

Prediction Model of Earning Management Actions, Intellectual Capital, and Efficiency Ratios on the Performance of Service Sector Companies in Indonesia

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Abstract—Financial statements are important information for decision makers, because they contain the financial position, performance and changes in the company's financial position. However, determining the performance of a company can be used in various ways and functions to get benefits as information in determining the direction of company policy. The objectives of this research are to formulate the design of earning management formulations and models, measure intellectual capital, and the level of efficiency in the corporate services sector in Indonesia. Furthermore, testing is carried out to make a prediction model about the consequences of earning management actions, intellectual capital, and efficiency ratio on Company Performance in Indonesia. The chosen research subjects are the Health services sub-sector company and the Restaurant, Hotel and Tourism sub-sector operating in Indonesia from 2013 to 2018. The data analysis method used is Path Analysis. The results showed that only earnings management, intellectual capital from VACA, and efficiency of the SFA ratio only affect the Company's performance while the intellectual capital from VAHU and STVA has no effect on company performance. The implication of this research is that service companies in Indonesia still apply earnings management in conducting their business, while in terms of intellectual capital, the role is only the company's ability to utilize its capital.

Keywords: earnings management, intellectual capital, efficiency ratio, price to book value

I. INTRODUCTION

Financial statements are important information for decision makers, because they contain the financial position, performance and changes in the company's financial position. Initially the purpose of financial statements is accountability functions and can be used as a basis for decision making so as to produce accurate and accurate decisions [1,2]. The contribution of the income statement and balance sheet in providing information to users is very real. Accounting information is predicted to have relevance value, because accounting information is statistically related to stock market value and cash flow has a significant effect on stock returns.

While Intellectual Capital (IC) has a strategic role in managing the company to be able to make the company more competitive. IC has the potential to advance the organization and society because it is related to the knowledge and experience as well as the technology used [3]. The efficiency ratio is used as a tool to measure the company's ability to manage the company so that it can be able to produce the desired profits.

II. LITERATURE REVIEW

A. Company Performance

Book value is the price recorded at the value of the company's shares. Measurement of company value in this study will use a proxy that is Price to Book Value in a predetermined period. Price to Book Value (PBV) illustrates how much the market appreciates the book value of a company's stock. The higher the PBV, the higher the level of market confidence in the company's prospects, so that it will be an attraction for investors to buy these shares, so that demand will rise, then push stock prices up [4]. This is calculated by dividing the current closing price of a share by the current quarterly book value per share. Also known as the "price-equity ratio". Calculated as:

$$\text{Price to Book Value} = \frac{\text{Price per share}}{\text{Book Value per share}} \quad (1)$$

B. Earning Management

Earnings management is the choice by a manager of accounting policies so as to achieve some specific objectives [5]. Earnings management is the choice of accounting policies by managers for various specific purposes. There are two ways to look at earnings management behaviour. First, the opportunistic behaviour of management to maximize their utility regarding compensation, debt contracts, and political costs; and second, earnings management from the perspective of efficient contracting [6].

There are two approaches that can be used to detect management behaviour to manage earnings [7]. First, control the type of accruals, on the income statement that is not represented by cash flow; and second, changes in accounting policies. Management makes an increase in profits through accrual policy can be detected from four accrual items, namely: amortization costs, increase in net accounts receivable, increase inventory, and decrease accounts payable and accrual liabilities [8].

Earnings aggressiveness is the output of aggressive accounting policies and is the best way used by management in manipulating earnings [9]. The impact of companies conducting aggressive accounting is the current book value of assets and profits higher than the actual value [10]. In accrual management, companies can manage earnings through some of the company's characteristics (such as: overstate earnings, loss avoidance, and income smoothing) [11]. Accrual management motivation is grouped into opportunistic motivation and signalling. Whereas in signalling motivation, management tends to manage accruals that lead to earnings persistence [12]. This can be done by improving the quality of financial statements through accounting numbers that lead to earnings quality. Opportunistic motivation encourages management behaviour to present earnings reports smoothly. Managers do smooth earnings have the hope that the compensation (reward) received can be satisfactory and there is a guarantee of compensation in the long run [13]. Opportunistic motivation can be done by management through aggressive accounting policies that lead to overstate earnings (earnings aggressiveness) and earnings smoothing [8].

