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Managing Professional Footballer's Finances to Avoid Financial Problems: a Belgian Survey.

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Managing Professional Footballer's Finances to Avoid Financial Problems: a Belgian Survey

Abstract

Purpose: Academics have studied the finances of football clubs, but not the financial situation of professional football players. To fill this gap in literature, this paper analyses the financial situation of individual players, the causes of financial problems and the probability of encountering financial difficulties.

Design/Methodology/Approach: A survey has been conducted of 102 players of five clubs in the Belgian first division. Based on this unique data set, a multivariate nominal logistic regression model allows the causes of financial difficulties to be identified. A derived classification model is estimated in order to predict the probability of professional players encountering financial problems.

Findings: About one out of four professional players is confronted with occasional financial problems. Next to the use and investment of income, personal, family and career status factors have a peculiar impact on the individual financial situation of professional sports players.

Practical implications: The results allow better identification of professional players likely to incur financial problems and of better ways to assist them avoid problems.

Originality/Value: Given the gap in the sports management literature, the findings from the econometric approach provide both researchers and practitioners with new insights into financial management issues of athletes. The findings may help athletes, their managers and club managers in their decision making. Future research can further build on these findings.

Keywords: Athlete Management; Financial problems; Professional football players; Multivariate logistic regression; Classification model; Economics.

1. Introduction

In recent years, there has been a lot of interest in the American and English press about well-paid professional athletes facing financial problems during and after their professional sports career (Dean, 2013; Kuper, 2013; Pagliarini, 2013; Preston, 2013; Torre, 2009). In the UK, some examples of former Premier League football players with financial problems are well known. Football is a very popular sport in Europe, involving high sums of money, e.g. for transfers and salaries. Nevertheless, little academic attention has been paid to the financial situation of individual athletes, especially during their careers. Schwenk et al. (2007) analysed the situation of retired professional American Football players from a medical point of view. They concluded that players may be confronted with a depression after their career, which in turn might induce financial difficulties. Fortunato and Marchand (1999) also found that some Australian Football players at the end of their career incurred financial losses, especially when forced to stop earlier because of injuries or reduced performances.

Contrary to the limited amount of research about individual player problems, thorough research exists about the financial situation of football clubs. In the literature study in the next section, an overview of this research is provided, as well as the relevant general finance literature on individual's financial decisions, problems and knowledge. This constitutes the ground for the theoretical framework of our financial research in football, with its own peculiar economics (Kesenne, 2014).

Professional football players have five particular characteristics as a group in society, which warrants a dedicated analysis. First, football players have a very short active professional career (about 15-20 years), resulting in a concentrated period of income. Second, the contracts of players have a short duration (1-5 years). Third, a player's career is uncertain and fragile, due to injuries and the expectations forcing players to continue playing, even when injured. (Roderick, 2006). Fourth, football players often live in a foreign country, isolated from their family (Back, Crabbe & Solomos, 2001). Finally, in some cases, this

family, even in a broad sense, cannot survive without the financial support of the football player's income (Omalu et al., 2010).

To fill the gap in the academic literature concerning the individual player's financial situation, this research tackles three questions: (1) How many players encounter financial problems? (2) What are the causes and how can they be avoided? (3) Can the likelihood of a player encountering financial difficulties be predicted?

The structure of the paper is as follows. The next section contains the literature review. This is followed by a discussion of the data obtained from a survey conducted by the authors amongst different clubs in Belgium, giving insight in the financial situation of the players. Subsequently the econometric methodology is explained, which allows identifying causes of player's financial problems. The results of the regression analysis are discussed afterwards and opposed to the general finance literature. The results lead to an identification tool for players likely to incur financial problems. The limitations of this exploratory research are discussed as well. The final section presents the main conclusions and gives some suggestions for further research.

2. The theoretical background of club and individual financial problems

In sports economics, comprehensive research exists on the financial situation of clubs. Lago, Simmons and Szymanski (2006) discuss a financial crisis in European football, having several negative implications for the different teams and leagues. Acero, Serrano and Dimitropoulos (2017) explore good governance measures to avoid financial club problems. The particular governance structures in Germany leave space for some financial issues in professional football clubs (Dietl & Franck, 2007). According to Hamil and Walters (2010), it even proved difficult for English Premier League teams to generate profits, notwithstanding their high revenues. Ascari and Gagnepain (2006) and Barajas and Rodríguez (2010) consider the Spanish football league in greater detail. They find some structural weaknesses in this league, resulting in a difficult financial situation for clubs and the league. Moreover, teams in

Spain tend to overpay their players as a result of the battle for acquiring the best players to maximise their sporting success. Also in Belgium, clubs face financial problems. According to Kesenne (2010), these clubs have very high pay-rolls. This might again be a result of European teams operating under win-maximisation, leading to players being overpaid. Notwithstanding, players still face financial difficulties, even during their careers. The causes, specifically related to professional football players, are identified in this work. As a result, clubs, associations and player managers are able to predict players prone to incurring financial problems and help them avoiding these pitfalls.

