The impact of human capital accounting on the efficiency of English professional football clubs

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17 February 2013

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Abstract

In this paper we tried to investigate the positive influence of capitalization of players acquisition costs as intangible assets on efficiency of professional football clubs. Econometric approach was used to establish econometric models for three indicators of efficiency – total income, total cash flow and rank of club in the national championship. In all models intangible assets (professional players) have reliable positive effect on efficiency of English football clubs.

Keywords: football clubs, human capital accounting, transfer fees, efficiency

1. Introduction

Sports organizations are a prime example of organizations that own expensive human capital, bringing multimillion-dollar economic benefits. These organizations have formed the needs of information about such valuable asset. In this regard, we consider the current accounting policies of human capital accounting in example of some football clubs.

Nowadays accounting for transfer fees is not regulated by specific accounting standards. In practice of Russian football clubs, there are several approaches for accounting policies of transfer contracts. The most common recognition approaches are one-time recognitions either as operating costs or as exceptional expenses in profit and loss account.

However, a one-time recognition of the costs of acquired players inevitably leads to catastrophic losses. As a result, sports organizations have to ask for support from government and non-governmental funding sources. Thus, in January 2011 the football club "Saturn" went bankrupt because of large debts.

Analysis of foreign experience has shown that the most common recognition policy in worldwide professional football clubs is the capitalization of transfer contracts as intangible assets.

According to the survey made by UEFA in 2010, about 60% of European football clubs recognize all costs associated with the acquisition of players' registrations as intangible assets and reflect them in the balance sheet. For example, all football clubs in Norway, England, France, Germany, Poland, Lithuania, Italy, Malta, Bulgaria, Spain, Portugal, the Netherlands, Denmark, and Iceland capitalise players' registrations as assets[1].

In order to confirm the hypothesis about the importance of human capital as one of the main drivers of revenue generated by sports organizations we conduct the econometric study.

The purpose of our work is to identify a set of factors that influence the performance of professional football club, and above all to evaluate the impact of the cost of players. We suppose that one of these factors should be the value of the players recognized in the accounting system of clubs as intangible assets.

2. Model and data

The object of our econometric exploration is the performance of English professional football clubs.

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[1] Perry S., Leach S., 2011. Club licensing benchmarking report financial year 2010. UEFA, Route de Geneve 46, Switzerland.

Nowadays the performance analysis of professional football clubs is of great interest. In particular, we may note the works of such scientists as Angel Antonio Barajas[2], Mathieu Jardin[3].

An integrated approach to the study of the performance of football club involves not only an analysis of financial performance, but also evaluation of sports success. In this regard, we propose to consider three basic indicators:
- total revenue;
- total cash flow;
- rank of club in the national championship.

The indicators of total income and total cash flow assess the efficiency of the club as a business entity. The club's position in the national championship characterizes the quality of club's team, the efficiency of its sports activity. It should be noted that financial results are closely related to the sports indicators, because the higher the rank of football club, providing by high quality of football player's game, the club has some financial benefits in the form of increasing demand of the viewers and fans on the football product – football match, and thus becomes the driver to the growth of revenue from gate receipts, media rights, football merchandise, etc.

The subject of the investigation is to identify the relationship between total revenue, total cash flow, the rank of the football club in the national championship, and a set of factors, which are able to exert significant influence on these variables

The study is carried out using an econometric package STATA. Data was collected from financial reports for 2008 year. The sample for the investigation comprises 20 English professional football clubs, playing in the English Premier League and in the Championship (the next division, following the Premier League).

A very important point to be made is that the variable RANG reflects a place of football club within the English championship. From 20 clubs considered in research, 4 clubs in 2008 participated not in the Premier league, but in a division below. As a result, direct comparison of ratings of two different divisions is incorrectly.