How the role of earnings management (short-term, long-term, total discretionary accruals) in influencing earnings relevance and causing the focus of market valuation to shift to book value is also unclear [14]. Short-term and long-term accruals have different characteristics. Short-term accruals have a relatively short period of time to be returned, usually until the first quarter or one financial year [15]. Whereas long-term accruals have a period of more than one financial year to return [15]. Managers will face difficulties in manipulating accounting data if they have to manage accruals with short-term discretionary accruals, because the market expects these types of accruals to return soon and vice versa, managers will be easier to manipulate accounting data through long-term discretionary accruals, because the manager's actions cannot be detected for the next several accounting periods [16]. By following the research procedure of Whelan and McNamara [16], total accruals are the difference between earnings before extraordinary items and cash from operations.

$$ACC_i, t = EARN_i, t - CFO_i, t \quad (2)$$

Information:

- ACC_{i, t} = Total company accrual i in year t
- EARN_{i, t} = Profit before the company's extraordinary post in Year t
- CFO_{i, t} = Cash from company i operations in year t

C. Intellectual Capital

1) *Resource based theory*: The view of Resource Based Theory the company will excel in business competition and get good financial performance by owning, controlling and utilizing important strategic assets (tangible and intangible assets) [17].

Potential strategy for improving company performance is to unite tangible assets and intangible assets [17]. Resource based theory is a thought that develops in the theory of strategic management and competitive advantage of companies that believe that a company will achieve excellence if it has superior resources [17]. Based on the resource-based theory approach, it can be concluded that the resources owned by the company affect the company's performance which in turn will increase the value of the company.

Intellectual capital as intellectual material that has been formalized, captured, and utilized to produce higher value assets [18]. Capital is intellectual material knowledge, information, intellectual copyright, experience that can be used to create wealth [14]. Intellectual capital can be obtained from three sources namely human capital, structural capital, and customer capital [19].

Devi argue that each of these components has a different basis [20], namely:

- The affective component is related to emotional, identification, and involvement employees in an organization.
- Continuance component means a component based on employee perceptions about losses that will be faced if leaving the organization.
- The normative component is an employee's feelings about an obligation must be given to the organization.

D. Efficiency Ratio

Efficiency is one of the theoretical performance parameters which is one of the performances that underlies the entire performance of a company [21]. Efficiency is the ratio between output and input [22]. On the other hand, the efficiency of a company will add value to the company and consumer confidence in the company will increase which will result in the company's profit level also increasing. The use of efficiency ratio in this case uses the stochastic frontier analysis (SFA) approach.

III. METHODS

The design of this study uses a causal or causal design that describes a regression model that contains various causal relationships and can be formed as a simple model but also bases itself on the causality approach.

The data used in this study are dependent and independent variables. The dependent variable used in this study is Company Performance in this case represented by Price to Book Value (PBV), and the independent variables used are Earnings Management, Intellectual Capital, namely VACA, VAHU and STVA, and Efficiency Ratio (SFA).

The population in this study are all service companies in the health sub-sector and Restaurant, Hotel and Tourism sub-sectors listed on the Indonesia Stock Exchange (IDX) during the study period, namely from 2013 to 2018. The number of health service companies and sub-sectors Restaurants, Hotels and Tourism listed on the Stock Exchange in 2013-2018 amounted to 30 companies.

A. Population, Samples and Sampling

1) *Population*: The population in this study is the Financial Statements in the service sector companies (Health sub-sector and Restaurant, Hotel and Tourism sub-sector) which are listed on the Indonesia Stock Exchange. The company population is in the Services sector (Health sub-sector and Restaurant, Hotel and Tourism sub-sector).

2) *Samples*: After determining the population in this study, the authors determined that the sample was a service sector company (Health sub-sector and Restaurant, Hotel and Tourism sub-sector) that were consistently listed on the Indonesia Stock Exchange in 2013-2018.

3) *Withdrawal of samples*: The sampling technique used in this study is the purposive sampling technique, which is a sampling technique where the samples in the study were taken with the requirements that are during 2013-2018 consistently listed on the IDX. Abbreviations and Acronyms.

B. Data Processing Stages

1) *Normality test*: Normality test is used to test whether the regression model, confounding or residual variables have a normal distribution. The method used to detect whether residuals are normally distributed or not, is the normal probability plot graph analysis [23].

2) *Classic assumption test*: In this study using multiple linear regression analysis, so it is necessary to do some classical assumption testing so that the data presented are normally distributed or close to normal. Some of the classic assumption tests include:

a) *Multicollinearity test*: Multicollinearity test aims to test whether the regression model found a correlation between independent variables (independent).

b) *Autocorrelation test*: The autocorrelation test aims to test whether in the regression model there is a correlation between the error of the intruder in period t and the error of the intruder in period $t-1$ (previous).

c) *Heteroskedasticity test*: Heteroskedasticity test aims to test whether in the regression model there is an unequal variance from the residuals of one observation to another.

