ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Master's Thesis Strategy Economics

The Effects of Managerial Turnover on Organizational Performance: Evidence from Professional English Football Leagues

MASTER THESIS

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Date final version: 28.06.2021

MSc Economics and Business | Strategy Economics

Abstract

This paper analyzes the potential effects of managerial turnover on the organizational performance of football clubs. Additionally, this research provides insights into how incoming directors try to achieve this. The empirical analysis uses data of 18 seasons of English professional football leagues to investigate if and how managerial turnover affects the ranking, revenue, wage-to-turnover ratio, and the debt-to-asset ratio. I find that managerial turnover does not have clear effects on the organizational performance of football clubs. However, I do find that incoming directors use the wage-to-turnover ratio to improve the sporting performance.

Keywords: Managerial Turnover, Organizational Performance, Football Industry.

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Table of Content

1. Introduction

In 2018, the aggregated value of the top 32 European football clubs grew by 9 percent in comparison to a year before with a combined enterprise value of 32.5 billion EUR (KPMG, 2018). The English Premier League is the main supplier of this top 32 with nine Premier League clubs included, responsible for 42.5 percent of the total enterprise value (KPMG, 2018). Manchester United tops the list with an enterprise value of 3.26 billion EUR. Overall, the European football industry is growing at a rapid pace. Over the course of eight years, the European football industry grew from 13 billion euros in 2010 to 21 billion euros in 2018 (KPMG, 2020). Due to the increasing commercialization of the football industry, the need for proper functioning management teams within those football clubs seems to be more important than ever.

Besides increasing levels of commercialization, the professional football industry is experiencing a strong rise in foreign-owned clubs and hostile takeover bids. Where these changes of ownership often lead to changes within the board of such a club (Franks & Mayer, 1996), new board directors can play a vital role in establishing successful strategic change and achieving successes (Holzmayer & Schmidt, 2020). One illustrative example of the potential effect of a change of the director's regime on organizational performance within the football industry is the English football club Chelsea. In 2003, Rowan Abramovich, a Russian billionaire, bought Chelsea and replaced the complete board of directors. One of the key changes within the board that Abramovich made, was recruiting Peter Kenyon from Manchester United as the new CEO to increase the financial performance of Chelsea. After Abramovich and the new board entered Chelsea, Chelsea was able to attract players with high salaries and the sporting performance of the club improved. Prior to this regime change, Chelsea was playing in the semi-top of the Premier League. But since 2003, they have won the most prices of all Premier League clubs.

While extensive research is done regarding head coach turnover and the performance of football clubs (Van Ours & van Tuijl, 2016; de Dios Tena & Forrest, 2007; Paola & Scoppa, 2012), no research has been conducted on the effects of changes within a football club's board of directors on its organizational performance. Additionally, Rohde and Breuer (2016) find that the number of acquired professional clubs is strongly increasing. Because of this trend within the football

industry and the strong positive effect of ownership changes on managerial turnover (Franks & Mayer, 1996), this study is highly relevant. Therefore, the research question is as follows:

What is the effect of managerial turnover on a football club's performance?

This study contributes to the existing literature in explaining the effects of managerial turnover on a football club's organizational performance. This study analyzes the impact of managerial turnover on organizational performance, split into financial as well as sporting performance. The main goal of this study is to gain knowledge on how managerial turnover affects organizational performance in the football industry. Furthermore, this paper provides additional understanding of how new directors try to alter their organizational performance, which remains unclear in current literature. This study is structured into seven sections. Section 2 analyzes the existing literature on the football industry, the impact of top executives and management in football. Subsequently, section 3 covers the hypotheses tested throughout this study. Section 4 discusses the data and methodology used throughout this study. Section 5 provides the reader with empirical results, followed by the discussion of this study in section 6. The final section provides the concluding remarks.

2. Theoretical Framework

In examining the literature on managerial turnover in the football industry, firstly, it is important to gain a comprehensive overview of the football industry in general, as it has experienced increased levels of commercialization in almost every professional league globally. If the reader is familiar with the football industry, this section can be skipped. Secondly, it is important to review the existing literature on managerial turnover to gain a better understanding of what the effects of such turnover are. Lastly, I study the literature on the management of football clubs because football clubs deviate from 'regular' companies in multiple ways (Michie & Oughton, 2005). Overall, this section is used to construct the hypotheses in section 3.

2.1 Comprehensive Overview of the Football Industry

In the past two decades, there has been a structural change in the ownership of football clubs, together with a shift in their financial incentives and objectives (Rohde & Breuer, 2016).
The English football community experienced the first steps of commercialization in 1863 with the foundation of the Football Association. Followed by the foundation of the Football League, England became the first European country with a professional football league. From that point onwards, most football clubs turned into larger entities which attracted the attention of both private and public investors (Rohde & Breuer, 2016). Tottenham Hotspur was the first professional football club that floated its shares on the London Stock Exchange back in 1983. Between 1996-2007, 22 English professional football clubs followed Tottenham and got listed as well. These listings turned out to be unsuccessful, and in 2005, Manchester United was the first football club that delisted, and within two years, all English professional football clubs followed Manchester United (Millward, 2013). During the period of listings and delistings, private investors became increasingly interested in owning European Football clubs. This still holds as if today, where private investors are the most dominant concept in financing the European football industry (Rohde & Breuer, 2016). Both the amount of money invested, together with the number of these private investors in European clubs have increased strongly. Simultaneously with this upcoming trend of private investors, other mentionable trends within the football industry occurred.

First of all, due to the increased levels of prize money of the UEFA Champions League and UEFA Europa League, Pawlowski et al. (2010) show that top football clubs have more reason

to initially focus on achieving international success rather than national success. Pawlowski et al. (2010) argue that revenue deriving from participating in the Champions League enables clubs to further dominate the national competition and consequently secures future participation in the Champions League, which creates a vicious cycle. Andrea Sartori, Global Head of Sports at KPMG, argues that this transition of focus reflects itself in the increasing team market values of top European clubs. This so-called 'vicious cycle' by Pawlowski et al. (2010) can, for example, be related to Juventus. This club increased their team market value by 151 percent between the seasons 2011/12 and 2017/18, which led to the participation in two UEFA Champions League finals and dominating the Italian Serie A by winning the competition for nine consecutive times.

Secondly, creating a global brand that puts the club in a position where they can generate significant amounts of sales from tickets, merchandise, and international broadcasting, is more lucrative than ever (Rohde & Breuer, 2016; Gladden & Milne, 1999; Pawlowski & Anders, 2012; Morrow & Howieson, 2014). Especially the amount of revenue that is generated by broadcasting fees is becoming more crucial (Morrow & Howieson, 2014). Illustratively, for the period 1992-1997, Sky Sports paid £304 million for an exclusive deal to broadcast the Premier League games. For the period 2016-2019, Sky Sports and BT Sports almost paid 17 times more by committing to a £5.136 billion deal (SportsPro, 2018). The substantial increase of this broadcasting deal can largely be explained by the increasing value of international tv rights. Over the seasons 2010-2019, 42% of all the EPL broadcasting revenue derived from international tv rights (KMPG, 2019).

2.2 The Impact of Top Executives

C-suite executives and other top executives are considered key factors in the determination of a firm's strategy and practices. In the decision-making process concerning financing, commercial, investment or other strategic related matters, these managers are likely to use their own style in doing so. This results in imprinted personal marks on the companies they manage (Bertrand & Schoar, 2003). Bertrand and Schoar (2003, p. 1204) argue that "the realizations of all investment, financing and other organizational strategy variables appear to systematically depend on the specific executives in charge". Therefore, the individual efficiency of managers is likely to vary, and so is the effect of managers on the organizational performance. In addition,

Hambrick and Mason (1984) suggest that top management teams are a determining factor for organizational outcomes, and it is likely that when turnover occurs at the top of a firm, consequences will follow for organizational outcomes. Additionally, whenever turnover in a top management team occurs, it is most likely that the level of cooperative interaction between hierarchal levels does not remain identical. Because the level of interaction between hierarchal levels is a driver of organizational performance (Peeters et al., 2020), managerial turnover could positively or negatively affect organizational performance. This managerial turnover can be initiated due to several reasons, including retirement, unfavorite appointments of board members, poor firm performance, or dismissal (Hermalin & Weisbach, 1988; Asthana & Balsam, 2007).

