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Has UEFA's financial fair play regulation increased football clubs' profitability?

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ABSTRACT

Research question: In response to the low profitability of European football clubs, in 2010, UEFA established its Financial Fair Play regulation (FFP) to encourage clubs not to spend more than they earn. We examine whether FFP's break-even rule has increased the profitability of football clubs.

Research methods: : We use data from the top five European football leagues (those of England, France, Germany, Italy, and Spain) over the period 2008–2016. Our sample includes 1,094 club-year observations (139 different clubs). Earnings before interest and taxes (EBIT) and profit before tax (PBT) margins are used as profitability measures. The impact of FFP is estimated using the Generalized Estimation Equations (GEE), logistic regressions, and fixed effects OLS models. We control for both domestic and European competition success, leverage, club size, and country/club fixed effects.

Results and Findings: In the pre-FFP period, roughly 70 percent of observations are losses, whereas in the post-FFP period, roughly 60 percent of observations are losses. However, the estimated positive effect is significant only in Spain, while for England and Germany we find weak evidence. We cannot rule out that the observed improvement in performance is simply caused by the recovery from the financial crisis. The effect of FFP is insignificant in France and Italy.

Implications: The effect of FFP on clubs' profitability has been at best modest. We call upon UEFA and its member associations and leagues to expand their efforts to enforce the break-even rule or to reassess the efficiency of current FFP requirements.

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Break-even rule; financial fair play regulation; FFP; football; profitability

Introduction

The persistent financial instability and chronic loss-making in European football has generated considerable academic and media attention. The most common explanation is that club owners are not concerned with maximizing profits and are pursuing prestige and sporting success under a soft budget constraint (SBC) (e.g. Andreff, 2007; Fort, 2015; Lang et al., 2011; Sloane, 1971). Another explanation is that the openness of competition along with the system of promotion and relegation contributes to financial

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mismanagement (e.g. Lago et al., 2006; Leach & Szymanski, 2015; Szymanski, 2017). Despite growing revenues, the Union of European Football Associations (UEFA), which governs European football, reported that aggregate losses reported by European top-division clubs grew from €0.6 billion in 2007 to €1.7 billion in 2011 (UEFA, 2012). The association stepped in and established its Financial Fair Play (FFP) regulation in an attempt to halt the increasing loss-making spiral. The purpose of FFP is to prevent clubs that qualify for UEFA competitions from spending more than they earn and, consequently, to improve the financial health of European football.

The FFP concept was unanimously approved by UEFA's Executive Committee in September 2009. In June 2010, the first set of FFP regulations were introduced, and they have been updated three times since (UEFA, 2012, 2015, 2018). However, the key requirements of FFP have remained largely unchanged: (i) it highlights transparency and credibility by setting minimum disclosure requirements for clubs' financial statements; (ii) it requires clubs to prove that they do not have overdue payables to other clubs, their players, and social/tax authorities throughout the season; (iii) it requires clubs to comply with the break-even requirement. Specifically, FFP's break-even rule states that *relevant* incomes and expenses essentially match over the reporting periods, and any difference must be above a predetermined threshold. Failure to comply with the FFP requirements can invoke various penalties ranging from warnings and fines to disqualification/exclusion from UEFA's competitions (i.e. the Champions League or Europa League).

There are both theoretical (Franck, 2014; Peeters & Szymanski, 2014; Sass, 2016) and empirical analyses of UEFA's FFP, especially on its effects on competitive balance (Birkhäuser et al., 2019; Freestone & Manoli, 2017; Plumley, Ramchandani, & Wilson, 2019). Recent studies have found that the FFP has further amplified the competitive imbalance, but the effect is not uniform across leagues. Dimitropoulos and Scafarto (2020) found that the FFP regulation has started to change the business model of Italian clubs from a wage-spending model to one that is more efficiency-driven based on player trading. In contrast, Gallagher and Quinn (2020) found that FFP reduces both the sporting and financial efficiency of regulated English clubs. However, the impact of FFP's break-even constraint on football clubs' profitability has not been examined directly. UEFA itself reports that FFP has helped to drastically reduce club losses over the last decade (UEFA, 2019). The purpose of this paper is to empirically examine this conjecture.

Specifically, we investigate the change in European football club's profitability following UEFA's FFP using data from Europe's top five football leagues over the period 2008–2016. First, we examine whether FFP has reduced the probability of football clubs reporting a loss using two proxies for UEFA's break-even rule: negative earnings before interest and taxes (EBIT) and negative profit before tax (PBT). We postulate that if a club's operations are funded largely by its own revenues, the club will more profitable than it would be if (wealthy) shareholders could cover losses, as was often the case previously. Clubs adhering to FFP should therefore reduce the incidence of losses. The impact of FFP is estimated using a dummy variable for FFP. We control for both domestic and European competition success, leverage, club size, and country fixed effects. We use the generalized estimating equation (GEE) method, introduced by Liang and Zeger (1986), to estimate the average treatment effect of FFP. Second, and relatedly, we examine whether FFP has increased the profitability of clubs as measured by the EBIT and PBT margins. We use the same set of control variables except that we replace country fixed effects with firm fixed effects.

