secondly, Pearson correlations for the variables in our main regression models will be presented. Thirdly, we will present the regression results for our two hypotheses.

4.1. Descriptive Statistics

Table 1 represents the descriptive statistics for the variables in our main regression models.

Table 1*Descriptive statistics*

	Full sample			Pre FFP			Post FFP		
	N = 274			N = 134			N = 140		
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD
<i>AQ</i>	0.686	0.469	0.714	0.619	0.532	0.519	0.751	0.448	0.857
<i>DEXP</i>	0.000	-0.003	0.086	-0.015	-0.022	0.072	0.014	0.003	0.096
<i>OnfieldP</i>	0.051	0.047	0.017	0.052	0.049	0.017	0.014	0.003	0.096
<i>Leverage</i>	1.035	0.809	0.737	1.103	0.875	0.814	0.971	0.783	0.652
<i>LogSize</i>	5.131	5.041	0.430	5.042	4.942	0.398	5.215	5.141	0.444
<i>rGrowth</i>	0.456	0.103	1.063	0.326	0.062	0.718	0.580	0.130	1.302
<i>ROA</i>	-0.009	-0.001	0.285	-0.048	-0.056	0.240	0.032	0.017	0.328

An overview of Table 1 indicates that clubs' financial condition prior to FFP is considerable worse. Yet, the average *AQ* is greater for the post FFP period, implying that accruals are on average less qualitative. Supportive of the difference in financial performance is that the average discretionary expenditure is negative for the pre period, implying that the discretionary expenses are greater prior to the recognition of FFP. This seems fairly plausible as clubs did not necessarily have requirements, such as the break-even rule, before FFP. The average abnormal discretionary levels after FFP was introduced are on the other hand positive, implying that the average level of discretionary expenditure has increased considerable, which in turn indicates an increase in earnings management.

Contrary to financial performance, clubs seem to have performed slightly better on the field before FFP, as the average value of *OnfieldP* is a little higher. This is also supported by the median of the data which is slightly higher for the pre period. The survivorship bias in our data selection process could be contributory to this value as the omitted clubs, that exclusively reside in the pre FFP period, were of smaller size and had lesser *OnfieldP* values. The more balanced competition is also supported by the value of *ROA* that states that clubs on average have a negative *ROA* before FFP. The spread of *ROA* is less prior to FFP, implying a more uniform *ROA* than for the post FFP period. However, clubs are more leveraged during the pre period compared to the post FFP period.

4.2. Pearson Correlations

In Table 2 we present Pearson correlations between our independent variables and control variables based on the accrual-based model by Francis (A) and the real earnings management model by Roychowdhury (B).

Table 2

Pearson Correlations for our variable set in Francis (A) and Roychowdhury (B)

A)	AQ	PostFFP	OnfieldP	Leverage	LogSize	rGrowth	ROA
AQ	1.000						
PostFFP	0.093	1.000					
OnfieldP	-0.246	-0.068**	1.000				
Leverage	0.124	-0.090	-0.235	1.000			
LogSize	-0.257	0.201	0.687	-0.397	1.000		
rGrowth	0.295	0.120	-0.267	0.063**	-0.248	1.000	
ROA	0.205	0.146	-0.060**	-0.249	-0.124	0.413	1.000
B)	DEXP	PostFFP	OnfieldP	Leverage	LogSize	rGrowth	ROA
DEXP	1.000						
PostFFP	0.170	1.000					
OnfieldP	0.148	-0.068**	1.000				
Leverage	0.122	-0.090	-0.235	1.000			
LogSize	0.150	0.201	0.687	-0.397	1.000		
rGrowth	0.137	0.120	-0.267	0.063**	-0.248	1.000	
ROA	-0.062**	0.146	-0.060**	-0.249	-0.124	0.413	1.000

Note: Significance at the 1% level (***), the 5% level (**) and the 10% level (*)

Table 2 shows some significant correlations between our independent variables. However, as the correlations are considerable low, they should not inflate the variance of the least square coefficient estimator, causing issues such as multicollinearity.

4.3. Regression Results

Our main regression model consists of two models, the accrual-based model by Francis and the real earnings management model by Roychowdhury and therefore it is not surprising that the results differ.

Table 3*Regression results for our two models*

	Francis			Roychowdhury		
	Coefficients	STD	t-Stat	Coefficients	STD	t-Stat
<i>Intercept</i>	1.765	0.681	2.591	-0.200**	0.083	-2.411
<i>PostFFP</i>	0.117	0.088	1.325	0.029***	0.011	2.672
<i>OnfieldP</i>	-3.355	3.562	-0.942	0.957**	0.434	2.205
<i>Leverage</i>	0.078	0.064	1.217	0.021***	0.008	2.697
<i>LogSize</i>	-0.214	0.151	-1.419	0.021	0.018	1.125
<i>rGrowth</i>	0.119***	0.044	2.735	0.018***	0.005	3.444
<i>ROA</i>	0.298*	0.169	1.767	-0.033	0.021	-1.624
Adjusted R ²	0.128			0.111		
N	274			274		

Note: Significance at the 1% level (***), the 5% level (**) and the 10% level (*)

The Francis model in Table 3 shows only two significant findings, these are *rGrowth* and *ROA*. Both variables show a positive association to the magnitude of accrual earnings management at the significant level of 1% respectively 10%. This implies that accruals management is greater in clubs with a larger sales growth and in clubs with a high ROA. However, due to insignificant results for both *OnfieldP* and *PostFFP*, the accrual-based model cannot implicate if accruals management has increased since FFP was introduced, nor if there is a relationship between a club's accrual earnings management and its on-field performance. Considering findings from Cohen et al. (2008), that there has been a considerable shift from accruals management to real earnings management since the turn of the century, these results become less surprising. Also, the adjusted R² for the Francis model is 0.128.