Existing literature finds contradicting results regarding managerial turnover and organizational performance. On the one hand, existing literature suggests that managerial turnover has a positive effect on a firm's performance (Bonnier & Bruner, 1989; Boeker, 1997; Denis & Denis, 1995; Lazear et al., 2015). Denis and Denis (1995) find that organizational performance, measured as the operating income to total assets, decreases three years before managerial turnover and increases after turnover. This effect differs based upon what the determinant of the turnover is. Where decreases in operating performance precede forced resignations, this is not likely to happen in the case of voluntary resignations. Still, both forms of managerial change lead to a substantial degree of post turnover restructuring of a firm, such as asset sales, layoffs, cost reduction policies, declines in employment, capital expenditures, and total assets (Denis & Denis, 1995). These results are similar to findings by Huson et al. (2004) and Khurana and Nohria (2000). Cornfort and Simpson (2002) give a possible explanation for this relationship and argue that boards characterized with high turnover rates are free of past biases, less path-dependent, and less constrained by their predecessors' policies and actions and, therefore, those boards are more effective in decision-making strategies. Another explanation for this positive relationship is given by Wincent et al. (2009) and Janis (1972), who argue that boards with high turnover rates may support enhanced learning and bring along fresh perspectives on project proposals. In line with the latter, Hambrick and Mason (1984) state that newcomers might have a positive impact on organizational performance because they bring in new ideas and have a better fit with the political and socio-economics environment (as cited in Boyne et al., 2011). In terms of increased organizational performance, Peeters et al. (2020) also argue that whenever the matching quality is high between managers, the organizational performance can also be

increased. Thus, whenever an increased level of matching quality follows managerial turnover, organizational performance can be improved.

However, current literature is also critical on the previous consensus of the positive effect of managerial turnover on an organization's performance. Van Ours and van Tuijl (2016) find a positive effect of managerial change on an organization's performance, however, this effect is likely due to prior bad performance. Van Ours and van Tuijl (2016) explain this effect by arguing that there is no difference in the change of performance between counterfactual replacements and football clubs that experienced managerial change. Despite that Van Ours and van Tuijl (2016) focus on head coaches, their findings show that the replacement of managers does not actually improve organizational performance. Therefore, the sacking of managers can be used to seek a scapegoat in times of bad performance rather than actually improving performance (Bruinshoofd & Ter Weel, 2003; Khanna & Poulson, 1995).

On the other hand, Khanna and Poulsen (1995) and Hannan and Freeman (1984) find a negative effect of managerial turnover on organizational performance. According to Hannan and Freeman (1984), organizational change, including managerial turnover, is more disruptive than adaptive. This disruptive change of the top management is most likely to cause destabilization within the top management of an organization, which will further destabilize organizational routines. Consequently, organizational performance will decrease. Furthermore, Boyne et al. (2011, p. 573) argue that "external partners and funders may be reluctant to provide support until the preferences and strategies of the new incumbents become clear, which may further destabilize internal operations". This will further cause a downfall in a firm's performance, which makes it more complex for incoming managers to stop this snowball effect.

2.3 Management of Football Clubs

First of all, Sherry and Shilbury (2009) argue that football clubs and subsequently board directors are not entirely comparable with mainstream businesses and its directors. They argue that football clubs are under constant influences by multiple stakeholders, including governments, sponsors, (inter)national associations, spectators, and media. Board directors of football clubs are working in high-pressure environments because on-pitch performance is visible to all these stakeholders. This strongly influences stakeholders' views and actions by shareholders (Söderman, 2013). Thereby, those performances are accessible for its stakeholder

on a weekly basis, which increases the level of interaction with their stakeholders (Carlsson-Wall et al., 2016; Michie & Oughton, 2005). In addition, boards have to deal with the conflicting interests of their stakeholders. On the one hand, especially fans, but also owners of clubs and other suppliers of capital, expect on-pitch performance. On the other hand, these owners and other suppliers of capital also want to protect their investment (Gerrard, 2000; Parnell et al., 2018). The consideration between sporting and financial performance might be the most distinguishing factor between football clubs and regular companies. Although football clubs can be either privately held or listed companies, their main goal is not profit maximization but finding a balance between profits and on-pitch performance (Michie & Oughton, 2005; Samagaio et al., 2009; Sloane, 1971). Michie and Oughton (2005, p. 518) describe that "the urge on the part of the board to seek playing success, potentially at the expense of outside shareholders and lenders, places a heavier burden than in other industries on corporate governance institutions as a means of protecting outside providers of finance". Besides the previous non-standard responsibility of a football club director, other non-standard responsibilities are include taking responsibility for the youth academy, sport science, scouting and medical departments (Parnell et al., 2018).

As a result of the non-standard goal of football clubs, a football club and subsequently the board of directors their performances are measured upon two criteria in current literature: financial performance and sporting performance. Sporting performance and financial performance should not be considered as two separate outcomes of an organization. Both performances are linked in current literature (Guzman & Morrow, 2007; Szymanski & Kuypers, 1999; Peeters & Szymanski, 2014).

Firstly, different measurements for sporting performance are used in the literature, such as points per game (Rohde and Breuer, 2016), win ratio (Plumley et al., 2017; Audas et al., 2002), and ranking (Galarotis et al., 2018; Kounetas, 2014; Wilson et al., 2013). Especially the rank can be considered as an essential driver of a football club's revenues (Peeters & Szymanski, 2014; Szymanski, 1998; Gerrard, 2005). The final rank of a club is an essential driver of four typical revenue streams, match-day income from ticket sales and catering at the stadium, media right sales, prize money from European competitions, and commercial income from sponsor deals (Peeters & Szymanski, 2014).

Similar to sporting performance measurements, multiple measurements of financial performance are used in current literature, with some examples being: operating margin (Gerrard, 2005), profitability ratios (Galariotis et al., 2018), and revenue (Guzman, 2006; Guzman & Morrow, 2007; Haas, 2003; De Heij et al., 2007; Rohde & Breuer, 2016). The use of profitability is being criticized because in general, the goal of a club is not profit maximization but finding a balance between the latter and sporting performance. In addition, profits may give a distorted view of the actual financial performance because it is common in the football industry that lenders are present within a club to ensure the continuity of a club (Investico, 2016).

Current literature presents a clear overview of challenges that directors of football clubs face and how the performance of those clubs can be measured, however, it does not shed light on how directors can affect organizational performance. Therefore, I focus on two frequently discussed topics in current literature, wages and debt, to explore whether incoming directors use them to change the performance of a football club.

First of all, current literature finds that in the football industry, wage expenditures are an important determinant of organizational performance (Galariotis et al. 2018; Haas, 2003; Haas et al. 2004; Barros and Leach, 2006; Ribeiro & Lima, 2012; Szymanski, 1998; Szymanski & Kuypers, 1999; Carmichael & Thomas, 2014). Players are considered the operating core of a football club and responsible for the on-pitch performance, and therefore, clubs pay high wages to their players. To illustrate, in the season 2010/11, Manchester City was one of the clubs where the total amount of wages paid exceeded the revenue they generated as they had a wage-to-turnover (WTT) ratio of 1.14. Moreover, the average WTT-ratio of all football clubs in the used dataset is 0.698, implying that almost 70% of all revenue is used to pay players and staff. A WTT-ratio that is close to 1 indicates that almost all revenue is used to pay staff cost. Obviously, a club has other costs and by consequence, the operating result is likely to be negative in case of excessive WTT-ratios. Currently, the UEFA advices clubs to maintain a WTT-ratio of approximately 70% (KPMG, 2021).