We report that in the pre-FFP period, roughly 70 percent of observations are losses, whereas, in the post-FFP period, roughly 60 percent of observations are losses. These simple statistics reveal that the effect of FFP on clubs' financial performance is relatively small, albeit statistically significant. Our GEE model analysis confirms that the propensity of clubs to report a loss has significantly decreased in the post-FFP period. Our fixed effects OLS model estimates that profitability margins are about six percentage points higher in the post-FFP period, thus providing corroborative evidence. However, a closer inspection reveals that the effect of FFP is economically and statistically significant only in Spain, and only weakly significant in England and Germany.

Nevertheless, there is an important caveat, as the period under examination encompasses the financial crisis. We cannot rule out that the observed improvement in performance is simply caused by the recovery from that financial crisis. The effect of FFP is insignificant in France and Italy. The effects of data paucity are unclear, especially with respect to Germany. In addition, our results are not generalizable to all of the 55 UEFA member leagues, so more research is required. One potential reason for the uneven implementation of FFP is the fact that the incentives of club owners remain primarily local. In addition, the ownership structures of clubs and the role of national decision-making bodies vary between countries: For example, in 1990, the French Football Federation put in place a financial regulation system called the National Direction for Management Control (NDCG). While FFP is concerned with profitability, DNCG is focused on solvency (Dermit-Richard et al., 2019). Concerning control variables, we generally find that sporting success and financial performance are positively related. This paper adds to the debate on sport management by demonstrating that the FFP is not a panacea to solve financial distress in European football. Our results pinpoint that clubs, on average, continue to be in deficit. We believe that the issue of cross-country differences in the FFP implementation efficiency in the post-FFP period is an essential avenue for future research.

The paper is organized as follows. Section 2 describes the theoretical background. In Section 3, we develop our hypotheses, and also present the research design and the sample selection. Section 4 demonstrates the empirical results. Concluding remarks are provided in Section 5.

Theoretical background

Football clubs as a utility maximizer

One possible explanation for the poor financial performance of European football clubs is that losses are to some extent voluntary. In his book, *Capitalism and Freedom,* Milton Friedman famously stated that 'there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud' (Friedman, 1962). However, Sloane's work (1971) demonstrates an early attempt to apply economic theory to professional football, which does not seem to follow Friedman's prescription. At the time, professional football clubs were repeatedly reporting deficits. Sloane (1971) argued that British football club owners mostly maximized utility instead of solely profit maximization (see also,

Fort, 2015, for an excellent discussion). In addition, Demsetz and Lehn (1985) recognize that owners' personal preferences rather than money alone play an important role in sports clubs. Furthermore, Downward and Dawson (2000) argue that the separation of ownership and control permits managers to pursue non-profit goals.

A natural question raised is whether there is an association between ownership structure and clubs' financial and sporting performance. Understanding these relations sheds light on the mechanism and source of financial distress of European football. Despite the widely held belief that European football clubs are not run on a profit-maximizing basis, there is also contradictory evidence. Leach and Szymanski (2015) examine the performance of 16 English football clubs that transit from private to public status. They argue that 'If the European story is true, we should have observed a shift toward profit-maximizing behavior at these clubs, under the assumption that investors were attracted to these football clubs to earn a positive return.' The study's research design allows for a change in owners' utility function while keeping the club and country constant. However, Leach and Szymanski (2015) find no evidence of any shift in the behavior of these 16 clubs after flotation. They interpret the results to suggest that 'football clubs in England have been much more oriented toward profit objectives than is normally assumed.' That finding suggests that a broader institutional environment plays a greater role in explaining declining profits following flotation than the change in owners' utility function.

It may be the case that clubs (especially the most prestigious ones) acknowledge *ex-ante* that they will be rescued in case of financial trouble *ex-post*, which affects their behavior. Storm and Nielsen (2012) ask the critical question: Why do only very few European professional football clubs go out of business even though they operate chronically on the edge of financial collapse? They argue that the club's ability to operate under the soft budget constraint (SBC) explains the apparent paradox. Andreff (2007) argues, based on a French Senate's report, that the financial crisis in French football is rooted in governance issues (at both league and club levels) under an SBC. In addition, shareholders behave as non-profit-seeking investors, which results in lax financial management and overspending on player wages because of a situation akin to an arms race.

Negative shocks

An alternative explanation relates to the unique business and operational environment of football clubs. Scelles et al. (2018) examine insolvency (payment failure) in the top three divisions of French football. They find that demand (attendance) shocks play a significant role in explaining insolvency but insolvency can also be explained by club status and ownership structure. Szymanski (2017), using financial data on English football clubs over the period 1974–2010, estimates shocks to demand and productivity and shows that failing clubs typically experience a series of negative shocks. Szymanski (2017, p. 441) concludes that, 'Clubs exist in a hypercompetitive environment due to the incentives of the promotion and relegation system. In a competitive environment, firms generate negligible profits and are always close to insolvency. A sequence of negative shocks can drive a club over the edge, no matter how rational or disciplined the owners.' The results imply that any wage cut is likely to lead to a deterioration in league performance (even to relegation) which can in turn lead to lower revenues. Szymanski's study is important because it highlights the codependency between financial and league

performance, which suggests that incentives (utility vs. profit maximization) may play a secondary role in the financial performance of clubs.

The two explanations presented above are not mutually exclusive and can coexist (see, Terrien et al., 2017). Moreover, their relative weight may vary from league to league (see, Terrien & Andreff, 2020). However, given the nature of FFP, it seems that UEFA believes the main driver of the poor financial performance is the former explanation.

