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Factors that Determine the Market Value of Professional Football Players in Indonesia

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Abstract

Purpose: This study aims to identify the factors that determine the market value of professional football players.

Method: The market value of soccer players is obtained from the official website www.transfermarkt.com which contains each professional soccer player's prices in the transfer market. This study used 205 samples of professional football players in the Indonesian league in 2017. We analyzed this study using multiple linear regression and stepwise analysis with STATA 14 to see the factors that affect professional football players' market value.

Findings: The research results prove that age has a negative effect on the player's market value, while assists, yellow cards, team status, and player status have a positive impact on the player's market value. On the other hand, goals, red cards, minutes played, and starting 11 do not affect market value. Information about various factors that impact the market value of football players can support investment decisions in football club management. The results of this study add to the literature on human resource accounting studies, especially intangible assets.

Novelty: The character of football in Indonesia is classified as developing, even though most people are soccer fans, but it does not profit. There is no Indonesian football club that has taken the floor on the stock exchange, unlike in Europe. This study adds the variables Team Status and Player Status as a development of previous research. The determinants of market value can be used as additional information in the financial reporting of football clubs.

Keywords*: Human Resource Accounting, Intangible Asset, Market Value, Football*

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INTRODUCTION

Human resources are currently believed to be an essential asset in an organization. Human resources are also related to the organization's success in achieving its goals, so it is appropriate for human resources to assess its financial statements properly. Sometimes interested parties were wrong in making decisions because they had not considered human resources as factors. In conventional accounting, human resources have not been seen as influential. The purpose of presenting human resources is to identify whether these human resources' value has decreased or increased. Human resource accounting focuses on the contribution of employees provided to the

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company. This contribution is usually in the form of services or personnel classified as intangible assets that can later benefit the company.

The market value of football players is still rarely used in research subjects. The market value of soccer players is a fascinating subject to research. A soccer player's market value is an estimate of the market price of a soccer player in the transfer market. According to Rowbottom (1998), football players recognized as intangible assets can be measured in monetary value by calculating market value. Market value is relevant because it is close to economic value. Besides, that market value can be used for financial reporting. A soccer player will be hot news and discussed in the media if the team's performance and contribution increase. This will usually make the market value of a soccer player increase.

The problem of identifying the most critical determinants of the market value of a football player is well explained in (Rowbottom, 1998; Barajas, 2006; Berg, 2011; Gulbrandsen, 2011; Kiefer, 2012; Majewski, 2016; Muller et al., 2017). In this case, the research contributes to knowing which variables can be used as determinants to measure professional soccer players' market value, especially in the Indonesian Football League. Such an approach can help management to add information and interpret intangible assets in the football industry. Research by Kiefer (2012) and Herm et al. (2014) found the market value of football players still focusing on advanced leagues in Europe. It is also interesting to study in Indonesia because Indonesia has different characteristics from clubs in Europe, and football in Indonesia is still relatively developing.

With millions of players and billions of fans, soccer is the most popular sport in the world. With its popularity, professional football clubs can generate passive income. They are not just a club but have become a union between shareholders and managers, sales and profit, customers, and fans. From the managerial side, the football team can be considered a company (Amir & Livne, 2005). The most important thing about a football club is the player. The better the player, the greater the chance for a team to win (Devi, 2004). With the ability or skill of a football player that provides economic benefits in the future, soccer players should be classified as an asset in the company. Thus football players should be on the balance sheet of a football club's financial statements. However, there is still debate about whether human capital can be recognized as an asset in a company. The current accounting rules, such as the IAS, FASB, and PSAK, have not recognized human capital as an asset. However, in a football club, it cannot be denied that human capital can add value to the club. This is related to financial statements, whether it can represent the actual value if human capital is recognized as an asset or recognized as an expense. For that, we need proper accounting treatment for soccer players (Devi, 2004). If an Indonesian club wants to sell its shares on the stock exchange, it should fix its financial statements by treating football players as club assets. That way, it describes the actual club financial statements and can attract new investors to invest in the football industry.

Recognition of workers (professional football players) in club financial statements can be assessed using two approaches (Morrow, 1997). The first is cost-based methods, such as historical costs, opportunity costs, and replacement costs. The second is market value-based methods, such as the economic value of human resources. By determining the value of a soccer player, the soccer player can be capitalized and amortized if it has an economic life. According to Herm et al. (2014), a player's market value is the player's value as a team asset and the value if it is sold to another team. Market value provides an estimate of transfer costs, so it plays a vital role in transfer negotiations. Market value has long been used as an estimate by soccer experts such as coaches, team managers, and sports journalists.