3) *Descriptive statistics test*: Descriptive statistical tests are used to describe the variables studied, the dependent variable (Price To Book Value) and the independent variable (Earnings Management, Intellectual Capital, Efficiency Ratio). From the descriptive statistical analysis obtained information about the mean, standard deviation, maximum, and minimum of the research variables.

C. Multiple Regression Test

In this study using multiple linear regression analysis (multiple regression) because there are more than two independent variables (X) in this study. Multiple linear regression analysis was performed to examine the effect of the independent variables on the dependent variable. The independent variables in this study are earnings management, debt to equity ratio, public share ownership, and good corporate governance. Whereas the dependent variable in this study is corporate social responsibility. The regression model to test the hypothesis in this study is as follows:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon \quad (3)$$

Information:

Y = Company Performance (PBV)

α = constant

β 1-6 = Coefficient

X₁ = Earning Management (EM)

X₂ = VACA

X₃ = VAHU

X₄ = STVA

X₅ = Efficiency (SFA)

ϵ = error term

D. Hypothesis Testing

1) *Statistics F (simultaneous test)*: Simultaneous influence test is used to determine whether the independent variables together or simultaneously affect the dependent variable [23]. Tests carried out using significance level 0.05 ($\alpha = 5\%$). The basic provisions for accepting or rejecting a hypothesis are as follows:

- If the F-statistic significance value < 0.05 then H_a is accepted.
- If the F-statistic significance value > 0.05 then H_a is rejected.

2) *t statistical test (partial test)*: Partial test is used to determine the effect of each independent variable on the dependent variable [23]. Tests carried out using significance level 0.05 ($\alpha = 5\%$). Acceptance or rejection of the hypothesis is done by the criteria:

- If the t-statistic value of significance < 0.05 then H_a is accepted.
- If the t-statistic value of significance > 0.05 then H_a is rejected.

3) *Coefficient test (R²)*: The coefficient of determination expressed by R² essentially measures how far the model's ability to explain variations in independent variables [23]. The coefficient of determination is between 0 and 1. A small R² value means the ability of the independent variable in explaining the dependent variable is limited. A value close to 1 means that the independent variable provides almost all the information needed to predict the variation of the dependent variable.

IV. RESULTS AND DISCUSSION

A. Descriptive Statistics

Descriptive statistical analysis is intended to provide an overview or description of the variables in this study by seeing the average value (mean), lowest value (minimum), highest value (maximum), standard deviation, and the number of research samples. A description of each research variable is obtained as follows:

- Price to Book Value (PBV) is seen as an average (mean) has a value of 2.75539130 in other words that the market value is higher than the book value of the company.
- Earning management can be seen the average (mean) Earning Management has a value of -0.98713298. Many of the motives of companies doing this one of which is the efficiency of tax payments and income reserves for the next period.
- Intellectual Capital (VACA) can be seen as mean (mean) VACA has a value of 0.56582853 or in other words that shows the contribution made by each unit of capital employed to the value added of the organization or ability intellectual company to utilize physical capital.
- Where the human resources who work in the companies on average already have the ability to adequately utilize their physical capital; Intellectual Capital (VAHU) can be seen as mean (mean) VAHU has a value of 36,63715363 or in other words that the companies show that all combinations of Knowledge, expertise, ability to innovate and individual ability in an individual company to carry out its duties in creating a value. Where the human resources who work in the companies on average have been able to use Knowledge, expertise, ability to innovate and the ability of individuals to provide added value to the company.
- Intellectual Capital (SVTA) can be seen as mean (mean) STVA has a value of 0.94526218 or in other words that the companies show the organization's capabilities including infrastructure, information systems, routines, procedures and organizational culture which supports the efforts of employees to produce optimal intellectuals. Where assets owned by the companies are on average able to make the employee's business provide added value to the company.
- The efficiency ratio (SFA) can be seen on average (mean) SFA has a value of 0.99625443 or in other words that the companies have a high level of efficiency which is quite high.

B. Classic Assumption Test

1) *Normality test*: Normality test is used to test whether the regression model, confounding or residual variables have a normal distribution [23]. A good regression model is normally distributed or close to normal. To test normality in this study using the values of Kolmogorov Smirnov. The result is that

the significant value between each variable above 0.05, it can be said that all variables are normally distributed.