Financial fair play regulations

The FFP, first introduced in June 2010, aims to improve the economic and financial capabilities of football clubs. Most importantly, FFP aims to encourage clubs to operate based on their own generated revenues and to spend responsibly. It covers financial results from more than 650 top-division clubs across UEFA's 55 member associations. UEFA's Club Financial Control Panel, which had monitored clubs since May 2010, was replaced the Club Financial Control Panel by the Club Financial Control Body (CFCB) in 2012. The CFCB may impose disciplinary measures in the event of non-fulfillment of the requirements of UEFA Club Licensing and FFP. (UEFA, 2015, 2018)

UEFA requires that every team qualified for their tournaments (most importantly, the Champions League and Europa League) has to provide audited financial statements and show that UEFA's criteria set is met. FFP regulations consist of two primary requirements for participating clubs. Firstly, clubs cannot have overdue payables to their employees, other clubs, or social/tax authorities. Secondly, clubs are required to break-even based on their relevant income and expenses in certain terms. If the requirements are not met, in extreme cases, UEFA might even withdraw a title or prohibit a club from participating in UEFA tournaments (UEFA, 2015). Characterizing the severest sanction, Jean-Luc Dehaene, the first chairman and chief investigator of CFCB, said in 2011 that 'The atomic bomb is a ban from European competition' (Slater, 2011). Other penalties available include fines, withholding of prize money, and player transfer bans. However, clubs are allowed to make what is termed an acceptable deviation, the extent of which has varied over the years. In the 2018 UEFA handbook, the acceptable deviation is EUR 5 million. However, a club can exceed that level up to EUR 30 million if such excess is entirely covered by contributions from equity participants and/or related parties. A lower amount may be decided in due course by UEFA's Executive Committee (Article 61).

The notion of relevant income and expenses are explained in Article 57 (UEFA 2018). Relevant income includes gate receipts, sponsorship and advertising, broadcasting rights, commercial activities, UEFA solidarity and prize money, other operating income, profit on disposal of player registrations, excess proceeds on disposal of tangible fixed assets, and finance income and foreign exchange result.[1] UEFA (2012) reports that club revenues have increased by an average annual rate of 5.6% between 2007 and 2011. Relevant expenses include the cost of sales/materials, employee benefits expenses, other operating expenses, loss on disposal and amortization/impairment of player registrations (and/or costs of acquiring player registrations), and finance costs and dividends.[2] Clubs expenditure is dominated by personnel expenses, more precisely, player wages. In the season 2015/16, clubs in the top five European football leagues spent an average of 61% of their revenues to cover personnel expenses (Deloitte, 2017).

The FFP, and especially its break-even requirement, has generated considerable attention since being implemented. Using simulations, Peeters and Szymanski (2014) examine both the financial and sporting impact of FFP in four major European football leagues. They argue that the break-even rule is likely to increase the profitability of clubs largely by reducing wage spending but is bound to cement the competitive advantages of top incumbent teams. Peeters and Szymanski (2014) conclude that a US-style explicit salary cap would be a far more effective tool to improve the seasonal competitive balance in European football than the FFP and evade EU competition law sanctions.[3] D'Andrea and Masciandro (2016) summarize the most important criticisms of FFP, which include (but are not limited to) FFP limiting external capital in football, increasing competitive imbalance (e.g. Peeters & Szymanski, 2014), and freezing the existing hierarchy between clubs (e.g. Sass, 2016; Vöpel, 2011). However, Franck (2014) argues that these concerns are unfounded. He argues that FFP breaks the *money comes to money* link and restores incentives for good management of football clubs while being a very tolerant restriction of competition.

There is also emerging empirical literature on FFP and especially its effects on competitive balance. Birkhäuser et al. (2019) examine league results, player market values, and investor payments relating to more than 300 European football clubs. The study's results are consistent with the view that FFP might have further amplified the competitive imbalance by reducing the equilibrium in European football leagues and freezing current hierarchies. However, Freestone and Manoli (2017) provide evidence that FFP regulations have not resulted in a reduction in competitive balance in the English Premier League (EPL). Plumley et al. (2019) examine competitive balance in the big five European leagues before and after FFP. They find a significant decline in competitive balance in Spain, Germany, and France but not in England (consistent with Freestone & Manoli, 2017) and Italy. Gallagher and Quinn (2020) investigate the effect of FFP on sporting and financial efficiency of English football clubs. They find that the FFP break-even regulation reduces average club efficiency, and moreover, raises the relative importance of financial goals (capturing revenue share) while reducing the relative importance of sporting goals (capturing point share). Gallagher and Quinn (2020) conclude that FFP further entrenches the financial and sporting power of elite clubs and potentially undermines competitive intensity in a league by shifting the relative focus of clubs away from sporting productivity toward financial productivity. Dimitropoulos and Scafarto (2020) examine whether FFP has affected the interrelationships between wage expenditure, sporting results, and financial performance in the Italian top league. They find that FFP has a negative (positive) effect on the relation between wages (net transfer fees) and sporting success, and a positive effect on the relation between gains on player trading and financial performance. In summary, it seems that the competitive balance is significantly affected by the FFP in major leagues except in England.

Hypotheses, research design, and sample selection

Hypotheses development

Our null hypotheses are based on the stated objectives of UEFA's FFP. Our first hypothesis relates directly to the fulfillment of the break-even requirement. We hypothesize that

the frequency of losses is lower in the post-FFP period. The fear of UEFA's sanctions may reduce overspending by clubs, especially by those owned by non-profit-seeking investors or wealthy patrons (referred to as *sugar daddies*). This situation may have a contagion effect that can lead to a lower payroll (and transfer fees) to revenues ratio at the league level. It follows that if revenues remain constant, a lower level of expenses leads to higher profitability.