The Roychowdhury model in Table 3 mainly indicates significant findings, the only exceptions are *LogSize* and *ROA*. The coefficient *OnfieldP* is statistically significant at the 5% level and *PostFFP*, *Leverage* and *rGrowth* are all significant at the 1% level. All the significant findings also show a positive association to the magnitude of earnings management. In other words, the Roychowdhury model tells us that discretionary expenditure management has increased after the implementation of FFP and also that there is a strong positive relationship between earnings management and a club's on-field performance. The results further show a positive relationship for clubs with more leverage and sales growth, compared to clubs with less debt and less change in turnover. Additionally, the adjusted R² of Roychowdhury is 0.111. The only similarity

regarding significant findings between the two models is thus *rGrowth*, where both models show a positive relationship between change in turnover and earnings management, at a statistically significant level of 1%.

Furthermore, these findings are both expected and unexpected. For *PostFFP* we expected a positive association to upwards earnings management which is supported by our findings. Regarding *OnfiledP*, it could be argued for both outcomes, yet, we predicted a negative relationship and our result shows a positive relationship. *Leverage* has a positive coefficient in the Roychowdhury model, which is consistent with our prediction and previous findings, that higher leverage firms are more likely to engage in upwards earnings management (Dechow et al., 2010). *LogSize* was expected to show a negative association with earnings management, yet, our results are insignificant in both models. For *rGrowth* we predicted a positive relationship, and this was supported in both models. *ROA* was expected to have a negative association, however, our results in the Francis model show a positive relationship between return on assets and earnings management.

5. ANALYSIS AND DISCUSSION

In this section we will analyze and discuss our findings. To start with, a discussion of the results of our two hypotheses will be made. Furthermore, robustness tests and their outcomes are analyzed. Lastly, we will discuss our research method including the validity and reliability of our study.

5.1. Analysis of Results

Earnings Management Post Financial Fair Play

Our first hypothesis states that upwards earnings management has increased in the Premier League since FFP was introduced. Table 3 shows that the coefficient of *PostFFP* is insignificant in the Francis model, yet, positive at a significant level of 1% in the Roychowdhury model. The test results from both models thus partly prove that our hypothesis is correct, and our findings find support for an increase in upwards earnings management in the Premier League clubs. The conclusive evidence of real earnings management could indicate that the cost of real earnings management is lower than for accrual-based earnings management. This is also in line with previous evidence found by Zang (2012) and Cohen et al. (2008).

Differences in our results, considering the inconclusive findings from the Francis model, compared to previous research, could be due to a number of factors. Firstly, in our study we examine football clubs and only clubs playing in the Premier League. Secondly, regarding the post FFP time, our period is longer, both before and after the implementation of the regulation. Thirdly, this study adjusts the data and only takes the break-even (football related) components into consideration when performing our main regression models. Previous studies analyzing the earnings management effects of FFP (Dimitropoulos and Koronios, 2018; Dimitropoulos et al., 2016; Dimitropoulos, 2016) neither consider the regulation in its totality nor adjust their research method to account for the specifics of the regulation. Thus, they base their analysis method on total earnings rather than taking the break-even rule into consideration.

The implications of our results primarily apply to the decision usefulness of earnings, considering that it is viewed as important by stakeholders for various economic decisions. FFP is no exception as the rationale behind UEFA's structure of FFP and the break-even component reside in the decision usefulness of earnings (Dechow et al., 2010). An increase in earnings management has therefore a major impact on the Premier League, as the presence of earnings management impacts the quality and usefulness of reports negatively. This in turn questions the legitimacy of FFP when clubs' break-even results are based on inflated earnings figures and it also influences the effectiveness of FFP when it is possible to circumvent the regulation. Our results therefore mainly support the notion made by regulatory and accounting literature (Schubert, 2014; Healy, 1985; Stigler, 1971), that financial performance measure may have a negative impact on accounting quality if not set up correctly.

Primarily, agency theory (Eisenhardt, 1989; Jensen and Meckling, 1976) attributes the increase of real earnings management post FFP to the presence of conflicting interest between the clubs and UEFA, yet, also to the agency costs associated with the principal-agent relationship. Considering that UEFA cannot validate whether clubs' financial statements actually reflect a fair representation of the economic activities conducted by the club, the presence of information asymmetry between UEFA and the clubs therefore presents a considerable residual loss in their relationship. However, if UEFA mitigates the information asymmetry then clubs should be less inclined to induce in opportunistic earnings management, alleviating the agency problem. The agency theory thus emphasizes inefficient contracting and information asymmetry as the root cause of the increased real earnings management post FFP.

Earnings Management and On-field Performance

Our second hypothesis presumes a negative relationship between clubs' earnings management and their on-field performance since FFP was introduced. Francis in Table 3 shows insignificant findings for *OnfieldP*, yet, Roychowdhury in Table 3 shows that the same coefficient of *OnfieldP* is positive at the significant level of 5%. The test results from both models thus partly show that our hypothesis is wrong and that the relationship between earnings management and on-field performance in the Premier League clubs is not negative. These findings are not consistent with our hypothesis nor previous research (Dechow et al., 2012; Dechow et al., 2010).