Given the limited amount of academic research on football players' individual financial situations and notwithstanding football players forming a peculiar group in society (Roderick, 2006), it is interesting to compare general financial literature insights with the particular situation of football players. According to Zhu (2011), the bankruptcy of individuals accounts for about 90 percent of all bankruptcies in the US. In the general literature, different causes of individual financial problems have been identified. The probability of financial difficulties increases with household size, age and medical problems, including smoking and drinking, whereas a higher income reduces this probability (Anderloni, Bacchiocchi, & Vandone, 2012; Fay, Hurst, & White, 2002; Rosen & Wu, 2004; Zhu, 2011). To reduce the impact of medical conditions on one's financial situation, Himmelstein, Warren, Thorne, and Woolhandler (2005) emphasise the importance of a good health insurance. Also, the ethnic background has an impact. Perry (1995) finds that Latin and African Americans have more financial problems in the US than Asian Americans and the rest of the country. Fay et al. (2002) and Zhu (2011) surprisingly did not find an impact of divorces on financial difficulties. Additionally, Zhu (2011) found an unexpected increase of financial difficulties with a longer employment duration. Some evidence is found that owning real estate and well-balanced financial assets could reduce financial difficulties. Conversely, player involvement in an own enterprise, high debts and other risky or bad investments

appears to be linked to financial difficulties (Anderloni et al., 2012; DeVaney & Lytton, 1995; Fay et al., 2002; Van Rooij, Lusardi, & Alessie, 2012; Zhu, 2011). Also the impact of psychological factors gains attention in literature. Impulsivity, self-control and extraversion may impact the individual's finances (Anderloni et al., 2012; Ameriks, Caplin, Leahy, & Tyler, 2007). In this study, the specific impact of the aforementioned factors on football players' financials is examined, based on gathered data. This enables important and unexpected conclusions to be derived.

The literature stresses the importance of financial education and the individual financial literacy to avoid financial problems (Anderloni et al., 2012; Campbell, 2006; Seshan & Yang, 2012). However, in case an individual is not able to manage his own financial situation adequately, assistance and advice are required. Dowling, Corney, and Hoiles (2009) observe that young people often seek the assistance of non-professionals to support their financial management. However, professional assistance is preferable to realise a better financial situation. Kiiza and Pederson (2001) show that good services of financial organisations, that are at the same time located close to the households, have a positive impact on the savings of the latter. This in turn is crucial to obtain financial stability (Van Rooij et al., 2012).

3. Data description

To obtain information on the personal financial situation of professional football players in Belgium, a survey was conducted during the summer of 2014 among the players of five Belgian highest division clubs, willing to collaborate in this project. Since the highest division (Jupiler Pro League) consists of 16 clubs, about 30% of the population is included in the sample. The consulted clubs are well distributed among the ranking of the seasons 2013-2014 and 2014-2015, so that players from the strongest, the weakest and the moderate teams

are equally represented. This resulted in a total of 102 surveyed players.[1] The anonymity for clubs and players was guaranteed, so the survey did not include the name of the club or individual. The survey and the use of each question is presented in Appendix A. The questions deal with the personal characteristics of the players, their investments and the phase of their career, as based on the literature review in the previous section. The questions also include factors that appeared in the newspaper articles of Dean (2013), Kuper (2013), Manfred (2014), Pagliarini (2013), Preston (2013) and Torre (2009), in relation to the financial circumstances of the players. These factors can be used in the regression analysis. Some additional yes-or-no questions were included to be able to qualitatively describe the financial situation of professional football players in Belgium in detail. This description is elaborated in this section.

The dependent variable in this research is a nominal variable, indicating whether a player encounters financial problems or not. The information is obtained from question 20, asking for the financial problems of players. The three possible answers are: never, occasionally and often. 23 out of 99 players indicated they occasionally have financial problems, the others indicated never having such problems. Nobody indicated having financial problems often. Hence, a nominal variable with two levels, represented by the dummy variable 'financial problems', can be constructed to distinguish between players with and without financial problems. The responses to this question give information on the prevalence and frequency of the financial problems amongst professional football players. This is the answer to our first research sub question. About one fourth (23%) of the players indicate encountering financial problems. To account for the fact that only a sample of the population is surveyed and that the sample proportion might differ from the population proportion, 95% confidence intervals (CI) are calculated. They include the true population