Nevertheless, as outlined in the previous section, there are at least two reasons to expect that the frequency of losses would not be lower in the post-FFP period. First, if FFP does not have a significant effect on club incentives, then clubs might continue to pursue sporting success at the expense of economic success (e.g. Lang et al., 2011; Sloane, 1971). In addition, the current FFP regulations are unlikely to work as a regulatory tool if clubs continue to operate under SBC (e.g. Andreff, 2007). If the compliance with and enforcement of FFP are inefficient, then we would not expect to observe an improvement in overall profitability. Second, the FFP regulations are not designed to reduce the competition to recruit the most elite players (i.e. the arms race element), nor to remove the threat of relegation. Szymanski (2017) points out that the excessive profligacy argument behind FFP is not warranted. If the promotion and relegation system is the main cause of insolvency then the FFP regulation is likely to be an inefficient means by which to improve clubs' financial performance (see, Lago et al., 2006; Peeters & Szymanski, 2014). Ultimately the effect of FFP is an empirical question. Our first hypothesis is:

H1: The Financial Fair Play Regulation has reduced the probability of football clubs reporting a loss.

Our second hypothesis is a variant of the first hypothesis. We expect that clubs exert more effort to control their spending on transfers and wages when there is a consequence of higher profitability. Thus, our second hypothesis is as follows:

H2: The Financial Fair Play Regulation has increased the profitability of football clubs.

Research design

We first examine whether FFP has reduced the probability of reporting a loss. If clubs' operations are based more on their own revenues, then clubs are expected to be more profitable and hence the incidence of losses is expected to be lower under FFP. To test H1, we estimate the following mixed logit model:

$$\begin{aligned} Log\left(\frac{p_{i,t}^{LOSS}}{1-p_{i,t}^{LOSS}}\right) =& \beta_0 + \beta_1 FFP_{i,t} + \beta_2 POSITION_{i,t} + \beta_3 WINNER_{i,t} + \beta_4 TIER2_{i,t} \\ &+ \beta_5 CL\_FINAL_{i,t} + \beta_6 CL\_SF_{i,t} + \beta_7 CL\_QF_{i,t} + \beta_8 CL\_R16_{i,t} \\ &+ \beta_9 CL\_G_{i,t} + \beta_{10} LEVERAGE_{i,t-1} + \beta_{11} logREVENUE_{i,t-1} \\ &+ \beta_{12} DEU_{i,t} + \beta_{13} ESP_{i,t} + \beta_{14} FRA_{i,t} + \beta_{15} ITA_{i,t} \end{aligned} \quad (1)$$

where $p_{i,t}^{LOSS}$ represents the probability of reporting a loss for football club in i and year t. We use two different measures for a loss: (i) negative earnings before interest and taxes (EBIT) and negative profit before tax (PBT). Our main variable of interest is the dummy

variable *FFP,* which takes a value of 1 for the post-FFP (years 2012–2016) and otherwise 0 (years 2008–2011). We assume that the incidence of losses has decreased under FFP. As a result, we expect the coefficient on *FFP* to be negative. *POSITION* is a club's domestic top tier position in a given year (a lower number indicates a higher position). If sporting success and financial profitability are positively related, then we expect to see a positive coefficient on *POSITION*. In other words, as a club's domestic league position worsens, then the probability of reporting a loss increases. We also control for winning the domestic league in the current or previous year by including a dummy variable *WINNER*. If a club plays in the second tier in a given year, and otherwise 0. If this is the case (namely, *TIER2* = 1), *POSITION* is set to zero. In addition, we include indicator variables that capture success in the UEFA Champions League. *CL_FINAL* (*CL_SM, CL_QF, CL_R16, or CL_G*) takes a value of 1 if the club plays in the Champions League finals (semi-finals, quarter-finals, a round of 16, or a group stage), and otherwise 0. We expect that a club's on-field success reduces the probability it will report a loss; the coefficients on these dummy variables are therefore expected to be negative. We include leverage to measure the financial health of clubs. We compute *LEVERAGE* as initial total liabilities divided by initial total assets. The size of the club is measured by the natural logarithm of revenues (*logREVENUE*). Finally, we control for country fixed effects by including separate dummy variables for each country (we use England as a reference country). We use a form of generalized estimating equation (GEE) to estimate a marginal regression model because the GEE gives consistent estimates for correlated longitudinal data (Fitzmaurice et al., 2012; Liang & Zeger, 1986). The incidence of losses is correlated, and inferences must take that into account. For this reason, each club is used as the clustering variable, and we specify an exchangeable correlation structure. For these reasons, a GEE is especially suitable for estimating the overall treatment effect of FFP. We also run the model separately for each country using logistic regression to reveal the effect of cross-country variations in the implementation of the FFP.

