FOOTBALL CLUBS DROWNED BY PLAYERS

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Abstract
Introduction. The insolvency in football was explained by the underperformance of a football club, either in terms of its ability to achieve playing results which depends on the quality of players on the staff, or in terms of its ability to generate a level of revenue consistent with performance in the league. Hence, two questions were addressed in the study: how deep will the European football crisis be after 2020 and are payrolls the most sensitive factor of football business performance? *Material and Methods.* The study was based on the European football clubs data derived from the annual financial statement. A descriptive statistics analysis was performed in order to find out how significant salary indicators are in comparison to other football clubs' performance measures. In order to establish the scale of changes in football finance in 2020, a basic stress test analysis was implemented. *Results.* The study established that salary to revenue indicator is one of the most significant for football clubs' performance. Thus, as the first step, the analysis of revenue reduction was elaborated and in the second step, the analysis of the reduction of salaries was performed. The presented stress test scenario implied that the situation of European football would change dramatically under the assumption of 50% reduction of the annual revenue. *Conclusions.* The study established that the football clubs'situation is too serious not to be carefully managed due to cost and revenue performance.

Key words: bankruptcy, football, finance, crisis

Introduction

Defining a reason behind the firm's failure is one of the most important study subjects in management, business and economics. The standard economic view based on the work of Jovanovic [1] and Hopenhayn [2] is that the forces which underline the firm's failure and the decision to exit a competitive industry are driven by random shocks. Empirical studies of bankruptcy and exit have focused on the characteristics of failed firms and the effect on industry returns, innovation and product market competition. Insolvency is a systematic problem in European football. In 2012, UEFA [3], the governing body of European football, reported that 56% of the clubs failed to meet at least one of the following criteria: no negative net equity, no qualification by the auditors as to whether the business was a going concern and no overdues payable [4, 5].

The contribution of this paper is to implement previous studies on financial difficulties of football business and, basing on these studies and collected financial data, to answer the following questions:
1. How deep will the crisis in European football be after 2020?
2. Are salaries the most sensitive factor of football business performance?

The previous research about financial difficulties of football clubs is quite well developed. One of the key authors who researched insolvency of main football leagues in Europe is Szymanski [5, 6, 7]. He co-published three papers based on English, French and German insolvency in the football league. Some of these main conclusions can be identified in the following research. The principal cause of insolvency is the underperformance of a football club, either in terms of its ability to achieve playing results, given the quality of players on the staff, or in terms of its ability to generate a level of revenue consistent with performance in the league. Thus, one of the key performance in-

dicators to present this relation is salaries to revenue ratio [8]. In sport business, before clubs go into administration insolvency procedure, the underperformance must persist for a number of years and still it is not the ultimate solution. Szymanski [6] noted that underperformance which leads to insolvency is not predictable: "it is like tossing a coin five times and coming up heads five times – an unlikely and unpredictable yet perfectly possible event". A key factor in the process of insolvency is the relegation of the team to lower leagues. Underperformance increases the probability of the relegation, and the relegation almost always leads to a significant drop in revenues (in all three main sources: broadcasting, ticketing and merchandising), which further undermines the financial position of the club. The bankruptcy process usually involves the relegation, the insolvency is typically a problem among lower division clubs that once played in higher divisions. The extent to how far down the pyramid the problem of insolvency is concentrated varies by country, but for England, France and Germany the phenomenon is almost unknown for clubs when they play in the top division. By contrast, it is quite common in the third tier in each country [7].The countries which have long imposed regulatory constraints on club finances, such as France and Germany, are no less susceptible to this pattern of financial distress of football clubs than countries which traditionally have not (England).