Besides, for the regression analysis direct rating estimates are not suitable, because the club possessed higher from the point of view of a rating situation, in terms of calculation receives lower mark, than its less successful competitor. For the purpose of leveling of this effect we used calculation of mark estimates (bij) for indicators-disincentives (f. 1):

Formula 1

$$b = 1 - \frac{(x_i - x_{min})}{(x_{max} - x_{min})},$$ (1)

where:

b – mark estimate of rating indicator of football club;

x_i – rank of football club in the national championship;

x_{max} – maximum rank in the national championship;

x_{min} – minimum rank in the national championship.

The results of calculation of mark estimates of rating indicators are presented in Table 1.

3. Empirical results

By means of correlation and regression analysis, we divided all factors in several groups depending on the strength of correlation with the total income of football clubs. Table 2 shows the variables which have a close (correlation coefficient 0.7-0.9) and a very close relationship with the variable «Total income» (correlation coefficient greater than 0.9).

Based on the analysis of the matrix of correlation coefficients we selected several factors that have the greatest impact on the total income of English clubs, among which were borrowed

[2] Barajas A., 2004. Valuation model for football clubs based on the key factors of their business, MPRA Paper, 13158: 1-431.
[3] Jardin, M., 2009. Efficiency of French Football Clubs and its Dynamics. MPRA Paper, 19828: 2-29.

capital, intangible assets (the players), the total staff costs, total cash flow, rang of football club in the national championship, difference between goals scored and conceded etc.

Non-linear regression analysis showed that the best form is a logarithmic model specification of total income of football club with only two factors: the cost of the players and the share of total income on total personal costs (PLAYERS, INCOMEONWAGE).

Thus, the model of total income of football club received the following look (the standard errors are noted under coefficient estimations) (f. 2):

Formula 2

$$LGTOTINCOME = 2{,}178 + 0{,}529 * LGPLAYERS + 1{,}034 * LGINCOMEONWAGE \qquad (2)$$
$$\quad (0{,}278) \qquad\qquad (0{,}079) \qquad\qquad\qquad (0{,}170)$$

In this model 88,79% of scatter part of a dependent variable values are explained by the function of regression. Unexplained part of the scatter includes 11,21%. All factors of regression are statistically significant at the significance level of 5%. This means that estimation accuracy is good and the dependence exists.

As a result of testing the multiple regressions for other performance indicators of the football club there were also obtained qualitative results for models of total cash flow and rank of club in the national championship. All coefficients in these models are statistically significant with the probability of 95%. The results of econometric analysis are presented in table 3.

Interpretation and the analysis coefficient estimations of regression function allowed to come to the following conclusions:

1) the cost of intangible assets (players) has impact on the total income of football club. The contribution of one-percentage increase in expenses on acquisition of players makes on average 0,53% increase of the total income.

Total income on one euro invested in employees, describes the efficiency of personnel costs. Its impact on the total income of the club is quite large – increase of total income on wage by 1 % results to the increase of total income on average by 1,03%;

2) total cash flow is influenced by two main factors - the cost of the players and the cash flow generated by key personnel, namely the players and coaching staff. Growth in the value of players by 1% leads to an increase in total cash flow by an average of 0,31%. Additional increase in the cash flow generated by key personnel by 1% leads to an increase in the total flow by 0,77%;

3) the variation of a place taken by club in standings of the national championship is defined by three major factors. With growth of cost of players by 1% the mark assessment of a rank of club increases on average by 0,0009 points.

Growth of total assets by 1% promotes growth of a mark assessment of tournament position of club by 0,0012 points that is quite logical. The more assets the club has, the more developed its material base is. Therefore, the club has a great potential to improve the quality of training process, the training of more professional players and to achieve better results.

With growth of total cash flow by 1% the mark assessment of tournament position of club falls on the average by 0,0007 points at other invariable factors. Despite the statistical significance of this coefficient, its value can't be interpreted unambiguously. We suppose that cash flow, if it is connected with sale of players, leads to the temporary decrease in productivity of football club because team loses the valuable player. As a result there is a need for reorganization of the scheme of game, time for adaptation of players to the new scheme. That's why there may be a temporary decrease in productivity of team that results in decrease of current rating of team in the national championship.