Our second hypothesis examines whether the FFP has increased the profitability of clubs as measured by the PBT and EBIT margins (i.e. profit measure divided by revenue). We estimate the following OLS model and keep the same independent variables as in Model 1 except that we also include club fixed effects to control for unobserved club characteristics that are time-invariant (to avoid perfect multicollinearity, country fixed effects are omitted):

$$\begin{aligned} PROF_{i,t} = & \beta_0 + \beta_1 FFP_{i,t} + \beta_2 POSITION_{i,t} + \beta_3 WINNER_{i,t} + \beta_4 TIER2_{i,t} \\ & + \beta_5 CL\_FINAL_{i,t} + \beta_6 CL\_SF_{i,t} + \beta_7 CL\_QF_{i,t} + \beta_8 CL\_R16_{i,t} \\ & + \beta_9 CL\_G_{i,t} + \beta_{10} LEVERAGE_{i,t-1} + \beta_{11} logREVENUE_{i,t-1} \\ & + club\ f.e. + \varepsilon_{i,t}, \end{aligned} \tag{2}$$

where *PROF* is either PBT margin or EBIT margin, H2 is closely related to H1 because both are based on clubs' profitability, but they examine the issue from different angles. Model 1 examines whether the FFP reduces the probability of reporting a loss (i.e. a specific threshold within the distribution of profitability) while Model 2 examines whether the level of profitability is higher under the FFP. As an additional test, we also estimate Model 2 separately for each country.

Sample selection

The data used in this study consist of club financials from Europe's top five football leagues, the English Premier League, the French Ligue 1, the German Bundesliga, the Italian Serie A, and the Spanish La Liga. Data were gathered for the years 2008–2016. There are 98 teams playing each year in Europe's top five leagues, and when the time period is nine years, this would mean roughly 882 data points in total. The financial data of this study are extracted from the Orbis database, which is produced and held by Bureau van Dijk. Unfortunately, financial data is not available for all of the teams and years. Our initial sample comprises 690 club-year observations (139 different clubs). As our initial sample does not comprise the entire population of top tier observations, our sample is prone to selection bias (see, Denrell, 2003). Specifically, it is possible that financially poorly (well) performing clubs are more likely to be relegated (promoted) to the (top) second tier, creating an illusion that FFP has increased clubs' profitability. For this reason, we also collected available financials for second-tier years for these 139 clubs over the examined period. Following this procedure, our main sample includes 1,094 club-year observations.

There are many different accounting indicators that could be used to measure the financial performance of professional football clubs. We use EBIT and profit before tax (PBT). Both measures have their strengths and weaknesses. EBIT numbers do not include finance income/costs, so the measure is potentially more comparable across clubs because it is not affected by the differences in financial structure and cost of capital (and income on financial assets). However, the definition of EBIT in Orbis generally excludes transfer fees. For example, the EBIT number collected by Orbis for Tottenham Hotspur in 2014 excludes a line item called 'Profit on disposal of intangible fixed assets' which amounted to almost £104 million (mainly due to one player's (Gareth Bale) transfer to Real Madrid). In this respect, the PBT number is more consistent with UEFA's stated break-even rule than the EBIT one.

All the financials are in US dollars and they are primarily obtained from the club level to exclude irrelevant revenues and expenses unrelated to the football club's core operations. However, the financial data of some clubs are gathered from the holding company level as there were important revenues or expenses missing from the club level financials. This is particularly the case with the few biggest clubs, where club level financials do not include revenues and expenses from the stadium or from related activities. Domestic league information and positions were gathered from the archives of each league's website, that on Champions League positions from UEFA's website. In the German Bundesliga, the league positions vary between 1 and 18, and for other leagues, the scale is from 1 to 20.

Empirical results

Descriptive statistics

Table 1 shows the mean values of key financial variables pre- and post-FFP by country. It is noteworthy that we have only 80 club-year observations from 11 German clubs. The average domestic league position for these observations is exactly nine, so on-field performance does not seem to be associated with the availability of observations. However,

Table 1. Key financial variables pre- and post-FFP by country.

	England		Germany		Spain		France		Italy	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
n	126	167	37	43	91	127	115	139	112	137
Revenue ($000s)	121,542	**156,595**	129,735	183,804	49,246	**89,448**	52,008	53,607	81,864	89,575
Total assets ($000s)	263,751	299,427	167,737	197,796	163,122	179,012	49,252	58,115	117,922	143,193
LEVERAGE	1.396	1.361	0.837	**0.658**	1.334	1.076	0.835	**0.953**	0.886	0.923
EBIT ($000s)	−22,685	−17,648	−356	8,995	−7,974	**6,428**	−10,108	−8,667	−7,754	−8,160
PBT ($000s)	−17,532	−8,502	−1,869	**8,527**	−10,951	**5,481**	−9,221	−8,644	−7,641	−9,297
EBIT margin	−0.347	−0.324	−0.071	−0.033	−0.367	**−0.042**	−0.220	−0.228	−0.208	−0.209
PBT margin	−0.247	−0.214	−0.059	−0.023	−0.382	**−0.042**	−0.217	−0.227	−0.211	−0.230
LOSS (EBIT<0)	0.810	0.743	0.541	0.395	0.604	**0.307**	0.791	0.827	0.634	0.650
LOSS (PBT<0)	0.730	**0.563**	0.622	**0.372**	0.648	**0.307**	0.765	0.827	0.616	0.693

Significant differences ($p<0.005$) in mean values between pre- and post-FFP are in bold (in 'Post' column).