The factors that are predicted to affect the market value of a football player in Indonesia are age, yellow card, red card, starting 11, goals, assists, minutes of play, team status, and player status. A footballer has a productive age. The older a player is, the more likely his market value to be decrease (Rowbottom, 1998; Carmichael et al., 1999; Barajas, 2006; Kiefer, 2012; Majewski, 2016; Muller et al., 2017). Muller et al. (2017) found that the number of yellow cards and red cards can harm market value if the number of cards received by a player increases because yellow cards and

red cards are identical to a player's negative impressions and disciplinary actions when playing on the field. However, the world of football provides another illustration that a player like Sergio Ramos from Real Madrid (Spain) is the player with the most yellow card collections for his club. He collects many yellow cards in the Liga competition with 161 cards, 38 cards in the Champions League and became the reddest card collector for the Liga competition with 20 cards. Until now, Sergio Ramos has always been a mainstay for his team and has become one of the players who have a reasonably high market value. At the end of 2018, it was recorded at 40 million Euros, and the highest market value was at 50 million Euros a few years earlier. Meanwhile, the performance of players on the field such as goals, assists, number of minutes played, and the number of times being the starting 11 are predicted to increase the market value of football players if the number increases (Barajas, 2006; Kiefer, 2012; Majewski, 2016; Muller et al., 2017). Additional factors in this study are team status and player status, which are expected to increase the player's market value. Team status (Big 4) is a team in the top 4 of the standings, which is predicted to affect the players' market value because collectively, a team has struggled until the end of the season and has reached the top 4 standings. In contrast, player status is a foreign player brought to Indonesia for improving the quality of the team because foreign players are considered to have above-average abilities and have a higher market value.

To examine this problem, researchers used professional soccer players who played in the Indonesian Football League, especially the Gojek Traveloka League in the 2017 season. The players sampled were players who were positioned as Striker, Midfielder, and Winger. Researchers got a sample of 205 players. The data is obtained from the official website, namely www.transfermarkt.com, which contains information on professional football players and their market value in the transfer market. This research was conducted by looking at each variable's relationship to the market value of football players who had previously tested multicollinearity.

This research found that a soccer player's market value decreases with increasing age who has not entered the productive era. Factors related to the performance, such as the number of goals, assists, minutes played and starting 11, but only the number of assists influences a player's market value. The more assists created, the higher the market value. The team's status that a soccer player defends influences the market value of a player. If the team defended is Big4, or in the season-ending standings in the top 4 places, the players can have a higher market value. The following finding relates to players' status, which is differentiated between foreign players and local players. The quality of foreign players has a significant effect on the market value of professional football players.

The number of yellow cards or the number of red cards that is closely related to a negative impression when playing on the field significantly influences the market value of football players. Namely, the number of yellow cards that positively affect market value, the number of yellow cards can be related to the player's activity on the field. Still, the players are not punished for leaving the area. Meanwhile, the number of red cards a player gets does not significantly affect the football player's market value.

This study provides additional evidence of what factors can determine professional football players' market value, especially in Indonesia, where the soccer league is still relatively developing. This study also provides information for football club management regarding matters that affect football players' market value in the financial statements. If a player is recognized as an asset, it will better describe the club's actual condition. Moreover, this research can be used as a reference related to accounting in the field of human resources.

METHODS

This study uses quantitative methods, and we used two types of data collection procedures. First, we employ secondary data documentation from the official website www.transfermarkt.com. The website contains accurate information about each player starting from age, player performance for each season, and market value. Second, from literature studies from scientific

journals, literature, and previous research to obtain supporting theories.

The dependent variable is the market value of professional soccer players in the Indonesian League. A professional football player's market value is the estimated price of a player who can be traded on the transfer market in monetary value. This value is also closely related to the value of services that a professional football player can provide to the club regarding each player's performance on the field and its ability to increase its finances. Consistent with Brommer (2011), professional football players' market value can be estimated from each individual's contribution to the team.

The independent variables used in this study are the same as previous studies by Rowbottom (1998), Barajas (2006), Berg (2011), Gulbrandsen (2011), Kiefer (20120, Majewski (2016), and Muller et al. (2017), with the addition of two new variables namely team status and player status so that a total of nine variables, namely.