Second, as football clubs are considered as utility maximizers rather than profit maximizers (Michie and Oughton, 2005; Samagaio et al., 2009; Garcia-del-Barrio & Szymanski, 2009), Dimitropoulos and Tsagkanos (2012) argue that European clubs are willing to sustain losses resulting from debt financing to achieve goals like on-pitch-successes. Like Pawlowski et al.

(2010), De Heij et al. (2006) state that top clubs consider qualifying for the Champions League as necessary in order to keep up with competitors, and therefore, they argue that it is not uncommon to engage in high debt levels. However, this does not only account for clubs active in the Champions League or Europa League. Due to the openness of the European football competitions and the subsequent relegation threat, lower-ranked football clubs could also benefit from going into debt in their attempt of staying in the same competition (de Freitas Neto et al., 2017). On the other hand, going into debt might also negatively affect financial performance. Concluding, when regular firms need to achieve their goal, profit maximization, high debt levels might hinder them in doing so (Campello, 2006) while it can be beneficial for football clubs. In order to assess whether new directors engage in debt levels to improve organizational performance at the cost of financial performance, Andrea Sartori pleads that solely looking at the debt level is not meaningful (KPMG, 2021). Sartori argues that net financial debt is a broad definition whereby its nature and risk change club by club and therefore is the debt-to-asset ratio more suitable to assess the financial situation. Additionally, the debt-to-asset ratio gives a more precise indication of which proportion of the debt level is used to finance daily operations like high wages. For example, Tottenham has the highest net financial debt currently, but this increase is mainly due to the new stadium development (KPMG, 2021).

3. Hypotheses

Firstly, current literature predominantly finds that managers do have a significant impact on organizational performance. Subsequently, current literature also suggests that managerial turnover affects organizational performance. However, it is not clear whether this also holds within the football industry. Therefore, I state the following hypotheses:

H1a: Managerial turnover has a significant impact on the sporting performance of a football club

H1b: Managerial turnover has a significant impact on the financial performance of a football club

Secondly, current literature finds that wage expenditures are considered a strong determinant of the sporting performance of football clubs. Taking the latter into consideration with the fact that football clubs are utility maximizers, I expect that incoming directors use wages as a strategy to increase organizational performance. As wages are consistently rising, the wage-to-turnover ratio is a more appropriate indicator than wages to verify if incoming directors adopt this strategy. Therefore, I state the following hypothesis:

H2: Managerial turnover has an increasing effect on the wage-to-turnover ratio

Thirdly, the literature states that football clubs can use debt financing in order to achieve sporting successes or prevent failures. Thereby, managerial turnover might suggest that incumbent directors have been fired due to underperformance (Denis & Denis, 1995). To investigate whether incoming directors use debt financing to improve organizational performance and achieve sporting successes or prevent failures, I state the following hypothesis:

H3: Managerial turnover has an increasing effect on the debt-to-asset ratio

4. Data and Methodology

4.1 Data

In order to answer the research question, I use data provided by dr. Peeters. This data consists of organizational information of 109 professional English football clubs from the period 1973-2017. The dataset contains financial figures, match results, and information on the board of directors. This study focuses on football clubs that have been active in the Premier League or Championship from the season 1992/93 until the season 2009/10. Because football clubs can relegate or promote to other divisions, a small number of observations play in League One (3rd division) or League Two (4th division). The reason for choosing this time period is that the Premier League and EFL Championship (before known as Football League First Division) were both founded in 1992. The number of clubs within a division ranges between 20 and 24 clubs, where there are 20 clubs in the Premier League and 24 in the other three leagues. This dataset contains 92 observations per year, which set the number of total observations to 1748[1]. In total, 37 clubs that are characterized by a change of the director's regime and fulfill the set requirements, which are discussed later, are included in this study. The changes of a director's regime occur between 1995 and 2008.

4.2 Methodology

To estimate the effect of managerial turnover on organizational performance, I use the difference-in-differences (DiD) approach (Lechner, 2011; Van Ours & van Tuijl, 2016). When implementing the DiD, the observed groups are split into four quadrants. Firstly, there is a distinction between groups affected by the treatment (treatment group) and groups not affected by the treatment (control group). The treatment in this study is a change of the director's regime of a football club, which is more extensively explained later. Secondly, the time period divides the observed clubs into another two groups: the before-treatment period and after-treatment period. In this study, I distinguish between clubs that did experience a change of director's regime, set as T=1, and clubs that did not experience a change of the director's regime are set as T=0. The time period divides the observed clubs in another two groups: the before-regime change period and the after-regime change period.

[1] This study mainly focuses upon the 20 EPL clubs and 24 Championship clubs. However, control clubs might have been active in other divisions as well. Therefore, this study contains 92 observations per year.

The idea behind the DiD approach is that if two treated groups and two control groups are subjected to the identical time trend, an estimate of the effect of the treatment could be measured (Lechner, 2011). When using a DiD approach, the average gain over time in the control group is deducted from the gain over time in the treatment group, which removes potential biases that could arise from comparisons over time in the treatment group that could be the result of time trends which are not the related to the treatment (Deschacht & Goeman, 2015). The difference between those gain changes is the causal effect of the treatment (Lechner, 2011). A simple DiD-design is given by:

$$Y = \beta_0 + \beta_1 * Treatment + \beta_2 * Post + \beta_3 * Treatment * Post + \beta_n X + \varepsilon$$

In this study, I compare treatment and control clubs upon the six-year performance, three years before and three years after the director regime change of the treatment club. The justification for choosing this time frame is that managerial turnover does not directly lead to changes in an organization's outcomes but might take some time (Connolly, 2018). To establish the control group, I use the nearest neighbour approach by matching the control club and treatment club based upon average ranking. The reason for using average rank is that it reflects a club's sporting performance and it is considered a strong determinant of a club its revenues (Peeters & Szymanski, 2014; Szymanski, 1998; Gerrard, 2005). Additionally, I base the matching on ranking to account for unobserved heterogeneity because these clubs operate in similar circumstances and board directors face similar external challenges like preventing relegation or playing in the Champions League. To make sure that the matching of control and treatment clubs is valid, I set the following requirements:

1. A treatment club is only subjected to one change of the director's regime during those six years.
2. The control club has not experienced a change in director regime three seasons before and three seasons after the change of a treatment club's director regime.
3. The average rank is based on the three seasons before the director regime changes. The maximum difference between the average ranks of the control and treatment clubs is four ranks.
4. Clubs cannot be matched if they have played in separate leagues during all three seasons prior to the director regime change.
5. If more than one club fulfills the previous requirements, I use the club with the most similar average rank as the control group.

To ensure that the matching of treatment and control groups is valid, I conduct the Wilcoxon rank-sum (Mann-Whitney) test. The Wilcoxon rank-sum test compares the medians between two groups, and the result of this test shows whether two groups are different from each other. After matching the control and treatment groups, there existed some overlap between the pre- and post-treatment phases of certain clubs. This implied that certain lagged year observations of clubs were considered treatment group or served as control group for multiple treatment observations within the measured period. Therefore, I sample these clubs and the corresponding data twice.

In this study, I assume that a change of director's regime occurs between two seasons and not during a season (i.e. after the season 2007/08, but before the start of the season 2008/09, a change of the different director's regime occurs). The reference category is the season preceding the change of a director's regime, which is t = -1. The reason for choosing this reference category is that this moment reflects most precisely how a club performs before the change of regime and (post)effects are contrasted in reference to the outcome in t = -1 (Callaway & Sant'Anna, 2020).