Table 1 shows German clubs have the highest revenue, closely followed by English clubs, which suggest that the largest German clubs are represented (like FC Bayern München and Borussia Dortmund). Spanish and Italian clubs have higher revenues than French clubs. English clubs have the highest total assets followed by German, Spanish, Italian, and French clubs. Leverage ratios (total liabilities to total assets) reveal that many clubs have a negative shareholders' equity as the mean value is close to or above one. Leverage ratios are the highest in England and lowest in Germany. Turning to profitability, we find that clubs generate significant losses. More than half the club-year observations are losses in England, France, and Italy. However, profitability is significantly higher in the post-FFP period in Germany and Spain. In addition, the incidence of losses in PBT seems to be notably lower in the post-FFP period in all countries except in France and Italy. An (untabulated) average propensity to report a negative EBIT (PBT) is 70.5% (68.8%) in the pre-FFP period and 62.6% (58.6%) in the post-FFP period, respectively. These differences are statistically significant. However, to make more definite conclusions, we next estimate GEE and OLS models.

Results

Table 2 reports the results of Hypothesis 1. Specifically, the estimates reveal the coefficient on *FFP* is significantly negative, indicating that football clubs are less likely to report a loss in the post-FFP period. It is difficult to determine the precise effect of UEFA's FFP due to confounding factors, but it is clear that the effect is economically significant even at the lower boundary. We, therefore, conclude that FFP has on average reduced the probability of football clubs reporting a loss.

With regard to control variables, we find that a one-position improvement in the domestic league decreases the probability of reporting a loss. However, winning the domestic league in the current or previous year is not associated with the probability of reporting a loss. All Champions League indicator variables are negative and increase in absolute magnitude with Champions League success. In both profitability measures, advancing to the semi-finals or better in the Champions League statistically significantly decrease the probability of reporting a loss. This is as expected because broadcasting and commercial revenues are substantial when a club advances in the Champions League. Our untabulated analysis indicates that club revenues are 20% to 26% higher when the club reaches the quarterfinals or better after controlling for other factors. Overall, the results suggest that greater on-field success improves financial performance. However, club size, as measured by the previous year's revenues, indicates that larger clubs are more likely to report a loss. Beginning-of-period leverage is insignificant. The France indicator variable is significantly positive, suggesting that French clubs are more likely to report a loss compared to English clubs.

Table 3 reports the results of Hypothesis 2. The general pattern of the results is very similar. Specifically, the OLS regression estimates reveal that the coefficient on *FFP* is significantly positive at 10 percent level (in a two-tailed test), indicating that the EBIT (PBT) margin is on average 6.2 (5.9) percent points higher in the post-FFP period. As a result, we find support for Hypothesis 2 suggesting that FFP has increased the profitability of football clubs.

Table 2. Has UEFA's Financial Fair Play regulation decreased the probability of losses?

		Dependent variable			
	Expected sign	*LOSS (EBIT<0)*		*LOSS (PBT<0)*	
$\boldsymbol{FFP_{i,t}}$	−	−0.468	(0.000)	−0.534	(0.000)
$POSITION_{i,t}$	+	0.061	(0.001)	0.049	(0.012)
$WINNER_{i,t}$	−	−0.395	(0.224)	−0.426	(0.311)
$TIER2_{i,t}$	?	2.784	(0.000)	2.434	(0.000)
$CL\_FINAL_{i,t}$	−	−1.856	(0.001)	−1.444	(0.034)
$CL\_SF_{i,t}$	−	−1.424	(0.025)	−1.046	(0.081)
$CL\_QF_{i,t}$	−	−0.776	(0.085)	−0.417	(0.410)
$CL\_R16_{i,t}$	−	−0.465	(0.277)	−0.430	(0.362)
$CL\_G_{i,t}$	−	−0.449	(0.254)	−0.296	(0.478)
$LEVERAGE_{i,t-1}$	+	0.135	(0.107)	0.072	(0.384)
$logREVENUE_{i,t-1}$	?	0.684	(0.000)	0.523	(0.000)
$DEU_{i,t}$	?	−0.870	(0.029)	−0.181	(0.632)
$ESP_{i,t}$	?	−0.912	(0.003)	−0.306	(0.307)
$FRA_{i,t}$	?	0.798	(0.022)	1.281	(0.000)
$ITA_{i,t}$	?	−0.224	(0.477)	0.417	(0.168)
Intercept		−7.630	(0.000)	−6.212	(0.000)
n		1,094		1,094	

The table reports mixed logit model results. Standard errors are clustered at the club level (*p*-values are in brackets).

An inspection of the effects of the control variables reveals that one-position improvement in the domestic league is associated with a 0.9 percent point increase in EBIT and PBT margins. On average, clubs that have won their domestic league in the current or previous year enjoy about eight percentage points higher PBT margin in the following year, although the result is only marginally significant. Profit margins are highly negative, both economically and statistically, for second-tier club-years. Note that our sample clubs have all played in the top tier in at least one year during the period 2008–2016. It may be the case that 'on the brink' clubs are spending heavily on player wages to get promotion to the top division. We leave the investigation of this issue for future work. The positive effect of on-field success in the Champions League is evident, as in Table 2, especially with respect to EBIT margin. Leverage and club size are not associated with profitability (we note that club fixed effects absorb their effect).

Taken together, we provide evidence that UEFA's regulatory intervention seems to have improved clubs' financial performance. We also show that on-field success

Table 3. Has UEFA's Financial Fair Play regulation improved the profitability of clubs?

