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Gambling With Debt: The English Premier League

Abstract

This paper aims to investigate the impact of debt on financial performance in the English Premier League from the 2000/01 season to the 2017/18 season. Panel model estimations concluded debt has a significant inverse relationship with financial performance. This relationship may potentially be stronger in larger clubs and could be present through human capital investment's significant direct relationship with financial performance. This further emphasised usages of intangible assets as a player human capital investment indicator, rather than using wage costs like previous studies. Furthermore, filling a gap regarding how capital structures may be used to impact financial performance within' football.

Cover Page Footnote

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1 – Introduction

This paper amalgamates two segments of sport economics research, more specifically, the study of association football to investigate relationships between debt and financial performance in sporting companies. This relationship's existence is related to the *Efficiency Wage (EW)* concept, whereby debt is borrowed to undertake human capital investments (i.e. a club's players) to increase productivity (i.e. team performances), helping obtain financial success to settle debt in the long run (Blanchard and Johnson, 2013). This relationship's existence is also considered against club size and is reviewed within' distinct context of the English Premier League (EPL), utilising panel models to produce econometric estimations.

Regarding the EPL, or, the Premiership, this is England's top tier of professional football. It replaced the First Division in 1992 and is regulated by the Football Association (FA) (Premier League, 2020). There are three leagues below the EPL, collectively known as the Football League (FL). The EPL is connected to the top division of the FL through systems of promotion and relegation, whereby three FL clubs are promoted, replacing three relegated EPL clubs after each season. League positions are determined by points obtained throughout the season, including: three points for a win, one point for a draw and zero points for a loss, and teams equal on points are ranked by aggregate goal difference. The team finishing top is crowned the EPL champion (Premier League, 2020).

Regularly in the EPL, debt financing is used for human capital investments, as this is related to higher *team performances (TP)*. For example, Hall *et al.* (2002), Camichael *et al.* (2011) and Rohde and Breuer (2016) suggest human capital investments stimulate TP. These higher TPs then create higher *financial performances (FP)*. For example, Samagaio *et al.* (2009) evidenced the positive relationship between TP and FP, whereby higher TPs lead to higher FPs from a long-term perspective. However, human capital investments are also linked to FPs themselves, through enhancing brand-management revenue streams (Rohde and Breuer, 2016). Although, investments receive negative criticism, as higher TPs do not always coincide with increased investment. Moreover, clubs could become engulfed in 'debt-gambles' (Rapp, 2004), hence why former Union of European Football Associations (UEFA) president, Michael Platini, describes it as 'unsustainable-debt' (BBC, 2020). Therefore, UEFA introduced *Financial Fair Play (FFP)*, with two main goals: protecting long-term financial stability and restoring competitive balance in European football (Vöpel, 2011).

Furthermore, with the aim of investigating the relationship between debt and FP in the EPL, the objectives of this paper followed to achieve this are: to explore the current EPL wage debate, to test and discover the relationship between debt, intangible assets, and TP against FP from the 2000/01 season to the 2017/18 season in the EPL, and to test and identify whether the relationship between debt, intangible assets, and TP against FP from the 2000/01 season to the 2017/18 season in the EPL differs depending on club size.

Achieving these allow this paper to help fill a research gap regarding how a club's capital structure is often used to enhance FP in football, and will add to previous research regarding how wages impact on FP may have altered since FFP introduction and the modern-day productivity paradox. Additionally, it allows this paper to provide objective evidence supporting large human capital investments in football, often in negative limelight's.

Moreover, the paper proceeds as follows: Section 2 outlines previous empirical research into these relationships. Section 3 justifies the research approach and data set used for analysis. Section 4 contains analysis from econometric estimations. Section 5 provides concluding remarks, regarding a summary, future research recommendations, and implications. The Appendix following includes further information on empirical evidence, data adjustments, econometric estimations, and an ethics form.

2 – Literature Review

Capital structures of EPL clubs have heavily favoured debt from equity for many years, despite significant revenue increases. An underlying debt-FP relationship created by a criticised wage-TP relationship is to blame, whereby this relationship is often why 'debt-gambles' are created. UEFA staggered to implement regulation preventing such gambles, but eventually introduced FFP, despite the criticisms over the trade-off it creates, and its difference to other sport's regulations. The next few sections discuss the theoretical framework acting as a foundation to these relationships, and the relatable empirical evidence supporting and opposing them.

2.1 Theoretical Evidence

EPL clubs often borrow significant amounts of debt (Parliament. House of Commons, 2011), which is then used to invest into player human capital (i.e. wages) to achieve team-success and financial-success. However, this relationship between investment into human capital and team-success resembles the EW concept described by Blanchard and Johnson (2013), whereby human capital investments into players could create greater work incentives, creating more productive players, resulting in the cost of higher wages being paid off in the long-run, through productivity gains enhancing revenue. For example, in the EPL, these human capital investments may encourage a player to find ‘good form’, improving TPs. Therefore, the EW concept pursued often regards Rebitzer’s (1994) explanation of employer’s using wages as a ‘carrot’ to persuade workers to supply higher productivity. However, as the EPL is different to traditional labour markets because wages ‘systematically reflect’ player skills and performances (Carmichael *et al.*, 2011), paying higher wages does not necessarily result in increased productivity (i.e. team-success), as you essentially get what you pay for. Hence why others use intangible assets instead of wage costs to measure player capital investments (Mnzava, 2013), as described later. Team-success also may not follow due to Arkelof’s (1984) mentions of an Equity theory, whereby players may not become more productive because they are on lower wages than others. Additionally, a modern-day productivity paradox resulting from technological advances (Brynjolfsson *et al.*, 2017), could destroy this relationship, as players could become more focused on areas like social media performance (i.e. number of followers), instead of playing performance, despite wage increases.

2.2 Empirical Evidence

Although significant amounts of debt are borrowed to fund the EW concept described, it is not because EPL clubs struggle to generate revenue. In fact, EPL clubs find relative ease generating revenue, because increasing EPL competition has created results unpredictability (Deloitte, 2018), and this excitement of unpredictability attracts demand. For example, Buraimo and Simmon’s (2008) modelled EPL attendances, discovering a u-shape relationship between win probability and attendance. They described a ‘David versus Goliath’ effect, whereby fans are attracted to games if their teams have low winning probabilities. Hence, with increased competition, fans become win-optimistic, drawing larger audiences.