The independent variable in this study is managerial turnover. In this study, I consider changes within the board of directors of a football club as managerial turnover. More specifically, managerial turnover is measured by a change of a director regime. Because this study uses a difference-in-differences approach, a policy intervention is required to distinguish pre-and post-intervention data. Therefore, using a continuous variable like a turnover rate is unsuitable and thus, I use the change of a director regime. The director regime changes whenever the director turnover rate of a club is 0.5 or lower. This turnover rate reflects the extent of consistency within the board of directors of a football club. To illustrate, whenever a club has a director turnover rate of 0 in a specific year, the board of directors of this club is entirely different in comparison with the season before. The reason for choosing a threshold of 0.5 is that whenever the majority of a board is renewed, they could be very influential in the decision-making process which could change how the club is being managed and subsequently the performance of the club. The dummy variable *ChangeRegime* takes the value 1 if a club experienced a change of the director's regime and takes 0 if a club has not experienced such a change.

As mentioned before, the main dependent variable in this study, the performance of a football club, is being measured in two ways in current literature: financial and sporting performance.

To investigate the effect of director turnover on a football club's sporting performance, I use rank as a proxy for sporting performance (Galarotis et al., 2018; Kounetas, 2014; Wilson et al., 2013). The aforementioned hypothesis states that director turnover has an effect on the final ranking. For the analysis, I use the following equation:

$$Rank = \beta_0 + \beta_1(ChangeRegime) + \beta_2(Time) + \beta_3(ChangeRegime * Time) + \varepsilon$$

In addition to the standard regression above, I make two additions. First, I include club fixed effects into the standard regressions to account for between-club variability. Second, I include both club fixed effects and year fixed effects in the regression. By adding the year fixed-effects, I additionally control for unobserved variables that change over time that could affect the variables of interest.

The variable *ChangeRegime* is indicated with 1 if there has been a change in the director's regime, otherwise 0 if there has not been a change of the regime. The variable *Time* is indicated as 1 for both the control group as the treatment group at t = 1, t = 2 and t = 3, which is post-treatment, and 0 for both groups at t = -3, t = -2 and t = -1, which is pre-treatment. The interaction term *ChangeRegime*Time* is the main explanatory variable and gives evidence if and how a change of the director's regime affects the rank of a football club after such a change. The error term ε accounts for the effect of unobserved random variables upon the responses other than the variables of interest.

Based on current literature, I expect that director turnover affects the rank of a football club. In this context, this means that the interaction term *ChangeRegime*Time* has a negative or positive effect on the variable *Rank*. A negative effect of the interaction term on the variable *Rank* implies that the actual ranking improves because the lower the value of this variable, the better your final ranking is. On the other hand, a positive effect of the interaction term on the variable *Rank* implies that actual ranking worsens.

Secondly, to investigate the effect of director turnover on a football club its financial performance, revenue is used as a proxy to capture this performance (Guzman, 2006; Guzman & Morrow, 2007; Haas, 2003; De Heij et al., 2006). The hypothesis states that director turnover has an effect on revenue. For the analysis, I use the following equation:

$$Revenue_t = \beta_0 + \beta_1(ChangeRegime) + \beta_2(Time) + \beta_3(ChangeRegime * Time) + \varepsilon$$

In line with the previous model, *ChangeRegime*Time* is the main explanatory variable and gives evidence if and how a change of the director's regime affects the percentual difference of a football club's revenue. The error term ε accounts for the effect of unobserved random variables upon the responses other than the variables of interest. Similar to the previous regression, I conduct additional regressions where club fixed effects and year fixed effects are included. Lastly, I use the natural logarithm of the variable *Revenue* to obtain a normal distribution because skewness is present within this variable.

Thirdly, I expect that managerial turnover has an increasing effect on the wage-to-turnover ratio. For the analysis, I use the following equation:

$$WTT_t = \beta_0 + \beta_1(ChangeRegime) + \beta_2(Time) + \beta_3(ChangeRegime * Time) + \varepsilon$$

The variable of interest *WTT* is generated by dividing the wages paid by a club by the revenue generated in the same year. In theory, the WTT-ratio has a range between zero and infinity. In practice, the WTT-ratio takes on small values. The reason for the latter is that when firms have a WTT-ratio that exceeds the value of 1 for a long period, this firm is likely to be unprofitable and hence, will face difficulties with not going bankrupt. To illustrate, the maximum value of the WTT-ratio is 2.313 in this study. This ratio means that this club spent 231% of the revenue received in that year on wages.

In line with previous models, *ChangeRegime*Time* is the main explanatory variable and gives evidence if and how a change of the director's regime affects the WTT-ratio. The error term ε accounts for the effect of unobserved random variables upon the responses other than the variables of interest. Similar to the previous regression, I conduct additional regressions where club fixed effects and year fixed effects are included.

Lastly, I expect that director turnover has a positive effect on the debt-to-asset (DTA) ratio. For the analysis, I use the following equation:

$$DTA_t = \beta_0 + \beta_1(ChangeRegime) + \beta_2(Time) + \beta_3(ChangeRegime * Time) + \varepsilon$$

The variable of interest *DTA* is generated by dividing the net debts of a club by the amount of total assets. Rather than focusing solely on a club's total debt, I use the debt-to-asset ratio because it can be interpreted as the proportion of a club's debt that has been used to finance its assets. The range of the distribution of the DTA-ratio is theoretically infinite. A negative DTA-ratio is likely the result of a financial situation where a firm has a higher amount of available liquidity than its financial debt. To illustrate, whenever a football club has a DTA of 0.1, the total net debt is 90% lower than the total amount of assets that this club possesses. On the other hand, if a club has a DTA-ratio of 1.1, the total net debt is 10% higher than the total amount of assets. In general, a lower DTA-ratio is considered more desirable.

In line with previous models, *ChangeRegime*Time* is the main explanatory variable and gives evidence if and how a change of the director's regime affects the debt-to-asset ratio. The error term ε accounts for the effect of unobserved random variables upon the responses other than the variables of interest. Similar to the previous regression, I conduct additional regressions where club fixed effects and year fixed effects are included.

There is one assumption that should be fulfilled to assure the internal validity of the DiD approach, which is the parallel trend assumption (Wooldridge, 2015). This assumption requires that there should be parallel trends in the treatment and the control group in the absence of the treatment. For the dependent variables in this study, *Rank*, *Revenue*, *WTT-ratio*, and *DTA-ratio*, this assumption implies that all variables of the treatment and control clubs follow the same trend without a director regime change of the treatment clubs. Statistically testing this assumption is not possible, but Figure 1, Figure 2, Figure 3, and Figure 4 show that the treatment and control clubs follow the same or almost the same pattern in the variables preceding the regime change. The change of the director's regime occurs between t = -1 and t = 1.