4. Conclusion

Thus, in all three models of multiple regression considered by us we established the influence of the human capital on dependent variables – the total income, total cash flow and rank of football club in the national championship.

The most essential influence on financial indicators of football club's performance is rendered by the share of total income on the total personal costs and the share of total cash flow on the general staff. In turn of sports success, the efficiency of sports activity depends mostly on the amount of total assets of football club.

The results of our work show that the more the club invests in players, the higher the interest of players in the rise of club's total income. The source of such benefits to a large extent is the tournament position of club because it can provide financial advantages in the distribution of income from the sale of broadcasting rights among football in the national leagues, and also gives the right to participate in international tournaments, which opens access to the international audience (and consequently also to the potential markets for selling media rights, football attributes and other receipts of the income).

Therefore, our hypothesis about the impact of human capital on the performance of the football club is confirmed. Study of the dependence of total income, total cash flow and the tournament position of football club in the national championship on a number of factors showed that the value of the players has a positive impact on key indicators of success and financial performance of the club.

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Table 1

Calculation of mark estimates of rating indicators of studied football clubs for 2008 year

Football club	League / Division	Rank of club in the national championship	Mark estimates of rank of football club in the national championship
1	2	3	4
Arsenal	Premier League	3	0,9535
Aston Villa	Premier League	6	0,8837
Birmingham City	Premier League	19	0,5814
Blackburn Rovers	Premier League	7	0,8605
Bolton Wanderers	Premier League	16	0,6512
Burnley	Football League Championship	13	0,2558
Cardiff	Football League Championship	12	0,27907
Chelsea	Premier League	2	0,9767
Everton	Premier League	5	0,9070
Fulham	Premier League	17	0,6279
Hull City	Football League Championship	3	0,4884
Liverpool	Premier League	4	0,9302
Manchester City	Premier League	9	0,8140
Manchester United	Premier League	1	1
Stoke City	Football League Championship	2	0,5116
Sunderland	Premier League	15	0,6744
Tottenham Hotspur	Premier League	11	0,7674
West Ham United	Premier League	10	0,7907
Wigan Athletic	Premier League	14	0,6977
Wolverhampton Wanderers	Football League Championship	7	0,3953

Table 2

Ranking factors in the degree of closeness of the connection with variable «Total income» (TOTINCOME)

Characteristics	Correlation ratio
1	3
Borrowed capital	0.9476
Costs of sales	0.9434
Total assets	0.9181
Participation in Champion League	0.8707
Profit on player registrations sale	0.8667
Total staff costs	0.8300
Amortization of player registrations	0.8181
Rank of football club in the national championship	0.7950
Place of football club in the rating of UEFA	0.7456
Goal difference	0.7356
Total cash flow	0.7343
Intangible assets (player registrations)	0.6975

Table 3

The main parameters of the multiple regression models of the key financial and non-financial indicators of English football clubs

Dependent variable	Explanatory variable	Coefficient estimation of regression function	Correlation coefficient	Coefficient of determination	Standard error of regression coefficient estimation	t-statistics	Probability of getting t-statistics
1	2	3	4	5	6	7	8
Total income	Cost of player registrations	0,5288818	0,6975	0,8879	0,079002	6,69	0,000
	The share of total income on the total personal costs	1,034443	0,6754		0,1702779	6,08	0,000
Total cash flow	Cost of player registrations	0,3099852	0,8644	0,9494	0,0544378	5,69	0,000
	The share of total cash flow on the general staff	0,7727291	0,8974		0,068424	11,29	0,000
Rank of football club in the national championship	Cost of player registrations	0,0908447	0,6315	0,8869	0,0279495	3,25	0,005
	Total assets	0,1200799	0,6480		0,0298765	4,02	0,001
	Total cash flow	-0,0710527	0,6181		0,0273455	-2,60	0,019