Therefore, the 2010-12 Football Governance Report (Parliament. House of Commons, 2011), states the problem is not revenue generation, but instead, controlling expenditure. Perfectly demonstrated in the EPL's 2009/10 season, whereby total EPL revenue reached above £2 billion (Deloitte, 2011) for the first time, whereas operating profit margins decreased 12% since the EPL first begun (Parliament. House of Commons, 2011). This is because EPL clubs are attracted to 'chasing the dream' (Wilson and Joyce, 2008, p. 10), whereby clubs borrow to invest in talented players, meaning wages (which reflect player talent) increase to achieve team-success, and eventually, financial-success (Parliament. House of Commons, 2011). Although instances of using equity exist, EPL clubs typically choose debt, which could potentially be because of debt's traditional benefits over equity, like being a cheaper source of financing, especially for smaller clubs. However, this paper follows the favouring of debt-financing in accordance with owners having over-optimistic club visions, as described by former Bundesliga¹ Chief Financial Officer (CFO), Christian Müller (Parliament. House of Commons, 2011, p. 24):

'all over the world [that] most club executives tend to operate riskily, tend to overestimate their chances.... This may result in disproportionate spending relative to the income some clubs generate...'

Therefore, owner's over-optimism on club expectations, as Müller described, results in team-success urgencies creating short-run win-maximisation aims. However, economists did not always favour win-maximisation, as manager's and owner's aims have always been controversial. Reverting as far to Alchian (1950), economists argued, to survive in competitive environments, decisions needed to resemble profit-maximisation, therefore, they assumed industry results followed profit-maximisation, regardless of owner's or manager's motives. As time progressed, other economists were even pushed towards utility-maximising behaviour, like Atkinson *et al.* (1988). Nonetheless, many researchers still supported profit maximization. However, from the 1990's, economists like Alchian (1950) faced criticism over profit-maximisation originating from natural selection rather than individual motives, therefore, win-maximisation became favourable. For example, Dutta and Radner (1999) found profit maximisation creates certain bankruptcy, but with other strategies, long-term survival becomes likely. Even with different club owners, win-

¹ The top tier of German professional football (BBC, 2020).

maximisation is favoured. For example, Vrooman (2009) mentioned if owners are ‘sportsman owners’, aims are primarily win-maximisation, and if owners are ‘profit-maximising owners’, they aim to optimise inputs (player-investments) and outputs (financial-success), and outputs can only be achieved through team-success. Short-run win-maximisation behaviour but to profit constraints (i.e. a minimum profit to be met), also became favourable (Késenne, 2006; Samagaio *et al.*, 2009).

Nonetheless, Garcia-del-Barrio and Szymanski (2009) agreed with Vrooman’s (2009) ‘profit-maximising’ owner proposition, concluding short-run win-maximisation is perceived as a route to obtain higher profits in the long-run. This is because financial-success in football is based on short-run results, as it is a ‘zero-sum game’, whereby league position can decrease, regardless of how well TPs are in ‘absolute terms’ (Vöpel, 2011). Therefore, if aiming for other short-run objectives, this could cause relegation, destroying future profit opportunities (Garcia-del-Barrio and Szymanski, 2009). Hence why owners use short-run debt, as short-run equity is often unavailable to produce these short-run results.

Moreover, borrowing for short-run win-maximisation, to achieve desires to ‘maximise global, long-term returns’ (Zimbalist, 2003), should conclude in short-run debt being settled. However, when team-success does not follow debt increases, wages and transfer fees increase above revenue (Financial Times, 2019), therefore, clubs have no choice but to continue borrowing. Additionally, club’s ‘high expectations’ mean they maintain continuous borrowing (Rapp, 2004). This is specifically demonstrated through Gerrard’s (2004) case study into Leed’s United F.C.’s ‘Dash for Glory’ period, whereby a debt investment of a £60 million, 25-year corporate bond, securitised against gate revenues in 1999 was made to achieve short-run win-maximisation. However, team-success did not follow, but remaining high expectations (Rapp, 2004) caused continuations of ‘chasing the dream’ (Wilson and Joyce, 2008, p. 10), resulting in wage costs quadrupling after 1999 and gearing ratios becoming significantly high at 98.34% (Gerrard, 2004). Therefore, this ‘debt-gamble’ (Gerrard, 2004) resulted in significant losses for Leed’s United F.C, concluding in a winding-up order from its debtor, HM Revenue and Customs (HMRC), to be issued in 2007 (BBC, 2007).

Differentially, ‘debt-gambles’ may oppose Gerrard’s (2004) case study, as proven by Drut and Raballand (2012) who found clubs which borrow more freely, like in the EPL, hire more playing talents, and obtain better results than others. Therefore, research’s mixed results show debt-gambles can result in completely opposite results, hence the term ‘gamble’.

According to Szymanski (2013), ‘debt-gambles’, like in Gerrard’s (2004) case study, do not create team-success because managers occasionally misinterpret player talent before signings, relating to a statement by Quirk and Fort (1999, p. 85):

‘If general managers really were perfect judges of talent, there would be no need to play the league schedule to determine the league champion – we’d simply award the title to the team with the highest payroll.’

However, Szymanski (2013) also mentioned, that even if managers had perfect judgements, players would still envy another player if they were on higher salaries, and this envy creates inabilities to cooperate between equally talented players, leading to no team-success. This heavily relates to the Equity Theory defined by Padgett (2012), whereby individuals are less interested in their absolute life position, and more interested in their situation relative to others. Vöpel (2011) also stated players can unexpectedly have poor fitness or get injured. Therefore, large debate over high EPL wages has originated from individuals who do not believe TPs follow wage increases, causing many to believe wage increases are just a result of player’s ‘insatiable greed’ (Morrison, 1996). However, origins of support for this debate arise when team-success follows, hence Forbes’ headline ‘Premier League Wages Are a Disgrace – Except When Your Team’s Winning’ (Forbes, 2019). Furthermore, despite disbelievers, the wages-TP relationship is significantly supported within’ research. Some researchers, like Hall *et al.* (2002), suggested this relationship has backwards causation, however, the favoured explanation is the direct relationship, whereby increased investment into human capital ‘buys success on the field’ (Carmichael *et al.*, 2011) as it increases TPs (Garcia-del-Barrio and Szymanski, 2009; Carmichael *et al.*, 2011). This is because player wages ‘systematically reflect’ player skills and performances (Carmichael *et al.*, 2011). However, despite heavy support, questions remain over the relationship’s test reliability, as with Hall *et al.*’s (2002) Granger Causality test, which is considered very weak (Szymanski, 2013), and Garcia-del-Barrio and Szymanski’s (2009) unbalanced panel data set, producing bias (Iram *et al.*, 2016).