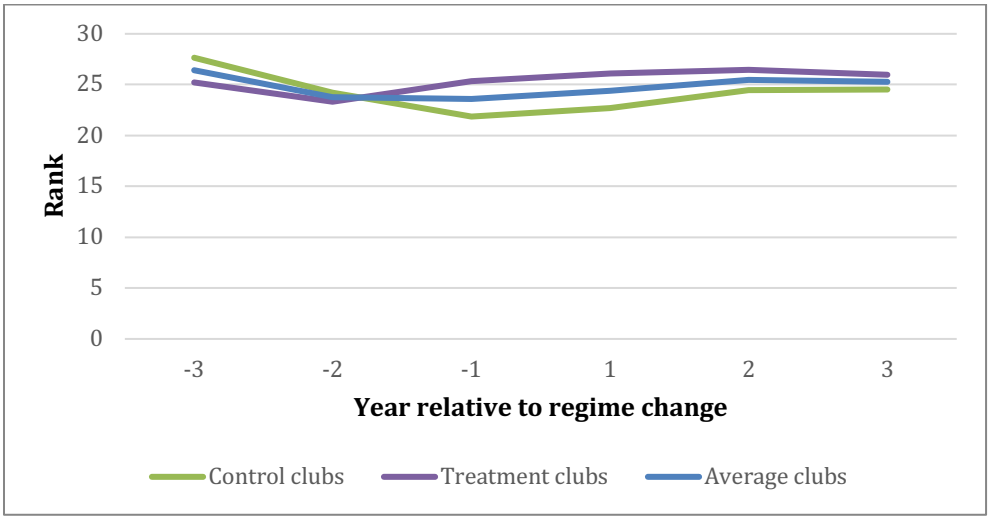

Figure 1: Development of rank

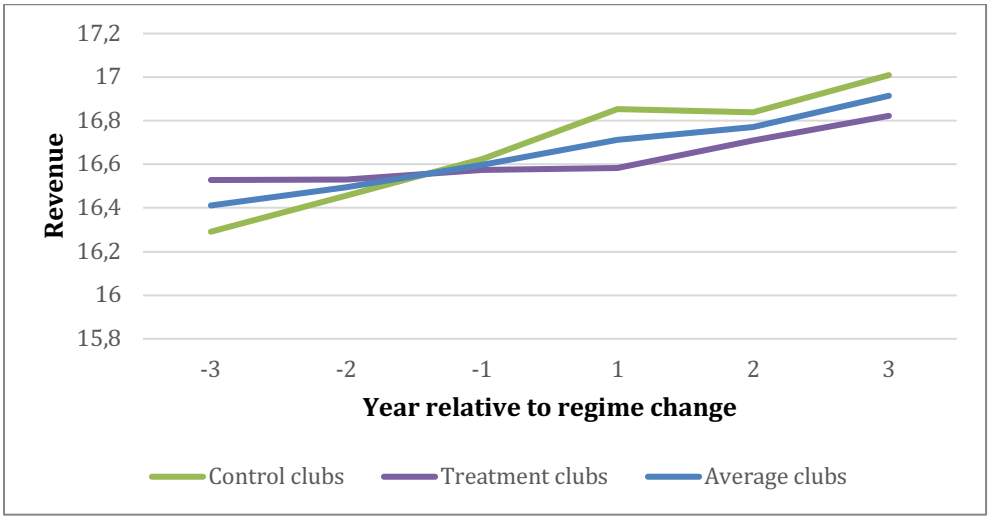

Figure 2: Development of revenue

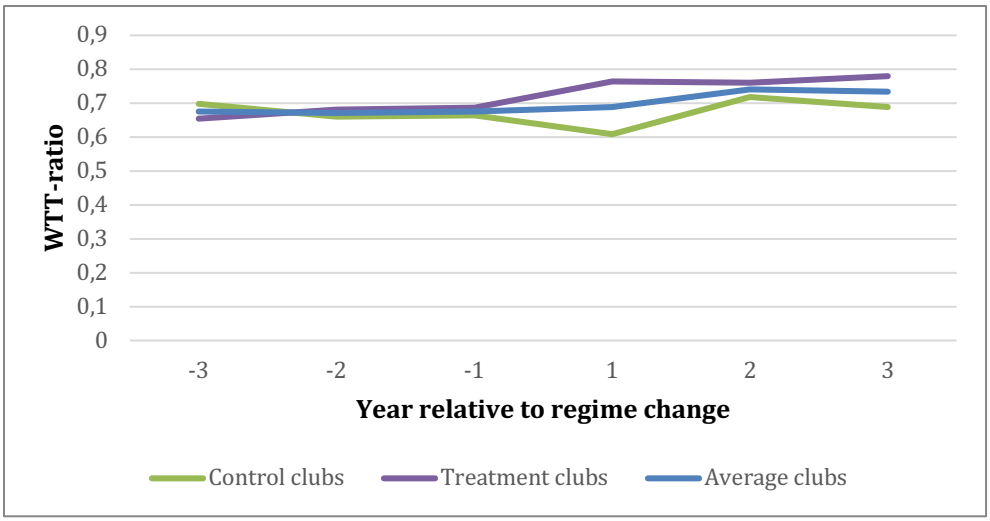

Figure 3: Development of the wage-to-turnover ratio

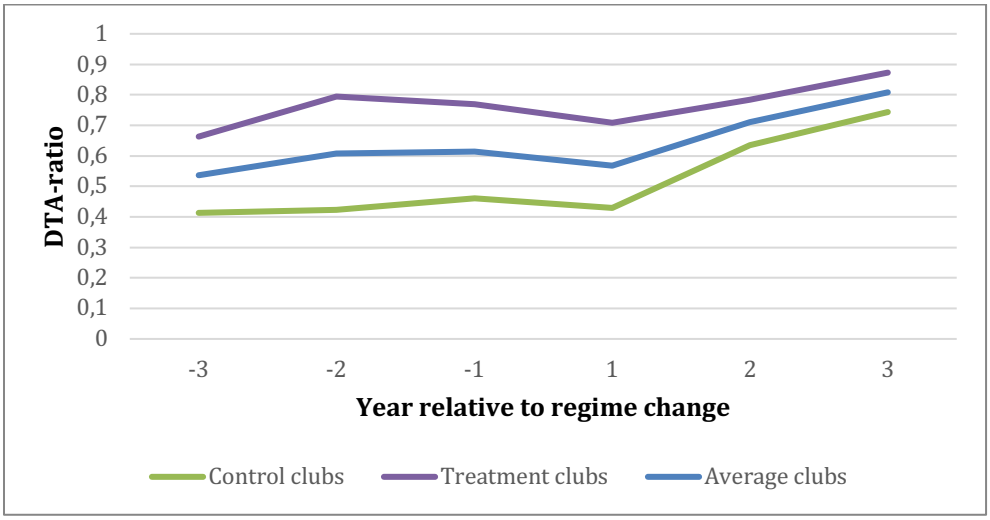

Figure 4: Development of the debt-to-asset ratio

In addition to applying the standard DiD approach, I conduct an analysis of the multiple group-time average treatment effects. This extension aims to identify potential specific group-time treatment effects that are not observable in the standard DiD approach. The additional value of extending the standard DiD approach with the group-time average treatment parameters is that these parameters do not restrict heterogeneity within the first period where units are treated or the development of the treatment effect over time (Callaway & Sant'Anna, 2020). The analysis of the group-time average treatment effects hence provides additional insights into treatment effect heterogeneity. If only the standard DiD approach would be considered, the average effect of the treatment could be moderated due to multiple time periods in the study (Callaway & Sant'Anna, 2020).

To conduct an analysis of multiple group-time average effect of the variable *ChangeRegime* on the variable *Rank*, I use the following equation:

$$\begin{aligned} Rank = \ & \beta_0 + \beta_1(Time = -3) + \beta_2(Time = -2) + \beta_3(Time = +1) + \beta_4(Time = +2) \\ & + \beta_5(Time = +3) + \beta_6(ChangeRegime) + \ \beta_7(ChangeRegime * Time_{-3}) \\ & + \beta_8(ChangeRegime * Time_{-2}) + \beta_9(ChangeRegime * Time_{-1}) \\ & + \beta_{10}(ChangeRegime * Time_{+1}) + \beta_{11}(ChangeRegime * Time_{+2}) \\ & + \beta_{12}(ChangeRegime * Time_{+3}) + \varepsilon \end{aligned}$$

To conduct an analysis of multiple group-time average effect of the variable *ChangeRegime* on the variable *Revenue*, I use the following equation:

$$Revenue = \beta_0 + \beta_1(Time = -3) + \beta_2(Time = -2) + \beta_3(Time = +1) + \beta_4(Time = +2) + \beta_5(Time = +3) + \beta_6(ChangeRegime) + \beta_7(ChangeRegime * Time_{-3}) + \beta_8(ChangeRegime * Time_{-2}) + \beta_9(ChangeRegime * Time_{-1}) + \beta_{10}(ChangeRegime * Time_{+1}) + \beta_{11}(ChangeRegime * Time_{+2}) + \beta_{12}(ChangeRegime * Time_{+3}) + \varepsilon$$