According to prior findings, one main determining factor of earnings management is firm characteristics and it is further presented that low performing firms have been identified to conduct in earnings management to a greater extent than good performing firms (Dechow et al., 2012; Dechow et al., 2010). However, our findings show the opposite, namely that good performing clubs conduct in earnings management to a greater extent than low performing clubs. These results are not necessarily surprising considering that the clubs with a higher league ranking have more incentives to manage earnings as they have a better chance of playing in the UEFA Champions League and the UEFA Europa League than lower performing clubs. Further, an explanation of why our findings are not consistent with previous research could be that performance is not the same in clubs as for profit seeking companies. This goes back to the discussion of being a win maximizing or profit maximizing club. Namely, that the performance logics of mission oriented organizations, such as football clubs, indicate a less prominent relationship between financial health and business objective.

Furthermore, the institutional environment of football clubs is not directly comparable to the environment of profit maximizing firms, as those companies are mainly valued for their financial viability towards stakeholders while football clubs are mainly considered for their sports performance and entertainment value. Our findings therefore suggest that one might have to consider the application of traditional business metrics to unconventional organizations with care. We ultimately find support for Szymanski's (2017) and Morrow's (2013) claims, that the nature of football would need to change if clubs are to be comparable to profit maximizing firms. Additionally, the increased real earnings management implies a decrease of discretionary expenditure, which in turn indicates a short-term focus on the yearly league at the expense of future financial and sporting achievements.

Our results further imply a remaining unfairness between the clubs, as clubs that perform better on the football field also manipulate earnings to a greater extent. In other words, UEFA's aim of introducing a regulation in order to make the European leagues more fair is not supported by our results. It can thus be concluded that our findings imply a positive relationship between earnings management and clubs' on-field performance, yet, it is more difficult to support our results with concrete studies due the limited coverage of FFP and earnings management.

5.2. Robustness Tests

To test the robustness of our findings we control if the impact of outliers, alternative accruals measurement and the transition period largely affect our conclusion of earnings management. Therefore, our findings are considerably reliant on the definition and measurement of our variables.

Impact of Multivariate Outliers

The presence of multivariate outliers has a considerable effect on the regression output as they bias the regression results towards them. In order to identify potential outliers, we conduct Mahalanobis distance test, where a few outliers were identified. Namely, less than 5% of the data, which constitutes thirteen observations, reflected multivariate outliers. After further investigation we could conclude that our identified outliers primarily concern our control variables for firm characteristics. These outliers are mainly believed to be a product of the variation in clubs' financial structure and performance, making them legitimate outliers to consider in the regression. Nonetheless, in order to estimate the effects of outliers on our regression results we conduct winsorizing, that is trim outliers to match the nearest representative value of our extreme observations, and re-run the regression.

The decision to winsorize, rather than trim the data, primarily resides in previous evidence. Dixon (1980) and Tukey (1962) suggest that winsorizing should be considered over trimming when the outliers are representative of the population. This is because an exclusion of such observations through trimming reduces the explanatory power of the regression. Following our winsorizing of the multivariate outliers, the new regression output does not change our conclusions and results from the Roychowdhury model considerable. Yet, the adjusted result presents a positive and significant finding for our *PostFFP* variable in the Francis model, supporting our first hypothesis, see Appendix 2. Thus, this implies that the outliers in our model have a considerable influence on the regression results regarding the Francis model.

Alternative Accruals Measurement

As the Francis model builds on Dechow and Dichev, we are limited to use working capital accruals which present a more considerable relationship with CFO. For the case of football clubs, this limitation should present no further issue as their operations are more short-term than long-term, thus leading to more emphasis on working capital accruals than non-current accruals. However, total accruals capture the level of accruals management to a greater extent. Our results for the accrual model may therefore, to some extent, be slightly understated as we have to use working capital accruals rather than total accruals which are more long-term, given the application of the Francis model. Accordingly, we test for the sensitivity of our results on the application of working capital accruals rather than total accruals. We thus substitute the variable *TCA* in the Francis model with total accruals. The new results do not change our findings from using the working capital components, as can be seen in Appendix 3. Ultimately, our results are not sensitive to the application of working capital accruals.

Impact of the Transition Period

FFP was not introduced and compulsory overnight, our data sample thus includes a transition period, constituting the years 2009-2011, for clubs to adjust to the new regulation. Cohen et al. (2008) suggest that the exclusion of a transition period could be worth considering when analyzing two time periods. Observations from the transition period may reflect extraordinary business conditions and not be reflective of the study objective. Consequently, our results and inference may thus be sensitive to the applied observation period. We therefore test for the robustness of our results when omitting the transition period from the data sample and thus only test for the years 2004-2008 and 2012-2017. Our sensitivity test for the transition period, see Appendix 4, indicates that our main results from the Roychowdhury model do not change. Yet, the findings from the Francis model now reflect a significant result of *PostFFP* at the 1% level, and thus show an increase of accruals management after FFP was introduced.