The insolvency was also researched by Barajas and Rodríguez [9]. They tried to use a regression model to explain why some clubs are under administration in Spanish football. They rely on a sample of 35 clubs in 2008, of which six were in the legal insolvency process of administration in that year. Their selected explanatory variables are mainly financial ones: financing rate (the ratio of short term debt to current assets), indebtedness (Total Debts/Total Assets), the ratio of total revenues to debt, the ratio of staff expenses to operating revenues and the ratio short-term to long-term debt. They find no significant impact

of their explanatory variables on the likelihood that a club has entered the administration process. They developed this topic [10] analyzing Spanish clubs during the period from 2007 until 2011, using Altman's methodology to classify clubs according to their Z-score values [11]. They noted that Spanish football was in a very poor financial condition with the most clubs being at risk of going bankrupt. A similar conclusion was also noted by the author out of the top 5 European leagues. Perechuda [12] presented results for Polish top division football clubs from the years 2010-2014. Ten of 11 researched clubs were at risk of going bankrupt. Barajas and Rodriguez [10] identified a number of steps required to restore the financial stability including raising equity from the capital markets or club members, revenue enhancement, wage cuts and working to reduce current liabilities.

Judging from the recent UEFA Club Licensing Benchmarking Report [3], there is also a reason to be concerned about the effect of downturn on the financial position of some of the weaker European clubs. Just under 10% of clubs in the top divisions in Europe declared losses in excess of €10 million in 2017 [3]. In the past, UEFA used to report the percentage of clubs whose auditors expressed a "going concern" qualification, meaning that, without an injection of capital from outside, the club would likely be bankrupt in the foreseeable future. The last time UEFA reported the figure is 2011, and it was one in six of the top division clubs in Europe. The continuing silence of UEFA on this statistic does not suggest that the percentage has diminished significantly [6]. The newest reports of UEFA financial benchmark indicate that financial performance has improved, clubs' financial position has become significantly healthier, with net assets increasing from less than €2bn to more than €9bn in the space of a decade, which is considered in the report as a success of financial fair play (FFP) regulation. The optimistic summary of the UEFA president after the economic slowdown in 2020 will probably be insignificant as other main benefits of FFP implementation. In order to summarise the situation before 2020, it is worth seeing the financial analysis presented by UEFA in its report [3]. First of all, we can notice an increasing disparity between the big five European leagues (Spanish, English, Italian, French and German) and other countries. The English clubs have more than twice the assets of Spanish clubs and account for 30% of all European club assets. The asset-to-revenue ratios of the top five leagues range from 120% in Germany to 210% in Italy and England. The highest ratios overall can be found in the Portuguese, Danish and Croatian leagues, while only one country in the top 20 – Switzerland – has total assets that are worth less than its annual revenue, with an asset to revenue ratio of 90%. This kind of disparity is not the only one among other financial indicators. We can assume that strong clubs after FFP regulations are stronger and weak clubs became weaker. However, we can observe key changes in the case of football players' financial disclosure. With European clubs continuing to spend large amounts of money in the transfer market, players account for a larger percentage of clubs' balance sheet assets, with that percentage rising from 26% in 2017 to 29% in 2018. The value of intangible fixed assets (players) increased in 17 of the top 20 leagues, with 16 of them reporting double-digit growth, reflecting transfer price inflation. A similar observation was made by Ciechan-Kujawa and Perechuda [13]. The problem of transfer value inflation and a forthcoming factor as a salary have already been considered by many other authors [8, 10]. Player accounting provides a consistent way of valuing players across all clubs, but it is not a particularly accurate way of assessing the value of players on clubs' balance sheets. Players sold in 2018 had a combined transfer fee of €5.4bn, but were valued at just €1.0bn

at the time of their sale. The net book value and original transfer costs of the top 20 football squads have both increased by more than 60% since 2015, reflecting major increases in transfer prices. In relative terms, the average squad cost of clubs in the top 20 football clubs (€532m) is equivalent to 140% of those clubs' average 2018 revenues. So, investments in players excess the value of revenue from the sale which actually led to call this a financial bubble. In 2018, the wages increased in 17 of the top 20 leagues. One of the key wages indicators is S/R (salary to revenue ratio) [8]. Germany continues to have the lowest wage to revenue ratio (53%) out of the top 20 leagues in UEFA report [3]. At the other end of the scale, France, Russia, Turkey, Portugal, Belgium, Switzerland, Ukraine, Greece, Israel and Poland have average wage bills of between 70% and 80% of revenue. Given that other operating costs tend to consume between 33% and 40% of revenues, a wage to revenue ratio in excess of 70% is highly likely to result in losses. In addition, a continuation of the low revenue growth reported in 2018 coupled with a reduction in transfer profits could leave clubs with high wage to revenue ratio heavily exposed and potentially leading to financial problems. This explains why the 70% ratio is included as a risk indicator in the UEFA Club Licensing and Financial Fair Play Regulations [3, 4]. The reports from UEFA, Deloitte, KPMG and research papers confirm that the management of wages and players is a key to the financial performance of football in Europe [3, 4, 8].