Furthermore, although debt-fueled, borrowing for short-run win-maximisation (i.e. increased TPs), should create long-run FP according to Blanchard and Johnson’s (2013) EW concept, as heavily supported within’ research (Garcia-del-Barrio and Szymanski, 2009; Rohde and Breuer, 2016). Dobson and Goddard (1998) state this exists because improved

performances attract spectators, increasing income from matchday revenue, broadcasting rights, commercial sponsorships, and merchandising. International competitions are also considered a main factor in increasing these revenue streams (Samagaio *et al.*, 2009; Carmichael *et al.*, 2011; Rohde and Breuer, 2016), as increasing talent means teams become more likely to attend remunerative European competitions, hence the term, ‘superstar’ wage effect (Carmichael *et al.*, 2011). However, Carmichael *et al.* (2011) also mentions increased FP is driven by access to capital resources, for example, debt. With greater capital access, clubs obtain ‘sustained advantages’, whereby they have larger scopes to maximise wages impact on TPs. Moreover, although attending international competitions is considered the main influence, other variables do impact FP.

Nevertheless, despite criticisms of debts impact on FP through intertwined relationships, Garcia-del Barrio and Szymanski (2009) state:

‘...the business of soccer seems relatively easy to understand: performance generates revenue, and wages generate performance.’

However, as ‘debt-gambles’ have historically created over-investment (Dietl *et al.*, 2007) leading to debt fallacies because all teams cannot simultaneously succeed (Vöpel, 2011), a ‘G-14’ payroll cap was going to be introduced by UEFA in the 2005/06 season (Szymanski, 2013), meaning payrolls could not exceed 70% of revenue (Szymanski, 2013). Although, this was never introduced. This is because EPL debt fallacies were often related to what former US Vice-President, Al Gore, described as ‘inconvenient truths’, whereby as the scenario is expensive to address, there is natural tendencies to postpone any regulation (Hassan and Hamil, 2011, p. 14). However, continued worsening deficits and record high-debt levels (Vöpel, 2011) eventually caused UEFA to introduce Financial Fair Play (FFP).

Researchers doubted FFP’s ‘fairness’, as many believed ‘break-even requirements’ created trade-offs between both primary goals. Vöpel (2011) mentioned the debt-ceiling arising from the requirement would destroy competitive balance because clubs would not have access to external money, diminishing abilities to close the gap on national champions, as financing team-investments becomes beyond their means. UEFA attempted narrowing this gap by introducing the notation, ‘relevant income’, but because larger clubs still earn more, FFP may restore balance amongst leading European clubs, rather than poorer clubs (Vöpel, 2011; Grasso, 2011). Nonetheless, according to Vöpel (2011), the EPL would lose

competitiveness. Positive critiques refer to how the industry would move away from team-success originating from a club's financial capabilities (i.e. wage expenditure), to managerial and administrative abilities (Grasso, 2011), as wage expenditure can no longer be excessive (Peeters and Szymanski, 2012). However, after implementation, lower wage expenditure decreased squad talent, which decreased competition, therefore, fans became unattracted (Madden, 2015), causing decreased FP across all of Europe's top five leagues (Beyer, 2018). Additionally, as 'Brexit' created Pound Sterling to Euro depreciations, this meant EPL clubs had players requiring funds in Euros, therefore, clubs faced increased wage expenditure from inflated wages (Perry and Steenson, 2019). Furthermore, with 'Brexit' inflating wages, and FFP demanding decreased wages, EPL clubs struggled to obey FFP. Moreover, UEFA introduced FFP to reduce 'debt-gambles', however, it created 'unintended consequences' (Birkhäuser *et al.*, 2019), especially in the EPL. Therefore, debts impact on FP may have suffered through a diminishing wage-TP relationship created by FFP.

Differentially to FFP, other sports implemented salary caps like UEFA's 'G-14' idea, and resultantly, destroyed the wages-TP relationship (Szymanski, 2013). Whereby wages only account for 10% of variations in wins, in sports like American football (Szymanski, 2013). In the NFL and NHL, 'hard' salary caps have been implemented, whereby maximum payrolls cannot exceed 57% of total revenue (Szymanski, 2013). Differentially, in Major League Baseball (MLB), a 'luxury tax' is set, whereby clubs exceeding predetermined payrolls pay Competitive-Balance Taxes, and these taxes increase if done in consecutive seasons (MLB, 2020). Nevertheless, salary caps have diminished debts impact on FP through diminishing the wages-TP relationship.

Moreover, this paper adds to previous research, regarding how wage's impact on FP may have altered since FFP introduction and the modern-day productivity paradox, as this may have diminished since previous research. Additionally, it may support player investments in the current EPL wage debate, providing objective evidence to why EPL clubs undertake such large human capital investments. However, as EPL clubs are well-known to frequently favour debt-financing, instead of being swayed towards public funding, as mentioned, it also helps fill a gap regarding why EPL clubs may choose this capital structure in an attempt to influence FP. This gap will be addressed through using a debt-to-equity gearing ratio to measure capital structure, and football-operational turnover to measure FP. For a simplified representation of theoretical framework, see Appendix 1.

3 – Methodology and Research Method

This chapter outlines the research methodology and method employed to conduct the study. Therefore, the discussion of research methodology, data collection, data adjustment, and research methods are justified.

3.1 Research Methodology

Advocated by many economists, like Milton Friedman and John Maynard Keynes's father, John Neville Keynes, a logical positivist approach is where combinations of theory and factual knowledge (i.e. measurements) source hypotheses and create reliable conclusions providing trustworthy knowledge (Ethridge, 2004). This paper adopts this, using the EW theory (Blanchard and Johnson, 2013) and factual knowledge from the FAME database and EPL website. This approach was chosen because it argues against debates created by personal judgements and highlights the importance of objectivity in economic research by creating fact-based conclusions (Ethridge, 2004). This is significantly important with debt's impact on FP because the intertwined relationship between human capital investments and TP is heavily debated, therefore, this approach helps factualise the debate, providing objectivity. Additionally, this indicates an inductive approach (Ethridge, 2004), as conclusions are reached through previous literature and theories, as mentioned. Worth noting this is not pure positivism, but a modern view, as pure positivism disregards theory and only focuses upon factual knowledge (Ethridge, 2004).

3.2 Data Collection

As logical positivist approaches are adopted, quantitative data is gathered because it provides factual knowledge needed for reliable conclusions (Ethridge, 2004). Additionally, the scientific approach to collect quantitative data allows for objective conclusions, opposing the subjective nature originating from qualitative data (Bryman, 2016). Secondary data is used because it entails high-quality data gathered in short time-periods with minimal costs (Bryman, 2016). Therefore, as collection sources include the FAME database, containing original data according to a company's official filed documents (Bureau van Dijk, 2020), and the EPL website, the official website of the EPL (Premier League, 2020), secondary

data is considered high-quality, despite the study's short completion time-limit. Furthermore, other data types like primary data are unsuitable due to the data collection's lengthy process (Ethridge, 2004).