1. Age. In some professional football leagues, there is a rule that every player can enter a professional contract with a club if the player is at least 17 years of age or older (Rowbottom, 1998). In this study, age refers to every professional soccer player's age in the Indonesian League from birth to 2017.
2. Goal is the number of balls a player has successfully put into the opponent's goal. This study's goal size is the number of goals scored by a professional soccer player in the Indonesian League in one competition season in 2017.
3. Assist means a feed that is converted into a goal. Assist is given to the player who gives a pass or touches before the ball is given to the last player to score a goal. This study's assist size is the number of assists scored by a professional soccer player in the Indonesian League in one season in 2017.
4. The yellow card issued by the referee is given to a player who commits repeated minor fouls or violent fouls but is still a little tolerable. In this study, yellow cards are calculated from the number of yellow cards a professional soccer player got in the Indonesian League in one season in 2017.
5. Red Cards. The referee's red card is given directly to the player who commits a violent foul or the player who gets a yellow card twice. In this study, red cards were calculated from the number of red cards a professional soccer player received in the Indonesian League in one season in 2017.
6. Minutes of play is the number of minutes played by a soccer player on the field, either playing as a core player or a substitute player. The size of playing minutes in this study is the number of minutes played for the cubs defended by each professional soccer player in the Indonesian League in one season in 2017.
7. Starting 11 means the soccer player is installed as a core player in a match. The starting 11 in this study is the number of appearances of a professional football player in the Indonesian League when installed as a core player in a match in one season in 2017.
8. Team status is the grouping of club status based on the competition's final standings. We used a dummy variable with a score of 1 if they came from the Big 4 team and 0 for groups below 4th in the last places. The term Big 4 in football refers to clubs that can be in the top four rankings in the season-ending standings, and these clubs usually compete fiercely for the title.
9. Player status is the difference in each player's status based on their nationality, an Indonesian citizen or not. In this study, a dummy variable was used, with 1 for foreign players and 0 for local Indonesian players. The average foreign player who has above average ability is brought inexpensive to an Indonesian club to improve the team's quality in the season.

The population was soccer players in Liga 1 Indonesia, the official professional football league with the highest caste in Indonesia in the 2017 season. Sampling was done by purposive sampling. The criteria that are considered in selecting the sample in this study are as follows:

1. This study selects a sample of players from the 15 best clubs in the league based on their standings, and the clubs are not relegated.

Table 1. Purposive Sampling

No	Description	Total
1	Population	633
2	Does not meet the 1st criteria	110
3	Does not meet the 2nd criteria	318
	Final Sample	205

Source: Author (2020)

Table 2. Total Sample

No	Description	Total
1	Striker	51
2	Midfielder	103
3	Winger	51
	Total	205

Source: Author (2020)

2. Players who play in the 2017 Indonesian League 1 season and who play in one entire season and are positioned as strikers, midfielders, and winger are taken from each club because they usually create many assists and have a tendency to higher market value.

After applying purposive sampling, our final sample consists of 205 soccer players (see table 1 and table 2). We start with manual data collection, and then we analyze the data using the STATA command to reduce human error. The statistical calculation is entirely using STATA 14 software. On that basis, it is expected to be able to present accurate calculations. The data analysis method used in this research is multiple regression analysis and stepwise regression.

Multiple regression was performed using a robust Ordinary Least Square (OLS) model. Command robust was added to solve the heteroscedasticity problem prone to occur in the author's type of cross-section data. Using robust standard error, the regression coefficient value does not change and robustly corrects the standard error according to the heteroscedasticity level. Equation 1 shows the regression models in this study.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + e \quad \text{.....(1)}$$

Description:
Y: Market Value of a soccer player; β_0: Constant; X_1: Age; X_2: Goal; X_3: Assist; X_4: Yellow card; X_5: Red card; X_6: Minutes of play; X_7: Starting 11; X_8: Team status; X_9: Player status; e: Error

RESULTS AND DISCUSSION

Table 3 presents the descriptive statistics of the study. The market value of soccer players in Indonesia has an average of 132211 Euros. The average age of a soccer player in Indonesia is 26 years. The number of goals scored per player in one season is 3,124 goals on average, while the number of assists scored is 1,943. Each player averaged 2,483 yellow cards, the average number of minutes played was 1267,794 minutes, and each player averaged 14,091 starting 11 times.