[1] Not all surveys were filled out completely, leading to the exclusion of some observations. That is why in each analysis, the number of observations containing all the necessary information, is reported.

proportion with a probability of 95%. For the proportion of financial problems, this is [15%, 32%]. In case players in Belgium encounter such financial difficulties, the frequency indicated by them is "occasionally". Moreover, the financial situation of players has an impact on the sports performance of 37 out of 101 players who answered question 21. This results in a proportion of 37%, 95 CI [27%, 46%]. For 29 players the financial results had a positive impact on their performance, which is not surprising for 20 players without financial difficulties. For the eight players with financial difficulties however, such a positive impact is remarkable. It might be the case that financial difficulties motivate players to perform better. However, to confirm such a deduction, additional in-depth interviews are required. On the opposite side, eight players experience a negative impact from their financial situation. Of these eight players, five have financial problems, two do not and one did not specify.

Although anonymity was guaranteed, only 59 players gave information about their salary. Only the fixed salary was considered by question 8. Performance and sign-on bonuses were left out of the questionnaire to increase the probability of receiving an answer to this question. The majority of the players reported their gross salary (48 out of 59), nine players filled out their net salary, and two Belgian players reported both. For the three Belgian players that only reported net salary, a ratio of 13/8 was used to convert net to gross salary as an extrapolation of the observations including both salaries. Given that foreign players in Belgium pay only 18% income tax, the conversion from net to gross salary is adjusted for these players. Based on the descriptive statistics in Table 1, some interesting conclusions can made about the salary of a football player. It is a misunderstanding that all football players earn high salaries. The responses show that this is not the case for every player. The maximum wages are very high,[2] but the average player's gross salary (about €8000 per month, which is in line with the findings of Thijskens (2016)) is far below this maximum. The

[2] In 2014, the highest paid player in the Belgian league was earning €125,000 per month.

minimum is even only €750 per month. Another variable derived from the survey is the savings ratio, calculated as the monthly amount of money saved divided by the salary. For this variable 56 observations are available. The descriptive statistics in Table 1 show large differences between players. Some players spend almost their entire income, while others prefer to save a larger share.

TABLE 1 ABOUT HERE

Table 1 indicates that the average age of the players included in the sample is 24.6 years. At least half of the players in this sample have no children. The highest number of children is three. Players on average sign their first contract at an age of 18, and the remaining length of their contract is 2.3 years on average, which falls within the range of one to five years.

The psychological variables extraversion level and self-confidence level are quantified by a number from zero to five and one to five respectively. The first variable considers questions 27b, d, f, g and i. Every time the first option is selected, one point is added because this is a proposition indicating extraversion. The second variable is a result of the subjective question 26, asking for the player's judgement on his level of self-confidence through a Likert scale.

Next to the quantitative variables, a lot of qualitative variables are extracted from the survey. For the binary variables with a yes or no attribute, the number of respondents and the proportion for each attribute are given in Table 2. The first variable divides the nationalities between Western-European and other nationalities, as players working in their region of origin might benefit from having experience in the local day-to-day life. The different nationalities included in the study are presented in Appendix B, including the division between Western Europe and the other countries.

TABLE 2 ABOUT HERE

Table 2 also contains some information on the spending and investment strategy of the players. About one out of four players thinks that he is spending too much money on different categories, a variable considered as a subjective valuation of the debt level of a player. These categories are presented in Table 3. The percentage between brackets is an indication of the distribution of the "yes"-group from Table 2 over the different categories. More than 50% of the 26 players considering themselves spending too much, spend this money on shopping. Additionally, Table 2 reveals that about half of the players own real estate, which is assumed in Belgium to bear little investment risk. Only a few players have financial investments, which are deemed to be riskier. About 40% of the players indicate that they have invested in other sectors, considered being less stable. Moreover, players indicate that in three out of ten cases, they financially support people outside their household. Table 4 shows who is receiving this support and in how many percent of the cases.

TABLE 3 AND 4 ABOUT HERE

Two more explanatory qualitative variables can be extracted from the survey. 99 players gave an answer to question 16, asking for who is involved in their investment decision making. 13% indicated that they decide by themselves. The other 87% consult someone else, from one of the categories presented in Table 5. One player even consults multiple advisors. This information is captured in the independent variable "financial specialist". This variable makes a distinction between no consultation of a financial specialist (75% of the cases), consulting a financial specialist only (9%) and combining insights of a financial specialist with insights of others (16%).

TABLE 5 ABOUT HERE

Football players sometimes are cited in newspapers for their betting activities. In the survey, 100 players reported on their betting activities. 23% of them are betting on a regular basis, 95% CI [15%, 31%]. Although smoking and drinking are found in general literature to

influence the financial situation of an individual, no significant correlation between betting and having financial problems was found in any regression model.