The FAME database provides intangible assets, total turnover, turnover from non-football operations, gearing ratios, and wage costs from the 2000/01 season to the 2017/18 season for 45 clubs.

Wage costs collected include all an EPL club's employees, not just players, as done in previous research because player wages account for the largest shares of wages (Szymanski, 2013). Additionally, Carmichael *et al.*'s (2011) wages adjustment is adopted, whereby wage costs are percentage shares of a club's total turnover in each season, because this captures the excessive wage-spending historically undertaken by clubs, demonstrating the EPL's expenditure control problem, as mentioned in Section 2.2 (Parliament. House of Commons, 2011). For this reason, normalising wage data is unnecessary, as this adjustment does this. Lags were also considered due to thoughts new player's take time to adapt, however, in the EPL they adjust 'almost instantly' (BBC, 2020), therefore, this was also unnecessary.

However, although literature describes human capital investments of wages as player talent indicators (Carmichael *et al.*, 2011), wages are technically just short-run costs according to Gillespie (2014), therefore, they are seen as a control variable. Furthermore, to measure player human capital investments, intangible assets are used like in Mnzava's (2013) study, because players are placed under intangible assets on balance sheets² (RSM, 2017; PwC, 2018), meaning this variable is more representative of player talent. Moreover, the relationship originating between intangible assets and FP should be positive, whereby higher player talent investments create increased TPs that coincide higher FPs. However, it may be, TPs do not have this impact, just intangible assets. In this case, it indicates human capital investments enhances FPs themselves, potentially through higher brand-management revenue streams (Rohde and Breuer, 2016).

² This is because players provide future economic benefits to clubs with their matchday performances, therefore, revenue can be generated through merchandising, gate receipts and so on (Mnzava, 2013). Furthermore, players are placed under intangible assets in forms of player registration costs, known as 'rights to use' (RSM, 2017).

To measure FP, Raja and Morrow's (2007) turnover adjustment is adopted, where turnover from non-football operations is taken from total turnover, leaving football-operational turnover. This is because total turnover contains wealthy benefactor's income, not connected with a club's market orientations (Ozawa *et al.*, 2004), therefore, this allows FP to be more representative than other FP measures in research (Raja and Morrow, 2007).

With usage of 2018 yearly turnover, each club's 2018 market share is calculated following Cooper and Nakanishi's (1988) formula (Figure 3.6.1). The clubs are split in half dependent on their 2018 market shares to determine club size (Appendix 3), whereby a club size dummy variable can be created: 1 = large club and 0 = small club. A robustness test is undertaken afterwards to determine whether this is because larger clubs follow a debt-fueled EW concept. This is because larger clubs may have larger capital resources access, therefore, may invest significantly more debt (Carmichael *et al.*, 2011), meaning extents of debt's impact on FP differs depending on club size. Furthermore, the debt-FP relationship in large clubs is expected to be stronger.

The capital structure measure, gearing ratios, are collected to capture club's debt-to-equity compositions, similar to Wilson *et al.* (2013), because they emphasise an EPL club's debt-dependency, therefore, providing good capital structure representations within the industry. It is expected debt has an inverse relationship with FP, as according to the EW concept, in the long-run, FP increases result in total debt decreases.

The EPL website provides total points from the 2000/01 season to the 2017/18 season. Total points are adjusted to percentage shares of total points achieved by all clubs during the season, as commonly used in football industry research, because it regards club's forms throughout the season (Michie and Oughton, 2004; Carmichael *et al.*, 2011)³. For further information on wage costs, turnover, gearing ratios and total points adjustments, view Figure 3.6.1.

3.3 Sample

Data collection required a type of non-probability sampling known as convenience sampling to select clubs because there is no significant costs and time difficulties, like probability sampling (Bryman, 2016). Therefore, proving useful

³This opposes measures, like a club's total points as a percentage of total achievable points (Carmichael *et al.* 2011), which does not account for this.

considering the paper's short completion time-length. Although, due to this short time-length, qualitative data could not be collected, like managerial tactics, to explain debt-FPs qualitative relationship.

Initially, 45 clubs were selected because of competing in the EPL once from the 2000/01 season to the 2017/18 season, however, 9 clubs were omitted as they only competed once during this period, therefore, they provided poor TP data because of the league's nature of promotion and relegation. Furthermore, clubs that competed in the EPL more than once were left, ensuring enough TP data was available. No further adjustments could occur (i.e. include teams that competed three times, instead of twice) because this created a small data set (Delice, 2010). TP data only includes EPL seasons because this ensures conclusions are specific to the EPL, and no other leagues below. The sample also entailed gearing ratio data gaps because EPL clubs are not required to publish them.

Additionally, there is only 17 years of available data for each club. However, the 17 years collected is the most current data available, an aspect of secondary data stressed to be present for accurate conclusions within' secondary data research (Johnston, 2014). Furthermore, this leaves an unbalanced panel dataset of 36 teams from 45 initially chosen, which is still a well-covered sample size (Delice, 2010). Additionally, other studies used unbalanced panel data sets as well (Garcia-del-Barrio and Szymanski, 2009) and come to similar conclusions as balanced panel data research (Carmichael *et al.*, 2011).

3.4 Ethical Issues

Economic and Social Research Council's six key research ethics principles (ESRC, 2020), Data Protection Act (*Data Protection Act 1998*), and University of Derby's Good Scientific Practice (University of Derby, 2020) are adhered to. No ethical issues present because of secondary data usage from public databases: FAME and the EPL website. Ethics Form was filled out appropriately and submitted for approval to Research Ethics Committee before undertaking data collection. Ethics Form in Appendix 19.

3.5 Data Analysis

Descriptive statistics will summarise the variables, afterwards, panel models are used as they include more accurate parameter inferences than other methods because they account for more variability and degrees of freedom (Hsiao, 2007).

Intangible assets and football-operation turnover have natural logarithm adjustments. Others: gearing ratios, wage-turnover ratio and total points to total points achieved ratio are in percentage formats, therefore, natural logarithms are unnecessary. Econometric estimates of this paper are conducted by employing STATA, like in other studies (Carmichael *et al.*, 2014). Furthermore, variable labels for each model are demonstrated below:

Table 3.6.1 - Variable Labels

Label	Variable Used	Equation
FP	LN Football Operation Turnover	Total Turnover – Non-Football Operations Turnover
D	Gearing Ratio	$((\text{Short-term Loans and Overdrafts} + \text{Long-term Liabilities}) / \text{Shareholders Funds}) * 100$
W	Wage-Turnover Ratio	$(\text{One Club's Total Wage Costs in a Season} / \text{One Club's Total Turnover in a Season}) * 100$
IA	LN Intangible Assets	-
TP	Total Points to Total Points Achieved Ratio	$(\text{Total Points in a Season} / \text{Total Points Achieved by All EPL Clubs in that Season}) * 100$
CS	Club Size	$((\text{2018 Total Club Turnover}) / (\text{All 36 Clubs Total 2018 Turnover})) * 100$

Source: Cooper and Nakanishi (1988); Raja and Morrow (2007); Carmichael *et al.* (2011); Bureau van Dijk (2020).