Table 4 displays the T-Test results from Team Status. The team in the top 4 league standings (Big 4) or the team below the top 4 of the league standings (not Big 4). The results of the T-Test test did not show a significant average between each variable.

Table 3. Descriptive Statistic

Variable	Unit	Mean	Median	Minimum	Maximum
Market Value	Euro	132211	100000	25000	500000
Age	Year	26.665	27.000	18.000	37.000
Goal	Total	3.124	2.000	0.000	22.000
Assist	Total	1.943	1.000	0.000	11.000
Yellow Card	Total	2.483	2.000	0.000	9.000
Red Card	Total	0.115	0.000	0.000	1.000
Minutes of play	Minutes	1267.794	1221.000	45.000	2937.000
Starting 11	Total	14.091	13.000	0.000	33.000
Player status	Total	0.268	0.000	0.000	1.000
Market Value	Total	0.230	0.000	0.000	1.000

Source: Author (2020)

Table 4. T-Test Team Status

Variable	MEAN		Coef	t-value
	Big4	Non Big4		
Market Value	11.694	11.555	0.139	1.378
Age	26.250	26.817	-0.567	-0.742
Goal	3.482	2.993	0.489	0.743
Assist	2.214	1.843	0.371	0.957
Yellow Card	2.518	2.471	0.047	0.132
Red Card	0.143	0.105	0.038	0.766
Minutes of play	6.786	6.803	-0.017	-0.108
Starting 11	2.307	2.351	-0.045	-0.300
Player status	0.268	0.216	0.052	0.792

Source: Author (2020)

Table 5 displays the T-Test results from player status between foreign players and local players who play soccer in the Indonesian League. We found that foreign players have a higher average of all variables than the local players by showing significant values.

Table 6 presents the results of the Pearson correlation. Sign "+" or "-" indicates the relationship's direction and strength shown by the number of asterisks interpreted as the level of significance. The analysis indicates that goals, assists, yellow cards, red cards, playing minutes, and starting 11 have a linear relationship with a football player's market value. If the number of goals, assists yellow cards, red cards, minutes played, starting 11 is high, the market value will move in a line and show a high market value. This means that these variables have a positive linear relationship to the market value of football players.

Table 7, the independent variable age harms the market value of soccer players. This result aligns with what Rowbottom (1998) did, which states that generation breaks the player's market value. The higher the age of soccer players in Indonesia, the lower the market value because of the soccer's productive period. The fact is that many players aged 30 years or over are put on the bench during matches. According to his position, the striker, midfielder, and winger also showed significant adverse results for each player. From the analysis, we conclude that age affects the market value of soccer players.

The goal variable is not significant and does not affect the market value of football players in Indonesia. This result is different from Sebastian Majewski (2016), who found that goals can

Table 5. T-Test Player Status

Variable	MEAN		Coef	t-value
	Foreign Players	Local Players		
Market Value	12.145	11.427	0.719***	7.620
Age	30.625	25.484	5.141***	7.115
Goal	6.521	2.112	4.409***	7.083
Assist	3.146	1.584	1.562***	3.956
Yellow Card	3.917	2.056	1.861***	5.276
Red Card	0.229	0.081	0.148***	2.873
Minutes of play	7.421	6.613	0.809***	5.260
Starting 11	2.949	2.153	0.796***	5.489
Player status	0.313	0.255	0.058	0.792

Source: Author (2020)

Table 6. Pearson Correlation

Variable	Market Value	Age	Goal	Assist	Yellow Card	Red Card	Minutes of play	Starting 11	Team status	Player status
Market Value	1.000									
Age	0.017 (0.805)	1.000								
Goal	0.446*** (0.000)	0.365*** (0.000)	1.000							
Assist	0.487*** (0.000)	0.218*** (0.002)	0.508*** (0.000)	1.000						
Yellow Card	0.491*** (0.000)	0.213*** (0.002)	0.203*** (0.003)	0.242*** (0.000)	1.000					
Red Card	0.238*** (0.001)	0.080 (0.249)	0.104 (0.135)	0.105 (0.129)	0.366*** (0.000)	1.000				
Minutes of play	0.609*** (0.000)	0.265*** (0.000)	0.497*** (0.000)	0.522*** (0.000)	0.550*** (0.000)	0.224*** (0.001)	1.000			
Starting 11	0.609*** (0.000)	0.278*** (0.000)	0.481*** (0.000)	0.511*** (0.000)	0.547*** (0.000)	0.229*** (0.001)	0.958*** (0.000)	1.000		
Team status	0.095 (0.170)	-0.051 (0.459)	0.052 (0.459)	0.066 (0.340)	0.009 (0.895)	0.053 (0.444)	-0.008 (0.914)	-0.021 (0.764)	1.000	
Player status	0.468*** (0.000)	0.443*** (0.000)	0.442*** (0.000)	0.265*** (0.000)	0.344*** (0.000)	0.196*** (0.004)	0.343*** (0.000)	0.360*** (0.000)	0.055 (0.430)	1.000