5.3. Statistical Considerations

As we employ a linear regression methodology, we assess the validity of the regression following whether or not the Gauss-Markov theorem for linear regression holds. The theorem states several assumptions that presents least square coefficient estimator as a prominent statistical analysis method. Gauss-Markov's first assumption concerns there being a linear relationship between the dependent and independent variables. The function between the variables thus presents an essential part of whether ordinary least square (OLS) holds or not.

Furthermore, linear regression analysis is concerned with the distribution of the independent variables to approximately follow a normal distribution. The central limit theorem allows relaxation of the condition of the error term being normally distributed given a sample larger than 30, which we have in our case. The normality assumption should thus hold for both our models.

Another stipulation made by the Gauss-Markov theorem is homoscedasticity. Homoscedasticity refers to the error term being constant over all observations in order to minimize the residuals and standard errors from the regression estimates. The error term is assumed to not be greater for certain observations for a variable. Instead all observations of a variable are expected to have the same standard error. In other words, when the variance of the error term is not uniform, we face issues concerning heteroskedasticity. Our scatter plot analysis of the residuals from both models indicates ambiguous results for the assumption of homoscedasticity.

As we employ time series data, controlling for autocorrelation becomes crucial. Autocorrelation refers to there being a dependency between the residuals of at least two observations. Autocorrelation leads to the standard errors for the estimated coefficients being biased, increasing the likelihood of type 1 and type 2 errors. Violating the autocorrelation assumption implies that OLS is no longer the most efficient way of estimating the coefficients. Durbin-Watson test is the most used when testing for autocorrelation. Following the test statistics, the accrual model seems to not suffer from autocorrelation as we have a Durbin-Watson statistic of 1.820, which implies little to no autocorrelation. Yet, the real earnings management model might suffer from autocorrelation as it displays a statistic of 2.151. However, as the Durbin-Watson statistic is close to 2 we do not seem to have considerable problem with autocorrelation.

Being that the objective of our regression models is to analyze association between the dependent and independent variables, it becomes pivotal to test for the likelihood of multicollinearity as it can have a considerable impact on our result. The presence of multicollinearity leads to discrepancy in estimates of the association between an independent variable and dependent variable. Testing for multicollinearity, statistical theories advocate to consider the variance inflation factor (VIF) and Tolerance. When the VIF is 10 or above or the tolerance level is 0.1 or lower, there are indications of presence of high multicollinearity. As seen in Appendix 5, both regression models present considerably low VIF values below 10 and

sufficient tolerance levels considerable above 0.1. Further, signs of multicollinearity can be identified when coefficient estimates are inconsistent with previous empirical results. Given the background of our findings, which are supported by previous research, our models do not seem to suffer from multicollinearity.

5.4. Validity and Reliability

The validity and reliability of our findings mainly build on two factors. Whether our regression models used to derive our results are statistically valid and whether our findings are supported by theory and previous findings. Our statistical consideration in section 5.3. validates the application of linear regression as the linear regression assumptions are not violated. Statistical theory bridges the gap between data and our research questions, allowing for objective and replicable results.

Interestingly, despite the difference in institutional environment, our results are considerable in line with evidence from other industries as well as from clubs in other European countries. The results from our control variables further indicate that our regression results are reliable and accurate. Since we found the same regression coefficients as previous studies, it further provides a set of reliability to the findings in this study. If our results would not have been in line with theory or previous studies, then the reliability of our findings would instead have weakened considerably.

The validity and reliability of our study is further dependent on our employed earnings management models. Mainly, accruals models have been scrutinized as they are reliant on accounting figures rather than firms' actual performance. This becomes an issue as reported accounting figures do not necessarily reflect a firm's actual performance for the period, yet, rather the firm's performance that has been subject to managerial discretion. Considerable attempts have been made to measure the objective performance of a firm, however, this research has yet to gain wide acceptance amongst researchers. Despite concerns for measurement errors, our accrual model employed is based on a well approved and robust method for estimating discretionary accruals. Concerns have further been expressed towards the balance sheet approach of measuring earnings management as the balance sheet reflects an accumulation of prior accounting choices and ultimately earnings management choices. Yet, faster reversal of working capital accruals presents less concerns when applying the balance sheet approach (Dechow et al., 2010), which increases the validity of our study.

The results of the robustness tests in section 5.2. further allude to our results being conservative, yet, reliable. As the majority of the robustness tests reflected results that were more supportive of our hypotheses, the validity and reliability of this study is believed to be considerable high. The regression models employed are based on previous findings and theory of earnings management in order to accurately model an adequate regression model, which we further find support for based on prior empirical and theoretical evidence.

6. CONCLUSION

In this section we will first summarize the contributions and state the conclusions of our thesis. Thereafter, we discuss and present the limitations in this study, as well as suggestions for future research.

6.1. Summary and Conclusion

Our aim of this study has been to examine if earnings management increased in the Premier League since FFP was introduced and if there is a relationship between clubs' earnings management and their on-field performance, using two different models. The motive for studying only the English Premier League, even though football clubs all over Europe are affected by FFP, was to isolate the data and only examine the increase in earnings management on a national level. It could thus indicate and reflect cultural differences that would otherwise be mixed in a cross country study. Our aim was also to compare two different types of earnings management and as research argues for a transition from accruals to real earnings management, we therefore chose the models we considered would provide the highest explanatory value.