To conduct an analysis of multiple group-time average effect of the variable *ChangeRegime* on the variable *WTT*, I use the following equation:

$$WTT = \beta_0 + \beta_1(Time = -3) + \beta_2(Time = -2) + \beta_3(Time = +1) + \beta_4(Time = +2) + \beta_5(Time = +3) + \beta_6(ChangeRegime) + \beta_7(ChangeRegime * Time_{-3}) + \beta_8(ChangeRegime * Time_{-2}) + \beta_9(ChangeRegime * Time_{-1}) + \beta_{10}(ChangeRegime * Time_{+1}) + \beta_{11}(ChangeRegime * Time_{+2}) + \beta_{12}(ChangeRegime * Time_{+3}) + \varepsilon$$

To conduct an analysis of multiple group-time average effect of the variable *ChangeRegime* on the variable *DTA*, I use the following equation:

$$DTA = \beta_0 + \beta_1(Time = -3) + \beta_2(Time = -2) + \beta_3(Time = +1) + \beta_4(Time = +2) + \beta_5(Time = +3) + \beta_6(ChangeRegime) + \beta_7(ChangeRegime * Time_{-3}) + \beta_8(ChangeRegime * Time_{-2}) + \beta_9(ChangeRegime * Time_{-1}) + \beta_{10}(ChangeRegime * Time_{+1}) + \beta_{11}(ChangeRegime * Time_{+2}) + \beta_{12}(ChangeRegime * Time_{+3}) + \varepsilon$$

Lastly, all models are run with robust standard errors clustered by club and subsequently account for heteroskedasticity. In addition to the standard DiD model, I also include club fixed effects and year fixed effects in these models.

Additionally, I conduct two robustness checks. Firstly, I conduct a robustness check by using another proxy to measure sporting performance. To do so, I use the variable *Points per game* instead of the variable *Ranking*. The variable *Points per game* is calculated by dividing the total points won within a season by the number of games played in that season. Secondly, I conduct a robustness check by using another proxy to measure financial performance. This new variable, *REV/AVGREV*, is constructed by dividing a club's revenue by the average revenue of all clubs during that same season.

5. Results

Table 1 and Table 2 show the summary statistics of the variables used for all three hypotheses. Table 1 contains the summary statistics of all clubs present in the dataset and Table 2 only the treatment and control clubs.

Table 1: Summary statistics of all clubs

	Observations	Mean	Std. Dev.	Minimum	Maximum
Rank	1656	46.5	26.565	1	92
Revenue (log)	1263	15.818	1.335	11.316	19.85
Revenue	1263	19479.654	36453.884	82.093	417533
Wage-to-turnover ratio	1226	.705	.237	.096	2.313
Debt-to-asset ratio	1583	.674	1.255	-1.114	13.621

Note: The numbers of the variable *Revenue* should be multiplied by 1.000

Table 2: Summary statistics of treatment and control clubs

	Observations	Mean	Std. Dev.	Minimum	Maximum
Rank	444	24.813	15.502	1	86
Revenue (log)	407	16.654	1.088	14.251	19.623
Revenue	407	32132.208	43408.344	1546.026	332927
Wage-to-turnover ratio	405	.698	.231	.287	2.313
Debt-to-asset ratio	438	.639	.812	-.524	5.744

Note: The figures of the variable *Revenue* should be multiplied by 1.000.

Table 1 displays that the main variables, *Rank* and *Revenue*, count respectively 1656 and 1263 observations. The variable *Revenue* displays high variation between a minimum value of 82.093.000 and a maximum value of 417.533.000, which justifies the further use of a logarithm of the variable *Revenue*. Table 2 shows that the main dependent variables, *Rank* and *Revenue*, of control and treatment clubs count respectively 444 and 407 observations. The mean value of the variable *Rank* is 24.813, with a minimum value of 1 and a maximum value of 86. This implies that, on average, the ranking of the control and treatment clubs is 24.8, implying that they play in the Championship. The variable *Revenue(log)* has a minimum value of 14.251 and a maximum value of 19.623 with a standard deviation of 1.088. The WTT-ratio has a mean of 0.698 with a standard deviation of 0.231 between 0.287 and 2.313. This implies that on average, the football clubs in this study spent 69.8% of their revenue on wages. Furthermore, the variable *DTA* presents a variation of 0.812 between 0.639 and 5.744 with 438 observations and a mean of 0.639. This means that, on average, the debt level of a football clubs is 63.9% of the asset value. The descriptive statistics concerning the variables *WTT* and *DTA* in Table 1 and Table 2

show a high level of similarity. However, this does not hold for the variables *Rank* and *Revenue*, which can be explained due to a larger share of clubs present in the 3rd and 4th division in Table 1.

Table 3 presents the results from DiD estimation regarding the variable *Rank*. Table 4 presents the results regarding the analysis of the multiple group-time average treatment effects. Similar to all the other tables containing the regression results of the other models, column (1) displays the results of regression results of the standard model. Column (2) shows the results where I control for the club fixed effects. Lastly, column (3) displays the results of the regression whereby I account for club and year fixed effects.

Table 3: Regression results – Rank

	(1)	(2)	(3)
VARIABLES	Rank	Rank	Rank
Treatment = 1	0.0360	-	-
	(3.123)		
Time = 1	-0.694	-0.694	-2.452
	(1.421)	(1.419)	(1.942)
ChangeRegime*Time	2.261	2.261	2.261
	(2.677)	(2.674)	(2.704)
Constant	24.58***	24.59***	18.56
	(2.221)	(0.668)	(15.00)
Observations	444	444	444
R-squared	0.003	0.006	0.033
Number of clubs		70	70
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Regression results of time extension – Rank

	(1)	(2)	(3)
VARIABLES	Rank	Rank	Rank
Treatment = 1	3.459	-	-
	(3.264)		
Time = -3	5.784***	5.784***	7.827***
	(1.428)	(1.426)	(1.901)
Time = -2	2.351**	2.351**	3.221***
	(1.007)	(1.006)	(1.148)
Time = +1	0.811	0.811	-0.0361
	(1.253)	(1.252)	(1.411)
Time = +2	2.595*	2.595*	0.787
	(1.416)	(1.414)	(1.903)
Time = +3	2.649	2.649	-0.449
	(1.723)	(1.721)	(2.443)

Table 4 (continued).

ChangeRegime*Time = -3	-5.919***	-5.919***	-5.919***
	(2.170)	(2.168)	(2.144)
ChangeRegime*Time = -2	-4.351***	-4.351***	-4.351***
	(1.340)	(1.338)	(1.333)
ChangeRegime*Time = +1	-0.0541	-0.0541	-0.0541
	(1.939)	(1.937)	(1.991)
ChangeRegime*Time = +2	-1.459	-1.459	-1.459
	(2.572)	(2.569)	(2.636)
ChangeRegime*Time = +3	-1.973	-1.973	-1.973
	(3.046)	(3.042)	(3.098)
Constant	21.86***	23.59***	11.02
	(2.270)	(0.577)	(14.92)
Observations	444	444	444
R-squared	0.011	0.037	0.077
Number of clubs		70	70
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 shows that the coefficient of the interaction term, the explanatory variable *ChangeRegime*Time*, a value has of 2.261 in column (3). This suggests that the change of a director's regime increases the rank of a club by 2.3 places, implying that your rank position worsens. Although, this effect is not significant. Furthermore, Table 4 shows the results of the group-time average treatment effects relative to t = -1. The results show that at t = -3 and t= -2, the ranking of a treatment club is respectively 5.9 and 4.4 rankings lower relative to their ranking at t= -1. Both effects are significant at a 1% significance level. This implies that the ranking at t = -3 and t = -2 is actually better than the ranking at t = -1. Overall, these results lead to the rejection of hypothesis 1A.

Table 5: Regression results – Revenue

	(1)	(2)	(3)
VARIABLES	REV	REV	REV
Treatment = 1	0.0854	-	-
	(0.258)		
Time = 1	0.442***	0.425***	0.261***
	(0.0811)	(0.0811)	(0.0861)
ChangeRegime*Time	-0.282**	-0.285***	-0.282**
	(0.109)	(0.104)	(0.108)
Constant	16.46***	16.51***	15.67***
	(0.185)	(0.0263)	(0.426)
Observations	407	407	407
R-squared	0.024	0.178	0.314

Table 5 (continued).