Materials and methods

In order to achieve the main study goals, a careful data collection was necessary. The main criterion each club fulfilled in order to be included in the sample was that they had full financial data published in their annual financial statements required by the research data setting. For the chosen research, I collected data regarding clubs' gross income, total assets, current and non-current assets, shareholder's equity, revenue, total debt and other additional financial information. The research sample is restricted only to clubs participating in UEFA ranking in the period of 2012-2019. This ranking lists the best sports clubs in Europe, assigning them points for sports achievements from the past 5 years. In the process of gathering financial data, it was possible to preliminarily select 37 clubs with available financial data. The following verification of the data ultimately allowed us to use the data of 33 clubs in a reporting period of at least 3 years in the period of 2012-2019. The final verification of the data allowed us to collect the financial information of 78 individual reporting periods in the given timeframe (firm-year observations). In addition, the data pertaining to player value, clubs, and sports achievements were gathered for the purpose of the second stage of the research. In this case, data were gathered for 8 football seasons.

In order to answer the first research question, the procedure of stress tests [14] was performed. For this part of the study, the sample was based on 28 firm-year observations (14 for each year). Financial data were modified by reducing revenue by 50% for the last two seasons in the sample. This modification had two versions: 1- without any changes in salaries 2- reducing salaries annually by 50%. All the changes were compared to real data and showed the way financial performance measured by chosen indicators changed with a stress test. In order to answer the second research question, basic descriptive statistics were applied to check how the key performance indicators are correlated with salary ratio (S/R).

Results and discussion

Football performance indicators
Based on the previous literature review, the following performance variables were analysed: revenue, operational and gross income, revenue diversification, share of current assets in total assets, growth of revenues from different sources, gross margin and operational margin, stadium attendance, gross return on total assets, debt ratio, asset turnover, size of the company measured as the natural logarithm of the total assets of each club (Dimitropoulos and Tsagkanos) [15], salary to revenue ratio, salary to total operational costs, place in national league, points granted by UEFA, operational income as EBITDA and operational margin.

In Table 1, median, mean and coefficient of variance were applied. Coefficient of variance showed that the most stable performance indicators are SIZE, S/TOC, S/R, stadium attendance. Two of them are related to salaries.

Pearson's correlation analysis confirmed that salary understood as salary/revenue ratio is one of the most significant performance indicators because it is significantly correlated with 15 of 21 analysed indicators. We can observe good negative significant correlation with operational margin (-0.71). The strongest significant correlation is also observed between S/R and EBITDA (-0.56), stadium attendance (-0.55) and gross income (-0.50). All mentioned indicators are negatively correlated, which means salary inflation has got a negative influence on profitability of football clubs. Stadium attendance is also negatively correlated, which means spending more does not lead clubs to higher attendance. Moreover, a negative significant correlation between S/R and value of football players can be noted. As the previous assumption was made that transfers and higher value of players lead to higher expenditures on salaries in relation to revenue, the correlation is opposite. The established correlation analysis confirmed the previous assumptions that salary is the most sensitive factor of football business performance. The performed analysis and previous research review also let us assume that salary would be one of the most important factors in determining whether football clubs can cope with financial difficulties and partially lower revenues due to suspension of football competitions in Europe in 2020.