* t > 1.65 ** t > 1.97 , *** t > 2.60 , level of significance 10%, 5%, 1%
Source: Author (2020)

affect a football player's market value. This gap happens because of the minimum number of goals scored by each player. A player who has the most goals in the Indonesian league from table 1 can only achieve 22 goals from 34 matches in one season, which is much different when compared to one of the European leagues in Spain. Lionel Messi can score 37 goals from 38. possible matches. However, for players who are in the midfielder position, the goal variable has a significant positive effect. Thus, the goal hypothesis is rejected.

Based on the regression results in table 7, we found that assists are positively and significantly related to Indonesia's soccer players' market value. The more assists a player creates, the higher the market value. The assist created indicates that a player's performance on the field through the number of assists can affect a player's market value. The large number of assists created by players also significantly affects players, especially in striker and midfielder positions. It means that the author's hypothesis that assists affect soccer players' market value is acceptable and supports Majewski's research (2016) that assists affect soccer players' market value.

The yellow card has a positive relationship to market value and shows significant results. The more yellow cards a player gets, the higher the market value of a player. According to Muller et al. (2017), a yellow card is identified as unfavorable because it is related to the slightly dirty game played by a player on the field; thus, the referee issues a yellow card as a warning. In Indonesia, the character of football is aggressive and rough, so it is not uncommon for a player to make various attempts and dirty tricks to win the team being defended. That is perfectly legal, if he does not receive a red card, which can harm the team. Maybe that is why the yellow card variable has a positive effect on the player's market value. If seen based on the yellow card player's position, it influences the midfielder but does not affect the striker and winger. Thus, the yellow card hypothesis is accepted.

The red card variable does not affect the player's market value. It does not show a significant value for the whole. Even if it is seen based on the striker, midfielder, and red card winger, it does not affect market value. It may be due to Indonesian football. Even though the game is aggressive and sometimes rough, the players can still control themselves, so they do not get the referee's red

Table 7. OLS

Variable	(All)	(Striker)	(Midfielder)	(Winger)
	Market Value	Market Value	Market Value	Market Value
Age	-0.049***	-0.059***	-0.051***	-0.054***
	(-6.28)	(-2.97)	(-4.34)	(-5.17)
Goal	0.014	0.010	0.054*	0.014
	(1.24)	(0.36)	(1.86)	(0.75)
Assist	0.041***	0.121***	0.016	0.051***
	(2.76)	(3.03)	(0.82)	(2.79)
Yellow Card	0.049***	0.055	0.056**	0.054
	(2.75)	(1.18)	(2.57)	(1.49)
Red Cards	0.022	0.093	-0.064	-0.044
	(0.23)	(0.26)	(-0.57)	(-0.39)
Minute of play	0.144	0.524	-0.046	0.237*
	(1.04)	(0.98)	(-0.23)	(1.74)
Starting 11	0.111	-0.362	0.308*	-0.077
	(0.92)	(-0.93)	(1.72)	(-0.51)
Team status	0.929***	0.272	0.899***	0.696***
	(6.02)	(0.71)	(2.81)	(3.18)
Player status	0.557***	0.488**	0.492***	0.892***
	(6.44)	(2.41)	(4.32)	(2.94)
_cons	11.206***	9.695***	12.135***	10.862***
	(17.31)	(3.44)	(14.24)	(18.41)
r2	0.661	0.733	0.759	0.847
N	205	51	103	51

t statistics in parentheses * t > 1.65 ** t > 1.97; *** t > 2.60 level of significance 10%, 5%, 1%
Source: Author (2020)

card. As shown in table 1 descriptive statistics, even players who have received a yellow card, no one has received a red card with more than 1, the average number of red cards for a player is also <1. It means that players rarely get a red card. The analysis concluded that the red card does not affect the market value of soccer players.