Number of clubs		69	69
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Regression results of time extension – Revenue

	(1)	(2)	(3)
VARIABLES	REV	REV	REV
Treatment = 1	-0.0501	-	-
	(0.267)		
Time = -3	-0.333***	-0.311***	-0.243***
	(0.0699)	(0.0689)	(0.0707)
Time = -2	-0.167***	-0.167***	-0.139**
	(0.0505)	(0.0504)	(0.0570)
Time = +1	0.228***	0.228***	0.184**
	(0.0785)	(0.0784)	(0.0829)
Time = +2	0.215**	0.219**	0.115
	(0.0906)	(0.0867)	(0.0868)
Time = +3	0.385***	0.359***	0.234*
	(0.112)	(0.112)	(0.122)
ChangeRegime*Time = -3	0.287***	0.298***	0.276***
	(0.0918)	(0.0977)	(0.0881)
ChangeRegime*Time = -2	0.123*	0.167**	0.135**
	(0.0628)	(0.0762)	(0.0655)
ChangeRegime*Time = +1	-0.220**	-0.220**	-0.229**
	(0.0995)	(0.0994)	(0.0996)
ChangeRegime*Time = +2	-0.0803	-0.0900	-0.114
	(0.123)	(0.118)	(0.110)
ChangeRegime*Time = +3	-0.137	-0.0794	-0.0928
	(0.149)	(0.148)	(0.150)
Constant	16.62***	16.59***	15.86***
	(0.193)	(0.0339)	(0.416)
Observations	407	407	407
R-squared	0.031	0.238	0.343
Number of clubs		69	69
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 displays the regression results regarding the variable that measures the financial performance of a football club, *Revenue*. First of all, the coefficient of the variable *Time* is positive and significant at a 1% significance level. The coefficient of the variable *ChangeRegime*Time* has a negative value in all three models. However, in the standard regression model and the model whereby I account for club and year fixed effects, the effect of a change of the director's regime on revenue is significant at a 5% significance level, while the

effect is significant at a 10% level when only controlling for club fixed effects. Overall, the results show that a change of the director's regime affects revenue. Therefore, hypotheses 1B is accepted. Additionally, Table 6 shows that the coefficient of the interaction term *ChangeRegime*Time* at t = -3, has a positive value of 0.276 and is significant at a 1% significance level in column (3). At t = -2, the coefficient of this interaction term has a value of 0.135 and is significant at a 5% significance level. This implies that at t = -3 and t = -2, the revenue is higher relative to the season before the regime change. Additionally, the coefficient of the interaction term *ChangeRegime*Time* at t = +1 has a negative value of 0.229 and is significant at a 5% significance level. This implies that at t = 1, the revenue is lower compared to the revenue at t = -1.

Table 7: Regression results – Wage-to-turnover ratio

	(1)	(2)	(3)
VARIABLES	WTT	WTT	WTT
Treatment = 1	0.000575	-	-
	(0.0499)		
Time = 1	-0.00207	-0.00280	-0.0528
	(0.0392)	(0.0400)	(0.0441)
ChangeRegime*Time	0.0960*	0.103**	0.102**
	(0.0505)	(0.0510)	(0.0492)
Constant	0.674***	0.673***	0.568***
	(0.0433)	(0.0128)	(0.0988)
Observations	405	405	405
R-squared	0.033	0.043	0.171
Number of clubs		68	68
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Regression results of time extension – Wage-to-turnover ratio

	(1)	(2)	(3)
VARIABLES	WTT	WTT	WTT
Treatment = 1	0.0230	-	-
	(0.0608)		
Time = -3	0.0328	0.0329	0.0680
	(0.0620)	(0.0620)	(0.0660)
Time = -2	-0.00339	-0.00339	0.0125
	(0.0401)	(0.0400)	(0.0427)
Time = +1	-0.0558	-0.0558	-0.0749
	(0.0536)	(0.0535)	(0.0565)

Table 8 (continued).

Time = +2	0.0538	0.0564	0.0233
	(0.0506)	(0.0513)	(0.0544)
Time = +3	0.0240	0.0232	-0.0466
	(0.0543)	(0.0563)	(0.0622)
ChangeRegime*Time = -3	-0.0658	-0.0643	-0.0572
	(0.0717)	(0.0709)	(0.0665)
ChangeRegime*Time = -2	-0.00315	-0.00700	0.00162
	(0.0492)	(0.0490)	(0.0466)
ChangeRegime*Time = +1	0.133**	0.133**	0.138**
	(0.0622)	(0.0621)	(0.0632)
ChangeRegime*Time = +2	0.0201	0.0266	0.0333
	(0.0604)	(0.0601)	(0.0614)
ChangeRegime*Time = +3	0.0685	0.0778	0.0799
	(0.0735)	(0.0753)	(0.0743)
Constant	0.664***	0.675***	0.511***
	(0.0520)	(0.0199)	(0.112)
Observations	405	405	405
R-squared	0.045	0.066	0.192
Number of clubs		68	68
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7 shows the regression results of all three models regarding the variable *WTT*. The coefficient of the interaction *ChangeRegime*Time* is positive in all three models. The coefficient has a value of 0.096 and is marginally significant at a 10% significance level in column (1). The values of the coefficient of the interaction term in column (2) and (3) are almost similar and both effects are significant at a 5% significance level. More specifically, Table 8 shows that the value of the interaction term *ChangeRegime*Time* at t = 1 is positive, and significant at a 5% significance level. This implies that the WTT-ratio is 0.138 points higher for clubs who experience a change in the director's regime in comparison to their WTT-ratio at t = -1. Overall, the results show that a change in the director's regime has a positive effect on the wage-to-turnover ratio and therefore, hypothesis 2 is accepted. However, it is noteworthy to know whether this positive effect is caused by lower revenues, higher wage expenditures, or a combination of both. Table 5 shows that a change of the director's regime has a negative effect on revenue. Furthermore, Table 13 in Appendix C shows that the change of director's regime does not have a significant effect on the wage expenditures. Concluding, the positive effect of a regime change on the WTT-ratio is mainly caused by lower revenue and wage expenditures that maintain the same level after controlling for club and year fixed effects.

Table 9: Regression results – Debt-to-asset ratio

VARIABLES	(1) DTA	(2) DTA	(3) DTA
Treatment = 1	0.310*	-	-
	(0.167)		
Time = 1	0.167*	0.161*	0.0350
	(0.0908)	(0.0892)	(0.0991)
ChangeRegime*Time	-0.123	-0.124	-0.118
	(0.150)	(0.149)	(0.144)
Constant	0.432***	0.591***	0.360**
	(0.0806)	(0.0370)	(0.171)
Observations	438	438	438
R-squared	0.029	0.016	0.118
Number of clubs		70	70
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Regression results of time extension – Debt-to-asset ratio

VARIABLES	(1) DTA	(2) DTA	(3) DTA
Treatment = 1	0.308	-	-
	(0.185)		
Time = -3	-0.0477	-0.0477	0.0456
	(0.101)	(0.101)	(0.106)
Time = -2	-0.0387	-0.0387	-0.00558
	(0.0815)	(0.0814)	(0.0807)
Time = +1	-0.0322	-0.0322	-0.0410
	(0.0435)	(0.0435)	(0.0513)
Time = +2	0.174**	0.170**	0.107
	(0.0819)	(0.0810)	(0.100)
Time = +3	0.283**	0.270**	0.147
	(0.120)	(0.116)	(0.143)
ChangeRegime*Time = -3	-0.0575	-0.0587	-0.0603
	(0.144)	(0.145)	(0.140)
ChangeRegime*Time = -2	0.0639	0.0639	0.0639
	(0.102)	(0.102)	(0.102)
ChangeRegime*Time = +1	-0.0285	-0.0285	-0.0285
	(0.127)	(0.127)	(0.126)
ChangeRegime*Time = +2	-0.159	-0.155	-0.149
	(0.167)	(0.166)	(0.156)
ChangeRegime*Time = +3	-0.178	-0.187	-0.174
	(0.189)	(0.187)	(0.171)
Constant	0.461***	0.618***	0.382
	(0.0838)	(0.0429)	(0.262)
Observations	438	438	438
R-squared	0.039	0.044	0.127

Table 10 (continued).