		Dependent variable			
	Expected sign	*EBIT margin*		*PBT margin*	
$\boldsymbol{FFP_{i,t}}$	−	0.062	(0.075)	0.059	(0.074)
$POSITION_{i,t}$	+	−0.009	(0.016)	−0.009	(0.012)
$WINNER_{i,t}$	−	0.061	(0.137)	0.081	(0.095)
$TIER2_{i,t}$	?	−0.589	(0.000)	−0.548	(0.000)
$CL\_FINAL_{i,t}$	−	0.134	(0.029)	0.134	(0.055)
$CL\_SF_{i,t}$	−	0.165	(0.043)	0.141	(0.163)
$CL\_QF_{i,t}$	−	0.128	(0.057)	0.113	(0.125)
$CL\_R16_{i,t}$	−	0.061	(0.415)	0.076	(0.291)
$CL\_G_{i,t}$	−	−0.029	(0.750)	−0.016	(0.872)
$LEVERAGE_{i,t-1}$	+	−0.002	(0.938)	0.031	(0.308)
$logREVENUE_{i,t-1}$	?	−0.021	(0.551)	−0.014	(0.715)
firm fixed effects		Yes		Yes	
n		1,094		1,094	
R^2		38.1%		30.0%	

The table reports OLS results. Standard errors are clustered at the club level (*p*-values are in brackets).

improves financial performance. In subsequent tests, we examine whether these findings are similar across countries. We also report a series of robustness checks.

Additional analyses

Cross-country differences

There are reasons to believe that the effect of FFP is not uniform across countries. For example, incentives and resources of domestic league organizations, competitive balance in national leagues, and ownership structures of clubs vary between countries and are likely to affect the implementation of the FFP. We do not attempt to identify and quantify such differences. Rather, our aim is more modest: to determine whether the effect of FFP is similar across countries. To shed light on this issue, we estimate our models separately by country. We use only the PBT margin as a measure of profitability and switch from GEE to logistic regression and account for the clustering at the club level. Logistic regression allows us to compute country-specific odds ratios (e^{β_1}) for FFP.

Table 4 reports the results and shows that the coefficient on *FFP* is significant in two out of five cases. Specifically, football clubs are less likely to report losses in the post-FFP period in England and Spain. The magnitude of the coefficients implies that clubs in these countries are roughly half as likely to report a loss in the post-FFP period. The coefficient on *FFP* is insignificant in France and Italy, suggesting that the break-even requirement of FFP was not met in these countries. The coefficient on *FFP* is insignificantly negative (−0.689, p=0.130) in Germany, perhaps because of the small sample size (i.e. low power). We do not discuss control variables for reasons of brevity.

Table 5 reports the results of country specific OLS models. The only positively significant coefficient on *FFP* is found in the Spain sub-sample. The coefficients on *FFP* in other country sub-samples are insignificant. The combined evidence suggests that English and German clubs may smooth their reported numbers to meet the break-even requirements. In fact, Dimitropoulos et al. (2016) find that clubs seek to promote the image of a financially robust organization in order to secure licensing, often at the expense of accounting quality.

Dermit-Richard et al. (2019) provide evidence that most French clubs do not conform with FFP rules. One potential reason for French clubs' inability to comply with FFP is that instead of profitability, French clubs focus on solvency (see, Dermit-Richard et al., 2019). For Italian clubs, the inability to comply with FFP result is consistent with anecdotal evidence. Milan vice-president Adriano Galliani admitted, 'FFP hurts Italy. There will no longer be patrons that can intervene. Until now, people like Berlusconi and Moratti would be able to support us, but with the fair play, it will no longer be possible.' (Swiss Ramble, 2012). Taken together, our results suggest that the implementation and enforcement of FFP remain challenging. One avenue for future research is to examine the reasons for and persistence of this efficacy gap.

The financial crisis and difference-in-differences estimator

The 2008 financial crisis had a major impact on the global economy. We obtain GDP per capita data from the World Bank's World Development Indicators database. Our untabulated investigation reveals that the GDP per capita decreased in all sample counties in

Table 4. Probability of negative profit before tax by league.

	Logistic regressions by league									
	England		Germany		Spain		France		Italy	
$\boldsymbol{FFP_{i,t}}$	−0.516	(0.006)	−0.689	(0.130)	−0.750	(0.000)	0.073	(0.670)	0.142	(0.322)
$POSITION_{i,t}$	0.069	(0.111)	0.167	(0.051)	0.041	(0.333)	0.219	(0.001)	−0.019	(0.619)
$WINNER_{i,t}$	0.602	(0.058)	−6.042	(0.000)	−6.834	(0.000)	−0.840	(0.185)	−0.412	(0.241)
$TIER2_{i,t}$	1.352	(0.001)	1.862	(0.020)	0.869	(0.012)	3.009	(0.000)	0.441	(0.324)
$LEVERAGE_{i,t-1}$	0.555	(0.052)	−0.757	(0.558)	−0.236	(0.053)	0.400	(0.488)	1.818	(0.025)
$logREVENUE_{i,t-1}$	0.379	(0.170)	0.149	(0.834)	0.262	(0.218)	2.253	(0.000)	0.162	(0.388)
Intercept	−3.916	(0.222)	−7.085	(0.443)	−9.317	(0.004)	−23.374	(0.000)	−2.824	(0.216)
n	293		80		218		254		249	
McFadden's R^2	13.8%		30.9%		16.0%		24.7%		6.1%	

The table reports logistic estimation results. Standard errors are clustered by club (*p*-values are in brackets).

Table 5. Profit before tax margin by league.