Stress test analysis
The change of revenues and salary costs was included in gross income calculations and, in the case of loss, values of the balance sheet were reduced without any new financing from the owner, only liabilities could cover the loss. Only two full financial years were analysed: 2018 and 2019. The sample for the analysis consisted of 14 European football clubs such as Real Madrid, FC Barcelona, Atletico Madrid, PSG, Bayern Munchen, Manchester City, FC Basel, FC Porto, Lazio, Arsenal, AC Milan, Juventus, Ajax, FC Internazionale Milano. The sample was elaborated on the basis of the access to financial data necessary to elaborate the chosen indicators. The stress test was performed on the following indicators: gross margin (Gross Margin), gross return on assets (ROA gross), debt ratio calculated as total liabilities divided by total assets (Debt ratio), total asset turnover ratio (A turn), salary to revenue ratio (S/R), earnings before interest, tax, depreciation and amortization (operational income, EBITDA), operational margin calculated as EBITDA divided by total revenue from the sale. These indicators were chosen to show changes in profitability, productivity and financing. Table 3 presents the data regarding the change in the situation by

Table 1. Descriptive statistics of football clubs performance variables

Variable	Valid N	Mean	Median	Minimum	Maximum	Std Dev.	Coef.Var.
Total revenue	78	315.74	280.98	46.11	852.17	214.19	68%
Gross income	78	15.21	18.14	-98.71	124.92	38.81	255%
Coeff of variance of revenue diversification	78	72%	66%	27%	137%	27%	37%
Cur Assets/Total Assets	78	35%	32%	6%	70%	14%	39%
Match-day rev growth %	78	14%	3%	-72%	610%	77%	545%
TV rev growth %	78	17%	6%	-76%	271%	47%	272%
Merchandising rev growth %	78	12%	8%	-89%	134%	31%	254%
Total rev growth %	78	11%	10%	-56%	117%	26%	240%
Gross Margin	78	5%	5%	-76%	72%	23%	437%
Stadium attendance %	78	79%	85%	28%	100%	19%	24%
ROA gross	78	3%	3%	-29%	39%	11%	340%
Debt ratio	78	71%	77%	23%	132%	28%	40%
Asset turnover	78	56%	55%	18%	114%	21%	37%
SIZE	78	6.15	6.30	4.49	7.22	0.64	10%
S/R	78	60%	56%	25%	107%	14%	23%
S/TOC	78	65%	66%	37%	98%	12%	18%
Place in league	78	3.49	2.00	1.00	17.00	3.18	91%
Value of football players	78	356.86	313.70	1.09	1160.00	228.15	64%
UEFA points	78	20.11	20.00	0.00	72.00	12.74	63%
EBITDA	78	41.37	15.32	-83.26	249.19	71.58	173%
Op margin	78	6%	9%	-108%	44%	24%	422%

Source: author's own elaboration

Table 2. Pearson's correlation analysis of performance indicators in football clubs