Finally, some variables are not included in the quantitative model as they are not directly related to the dependent variable. They are given in Table 6. However, they allow more insight into the broader context of a player's financial situation. From the survey, it is found that 47% was insured against temporary disablement, additional to their social security agreement, 95% CI [37%, 57%] and 41% against permanent disablement, 95% CI [31%, 51%]. The majority of these players (32) are insured for both at the same time, while some (12) only have an insurance against temporary disablement and others (5) only against permanent. This observation shows that many other players are at risk in case of a serious injury, leading to unemployment and subsequent financial problems. This could be solved by investing in a good medical insurance (Himmelstein et al., 2005). Additionally, a group insurance has been established among the football players in Belgium. To this fund, a part of the player's salary is paid quarterly by the club. After a player's retirement, the rightful sum becomes available to the player at once. Only 4% uses this sum already before receiving it, for example as a collateral, 95% CI [0%, 8%]. The others take less risk and wait until they receive it as part of their pension and use it for that purpose only.

TABLE 6 ABOUT HERE

In the literature, no relation could be found between financial problems and a divorce, leading to a variety of complexities (Fay et al., 2002; Zhu, 2011). In this sample, only one player was divorced, which is too few to include it in the model. The player however did not experience his divorce as a complicating factor for his financial situation. As far as financials after life are concerned, 33% of the players indicated already having planned his inheritance, 95 CI [24%, 43%]. Although question 19 is a subjective yes-or-no question and is not suited to include in the regression model, it forms a first indication of the financial literacy of players, which is considered in literature as a crucial way to avoid individual financial

problems (Anderloni et al., 2012; Campbell, 2006; Seshan & Yang, 2012). 44% of the players consider their financial knowledge to be sufficient, 95% CI [34%, 54%], although 26% of this group encounters financial problems from time to time. A more thorough exploration of this variable is required in future research.

4. Methodology

The previous section discussed the survey that was used to collect data about professional football players in the Belgian first division. The personal and professional characteristics of the players and their investments are discussed through descriptive statistics of the variables extracted from the survey. They show that almost one out of four players are confronted with financial problems from time to time. To identify the causes of these problems, the impact of the extracted variables on the dependent nominal variable (occasional financial problems) is calculated. As explained, the dependent variable has two levels. Therefore, multivariate nominal logistic regression models can be used to predict which variables increase or decrease the probability of players having financial problems (Hill, Griffiths, & Guay, 2012).

The model estimated using a logit specification, is the following:

$$\pi_i = \mathbf{E}(Y_i = 1) = \frac{e^{\alpha+\sum_{j=1}^{N_1}\beta_j X_j+\sum_{j=1}^{N_2}\delta_j Z_j}}{1+e^{\alpha+\sum_{j=1}^{N_1}\beta_j X_j+\sum_{j=1}^{N_2}\delta_j Z_j}}, \quad (1)$$

with $\pi_i = \mathbf{E}(\mathrm{Y_i} = 1)$ the probability of having occasionally financial problems, α the intercept and β_j and δ_j the coefficients that are to be estimated for the continuous and nominal variables X_j and Z_j. $\beta_j > 0$ (< 0) implies that an increase of this variable results in an increase (decrease) of the probability of having financial problems. Analogously, a characteristic Z_j with a $\delta_j > 0$ (< 0) being present increases (decreases) the probability of occasionally encountering financial problems.

Based on the estimated model, the probability of occasionally incurring financial problems can be predicted. A cut-off probability value can be selected to discern between

players that are likely and unlikely to incur financial problems. In this way, the model can be used as a test to see which players are prone to financial difficulties. A lower cut-off value will result in a higher sensitivity of the test, which is the proportion of correctly predicted players with occasional financial problems. The proportion of false negatives (players incorrectly predicted as not having occasional financial problems) is low in such a case, a prerequisite for such an indicative test. A high test sensitivity often results in a lower specificity, the proportion of correctly predicted players not having financial problems. This is a consequence of a higher proportion of false positives.

To select the optimal cut-off probability, the formula 'sensitivity – (1 – specificity)' is maximised, through a receiver operating characteristic (ROC)-curve that is based on this formula. The logic behind it is that it maximises the true positives (sensitivity) and at the same time minimise the false positives (1 – specificity). In the optimal case, when all positives and negatives are predicted correctly and hence sensitivity and specificity are maximal, the formula takes the value '1'. The lower limit of the formula is '-1'. The values for all cut-off probabilities are displayed in a classification table.

5. Results

This section discusses the estimated model and the identified factors influencing the probability of a player incurring financial problems. Subsequently, the classification model to identify players prone to financial problems is given. Finally, the limitations of this research resulting from the size of the sample are discussed.