Number of clubs		70	70
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9 displays the results regarding the debt-to-asset models. Column (1), (2), and (3) display a negative value for the variable *ChangeRegime*Time*. This suggests that the effect of a change in the director's regime has a negative effect upon the DTA-ratio. However, the effect is not significant in all three models. Similar to the standard model, the results of the time extension displayed in Table 10**,** show no significant effects of a change of the director's regime on the DTA-ratio. Therefore, hypothesis 3 is rejected.

As last, Table 11 and Table 12 in Appendix B display the results of the robustness check of the results. All observed coefficients in Table 3 and 5 are in line with respectively, the coefficients in Table 11 and 12 in appendix B. There are only some small differences in significance levels of some significant effects of variables. This implies that the regression results in Tables 3 and 5 can be considered robust. To conclude, Appendix C presents the results of the Wilcoxon rank-sum (Mann-Whitney) test. The results show that there is no difference in ranking between treatment and control clubs.

6. Discussion and Limitations

The conducted analysis presents some evidence of the effect of changing a director's regime on the organizational performance. First of all, it seems that a change of the director's regime does not have an effect on the ranking of a football club. However, the ranking of the third and second season preceding the regime change shows that the ranking is significantly higher than it is at the season preceding the change. It might be possible that whenever no change would have occurred, the rank would have continued to decrease. The results do suggest that decreasing sporting performance is a potential determinant of managerial turnover.

Secondly, the results show that a change of the director's regime has a decreasing effect on the revenue. It is however questionable whether incoming directors actually decrease the financial performance of a club. First of all, the results of the analysis of the group-time average treatment effects show that the revenue during the third and second season preceding the regime change, significantly higher is than during season before the change. Moreover, the coefficient of the second season is smaller than the coefficient of the third season. This implies that the revenue follows a decreasing trend towards the regime change. Secondly, the revenue only decreases during the first season after the regime change. This suggest that, even after the regime change, the former directors' policies and decisions still have a decreasing effect on revenue. Combining these results with the findings by Connolly (2018), who finds that managerial turnover does not directly lead to changes in an organization's outcomes, I assume the negative effect of the regime change is caused by their predecessors instead of the new directors. Above all, the decreasing trend in revenue stops in the second and third season. Therefore, these results suggest a director's regime change does not negatively affect financial performance, but that incoming directors terminate the eventually financial mismanagement. Lastly, similar to the other organizational performance indicator, ranking, shrinking revenue also seems to be a potential determinant of managerial turnover.

Thirdly, this study shows that incoming directors have an increasing effect on the WTT-ratio. This result implies that incoming directors of football clubs spend a higher proportion of the incoming revenue on players and staff. Combining the literature of Denis and Denis (1995), who find that organizational performance decreases prior to managerial turnover, and the results of this study, I show that football club directors use wages as a strategy to improve the sporting

performance. The analysis of the group-time average treatment effects shows that this strategy is only used during the first season after the regime change. This suggests that increasing WTT-ratio is only used by incoming directors to increase sporting performance on a short-term notice. This is in contrast to the DTA-ratio. This ratio is not affected by a change of the director's regime and not used by incoming directors to achieve sporting successes or prevent failures.

Similar to al studies, this study also has some limitations. First, the intention of the DiD model is to discover whether there is a causal effect of a treatment on certain variables. However, it is not likely that a change of the director's regime can be considered as exogenous. Denis and Denis (1995) argue that forced resignations are preceded by decreases in organizational performance. In addition, the results regarding the group-time average treatment effects of the variables *Rank* and *Revenue*, confirm that the organizational performance decreases before the regime change. Therefore, endogeneity might be present in this study.

Another limitation of this research is that it does not control for the potential effect of a private investor acquiring a football club. Due to data limitations, I was not able to control for this. Rohde and Breuer (2016) argue that private investors have a significant effect on performance determinants and subsequently, performance is likely to be affected as well. Thus, the variables used in this study could also be affected by a new owner instead of the incoming directors. Therefore, future research could distinguish the potential effect of a new club owner and the change of a director's regime. Furthermore, the findings and implications of this research could be extended if future research conducts a similar study with football clubs deriving from multiple countries instead of England. Lastly, further research should extend the time frame prior managerial turnover. I do this recommendation based on literature by Connolly (2018) and the results regarding the variable *Revenue*. These results suggest that incoming directors do not have a direct effect upon indicators of organizational performance. By extending the time frame, it is possible that effects of managerial turnover on organizational performance become more evident.

7. Concluding remarks

This study aims to identify what the effects of managerial turnover are on a football club's performance. Furthermore, this study aims to identify how incoming directors attempt to change this performance. First of all, the effect of managerial turnover on the organizational performance of football clubs remains unclear. Before the regime change, the rank and revenue of football clubs decrease, and after the directors' regime changes, this decreasing trend stops for both variables. With the results from this study, it is not possible to argue whether this can be attributed to the incoming directors. However, I can conclude that incoming directors do have an impact on how the club is being managed and that after a director's regime change, incoming directors use the wage-to-turnover ratio to improve the sporting performance.

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Appendix A: **Wilcoxon rank-sum (Mann-Whitney) test**

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

treatment	obs	rank sum	expected
0	37	1315.500	1387.500
1	37	1459.500	1387.500
combined	74	2775	2775
unadjusted variance	8556.25		
adjustment for ties	-9.12		
adjusted variance	8547.13		

Ho: Rank(treatm~t==0) = Rank(treatm~t==1)
z = -0.779
p = .4361

Appendix B: Robustness Checks

Table 11: Points per game

VARIABLES	(1) PPG	(2) PPG	(3) PPG
Treatment = 1	B	-	-
Time = 1	B	B	B
ChangeRegime*Time	0.210**	0.101	0.101
	(0.0843)	(0.0964)	(0.101)
Division = 2		0.432***	0.425***
		(0.0806)	(0.0861)
Division = 3		0.762***	0.748***
		(0.0870)	(0.0920)
Constant	1.459***	1.111***	1.026***
	(0.0446)	(0.0535)	(0.161)
Observations	348	348	348
R-squared	0.031	0.292	0.320
Number of club		54	54
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Revenue / average revenue all clubs

VARIABLES	(1) REV/AVGREV	(2) REV/AVGREV	(3) REV/AVGREV
Treatment = 1	**0.182**	**-**	**-**
	(0.226)		
Time = 1	**0.488*** **	**0.473*** **	**0.184** **
	(0.0560)	**(0.0562)**	**(0.0823)**
ChangeRegime*Time	-0.294**	-0.277**	-0.282**
	(0.122)	(0.110)	(0.108)
Constant	-0.135	-0.0417	0.412
	(0.179)	(0.0280)	(0.426)
Observations	407	407	407
R-squared	0.006	0.056	0.247
Number of clubs		69	69
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix C: Wages

Table 13: Wage

VARIABLES	(1) ln_wage	(2) ln_wage	(3) ln_wage
Treatment = 1	0.182	-	-
	(0.226)		
Time = 1	0.488***	0.473***	0.184**
	(0.0560)	(0.0562)	(0.0823)
ChangeRegime*Time	-0.185**	-0.156*	-0.150
	(0.0915)	(0.0917)	(0.0912)
Constant	15.92***	16.01***	15.04***
	(0.164)	(0.0227)	(0.284)
Observations	432	432	432
R-squared	0.043	0.290	0.547
Number of club		69	69
Club FE included	No	Yes	Yes
Year FE included	No	No	Yes

Robust clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1