	OLS regressions by league									
	England		Germany		Spain		France		Italy	
$\boldsymbol{FFP_{i,t}}$	0.007	(0.891)	0.001	(0.975)	0.294	(0.005)	−0.017	(0.578)	−0.022	(0.757)
$POSITION_{i,t}$	−0.007	(0.159)	−0.007	(0.091)	−0.006	(0.772)	−0.012	(0.000)	−0.013	(0.005)
$WINNER_{i,t}$	0.127	(0.370)	0.080	(0.055)	0.058	(0.129)	0.165	(0.007)	0.096	(0.425)
$TIER2_{i,t}$	−0.530	(0.000)	−0.212	(0.004)	−0.710	(0.042)	−0.409	(0.000)	−0.598	(0.000)
$LEVERAGE_{i,t-1}$	0.031	(0.638)	0.084	(0.452)	0.056	(0.166)	0.157	(0.069)	−0.509	(0.003)
$logREVENUE_{i,t-1}$	0.109	(0.038)	0.201	(0.046)	−0.140	(0.273)	−0.098	(0.005)	−0.001	(0.971)
firm fixed effects	Yes		Yes		Yes		Yes		Yes	
n	293		80		218		254		249	
R^2	42.2%		47.8%		21.4%		55.2%		37.2%	

The table reports OLS results. Standard errors are clustered at the club level (*p*-values are in brackets).

2009 but then recovered its 2008 level or higher two years later in the UK (a proxy for England), Germany, and France but not in Spain and Italy. An alternative explanation for our findings is that the economic downturn seriously reduced revenues of football clubs while salaries and other costs remained at a constant level, leading to losses in the pre-FFP period. For this reason, it is difficult to disentangle the influence of the economic downturn from UEFA's FFP initiative. As a sensitivity test, we deleted the year 2009 in our pre- and post-FFP analyses and continued to find similar results. We also tested to ensure no single year was driving our results. We also controlled for GDP per capita in our models, but our inferences remain unchanged. However, the general recovery from the financial crisis suggests that our estimates are an upper boundary, which further casts doubt on the effect of FFP.

As a final test, we used a difference-in-differences (DID) estimator. We took advantage of the fact that UEFA regulations apply to European as opposed to domestic competition. We created a variable *TREATMENT* that takes a value of one for clubs that have participated in the Champions League (a treatment group) and zero for other clubs (a control group). Specifically, we compare the before and after changes in profitability outcomes for treatment and control groups and estimate the overall impact of the FFP using the *TREATMENT* and *FFP* interaction variable. We continue to find that EBIT and PBT margins are higher in the post-FFP period, but the interaction variable is insignificant. Thus, we cannot rule out the possibility that the observed improvement in performance is simply caused by the financial crisis recovery.

Conclusions

Numerous football clubs around Europe have faced financial distress over the years, and the main cause seems to be overspending on salaries and transfer fees. UEFA approved its Financial Fair Play regulation (FFP) in 2010 in the belief that the measures are crucial for the future of European football. The FFP does not rely on a salary cap like major professional sports leagues in the United States, so its efficacy is unclear. The objective of this paper is to provide preliminary evidence of whether FFP has been successful in promoting the break-even rule. Using data from the top five European leagues over the period 2008–2016, we provide evidence that the FFP has been only moderately successful. Specifically, we find that football clubs are less likely to report a loss in the post-FFP period (2012–2016) than in the pre-FFP period (2008–2011). In addition, overall profitability has increased. However, country-specific analysis reveals that the estimated positive effect is significant only in Spain, while for England and Germany, we find weak evidence. Despite these positive effects, we find that for French and Italian clubs, the effect of FFP is insignificant. The main limitations of this study relate to the recovery from the global financial crisis and data paucity, especially with respect to Germany.

UEFA's aim to improve clubs' financial management is necessary but not sufficient. Football clubs operate as a process of advancing expenses (e.g. player salaries) to earn revenues. In other words, expenses comprise shorter and longer-term operating bets (i.e. investments in player talent) to achieve sporting success and, consequently, deliver revenues. UEFA's break-even rule encompasses both clubs' tendency to spend resources (supply) and to generate revenues (demand), making it difficult to enforce and monitor. We renew the calls for budget constraints and/or a salary cap, because

in football, as in every business, expenses precede revenues and monitoring only one dimension is relatively easy using the audited income statements. However, it would be naïve to believe that one size fits all, so a salary cap should perhaps vary depending on league and other relevant factors. We hope this study prompts future discussion on the viable alternatives to the current FFP arrangements and that might significantly improve the financial health of European football clubs.

Notes

1. Relevant income must be reduced by the value of any non-monetary credits/income, income transaction(s) with related party(ies) above fair value, income from non-football operations not related to the club, income in respect of a player for whom the licensee retains the registration, and credit in respect of a reduction of liabilities arising from procedures providing protection from creditors. (Annex X, UEFA 2018)
2. Relevant expenses must be increased by the value of any expense transaction(s) with related parties below fair value. Relevant expenses must be decreased by expenditure on youth development activities, expenditure on community development activities, expenditure on women's football activities, non-monetary debits/charges, finance costs directly attributable to the construction and/or substantial modification of tangible fixed assets, costs of leasehold improvement, and expenses of non-football operations not related to the club. (Annex X, UEFA 2018)
3. In retrospect, we know that in March 2012, UEFA and the European Commission signed a joint agreement intended to prevent clubs using the EU legal system to challenge the validity of FFP (e.g., by claiming that it conflicts with the EU's anti-competition legislation) (https://www.dailymail.co.uk/sport/football/article-2118248/UEFA-Financial-Fair-Play-loophole-closed.html).

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