The regression results of the playing minutes variable from Table 7 show no effect of playing minutes on football players' market value. This result is different from Muller et al. (2017), which states that playing minutes positively affects the market value of a soccer player. Nevertheless, other research conducted (Majewski, 2016) shows that playing minutes does not affect football players' market value. So from these results, the more minutes a soccer player plays may not necessarily increase its market value.

The starting 11 variable shows a positive result on market value but not significant. This result is contrary to Majewski (2016). The players who come off the bench can also contribute to the team when sent to the field, even though the minute play is not as much as the starting 11. From this result, the more often a player becomes the starting 11 during a match, it does not guarantee a higher market value. Especially for players in the midfielder position, the play's minutes show significant positive results with a moderate significance level of 5%. Thus, the starting 11 hypothesis is rejected.

The regression results in table 7 show that the team status variable as a dummy variable marked with one as the team in the top 4 of the standings (Big 4) and the number 0 as the team that is under rank 4 in the standings (not Big 4) shows a significant positive result. From this result, we found that players who play in Big 4 clubs have the opportunity of higher market value than players who do not play in the Big 4. Players on the Big 4 team are more accomplished because they can deliver a team that is defended to compete at the top of the league standings. When viewed from the player's position, the team status variable significantly affects players with

midfielder and winger positions. From the analysis results, the team status affects the football player's market value because it positively affects the player's market value.

Based on the regression results in table 7, the player status variable as a dummy variable marked with one as a foreign player and 0 as a local player shows a significant positive result. This means that the variables marked with the number 1 or foreign players positively influence market value. This is because players who are foreign players tend to have a higher market value than local players. The player status's influence also shows a significant positive result in all player positions: striker, midfielder, and winger. From these results, we found that the player status affects football players' market value.

The stepwise regression analysis procedure is one of the ways to select the best predictor variable. The stepwise method is a combination of two ways, namely backward and forward analysis. The stepwise approach begins by including the independent variable, which has the highest simple correlation with y, followed by calculating the partial correlation coefficient, and the highest value entering the model (Fahrmeir et al., 2013).

From the stepwise regression results in table 8, we can see that several variables were eliminated, namely playing minutes, red cards, and team status. Finally, predictor variables are obtained to find the best model, namely variables of age, goals, assists, yellow cards, starting 11, and player status. The goal variable has the lowest significance level and has a positive direction. In contrast, the other variables are assists, yellow cards, starting 11, and player status, positively influencing high significance. In contrast, the age variable harms market value and has a high level of significance. From the results of the stepwise regression test, it can be formulated in the regression equation 2.

$$\text{Market Value} = 11.95 - 0.0468\ \text{Age} + 0.0210\ \text{Goal} + 0.0508\ \text{Assist} + 0.0578\ \text{Yellow card} + 0.206\ \text{Starting 11} + 0.503\ \text{Player status.} \quad \text{.....(2)}$$

In the multiple linear regression analysis, the author uses a robust standard error to overcome the heteroscedasticity problem prone to occur in the type of cross-section data used by the author. By using robust standard error, the regression coefficient value does not change and

Table 8. Stepwise Regression

Variable	Market Value
Age	-0.0468***
	(-6.92)
Goal	0.0210*
	(2.35)
Assist	0.0508***
	(3.56)
Yellow Card	0.0578***
	(3.71)
Starting 11	0.206***
	(4.73)
Player status	0.503***
	(6.07)
_cons	11.95***
	(65.30)
N	205
r2	0.593

t statistics in parentheses * t > 1.65 ** t > 1.97; *** t > 2.60 level of significance 10%, 5%, 1%
Source: Author (2020)

robustly corrects the standard error according to the current heteroscedasticity levels. On that basis, heteroscedasticity usually occurs in cross-section data is assumed to be resolved.

The author also sees multicollinearity in the data, and the VIF result is less than 10, which means that there is no correlation between the independent variables. Thus, the information presented from the regression results is expected to be representative and unbiased information.

CONCLUSION

The performance of players in the field will affect the players' market value (Rowbottom, 1998). In this study, we found that age harm the players' market value, means that the older the players, the lower the market value because they are not in the productive age anymore. The number of assists, the number of yellow cards received by a player, team status, and player status positively affect the player's market value, means that if the independent variables are high, the player's market value will also be higher. The number of goals, the number of red cards a player gets, the number of minutes played, and the number of times a player is downgraded to the starting 11 do not affect their market value.