Variable	Total revenue	Gross income	Coeff of variance of revenue diversification	Cur Assets/Total Assets	Match-day rev growth %	TV rev growth %	Merchandising rev growth %	Total rev growth %	Gross Margin	Stadium attendance %	ROA gross	Debt ratio	Asset turnover	SIZE	S/R	S/TOC	Place in league	Value of football players	UEFA points	EBITDA	Op margin
Total revenue	1.00	0.28	-0.42	-0.06	-0.08	0.00	0.15	0.05	-0.03	0.47	-0.01	-0.25	0.60	0.79	-0.42	0.12	-0.44	0.84	0.23	0.65	0.48
Gross income	0.28	1.00	-0.19	-0.23	-0.05	-0.21	0.07	0.29	0.82	0.46	0.85	-0.53	0.16	0.19	-0.50	-0.02	-0.17	0.22	0.27	0.42	0.42
Coeff of variance of revenue diversification	-0.42	-0.19	1.00	-0.13	0.15	0.20	-0.08	-0.07	0.02	-0.53	-0.05	0.09	-0.23	-0.45	0.41	0.24	0.37	-0.28	0.05	-0.25	-0.21
Cur Assets/Total Assets	-0.06	-0.23	-0.13	1.00	0.10	-0.11	-0.05	-0.10	-0.10	-0.06	-0.12	0.13	0.31	-0.25	-0.07	-0.52	-0.13	-0.23	-0.21	-0.28	-0.33
Match-day rev growth %	-0.08	-0.05	0.15	0.10	1.00	0.28	-0.26	-0.01	-0.09	-0.13	-0.10	0.08	-0.03	-0.07	0.04	-0.01	-0.05	-0.07	0.02	-0.07	-0.07
TV rev growth %	0.00	-0.21	0.20	-0.11	0.28	1.00	-0.10	0.04	-0.17	0.04	-0.18	-0.05	-0.08	0.09	0.18	0.22	-0.12	0.12	0.11	-0.04	0.01
Merchandising rev growth %	0.15	0.07	-0.08	-0.05	-0.26	-0.10	1.00	0.36	0.09	0.06	0.10	0.10	0.11	0.14	-0.02	0.12	-0.03	0.09	0.04	0.04	0.09
Total rev growth %	0.05	0.29	-0.07	-0.10	-0.01	0.04	0.36	1.00	0.29	0.19	0.26	-0.01	0.07	0.07	-0.31	0.03	-0.16	0.05	0.20	0.16	0.33
Gross Margin	-0.03	0.82	0.02	-0.10	-0.09	-0.17	0.09	0.29	1.00	0.28	0.94	-0.44	0.05	-0.13	-0.44	-0.10	-0.03	-0.05	0.24	0.15	0.32
Stadium attendance %	0.47	0.46	-0.53	-0.06	-0.13	0.04	0.06	0.19	0.28	1.00	0.34	-0.67	0.27	0.50	-0.55	-0.07	-0.48	0.42	0.25	0.42	0.43
ROA gross	-0.01	0.85	-0.05	-0.12	-0.10	-0.18	0.10	0.26	0.94	0.34	1.00	-0.50	0.07	-0.14	-0.44	-0.17	-0.14	-0.02	0.31	0.17	0.26
Debt ratio	-0.25	-0.53	0.09	0.13	0.08	-0.05	0.10	-0.01	-0.44	-0.67	-0.50	1.00	-0.15	-0.18	0.39	0.01	0.35	-0.24	-0.12	-0.38	-0.31
Asset turnover	0.60	0.16	-0.23	0.31	-0.03	-0.08	0.11	0.07	0.05	0.27	0.07	-0.15	1.00	0.10	-0.42	-0.23	-0.27	0.42	0.23	0.28	0.26
SIZE	0.79	0.19	-0.45	-0.25	-0.07	0.09	0.14	0.07	-0.13	0.50	-0.14	-0.18	0.10	1.00	-0.30	0.32	-0.47	0.74	0.01	0.61	0.50
S/R	-0.42	-0.50	0.41	-0.07	0.04	0.18	-0.02	-0.31	-0.44	-0.55	-0.44	0.39	-0.42	-0.30	1.00	0.32	0.39	-0.26	-0.16	-0.56	-0.71
S/TOC	0.12	-0.02	0.24	-0.52	-0.01	0.22	0.12	0.03	-0.10	-0.07	-0.17	0.01	-0.23	0.32	0.32	1.00	0.15	0.19	-0.02	0.41	0.41
Place in league	-0.44	-0.17	0.37	-0.13	-0.05	-0.12	-0.03	-0.16	-0.03	-0.48	-0.14	0.35	-0.27	-0.47	0.39	0.15	1.00	-0.40	-0.06	-0.29	-0.23
Value of football players	0.84	0.22	-0.28	-0.23	-0.07	0.12	0.09	0.05	-0.05	0.42	-0.02	-0.24	0.42	0.74	-0.26	0.19	-0.40	1.00	0.24	0.53	0.40
UEFA points	0.23	0.27	0.05	-0.21	0.02	0.11	0.04	0.20	0.24	0.25	0.31	-0.12	0.23	0.01	-0.16	-0.02	-0.06	0.24	1.00	0.22	0.18
EBITDA	0.65	0.42	-0.25	-0.28	-0.07	-0.04	0.04	0.16	0.15	0.42	0.17	-0.38	0.28	0.61	-0.56	0.41	-0.29	0.53	0.22	1.00	0.79
Op margin	0.48	0.42	-0.21	-0.33	-0.07	0.01	0.09	0.33	0.32	0.43	0.26	-0.31	0.26	0.50	-0.71	0.41	-0.23	0.40	0.18	0.79	1.00