Compared to previous studies (Dimitropoulos and Koronios, 2018; Dimitropoulos et al., 2016; Dimitropoulos, 2016), we did not find a statistically considerable difference between accruals management pre and post FFP, as our results indicate conclusive support for the increase of real earnings management, while the results of accruals management are inconclusive. This could imply that the cost of accruals earnings management is considerably higher than for real earnings management in our sample, consistent with findings from Zang (2012) and Cohen et al. (2008). Further, we find a positive relationship between clubs' performance on the field and their real earnings management. Denoting that the institutional environment of football clubs is not directly comparable to the environment of profit maximizing firms.

The robustness of our findings is considerably strong as our sensitivity and robustness tests assure valid results supported by theory, previous evidence and earnings management models, implying high reliability of our results and conclusions. Our findings thus contribute to the knowledge of institutional monitoring and financial reporting in a football context, as well as the consequences on accounting quality within the Premier League.

6.2. Limitations and Suggestions for Future Research

This study has focused on earnings manipulation in the Premier League and the increase of earnings management after the introduction of FFP. Along the process a number of limitations and fields of future research have been identified and they will further be presented.

A potential problem with the Francis model is the definition of accruals quality and the use of standardized residuals. Clubs with large, yet, consequent misstatements receive a higher accruals quality in the model as their accruals' misstatements will be less volatile. The variation in accounting quality might thus be harder to detect for clubs with consistent and large accruals residuals. Earnings management can further present itself in various forms considering the different components and attributes of earnings. Our inconclusive findings regarding accruals earnings management could therefore be due to the Francis model not being extensive enough to capture simultaneous properties of accruals management. We thus encourage future research to control for the findings of accruals management through other accruals models such as Jones, modified Jones etc.

Furthermore, the causality between sport performance and earnings management presents a viable option for future research, given our result that better performing clubs manage their earnings more. It would thus be interesting to study whether better sport performance is a result of earnings management or if earnings management is a product of good on-field performance. This would further develop the research area regarding earnings management in a football context.

One aspect that differentiates our study of FFP from previous ones is that we take the break-even rule into consideration and thus only look at the football related components in clubs' financial reports when testing for earnings management. Therefore, we suggest examining this exact study, yet, on the highest professional football division in another European country or as a cross country study of the European clubs. As Schubert and Könecke (2015) argue for similar

behavior regarding a development of poor financial management practices due to wealthy owners, the study would thus be suitable on either Italian or Spanish data, that is Serie A or La Liga. Alternatively, as our time period post the implementation of FFP is limited per definition, we propose an extension of our study with longer time periods, both pre and post FFP. The study would be conducted again in a few years and consequently yield a larger dataset.

REFERENCES

- CAS 2019/A/6298. 'Manchester City FC V. UEFA', *Court for Arbitration for Sports*, (2019).
- Cohen, D. A., A. Dey, and T. Z. Lys. 'Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods', *Accounting Review*, vol. 83/no. 3, (2008), pp. 757-787.
- Cohen, D. A., and P. Zarowin. 'Accrual-Based and Real Earnings Management Activities Around Seasoned Equity Offerings', *Journal of Accounting and Economics*, vol. 50/no. 1, (2010), pp. 2-19.
- Dechow, P. M. 'Accounting Earnings and Cash Flows as Measures of Firm Performance. the Role of Accounting Accruals', *Journal of Accounting and Economics*, vol. 18/no. 1, (1994), pp. 3-42.
- Dechow, P. M., and I. D. Dichev. 'The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors', *Accounting Review*, vol. 77/no. SUPPL., (2002), pp. 35-59.
- Dechow, P. M., A. P. Hutton, J. H. Kim, et al. 'Detecting Earnings Management: A New Approach', *Journal of Accounting Research*, vol. 50/no. 2, (2012), pp. 275-334.
- Dechow, P. M., and R. G. Sloan. 'Executive Incentives and the Horizon Problem. an Empirical Investigation', *Journal of Accounting and Economics*, vol. 14/no. 1, (1991), pp. 51-89.
- Dechow, P., W. Ge, and C. Schrand. 'Understanding Earnings Quality: A Review of the Proxies, their Determinants and their Consequences', *Journal of Accounting and Economics*, vol. 50/no. 2-3, (2010), pp. 344-401.
- Dechow, P., R. Sloan, and A. Sweeney. 'Detecting Earnings Management', *The Accounting Review*, vol. 70/no. 2, (1995), pp. 193-225.
- Dietl, H. M., M. Lang, and S. Werner. 'Social Welfare in Sports Leagues with Profit-Maximizing and/Or Win-Maximizing Clubs', *Southern Economic Journal*, vol. 76/no. 2, (2009), pp. 375-396.