5.1 Model specification

Different logistic regression models were estimated and tested. The best model as measured by both the likelihood and chi-squared test, is reported in Table 7 and offers an answer to research sub question (2). The model considers as many complete observations as possible, containing data for every included variable. In this model, 84 out of 102 observations are included. It is a model where 11 out of 13 coefficients have the same sign as

the correlation between the considered independent and dependent variables. This is an indication that multicollinearity does not pose a problem in this regression analysis. The signs of the coefficients allow interpreting a variable's impact on the probability of financial problems. Only the impacts of self-confidence and of investing in financial assets are different from what is expected from economic theory. However, these two coefficients are not significantly different from zero. By consequence, these two variables can be neglected in the rest of the analysis.

Moreover, age [p=0.58], length of the career as measured by age of the first contract [p=0.33] and being born in Western Europe [p=0.42] do not have a significant impact on the probability of incurring financial problems either, although the signs were negative and literature suggested different expectations. Also the remaining contract time, which might induce false financial security [p=0.11] and players finding themselves spending too much money [p=0.18] do not significantly increase the probability of incurring financial problems at the 5% level of significance. This is opposed to Zhu (2011) finding an increase in financial problems if one is employed for a longer time or has higher debt levels. Additionally and contrary to the findings of Dowling et al. (2009), asking a financial specialist for advice does not significantly alter the probability of financial turmoil either [p=0.64]. The related coefficients however suggest that consulting people with investment and financial knowledge might help some of the players to avoid risky investments and invest their money in a good way to guarantee secure returns in the future, also after their career.

No significant impact of salary or savings ratio on the probability of encountering financial problems could be found in any regression model, which is opposed to the general finance literature. A reason could be that it is not the amount of money earned by a player, but the use of this money that matters. Most of the players in Belgium earn a sufficient income to live from (on average about €8000 gross per month). In addition, since there are too few observations including salary and because of a possible selection bias, it was decided to omit

these variables from the rest of the analysis. As already indicated, betting was left out of the model too. It would unnecessarily reduce the number of complete observations and the quality of the model. Including it in the model resulted in a non-significant coefficient and had a very limited impact on the other coefficients.

5.2 Variables having an impact on the probability of financial problems

TABLE 7 ABOUT HERE

A first significant effect in Table 7 shows that extroverted players are significantly more likely to occasionally incur financial problems [p=0.01]. Extroverts might spend their money blindly, without knowing their limits accurately. Additionally, extroverts might engage in bad investments with people in their environment, who offer them a so-called ideal investment opportunity. In the end however, it might end up as a bad investment resulting in big losses. Investing in other sectors different from safe real estate investments or financial investments, indeed implies an increase in the probability of incurring financial difficulties [p=0.06]. This effect is close to being significant at the 5% level. On the contrary, investing in real estate, which is considered in Belgium as an investment with low risk, significantly reduces the probability of incurring financial turmoil [p=0.02].

Another interesting observation in Table 7 concerns players supporting other people. The significant positive impact of the number of children on the probability of financial problems is confirmed in this study [p=0.03]. If the players also support people outside their little family, the probability of incurring financial problems increases again in a significant way [p=0.03]. As was already mentioned, football players earn a decent income, but only a few have an income so high that they can financially support an entire family or friends with it.

It is apparent from the previous analysis that players should be careful with their income. An important variable in this light could be the savings ratio of a player. It is not included in the model, because there are not sufficient observations with information on this

savings ratio. Moreover, including it would result in a non-significant negative estimate for this variable. Saving money in a bank account does not generate enough money to live from in a period of low interest rates. To receive a decent income from the capital acquired, other investments are a better option. When more observations on the savings ratio could be obtained however, the significance of this variable might increase, which would imply that saving a part of the income functions as an effective protection against financial problems. It was also indicated that the income itself is not a significant variable to explain financial problems either. It does not matter how much a player earns, it matters how the income is used or invested, both in absolute and relative terms.

5.3 Identifying players that are prone to incurring financial problems

Based on the estimated model, a classification table can be composed to distinguish players that are likely and unlikely to incur financial problems (Appendix C). When 0.24 is selected as the cut-off value, the sensitivity and specificity are jointly optimised, as described in Section 4. Moreover, the sensitivity of the test is very high in that case [sensitivity = 0.91]. In this way, players who have financial problems from time to time are well identified by the test, which is very important. This excellent performance is also reflected by a low amount of false negatives. On the contrary, more false positives are identified, meaning that a certain number of players are incorrectly predicted to have financial problems. This is reflected in a lower test specificity [specificity = 0.79]. To improve this value and reduce the false positives, the cut-off value should be increased to 0.5, but in that case the sensitivity of the test would be too low. It is in this case better to have more false positives than false negatives, so that all players prone to financial turmoil can be identified and advised to manage their money in a responsible way. The presented model proves that research sub question (3) can be answered positively.