Several variables are predicted to affect market value, such as previous research studies, but they showed insignificant results in this study. This may occur because Indonesian football conditions are different from those of advanced football in European countries. The character of Indonesian football is classified as though. The players will do everything to win, which can be seen from the number of players who get yellow cards have a significant effect. Coaches in Indonesia also often replace core players who are usually deployed on the field or known as player rotation.

The stepwise regression method is used to find the best predictor variables that determine the player's market value. It is concluded from the analysis results that several variables enter and have an effect. They are age which has a significant negative impact while goals, assists, yellow cards, starting 11, and player status have significant positive impact.

Our study does not include players who are defenders and goalkeepers. This is because the variable data used is limited and is more suitable for examining players positioned as strikers, midfielders, and winger. Future research can include defender and goalkeeper in the research model as long as the appropriate variables and related data are available, such as the number of clean sheets, the number of successful dribbles, the number of tackles, or anything else that shows the player's performance on the field. It does not rule out further research to add unrelated variables in the field, such as player popularity, because each player has its brand value.

For the football industry, a player is a significant asset for his club. If a football player is included as an intangible asset in a club's balance sheet, it will strengthen a club's balance sheet and not add to the burden. That way, the actual club financial statements will be better describe. If Indonesian football clubs already have the correct financial statements, they can enter the stock market to attract new investors. This study also expected to provide additional information for the club to see the factors that determine a football player's market value.

REFERENCES

Amir, E., & Livne, G. (2005). Accounting, valuation, and duration of football player contracts. Journal of Business Finance & Accounting, 32(3-4), 549-586. DOI: http://dx.doi.org/10.1111/j.0306-686X.2005.00604.x

Brommer, B. C. (2011). Does the recognition of football player contracts require extra attention? Accounting, valuation, and duration of football player contracts. A re-examination with European data. Doctoral dissertation, Master thesis Accounting. Tilburg University, Tilburg, Netherlands.

Carmichael, F., Forrest, D., & Simons, R. (1999). The labour market in association football: Who gets transferred and for how much? Bulletin of Economic Research, 51(2), 125-150. DOI: http://dx.doi.org/10.1111/1467-8586.00075

Devi, A. P. (2004). Accounting for football player. Jurnal Akuntansi dan Keuangan Indonesia, 1(1), 38-53. DOI: http://dx.doi.org/10.21002/jaki.2004.04 (In Bahasa)

Fahrmeir, L., Kneib, T., Lang, S., & Marx, B. (2013). Regression: Models, methods, and applications. Springer Science & Business Media.
Gulbrandsen, A. M., & Gulbrandsen, C. M. (2011). Valuation of football players: A complete pricing framework. Master's thesis.
Herm, S., Callsen-Bracker, H. M., & Kreis, H. (2014). When the crowd evaluates soccer players' market values: Accuracy and evaluation attributes of an online community. Sport Management Review, 17(4), 484-492. DOI: http://dx.doi.org/10.1016/j.smr.2013.12.006
Ignacio, U., Barajas, A., Kase, K., & Castillo, P. (2006). Transfer market: Analysis of variables, which determine the players: Market value. European Association for Sport Management (EASM). Conference Abstracts.
Kiefer, S. (2014). The impact of the Euro 2012 on popularity and market value of football players. International Journal of Sport Finance, 9(2), 95-111.
Majewski, S. (2016). Identification of factors determining market value of the most valuable football players. Journal of Management and Business Administration, 24(3), 91-104. DOI: http://dx.doi.org/10.7206/jmba.ce.2450-7814.177
Morrow, S. (1997). Accounting for football players. Financial and accounting implications of 'royal club liégois and others V bosnian'for football in the United Kingdom. Journal of Human Resource Costing & Accounting, 2(1), 55-71. DOI: http://dx.doi.org/10.1108/eb029035
Müller, O., Simons, A., & Weinmann, M. (2017). Beyond crowd judgments: Data-driven estimation of market value in association football. European Journal of Operational Research, 263(2), 611-624. DOI: http://dx.doi.org/10.1016/j.ejor.2017.05.005
Rowbottom, N. (1998). Intangible asset accounting and accounting policy selection in the football industry. Doctoral dissertation. University of Birmingham.
Van den Berg, E. W. A. (2011). The valuation of human capital in the football player transfer market. Thesis. Erasmus University. DOI: http://hdl.handle.net/2105/9763