- Dimitropoulos, P. 'Audit Selection in the European Football Industry Under Union of European Football Associations Financial Fair Play', *International Journal of Economics and Financial Issues*, vol. 6/no. 3, (2016), pp. 901-906.
- Dimitropoulos, P., S. Leventis, and E. Dedoulis. 'Managing the European Football Industry: UEFA's Regulatory Intervention and the Impact on Accounting Quality', *European Sport Management Quarterly*, vol. 16/no. 4, (2016), pp. 459-486.
- Dimitropoulos, P., and K. Koronios. 'Earnings Persistence of European Football Clubs Under UEFA's FFP', *International Journal of Financial Studies*, vol. 6/(2018), pp. 1-15.
- Dixon, W. J. 'Efficient Analysis of Experimental Observations.', *Annual Review of Pharmacology and Toxicology*, vol. 20/(1980), pp. 441-462.
- Eisenhardt, Kathleen M. 'Agency Theory: An Assessment and Review', *The Academy of Management Review*, vol. 14/no. 1, (1989), pp. 57-74.
- Emery, R., and M. Weed. 'Fighting for Survival? the Financial Management of Football Clubs Outside the 'top Flight' in England', *Managing Leisure*, vol. 11/no. 1, (2006), pp. 1-21.
- Fort, R., and J. Quirk. 'Owner Objectives and Competitive Balance', *Journal of Sports Economics*, vol. 5/no. 1, (2004), pp. 20-32.
- Francis, J., R. LaFond, P. Olsson, et al. 'The Market Pricing of Accruals Quality', *Journal of Accounting and Economics*, vol. 39/no. 2, (2005), pp. 295-327.
- Franck, E., and M. Lang. 'A Theoretical Analysis of the Influence of Money Injections on Risk Taking in Football Clubs', *Scottish Journal of Political Economy*, vol. 61/no. 4, (2014), pp. 430-454.
- Garcia-del-Barrio, P., and S. Szymanski. 'Goal! Profit Maximization Versus Win Maximization in Soccer', *Review of Industrial Organization*, vol. 34/no. 1, (2009), pp. 45-68.
- Goodhart, C. A. E., and H. Huang. 'The Lender of Last Resort', *Journal of Banking and Finance*, vol. 29/no. 5, (2005), pp. 1059-1082.

- Graham, J. R., C. R. Harvey, and S. Rajgopal. 'The Economic Implications of Corporate Financial Reporting', *Journal of Accounting and Economics*, vol. 40/no. 1-3, (2005), pp. 3-73.
- Haugen, K. K. 'The Performance-Enhancing Drug Game', *Journal of Sports Economics*, vol. 5/no. 1, (2004), pp. 67-86.
- Healy, P. M. 'The Effect of Bonus Schemes on Accounting Decisions', *Journal of Accounting and Economics*, vol. 7/no. 1-3, (1985), pp. 85-107.
- Healy, P. M., and J. M. Wahlen. 'A Review of the Earnings Management Literature and its Implications for Standard Setting', *Accounting Horizons*, vol. 13/no. 4, (1999), pp. 365-383.
- Hölmstrom, B. 'Moral Hazard and Observability', *The Bell Journal of Economics*, vol. 10/no. 1, (1979), pp. 74-91.
- Humphreys, B. R., and T. J. Miceli. 'The Peculiar Preferences of Sports Fans: Toward a Preference-Based Motivation for the Uncertainty of Outcome Hypothesis', *Journal of Sports Economics*, vol. 20/no. 6, (2019), pp. 782-796.
- Jensen, M. C., and W. H. Meckling. 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics*, vol. 3/no. 4, (1976), pp. 305-360.
- Jones, J. 'Earnings Management during Import Relief Investigations', *Journal of Accounting Research*, vol. 29/no. 2, (1991), pp. 193-228.
- Késenne, S. 'The Financial Situation of the Football Clubs in the Belgian Jupiler League: Are Players Overpaid in a Win-Maximization League?', *International Journal of Sport Finance*, vol. 5/no. 1, (2010), pp. 67-71.
- Késenne, S. 'The Win Maximization Model Reconsidered: Flexible Talent Supply and Efficiency Wages', *Journal of Sports Economics*, vol. 7/no. 4, (2006), pp. 416-427.

- Kothari, S. P., A. J. Leone, and C. E. Wasley. 'Performance Matched Discretionary Accrual Measures', *Journal of Accounting and Economics*, vol. 39/no. 1, (2005), pp. 163-197.
- Lang, M., M. Grossmann, and P. Theiler. 'The Sugar Daddy Game: How Wealthy Investors Change Competition in Professional Team Sports', *Journal of Institutional and Theoretical Economics*, vol. 167/no. 4, (2011), pp. 557-577.
- Litvishko, O., R. Veynberg, and I. Bodrov. 'Investment Potential of the Football Industry', *Journal of Physical Education and Sport*, vol. 19/no. 4, (2019), pp. 2390-2399.
- Marchica, M., and R. Mura. 'Financial Flexibility, Investment Ability, and Firm Value: Evidence from Firms with Spare Debt Capacity', *Financial Management*, vol. 39/no. 4, (2010), pp. 1339-1365.
- McNichols, M. F. 'Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors', *Accounting Review*, vol. 77/no. SUPPL., (2002), pp. 61-69.
- Morrow, S. 'Football Club Financial Reporting: Time for a New Model?', *Sport, Business and Management: An International Journal*, vol. 3/no. 4, (2013), pp. 297-311.
- Müller, J. C., J. Lammert, and G. Hovemann. 'The Financial Fair Play Regulations of UEFA: An Adequate Concept to Ensure the Long-Term Viability and Sustainability of European Club Football?', *International Journal of Sport Finance*, vol. 7/no. 2, (2012), pp. 117-140.
- Nicoliello, M., and D. Zampatti. 'Football Clubs' Profitability After the Financial Fair Play Regulation: Evidence from Italy', *Sport, Business and Management: An International Journal*, vol. 6/no. 4, (2016), pp. 460-475.
- O'Connor Keefe, M., and J. Tate. 'Is the Relationship between Investment and Conditional Cash Flow Volatility Ambiguous, Asymmetric Or both?', *Accounting and Finance*, vol. 53/no. 4, (2013), pp. 913-947.
- Preuss, H., K. Haugen, and M. Schubert. 'UEFA Financial Fair Play: The Curse of Regulation', *European Journal of Sport Studies*, vol. 2/(2014), pp. 33-51.