Before analysis, variable stationarity is tested because a non-stationary series would produce spurious regressions (Stock and Watson, 2015). Therefore, Fisher-type (FT) unit-root tests based on Dickey-Fuller (DF) tests are undertaken because FTs allow for unbalanced panels (STATA, 2020).

Afterwards, Ordinary Least Squares (OLS) multivariate regression minimises sums of squared residuals ensuring estimates are close to the data collected (Studenmund, 2017). OLS model is:

$$\widehat{FP}_i = \hat{\beta}_0 + \widehat{\beta}_1 D_1 + \widehat{\beta}_2 W_2 + \widehat{\beta}_3 IA_3 + \widehat{\beta}_4 TP_4 + \widehat{\beta}_5 CS_5 \quad (1)$$

However, OLS includes simultaneity bias, therefore, considering alternative models is essential (Studenmund, 2017). This paper follows Carmichael *et al.*'s (2011) Fixed-Effect Model (FEM) or Random-Effect Model (REM) usage. FEMs estimate panel models including dummy variables allowing each period and cross-sectional entity to have different intercepts (Studenmund, 2017). Differentially, REMs assume intercepts for cross-sectional units are from distributions centered around mean intercepts, therefore, each intercept is independent from error terms (Studenmund, 2017). FEM and REM is respectively:

$$\widehat{FP}_{it} - \overline{FP}_i = \hat{\beta}_1(\Delta D_{it} - \overline{D}_i) + \hat{\beta}_2(\Delta W_{it} - \overline{W}_i) + \hat{\beta}_3(\Delta IA_{it} - \overline{IA}_i) + \hat{\beta}_4(\Delta TP_{it} - \overline{TP}_i) + \hat{\beta}_5(\Delta CS_{it} - \overline{CS}_i) + \hat{\mu}_{it} - \overline{\mu}_i \quad (2)$$

$$\widehat{FP}_{it} = \hat{\beta}_0 + \hat{\beta}_1 D_{it} + \hat{\beta}_2 W_{it} + \hat{\beta}_3 IA_{it} + \hat{\beta}_4 TP_{it} + \hat{\beta}_5 CS_{it} + \hat{v}_{it}, \text{ where } \hat{v}_{it} = \hat{a}_{it} + \hat{\mu}_{it} \quad (3)$$

However, as FEMs assume constant slopes across entities, whereby variables are not random, this model would be unrealistic with football industry research. For example, it would assume TP measures like the one used are fixed. However, this is a significantly unrealistic assumption, as if this were true, there would be no point competing in the league as total points each team achieves are already fixed. Therefore, as a REM suggests variables are random, this is much more realistic, considering the variables used in this paper to provide econometric estimates. However, to determine between a FEM or REM, a Hausman test is undertaken as commonly done in football industry research (Carmichael *et al.*, 2011), which determines whether FEM and REM coefficients are statistically different (Studenmund, 2017).

Furthermore, the hypothesis of this paper is as follows.

H_0 = Debt has no relationship with FP in the English Premier League.

H_1 = Debt has a relationship with FP in the English Premier League.

4 – Analysis and Findings

This chapter includes findings from descriptive statistics and econometric estimates, with significant emphasis on whether the debt-fueled EW concept is followed using debt financing, and the main hypothesis is met.

4.1 Descriptive Statistics

Table 4.1.1⁴ - Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum	DF Results
FP	63665.0	79380.0	-71712.0	554859.0	0.0031
D	202.7	199.6	1.0	976.0	0.0000
W	306.9	1256.4	0.0	12399.0	0.0000
IA	36079.1	56966.9	4.0	489307.0	0.0085
TP	5.0	1.6	1.1	9.6	0.0033

Source: Author's own calculations

View Table 3.6.1 for variable label reminders. Firstly, DF test results⁵ in Table 4.1.1 suggest rejecting null hypothesis and accepting the alternate hypothesis, indicating stationary data at ordinary level, therefore, regressing the original data will not produce spurious regressions.

⁴Football Operation Turnover and Intangible Assets are in millions, without natural logarithms.

⁵ DF results show p-values from tests with no trend.

On Table 4.1.1, mean operational turnover is £63,664,960, supporting the 2010-12 Football Governance Report, that generating revenue is not an EPL problem (Parliament. House of Commons, 2011). However, as some clubs faced multiple relegations since their last EPL involvement, operational turnovers range widely within the sample, whereby some are even negative, seen from high standard deviations, and minimum and maximum values, -£71,712,000 and £554,859,000, respectively. This is because with relegations, income from revenue streams depreciates, for example, matchday attendances may decrease, decreasing matchday revenue. However, regarding the significantly high standard deviation, this may explain why some football clubs do not go toward public funding as it unnecessary for them in doing so.

Gearing ratios mean is 202.7%, emphasising significant debt usage within club operations. Further emphasised through a significantly large maximum value of 976%, presumably because this club has continued 'chasing the dream' (Wilson and Joyce, 2008, p. 10) and not yet achieved it. Hence why many become like Leeds United in 2007 (Gerrard, 2004). However, standard deviations indicate large spreads, as demonstrated through minimum and maximum values, 1% and 976% respectively. This could possibly be club size impacting capital resource access, as larger clubs may have greater access (Carmichael *et al.*, 2011) due to debt settlement reliability, opposed to smaller clubs who may be unreliable and reluctant with large debt. This links to above, whereby relegations may create unreliable revenue streams, possibly creating reluctance in smaller clubs.

Mean wage costs as total turnover shares are 306.9%, highlighting EPL clubs' excess wage spending and emphasising expenditure control is an EPL problem (Parliament. House of Commons, 2011). Additionally, being more than 100%, suggesting wage costs are above earnings, it indicates most expenditure originates from debt, not equity. As standard deviation is large, indicating large spreads, this could possibly be because some clubs may have larger access to capital resources (Carmichael *et al.*, 2011) as explained above, therefore, investments differ from club-to-club.

Mean intangible asset holdings are £36,079,110, stressing the high values which player talent is often judged to be worth. However, as with other variables, intangible holdings range widely, seen from the significantly large standard deviation, and minimum and maximum values, £4,000 and £489,307,000, respectively. This accentuates size difference amongst clubs in the sample, hence why a club size dummy variable was necessary.