5.4 Limitations of the findings

Obtaining data on individual professional football players' private financial situations has proven delicate and challenging, even though anonymity of the responses was assured. As a result, the limited sample of 102 observations is the major limitation of this paper, in combination with the fact that data has only been gathered in Belgium. It could turn out that including observations from other leagues (such as the European Big Five leagues, or other smaller leagues) has an impact on the estimated coefficients. By adding more observations to the dataset, factors such as being born in Western-Europe (with an insignificant negative sign), the subjective self-evaluation of overspending behaviour (with a nearly significant positive impact on the probability of financial problems at the 10% significance level), the age of the first contract and current age (both with an insignificant negative sign as well) could become significant at the 5% level.

However, due to the inclusion of other variables, it might also be the case that these aforementioned variables do not significantly add explanatory power to the model. Moreover, the impact of the age of the first contract and current age could be ambiguous. The younger players are when earning a first (high) salary, the higher the probability of not yet being able to properly manage these funds. On the contrary, it might also enable players to earn an income for a longer period, in a longer career. In this light, older players might also have acquired more income over time, but might just as well have accumulated more debts and have other problems due to salaries decreasing after a certain age (Frick, 2006). To be able to better analyse these ambiguous impacting factors, more observations, also including retired football players, should be collected.

6. Conclusions and future research

The financial situation of individual sports professionals has so far received little attention in academic literature. Therefore, the objective of this research is twofold. First, the

financial situation of the professional football players in the Belgian first division is analysed. About 15% to 32% of the players in the Belgian first division are confronted with occasional financial problems, which in turn has an impact on the performance of about one quarter of the players on the pitch. The second objective of this research is to identify the main factors causing such financial turmoil for the players. It turns out that the height of the salary does not have a significant impact. It matters more how it is used. Extrovert players are found to be more vulnerable to financial problems. Players are advised to take care of their income in a responsible way. Engaging in secure investments, e.g. in real estate, could significantly reduce the probability of financial problems, whereas investments in other, volatile sectors could increase the probability of financial difficulties. Caution is especially required when the player's salary is used to support people outside his own household. Also a higher number of children increases the probability of financial problems significantly. Finally, these results can be used to classify players in two different groups: players likely to incur financial problems on the one hand, and players less likely to be confronted with these problems on the other hand.

The results of this explorative study are useful for professional football players, as it presents viable ways to avoid financial difficulties. In addition, the classification model allows clubs, associations and player managers to identify players prone to financial problems, as well as to guide them in avoiding these problems. In future research, it could be useful to expand the survey and obtain more observations from the same or other countries, which could lead to the identification of even more (significant) factors influencing a player's financial situation. This would also add to the robustness of the results. An evolution over time could be observed and more observations would increase the generalisability of the findings of this study. One explanatory variable that could prove important is the savings ratio, as it is also a good indication of how players use their monthly income. However, for this variable, information on the monthly salary and savings amount is required. This data

would be difficult to obtain, as it is highly confidential. Another important variable that could be included in future research is financial literacy. Finally, deeper insights into the causality could be obtained by conducting semi-structured interviews with players, former players and employees of the different clubs. In this study, only active players have been considered, because the surveys were distributed through their clubs. However, some players only incur problems after their career. A follow-up study with former players could investigate the frequency and the causes of financial problems after the active playing career. Divorce and overspending the acquired money definitely need to be investigated in detail as possible explanations.

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Appendix A. Survey (English Version) and use of each question in this paper.

1) Age? _____ years old **# Independent variable**

2) Nationality? _____ **# Independent variable (Western-Europe)**

3) At what age did you sign your first professional contract? At _____ years old
 # Independent variable

4) Number of children? _____ children **# Independent variable**

5) Civil status?
□ Married
□ Cohabitation (Living together)
□ Divorced
□ Single
(Multiple options possible) **# Background question**

6) In case of divorce: Did this divorce complicate your financial situation?
Yes / No (delete as necessary) **# Not used, too few observations**

7) In which year does your current contract end? _____ **# Independent variable**

8) What is approximately your average gross salary per month? _____ euro
If you only know your net salary per month, you may write it here: _____ euro
 # Independent variable

9) How much do you approximately save on average per month? _____ euro
 # Independent variable

10) Do you have any real estate investments?
O No
O Yes: amount: _____ (number of real estates) **# Independent variable**

11) How do you use the group insurance for football players?
O I keep it as a pension and don't use it except for that.
O I want to use it now: (partially) as collateral for a credit application.
 # Background question

12) Are you currently insured against temporary disablement, except for your social security?
Yes / No (delete as necessary) **# Background question**

13) Are you currently insured against permanent disablement?
Yes / No (delete as necessary) **# Background question**

14) Besides real estate, do you invest in other industries?
O No **# Independent variable + background**
O Yes, in _____ (which industries?)