- Rohde, M., and C. Breuer. 'Competing by Investments Or Efficiency? Exploring Financial and Sporting Efficiency of Club Ownership Structures in European Football', *Sport Management Review*, vol. 21/no. 5, (2018), pp. 563-581.
- Roychowdhury, S. 'Earnings Management through Real Activities Manipulation', *Journal of Accounting and Economics*, vol. 42/no. 3, (2006), pp. 335-370.
- Sass, M. 'Glory Hunters, Sugar Daddies, and Long-Term Competitive Balance Under UEFA Financial Fair Play', *Journal of Sports Economics*, vol. 17/no. 2, (2016), pp. 148-158.
- Schubert, M. 'Potential Agency Problems in European Club Football? the Case of UEFA Financial Fair Play', *Sport, Business and Management: An International Journal*, vol. 4/no. 4, (2014), pp. 336-350.
- Schubert, M., and T. Könecke. "Classical' Doping, Financial Doping and Beyond: UEFA's Financial Fair Play as a Policy of Anti-Doping', *International Journal of Sport Policy*, vol. 7/no. 1, (2015), pp. 63-86.
- Sims, P. J. 'The Circumvention of UEFA's Financial Fair Play Rules through the Influx of Foreign Investments', *Northwestern Journal of International Law and Business*, vol. 39/no. 1, (2018), pp. 59-84.
- Stigler, G. 'The Theory of Economic Regulation', *The Bell Journal of Economics and Management Science*, vol. 2/no. 1, (1971), pp. 3-21.
- Storm, R. K., and K. Nielsen. 'Soft Budget Constraints in Professional Football', *European Sport Management Quarterly*, vol. 12/no. 2, (2012), pp. 183-201.
- Szymanski, S. 'Entry into Exit: Insolvency in English Professional Football', *Scottish Journal of Political Economy*, vol. 64/no. 4, (2017), pp. 419-444.
- Terrien, M., N. Scelles, S. Morrow, et al. 'The Win/Profit Maximization Debate: Strategic Adaptation as the Answer?', *Sport, Business and Management: An International Journal*, vol. 7/no. 2, (2017), pp. 121-140.

- Thornhill, S., and R. Amit. 'Learning about Failure: Bankruptcy, Firm Age, and the Resource-Based View', *Organization Science*, vol. 14/no. 5, (2003), pp. 497-509.
- Tukey, J. 'The Future of Data Analysis', *The Annals of Mathematical Statistics*, vol. 33/no. 1, (1962), pp. 1-67.
- UEFA. 'Club Licensing Benchmarking Report Financial Year 2018', (2018).
- UEFA Club Licensing and Financial Fair Play Regulations, 2018.
- Walker, M. 'How Far can we Trust Earnings Numbers? what Research Tells Us about Earnings Management', *Accounting and Business Research*, vol. 43/no. 4, (2013), pp. 445-481.
- Zang, A. Y. 'Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management', *Accounting Review*, vol. 87/no. 2, (2012), pp. 675-703.

APPENDIX

Appendix 1

An overview of the break-even components

Income	Expenses
+ Revenue	- Cost of sales/materials
+ Gate receipts	- Employee benefits expenses
+ Broadcasting rights	- Other operating expenses
+ Sponsorship and advertising	- Amortization or costs of player registration
+ Commercial activities	- Finance costs and dividends
+ Other operating income	
+ Profit from disposal of player registration	<i>Infrastructure costs</i>
+ Excess proceeds on disposal of tangible fixed assets	<i>Youth development activities</i>
+ Finance income	<i>Community development activities</i>
	<i>Non-monetary items</i>
<i>Income from non-football operations</i>	<i>Finance costs (limited)</i>
<i>Non-monetary items</i>	
<i>Related party transactions above fair value</i>	

Note: *Non-relevant components are written in italics*

Appendix 2

Robustness test for multivariate outliers

	Francis			Roychowdhury		
	Coefficients	STD	t-Stat	Coefficients	STD	t-Stat
<i>Intercept</i>	1.595**	0.671	2.379	-0.234***	0.080	-2.905
<i>PostFFP</i>	0.164*	0.086	1.915	0.031***	0.010	2.987
<i>OnfieldP</i>	-1.116	3.546	-0.315	0.905**	0.425	2.129
<i>Leverage</i>	0.265***	0.054	4.929	0.023***	0.006	3.609
<i>LogSize</i>	-0.237	0.149	-1.591	0.027	0.018	1.484
<i>rGrowth</i>	-0.028	0.060	-0.459	0.019***	0.007	2.587
<i>ROA</i>	0.101	0.216	0.466	-0.088***	0.026	-3.397
Adjusted R ²	0.154			0.165		
N	274			274		

Note: *Significance at the 1% level (***), the 5% level (**) and the 10% level (*)*