Points as total points percentages has a mean value of 5%. However, this differs from other variables with a low standard deviation suggesting small spreads. Further advocating, EPL competition is relatively balanced as club's competitive market share according to points won is relatively indifferent, opposing declined EPL competitiveness findings (Madden, 2015; Beyer, 2018). However, minimum, and maximum values still range widely from Derby County Football Club achieving 1.1% in 2008 and Manchester City Football Club achieving 9.6% in 2018, accentuating competition may still not be strongly balanced amongst some teams.

4.2 Regression Model

Table 4.2.1 – OLS, FEM and REM Results

	OLS FP	FEM FP	REM FP
D	-0.00104*** (-3.96)	-0.00105** (-2.89)	-0.00104*** (-3.88)
W	-0.000706*** (-16.69)	-0.000737*** (-17.05)	-0.000714*** (-16.93)
IA	0.342*** (7.71)	0.345*** (7.24)	0.345*** (7.78)
TP	0.0414 (1.12)	-0.0244 (-0.43)	0.0339 (0.87)
CS	0.401** (2.67)	0 (.)	0.394* (2.41)
Observations	128	128	128
Adjusted R-squared	0.796	0.732	0.779

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Source: Author's own calculations

Worth noting, other TP measures were regressed, like goal difference (Carmichael *et al.*, 2014) and total points as shares of total achievable points (Carmichael *et al.*, 2011), however, these did not fit and were omitted. Additionally, OLS model will not be considered due to simultaneity bias mentioned.

The Hausman test concluded insignificance, therefore, the null hypothesis was accepted suggesting REM is more appropriate, consistent with Carmichael *et al.*'s (2011) study.

Moreover, the REM is⁶:

$$\begin{aligned}
 FP_{it} = \beta_0 & - 0.001_1 D_{it} - 0.001_2 W_{it} + 0.345_3 IA_{it} \\
 & \quad (3.88) \quad (16.93) \quad (7.78) \\
 & + 0.034_4 TP_{it} + 0.394_5 CS_{it} + v_{it} \\
 & \quad (0.87) \quad (2.41)
 \end{aligned} \tag{4}$$

With 99% significance, debt has an inverse relationship with FP in the EPL, whereby a 1% increase in debt, decreases FP by 0.001% (3 d.p). Therefore, debt has a significantly small impact on FP, however, whether consistent with the EW concept (Blanchard and Johnson, 2013) depends on other variable's significance. This result cannot be compared to other studies regarding EW concepts because of the present gap in this area.

Similarly, with 99% significance, wage costs have an inverse relationship with FP, whereby a 1% increase in wage costs decreases FP by 0.001% (3 d.p). This significantly small inverse relationship, similar to debt, opposes studies who found direct relationships (Garcia-del-Barrio and Szymanski, 2009; Carmichael *et al.*, 2011), emphasising wages may not 'systematically reflect player's skills and performances' (Carmichael *et al.*, 2011) and are simply just short-run costs (Gillespie, 2014). Additionally, the inverse relationship could be resultant of the modern-day productivity paradox (Brynjolfsson *et al.*, 2017), whereby increasing wages now have opposite impacts on FP due to recent technological advancements deteriorating productivity. For example, football players may be more focused on social media performance (i.e. number of

⁶ Regression constants not included in equation because maintaining focus upon specific independent variables, and numbers below in brackets are t-statistics. Additionally, investigating cross-sectoral effects between variables was considered, however, the REM assumes these are uncorrelated, therefore this was unnecessary.

followers), instead of playing performances. This highlights past findings may be unrepresentative of today's wages and FP relationship. Therefore, placing more prominence on wages as a control variable and intangible assets as a more accurate indication of player human capital investment.

With 99% significance, intangible assets have a direct impact on FP, whereby a 1% increase in human capital investment increases FP by 0.345% (3 d.p). This relatively large impact suggests high player talent investment strongly increases FPs. Similarly, Mnzava (2013) discovered at 99% significance, a 1% increase in human capital investment increased FP by 0.213%. This direct link between intangible assets and FP could exist because higher human capital investment enhances brand-management (Rohde and Breuer, 2016), which enhances revenue streams elsewhere. For example, buying an incredibly talented player may enhance merchandising sales through resultant shirt sales. Although, despite estimating a slightly larger impact of intangible assets on FP than Mnzava's (2013) study with similar significance, it is likely Mnzava's (2013) estimates are more representative as they included 194 observations, whereas this paper includes 128.

Moreover, the difference of impact between intangible assets and wage costs provides evidence wages do not necessarily 'reflect player's skills and performances' (Carmichael *et al.*, 2011) as wages would have a similar direct relationship. Therefore, this places prominence on using intangible assets as a more accurate indicator of player human capital investment. However, if this was not the case, and wages were still assumed to 'reflect player's skills and performances' (Carmichael *et al.*, 2011), this supports Szymanski's (2013) criticisms of wage's reflecting player talent, mentioning managers could misinterpret talent before signings, as this shows players signed on high wages, could still have low talent. Nonetheless, this suggests human capital investments increasing player talent have positive impacts on FP, supporting other studies (Garcia-del-Barrio and Szymanski, 2009; Carmichael *et al.*, 2011; Mnzava, 2013).

Although TPs have a direct relationship with FP, whereby a 1% increase in TPs increases FPs by 0.034% (3 d.p), this is insignificant, therefore, TPs are not consistent with FPs. This opposes studies like Carmichael *et al.*'s (2011) who used this indicator to measure TPs impact on FP, and found at 99% significance, a 1% increase in TPs creates a 0.77% increase in FPs. However, this could support Szymanski's (2013) criticisms, whereby increased human capital investment does not always increase TPs, because players may have poor cooperation on the field, there is talent misjudgments, or simply, because players may become ill or get injured.

Regarding club size, with 95% significance, if a club is considered large, it has a 0.394% larger direct impact than smaller clubs on FPs. However, to identify whether this is because larger clubs may follow a debt-fuelled EW concept, a robustness test was undertaken for large football clubs, whereby a Hausman test selected REM.

Table 4.2.2 – Large Club’s OLS, FEM and REM Results

	OLS FP	FEM FP	REM FP
D	-0.000982** (-3.20)	-0.00128** (-3.04)	-0.000988** (-3.04)
W	-0.000709*** (-15.01)	-0.000735*** (-15.35)	-0.000722*** (-15.45)
IA	0.344*** (6.66)	0.345*** (6.36)	0.350*** (6.82)
TP	0.0389 (0.87)	-0.0954 (-1.29)	0.0142 (0.28)
Observations	95	95	95
Adjusted R-squared	0.800	0.751	0.789

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Source: Author’s own calculations

Results are quite consistent, whereby debt and wages have significant indirect relationships with FP, whereas intangible assets have a significant direct relationship with FP. Additionally, TP is also insignificant within’ large clubs. Therefore, larger clubs may have a larger impact on FP than smaller clubs because they may use debt to invest in human capital, described above. This may support Carmichael *et al.* (2011), whereby larger clubs may have larger capital to invest in more talent. However, as the EW concept is cut short because of the uncertainty factor in a club’s TP making the variable insignificant in this regression, further research into TP indicators would be beneficial.