Correlations; marked correlations are significant at $p < .05000$; N = 78 (casewise deletion of missing data);
Source: author's own elaboration

Table 3. Case scenario with 50% revenue reduction

Case scenario	Year	Debt ratio	S/R	A turn	ROA gross	EBITDA	Gross Margin	Op margin
Before	2018	64.4%	63.1%	45.7%	2.4%	33.33	4.8%	0.6%
After	2018	96.6%	127.0%	23.5%	-20.9%	-148.57	-91.1%	-104.3%
Before	2019	63.2%	57.8%	53.5%	-0.1%	51.42	-0.7%	10.7%
After	2019	97.6%	113.9%	26.9%	-26.8%	-183.00	-103.0%	-78.7%

Source: author's own elaboration

Table 4. Scenarios after 50% revenue reduction and 50% salary reduction

Case scenario	Year	Debt ratio	S/R	A turn	ROA gross	EBITDA	Gross Margin	Op margin
After	2018	81.8%	63.5%	23.5%	-6.1%	-32.30	-27.5%	-26%
After	2019	83.3%	56.9%	26.9%	-12.5%	-42.14	-49.4%	-12%

Source: author's own elaboration

showing the state from before and after the implementation of 50% yearly revenue reduction.

The presented results of the stress test showed that the situation of European football would change dramatically under the assumption of 50% reduction of the whole year's revenue. First of all, it does not matter if we analyse stress tests in 2018 or 2019 because in all cases, all clubs showed negative EBITDA and negative gross income. We can observe that after the reduction, operational margin and gross margin decreased to the levels between -80% to -100%. The return from assets decreased to the level of around -20%. This indicator provides us with additional information that in case the football clubs start to sell their players by the book value, it is possible to cover such a hole by profitability. UEFA [3] report stated that the book value of top football clubs in Europe is around 25% of total assets. Moreover, they calculated that the real market value of players is much higher than this. But there is a question, would clubs find buyers of their players to cover the financial gap if every club were in the same situation? This is a financial bubble paradox that after the blow there is no demand for the asset. So, in the end, we can expect high depreciation of players even below book value. Debt ratio is another significant observation and it shows an increase from around 60% to around 100%. In the end, this situation is still not that concerning as the clubs from the sample can show an average positive value of equity. But most of all, as correlation results have shown, salaries are a key factor of football clubs sinking. After the reduction in revenue, the value of S/R ratio increases until around 120%. Thus, the main thing which can help football clubs stop sinking is to reduce salaries.

Table 4 presents data with the reduction of yearly salaries by 50% after 50% decrease in total revenue. We can observe it will definitely upgrade the profitability situation of clubs. Still, there is average loss measured by an operational margin, gross margin and ROA but indicators are much better than without salary reduction. Also, the debt situation is better and even acceptable in this scenario.

Conclusions

The presented research confirmed what was suggested in the previously conducted studies. The most important performance factors are related to players in the football industry. One of the key measures of efficiency is the salary ratio, which was supported by descriptive statistical analysis. The discussed research results answered the second research question that salaries and any measure based on salaries such as S/R constitute one of the most influential and sensitive factors in the context of football clubs performance. It was confirmed by Pearson's correlation analysis of the chosen sample. As salaries are one of the key factors in football business performance, stress test scenario with the reduction of salaries was provided in order to answer the first research question. The results showed that it is an effective solution, crucial in order to avoid football industry bankruptcy. Given the economic slowdown and early closure of sports season 2019/2020, we can expect that the financial performance of football clubs will encounter significant difficulties. The concept of a stress test was provided in order to answer the question of how serious the economic crisis would be for football clubs in Europe. The data estimated for only two years (2019 and 2018)

with revenue reduction of just 50% showed that in the case of profitability and financing, the situation is too serious to allow it not to be carefully managed. The additional conclusion is that transfer market and inflated salaries over decades were a financial bubble which will certainly not continue in 2020.

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