15) Do you have any other investments (financial, private banking)?
Yes / No (delete as necessary) **# Independent variable + background**

16) Do you involve other people in important financial decisions?
O No **# Independent variable + background**
O Yes, my most important advisor is: O External financial specialist
(indicate 1 option) O Sports agent
O Friends
O Family
O Other: _____

17) Are you satisfied with your financial advice? Yes / No (delete as necessary)
 # Not used, too many inconsistent answers

18) Select the most appropriate statement (only 1): **# Not used, idem**
O I analyse the decisions of my financial advisor accurately.
O I assume that the decisions of my financial advisor are correct.

19) Do you think that you have sufficient financial knowledge? Yes / No (delete as necessary)
 # Background question, subjective in nature

20) Do you experience financial difficulties? O Never **# Dependent variable**
O Occasionally
O Often

21) Do you think your financial situation has an impact on your performances?
O No **# Background question**
O Yes, a positive impact
O Yes, a negative impact

22) Do you think that you sometimes spend too much money? **# Independent variable**
O No
O Yes, precise on what: _____

23) Do you make a bet from time to time? O Daily **# Independent variable**
O Weekly
O Monthly
O (Almost) never

24) Do you financially support any people besides your household in a substantial way?
O No
O Yes, namely: □ Family **# Independent variable**
□ Friends
□ Other: _____ (who?)
I spend approximately _____ (how much?) euro per month on this.

25) a) Have you already planned your inheritance? Yes / No (delete as necessary)
b) Have you already drawn up a will/testament? Yes / No (delete as necessary)

 # Background question

26) On a scale from 1 to 5: Do you think you have a lot of self-confidence?

Little				A lot
1	2	3	4	5

 # Independent variable

27) Select the most appropriate statement: you can select only 1. If you find they suite both, select the one that fits you best. **# Independent variable (extraversion): b, d, f, g, i**

a
- O I mostly live from day to day.
- O I work towards certain goals in the future.

b
- O I behave in an energetic way and I like to be busy.
- O I behave in a modest way and like peace and quiet.

c
- O I rather follow the trends that are trending amongst my teammates.
- O I rather do my own thing.

d
- O I speak loudly.
- O I speak softly.

e
- O I wait to see what the day brings me.
- O I have a clear vision about my future.

f
- O I tend to accept things without questioning.
- O I first want to think about it.

g
- O I enjoy work where I can a lot of contacts with different people.
- O I enjoy work where I have a lot of opportunities to concentrate.

h
- O I feel pressure to buy what my teammates buy.
- O I only buy what I really want myself.

i
- O I don't have problems to say what I think in front of a group of people.
- O When I am in a group I prefer to prepare what I have to say.

 # a and e (impulsiveness), c and h (following behaviour) not used, too many inconsistent answers

Appendix B. Overview of the nationalities included in the study.

Nationality	Number of observations
Belgium*	55
Bosnia	1
Brazil	5
Costa Rica	1
Denmark*	3
Germany*	1
England*	2
France*	12
Gabon	1
Ghana	2
Indonesia	1
Israel	1
Cameroon	1
Croatia	4
Morocco	1
Montenegro	1
The Netherlands*	2
Portugal*	3
Senegal	1
Serbia	2
South-Africa	1
Switserland*	1

* Countries in the Western Europe group

Appendix C. Excerpt of the classification table for the model in Table 7.