Estimations also undertaken for small clubs, however, limited observations could have created estimation biases. Therefore, results will not be discussed in this dissertation. Additionally, this is the reason the analysis was not split dependent on club size, and instead, a club size dummy variable was created.

Furthermore, independent variables in equation 4 account for $0.779(R^2)$ of changes in an EPL club's FP from the 2000/01 season to the 2017/18 season, suggesting the independent variables chosen account for significant amounts of variation in FP within' football clubs. This is also similar in large clubs whereby independent variables account for $0.789(R^2)$.

Overall, this paper's second objective has been met, as debt has an inverse relationship with FP, however, not necessarily through a debt-fueled EW concept, as results confirm this concept is not consistent with the EPL from the 2000/01 season to the 2017/18 season because TPs (i.e. productivity) did not follow, further emphasising Szymanski's (2013) criticisms. In fact, as the EW concept was cut short, debts inverse relationship with FP could be a result of debt-fueled human capital investments enhancing revenue streams through brand-management (Rohde and Breuer, 2016), as described above.

Additionally, results are consistent with large clubs, suggesting they may have a larger impact on FP than small clubs because of greater human capital investments. Furthermore, this paper's third objective has been met.

5 – Conclusions and Recommendations

Econometric estimations are considered successful as all variables were significant, apart from TP. Therefore, this helps fill a gap regarding how a club's capital structure may potentially be rearranged to impact FP in football, through human capital player investments funded with debt. Econometric estimations were successful regarding club size, demonstrating how capital structure rearrangement may have a greater impact on FP in larger clubs. Furthermore, the research question is answered and the aim is achieved, whereby debt does have a significant inverse relationship with FP, however, it could be through debt-fueled player human capital investments enhancing club revenues (Rohde and Breuer, 2016) rather than an EW concept. Therefore, further research is recommended into this area, using many different TP indicators.

Regarding the EPL wage debate explored in Chapter 2, whereby this paper's first objective was met, this paper supports the EPL wage debate, producing objective evidence supporting increased player human capital investments as a possible route to higher FPs. However, these higher FPs are not necessarily through higher investment resulting in increased productivity (i.e. team-success), as with player's you essentially get what you pay for, demonstrated through insignificant TP variables. Additionally, this paper places more prominence with wages as a control variable, and intangible assets as a more accurate indication of player human capital investment. Furthermore, this validates studies like Mnzava (2013), suggesting increased player human capital investments creates enhanced FP, however, it also opposes studies like Carmichael *et al.* (2011), providing evidence wage costs may not 'systematically reflect a player's skills and performances', and intangible assets are more accurate player talent indicators.

Additionally, as wage's inverse relationship opposes past research (Hall *et al.*, 2002; Carmichael *et al.*, 2011), this paper recommends further research into the modern-day productivity paradox's (Brynjolfsson *et al.*, 2017) impact on the wage-FP relationship, as this is not heavily researched and could explain wage's opposing relationship. This could be feasible by using a variable covering technological advancements and testing it against player productivity. Moreover, this paper also recommends further research into how a club's capital structure could impact FP within' other leagues to see if results are consistent internationally and domestically, feasible through undertaking similar research methods used in this paper. However, inclusions of capital resource access indicators are recommended in further research, as explaining potential links between club size and FP was based upon Carmichael *et al.*'s (2011) explanation. Therefore, other research could incorporate access to debt financing indicators suggested by the Organisation for Economic Co-Operation and Development (2011). Additionally, as only the quantitative side of the debt-FP relationship was concluded, research into debt's qualitative impact on FP would allow for other explanations. Although qualitative data collection may prove difficult, interviews or questionnaires within' football clubs could be undertaken for a longitudinal study to gather data on variables like managerial tactics.

Reflecting upon this paper, a larger time-length of data could be sourced to provide more observations within' the econometric estimations to increase representativeness. Additionally, more variables could have been used to account for missing data gaps in debt and TP data, which would have also increased the paper's representativeness.

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Appendix**Appendix 1 – Theoretical Framework**

Author(s)	Findings
Mnzava (2013)	Intangible assets have a positive relationship with sporting performance and financial performance in UK football clubs.
Vöpel (2011)	Uncertainty of outcome is one of the most important determinants of football demand.
Plumley <i>et al.</i> (2018)	Uncertainty of outcome is essential in maintaining high demand that creates football's high market value.
Buraimo and Simmons (2008)	U-shape relationship between win probability and attendance, therefore, fans attracted to games if team has low winning probability because of uncertainty of outcome and attracted to high winning probability games because their team is likely to win.
Alchian (1950)	Profit-maximisation is an aim originating from natural biological processes.
Atkinson <i>et al.</i> (1988)	In the NFL, behaviour is consistent with utility-maximisation.
Dutta and Radner (1999)	Profit-maximising firms are significantly likely to fail in finite time.
Vrooman (2009)	Sportsman owners aim for win-maximisation, but profit-maximising owners aim to optimise inputs and outputs.

Késenne (2006)	Win-maximisation clubs hire more playing talents but also, charge higher ticket prices.
Samagaio <i>et al.</i> (2009)	Sport managers aim for win-maximisation, but also, to achieve a minimum level of profit.
Garcia-del-Barrio and Szymanski (2009)	Behaviour in Spanish and English football leagues is consistent with win-maximisation subject to a zero-level profit constraint. Any team adopting profit maximisation strategies would likely be relegated.
Zimbalist (2003)	In professional sport's leagues, owners often maximise global, long-term returns, which is quite different from annual operating profits.
Rapp (2004)	Increased levels of spending in one campaign follows performance below expectations in the previous campaign.
Gerrard (2004)	Leeds United is a classic example of a club having overly ambitious objectives, therefore, they suffered financial crisis when they failed to achieve team-success. Wage costs quadrupled after 1999. Gearing ratios became 98.34%. Therefore, they eventually received a winding-up order from its debtors.
Drut and Raballand (2012)	Club's allowed to run larger deficits and borrow more freely, like in England, Spain, and Italy, hire more playing talents and therefore, achieve better sporting results than clubs of equivalent size.