Appendix 3

Robustness test for alternative accruals measurement

Francis			
	Coefficients	STD	t-Stat
<i>Intercept</i>	1.992***	0.676	2.945
<i>PostFFP</i>	0.131	0.087	1.493
<i>OnfieldP</i>	-2.324	3.537	-0.657
<i>Leverage</i>	0.043	0.063	0.685
<i>LogSize</i>	-0.266*	0.150	-1.776
<i>rGrowth</i>	0.156***	0.043	3.608
<i>ROA</i>	0.088	0.167	0.524
Adjusted R ²	0.130		
N	274		

Note: Significance at the 1% level (***), the 5% level (**) and the 10% level (*)

Appendix 4

Robustness test for the transition period

Francis				Roychowdhury		
	Coefficients	STD	t-Stat	Coefficients	STD	t-Stat
<i>Intercept</i>	2.498***	0.809	3.088	-0.114	0.096	-1.177
<i>PostFFP</i>	0.186*	0.108	1.720	0.037***	0.013	2.875
<i>OnfieldP</i>	-3.181	4.115	-0.773	1.184**	0.490	2.413
<i>Leverage</i>	0.068	0.080	0.839	0.025***	0.010	2.589
<i>LogSize</i>	-0.361**	0.179	-2.017	0.001	0.021	0.031
<i>rGrowth</i>	0.131***	0.050	2.631	0.021***	0.006	3.570
<i>ROA</i>	0.380*	0.193	1.965	-0.023	0.023	-0.977
Adjusted R ²	0.171			0.129		
N	274			274		

Note: Significance at the 1% level (***), the 5% level (**) and the 10% level (*)

Appendix 5

Multicollinearity for equation (3) and (4)

	Francis N = 274		Roychowdhury N = 274	
	Tolerance	VIF	Tolerance	VIF
<i>Intercept</i>	0.837	1.194	0.837	1.194
<i>PostFFP</i>	0.465	2.148	0.465	2.148
<i>OnfieldP</i>	0.734	1.362	0.734	1.362
<i>Leverage</i>	0.386	2.591	0.386	2.591
<i>LogSize</i>	0.755	1.325	0.755	1.325
<i>rGrowth</i>	0.703	1.423	0.703	1.423
<i>ROA</i>	0.837	1.194	0.837	1.194

Appendix 6A

List of clubs in the pre FFP dataset

Clubs	2004	2005	2006	2007	2008	2009	2010
AFC Bournemouth							
Arsenal FC	x	x	x	x	x	x	x
Aston Villa	x	x	x	x	x	x	x
Birmingham City	x	x	x		x		x
Blackburn Rovers	x	x	x	x	x	x	x
Blackpool FC							
Bolton Wanderers	x	x	x	x	x	x	x
Burnley FC							x
Cardiff City							
Charlton Athletic	x	x	x	x			
Chelsea FC	x	x	x	x	x	x	x
Crystal Palace		--					
Derby County					x		
Everton FC	x	x	x	x	x	x	x
Fulham FC	x	x	x	x	x	x	x
Hull City						x	x
Leeds United	x						
Leicester City	x						
Liverpool FC	x	x	x	x	x	x	x
Manchester City	x	x	x	x	x	x	x
Manchester United	x	x	x	x	x	x	x
Middlesbrough FC	x	x	x	x	x	x	
Newcastle United	x	x	x	x	x	x	
Norwich City		x					
Portsmouth FC	--	x	x	x	x	--	--
Queens Park Rangers							
Reading FC				x	x		
Sheffield United				x			
Southampton FC	x	x					
Stoke City						x	x
Sunderland AFC			x		x	x	x
Swansea City							
Tottenham Hotspur	x	x	x	x	x	x	x
Watford FC				x			
West Bromwich Albion		x	x			x	
West Ham United			x	x	x	x	x
Wigan Athletic			x	x	x	x	x
Wolverhampton Wanderers	x						x

Note: *Playing in the Premier League (x) and missing values (--)*

Appendix 6B

List of clubs in the post FFP dataset

Clubs	2011	2012	2013	2014	2015	2016	2017
AFC Bournemouth						X	X
Arsenal FC	X	X	X	X	X	X	X
Aston Villa	X	X	X	X	X	X	
Birmingham City	X						
Blackburn Rovers	X	X					
Blackpool FC	X						
Bolton Wanderers	X	X					
Burnley FC					X		X
Cardiff City				X			
Charlton Athletic							
Chelsea FC	X	X	X	X	X	X	X
Crystal Palace				X	X	X	X
Derby County							
Everton FC	X	X	X	X	X	X	X
Fulham FC	X	X	X	X			
Hull City				X	X		X
Leeds United							
Leicester City					X	X	X
Liverpool FC	X	X	X	X	X	X	X
Manchester City	X	X	X	X	X	X	X
Manchester United	X	X	X	X	X	X	X
Middlesbrough FC							X
Newcastle United	X	X	X	X	X	X	
Norwich City		X	X	X		X	
Portsmouth FC							
Queens Park Rangers		X	X		X		
Reading FC			X				
Sheffield United							
Southampton FC			X	X	X	X	X
Stoke City	X	X	X	X	X	X	X
Sunderland AFC	X	X	X	X	X	X	X
Swansea City		X	X	X	X	X	X
Tottenham Hotspur	X	X	X	X	X	X	X
Watford FC						X	X
West Bromwich Albion	X	X	X	X	X	X	X
West Ham United	X		X	X	X	X	X
Wigan Athletic	X	X	X				
Wolverhampton Wanderers	X	X					

Note: *Playing in the Premier League (x) and missing values (--)*