Prob	1-Specificity	Sensitivity	Sens-(1-Spec)	True Pos	True Neg	False Pos	False Neg
			...				
0.6463	0.0492	0.4783	0.4291	11	58	3	12
0.5615	0.0656	0.4783	0.4127	11	57	4	12
0.5249	0.0656	0.5217	0.4562	12	57	4	11
0.5105	0.0656	0.5652	0.4996	13	57	4	10
0.4995	0.0656	0.6087	0.5431	14	57	4	9
0.4723	0.0656	0.6522	0.5866	15	57	4	8
0.4272	0.0820	0.6522	0.5702	15	56	5	8
0.4002	0.0984	0.6522	0.5538	15	55	6	8
0.4002	0.1148	0.6522	0.5374	15	54	7	8
0.3840	0.1148	0.6957	0.5809	16	54	7	7
0.3504	0.1148	0.7391	0.6244	17	54	7	6
0.3369	0.1148	0.7826	0.6679	18	54	7	5
0.3297	0.1311	0.7826	0.6515	18	53	8	5
0.3193	0.1475	0.7826	0.6351	18	52	9	5
0.3099	0.1639	0.7826	0.6187	18	51	10	5
0.3096	0.1639	0.8261	0.6622	19	51	10	4
0.3073	0.1803	0.8261	0.6458	19	50	11	4
0.2887	0.1967	0.8261	0.6294	19	49	12	4
0.2827	0.2131	0.8261	0.613	19	48	13	4
0.2555	0.2131	0.8696	0.6565	20	48	13	3
***0.2438**	0.2131	0.913	0.6999	21	48	13	2
0.2385	0.2295	0.913	0.6835	21	47	14	2
0.2227	0.2459	0.913	0.6671	21	46	15	2
0.2141	0.2623	0.913	0.6507	21	45	16	2
0.2106	0.2787	0.913	0.6344	21	44	17	2
0.2036	0.2951	0.913	0.618	21	43	18	2
0.1976	0.3115	0.913	0.6016	21	42	19	2
0.1839	0.3115	0.9565	0.645	22	42	19	1
0.1758	0.3279	0.9565	0.6287	22	41	20	1
0.1613	0.3443	0.9565	0.6123	22	40	21	1
			...				

Table 1. Descriptive statistics for the quantitative variables.

	Number of observations	Min	Max	Mean	Median	Standard deviation	Coefficient of variation
Gross monthly salary (euro)	59	750	36000	8207.87	7500	6115.98	74.5%
Savings ratio (%)	56	0%	90%	32%	28%	18%	56.3%
Age	102	17	36	24.6	24	4.6	18.7%
Number of children	100	0	3	0.5	0	0.9	180%
First contract age	102	16	27	18.3	18	1.9	10.4%
Remaining years of contract	102	1	5	2.3	2	1	43.5%
Extraversion level	102	0	5	1.86	2	1.29	69.3%
Self-confidence level	100	2	5	3.9	4	0.82	21.1%

Table 2. Overview of qualitative variables with two levels (yes or no).

	Number of Observations	**Yes (%)**	**No (%)**	***Additional information***
Occasional financial problems	99	23%	77%	
Western Europe	102	77%	23%	*Appendix B*
Overspending	101	26%	74%	*Table 3*
Real estate	97	47%	53%	
Financial assets	98	8%	92%	
Investments in other sectors	95	38%	62%	
Financially supporting others	85	32%	68%	*Table 4*

Table 3. Detailed distribution of the qualitative variable "overspending".

Overspending categories
Clothing and shoes (58%)
Food (32%)
Travel and leisure (16%)
Casino and betting (16%)
Gadgets (11%)
Family (11%)
Electronics (5%)

Table 4. Detailed distribution of the qualitative variable "financially supporting others".

Receivers of the financial support
Family (broad sense) (92%)
Friends (24%)
Girlfriend (5%)
Other (e.g. good causes) (5%)

Table 5. Overview of people supporting the players in their financial decision making.

Financial advice	
Family (69%)	No advice from others (13%)
Financial specialist (25%)	
Sports agent (20%)	
Friends (7%)	

Table 6. Overview of additional background information from the survey.

	Number of Observations	Yes (#)	No (#)
Insured against temporary disablement	93	31	62
Insured against permanent disablement	94	44	50
Players using group security before receiving it	90	37	53
Inheritance already planned	98	4	94
Consider financial knowledge to be sufficient	96	42	54

Table 7. Output of the full logistic regression model estimating the probability of financial problems.

Dependent variable	Financial problems (y)		
Whole Model Test:	**DF**	**ChiSquare**	**Prob>ChiSq**
	14	33.9133	0.0021
-LogLikelihood (full)			32.352286
AICc			101.763
BIC			131.167
Number of Observations			84

Variable	**Estimate**	**Std Error**	**p-value**
Intercept	4.508745	4.679427	
Age	-0.06961	0.12519	0.5777
Western Europe (y)	-0.40989	0.503308	0.4159
Extraversion level	0.825588	0.333626	0.0054
Self-confidence level	-0.63768	0.482957	0.1817
Overspending (y)	0.521268	0.389657	0.1766
Number of children	1.032137	0.494817	0.0280
Financially supporting others (y)	0.92173	0.438719	0.0289
Financial specialist (no vs including)	0.539935	0.611589	0.6449
& Financial specialist (only vs including)	-0.16464	0.984559	
Real Estate (y)	-0.97126	0.45159	0.0240
Financial assets (y)	0.159303	0.391017	0.6831
Investments in other sectors (y)	1.310262	0.719588	0.0571
First contract age	-0.20065	0.213378	0.3312
Remaining years of contract	0.539187	0.341132	0.1122