Szymanski (2013)	Increasing payrolls does not create increased sporting performances because managers occasionally misinterpret player talent and players envy one another if on differing payrolls.
Vöpel (2011)	Increasing payrolls does not create increasing sporting performances because players can unexpectedly get injured or have poor fitness.
Morrison (1996)	Fans in the United States are distressed that their favourite recreational activities are just another commercial enterprise. They relate this to the greed of professional athletes within' the enterprises.
Hall <i>et al.</i> (2002)	Granger causality test identified causality between performance and payroll runs in both directions, not just from wages to sporting performance.
Carmichael <i>et al.</i> (2011)	Success on the field is systematically linked to the skills and performances of players.
Rohde and Breuer (2016)	Sporting success is driven by team investments.
Dobson and Goddard (1998)	Improvement in performances is rewarded with increases in attendance which increase revenue shares.
Samagaio <i>et al.</i> (2009)	Participation in UEFA competitions enhances growth of income for clubs.
Carmichael <i>et al.</i> (2011)	Financial performance from attending high paying UEFA competitions originates from a superstar wage effect, whereby the more talents a club has, the more likely they are to attend.

	Additionally, some clubs have access to resources that others do not, resulting in them getting a sustained advantage.
Rohde and Breuer (2016)	Financial success is driven by national, as well as international sporting success. Additionally, it is heavily driven by brand management.
Dietl et al. (2007)	Clubs have historically overinvested in playing talent arising.
Vöpel (2011)	Some clubs face crisis's because all clubs cannot simultaneously succeed due to the nature of competition.
Szymanski (2013)	UEFA considered introducing a G-14 payroll cap in the 2005/06 season where payrolls could not exceed 70% of revenue.
Vöpel (2011)	The debt-ceiling arising from FFP violates a goal of FFP itself, to restore competitive balance, as clubs will not have access to capital resources so they cannot close gaps on national champions. Therefore, FFP may restore competition amongst larger clubs, but not smaller clubs. Furthermore, EPL loses competitiveness.
Grasso (2011)	FFP places more emphasis on sporting-success arising from managerial and administrative abilities of a football club, instead of financial capabilities.
Madden (2015)	FFP decreases team qualities due to decreased investments, which leads to Pareto disimprovement for all fans.

Beyer (2018)	FFP has decreased revenues across Europe's top 5 leagues as a result of decreased competition.
Plumley <i>et al.</i> (2018)	FFP has neither declined, or increased EPL competitiveness.
Perry and Steenson (2019)	EPL clubs faced inflated wages as a result of 'Brexit' depreciating the Pound to Euro exchange rate, because players began asking for wages in Euros.
Szymanski (2013)	Wages only account for 10% of win variations in basketball and American football as a result of their salary cap regulations.

Appendix 2 – Definitions of Variables

Description	Equation
Market Share (%)	$= ((2018 \text{ Total Club Turnover}) / (\text{All 36 Clubs Total 2018 Turnover})) * 100$
Debt-to-Equity Gearing Ratio (%)	$= ((\text{Short-term Loans and Overdrafts} + \text{Long-term Liabilities}) / \text{Shareholders Funds}) * 100$
Total Points to Total EPL Points in a Season (%)	$= (\text{Total Points in a Season} / \text{Total Points Achieved by All EPL Clubs in that Season}) * 100$
Wage-Turnover Ratio (%)	$= (\text{One Club's Total Wage Costs in a Season} / \text{One Club's Total Turnover in a Season}) * 100$
Football Operation Turnover	$= \text{Total Turnover} - \text{Non-Football Operations Turnover}$

Appendix 3 – Market Share Club Split

Large Clubs	Club	2018 Market Share (%)
	MANCHESTER UNITED FOOTBALL CLUB LIMITED	12.76306743
	MANCHESTER CITY FOOTBALL CLUB LIMITED	11.17496623
	THE LIVERPOOL FOOTBALL CLUB AND ATHLETIC GROUNDS LIMITED	10.16194073
	CHELSEA FOOTBALL CLUB LIMITED	9.436319087
	THE ARSENAL FOOTBALL CLUB PUBLIC LIMITED COMPANY	8.677247756
	EVERTON FOOTBALL CLUB COMPANY, LIMITED	4.223838734
	NEWCASTLE UNITED FOOTBALL COMPANY LIMITED	3.985716222
	WEST HAM UNITED FOOTBALL CLUB LIMITED	3.915400413
	LEICESTER CITY FOOTBALL CLUB LIMITED	3.547744077
	SOUTHAMPTON FOOTBALL CLUB LIMITED	3.314266115
	BURNLEY FOOTBALL & ATHLETIC COMPANY LIMITED(THE)	3.103742949
	AFC BOURNEMOUTH LIMITED	3.011387856
	WATFORD ASSOCIATION FOOTBALL CLUB LIMITED(THE)	2.863141855
	STOKE CITY FOOTBALL CLUB LIMITED	2.8401424
	SWANSEA CITY ASSOCIATION FOOTBALL CLUB LIMITED(THE)	2.832081426
	WEST BROMWICH ALBION FOOTBALL CLUB LIMITED	2.78588155
	ASTON VILLA FC LIMITED	1.594643762
	MIDDLESBROUGH FOOTBALL & ATHLETIC COMPANY (1986) LIMITED	1.384343891
Small Clubs		
	NORWICH CITY FOOTBALL CLUB PLC	1.376997464
	HULL CITY TIGERS LIMITED	1.243310341

	QUEENS PARK RANGERS FOOTBALL & ATHLETIC CLUB LIMITED(THE)	0.935899179
	LEEDS UNITED FOOTBALL CLUB LIMITED	0.909639607
	FULHAM FOOTBALL CLUB LIMITED	0.854485575
	THE DERBY COUNTY FOOTBALL CLUB LIMITED	0.661312483
	WOLVERHAMPTON WANDERERS FOOTBALL CLUB (1986) LIMITED	0.589500593
	BIRMINGHAM CITY FOOTBALL CLUB PLC	0.419304626
	THE READING FOOTBALL CLUB LIMITED	0.399632277
	IPSWICH TOWN FOOTBALL CLUB COMPANY LIMITED	0.382483169
	THE BLACKBURN ROVERS FOOTBALL AND ATHLETIC LIMITED	0.200363213
	CHARLTON ATHLETIC FOOTBALL COMPANY LIMITED	0.163162153
	WIGAN ATHLETIC A.F.C. LIMITED	0.148938218
	TOTTENHAM HOTSPUR LIMITED	0.085008665
	SUNDERLAND ASSOCIATION FOOTBALL CLUB LIMITED(THE)	0.014089957
	CRYSTAL PALACE F.C. (2000) LIMITED	
	PORTSMOUTH CITY FOOTBALL CLUB LIMITED	
	THE BOLTON WANDERERS FOOTBALL & ATHLETIC COMPANY LIMITED	

Worth noting market shares could not be calculated for Crystal Place, Portsmouth, and Bolton due to missing 2018 turnover data resulting from them going into administration.