2) *Multicollinearity test*: Multicollinearity test aims to test whether the regression model found a correlation between independent variables. Good regression is a regression that is free from multicollinearity. The results of multicollinearity testing are. shows that all independent variables tested have a tolerance value > 0.1 and the VIF value of all independent variables tested in this study shows a VIF value < 10 . Then it can be concluded that there is no multicollinearity problem in the regression model in this study.

3) *Autocorrelation test*: The autocorrelation test aims to test whether in the regression model there is a correlation between the error of the intruder in period t and the error of the intruder in period $t-1$ (previous). A good regression model is a regression that is free from autocorrelation. With a total of 138 observations ($n = 138$) and with a total of 4 independent variables ($k = 4$), the dU value is 1.7819 and the dL value is 1.6628. The value of Durbin Watson shows a value of 1.6683. So in this study it can be concluded that $du < dw < dl$ or $1.6682 < 1.6683 < 1.7819$. So in this study it cannot be concluded whether or not there is autocorrelation.

4) *Heterokedstasticity test*: Heterokedstasticity test aims to test whether in the regression model there is an unequal variance from the residuals of one observation to another. From the results of heterokedstasticity testing can be seen that there is no clear pattern formed and the points spread above and below the number 0 on the Y axis. It can be concluded that in this study free from heterokedstasticity.

C. Hypothesis Testing

1) *F test (simultaneous)*: The F test is used to test whether there is a simultaneous influence between the dependent variable (Y) and the independent variable (X). In this study, the F test is used to test whether there is a simultaneous influence of the dependent variable used in this study, which is the Company's performance in this case represented by Price To Book Value (PBV), and the independent variable used is Earnings Management, Intellectual Capital ie VACA, VAHU and STVA, and Effortency Ratio (SFA).

The significance level used is 0.05. Then the basis for accepting and rejecting hypotheses is as follows:

- If Significance < 0.05 , H_a is accepted
- If Significance > 0.05 then H_a is rejected

Then the result is 0,000 that H_{a1} is accepted. This means that Profit Management, Intellectual Capital, namely VACA, VAHU and STVA, and Efficiency Ratio (SFA) have a joint effect on PBV.

2) *t statistical test (partial test)*: t test is used to test whether there is a partial effect between the dependent variable (Y) and the independent variable. The test is carried out with the significance level used is 0.05. Then the basis for accepting and rejecting hypotheses is as follows:

- If Significance < 0.05 , H_a is accepted

- If Significance > 0.05 then H_a is rejected

The Result of t statistical test this research is as follows:

a) *Earning management to price to book value:* Based on the results, the significance level of the Earning Management variable shows a negative direction that is -0.019 and shows a significance level of 0.001, the resulting significance level is smaller than the significance level or 0.001 < 0.05. Then H_0 2 rejected H_a 2 accepted. This means that earnings management has a negative and significant effect on Price to Book Value.

b) *Intellectual Capital (VACA) to price to book value:* Based on the results, it can be seen that the significance level of the variable Intellectual Capital (VACA) shows a positive direction of 2,397 and shows a significance level of 0,000, then the resulting significance level is smaller than the significance level of 0.05, then 0.000 < 0.05. Then H_0 3 rejected H_a 3 accepted. This means that the Intellectual Capital (VACA) variable has a positive and significant effect on Price to Book Value.

c) *Intellectual Capital (VAHU) to price to book value:* Based on the results, it can be seen that the significance level of the variable Intellectual Capital (VAHU) shows a positive direction that is 0.003 and shows a significance level of 0.489, then the resulting significance level is greater than the significance level of 0.05, which is 0.489 > 0.05. Then H_0 3 is accepted. This means that the Intellectual Capital (VAHU) variable does not affect the Price to Book Value.

d) *Intellectual Capital (STVA) to price to book value:* Based on the results, it can be seen that the significance level of the Intellectual Capital (STVA) variable shows a negative direction of -1,054 and shows a significance level of 0.758, then the resulting significance level is greater than the significance level of 0.05, which is 0.758 > 0.05. Then H_0 3 is accepted. This means that the Intellectual Capital (STVA) variable does not affect the Price to Book Value.

e) *Efficiency Ratio (SFA) to price to book value:* Based on the results, it can be seen that the significance level of the Efficiency Ratio (SFA) variable shows a negative direction of -1.0046930 and shows a significance level of 0.042, then the resulting significance level is smaller than the significance level of 0.05, which is 0.042 < 0.05. Then H_0 6 is rejected and H_a 6 is accepted. This means that the variable efficiency ratio (SFA) has a negative effect on Price to Book Value.

3) *Determination coefficient test (R²):* Based on the results, the R-Square value of 0.492 or 49.2%. This means that the ability of independent variables (Profit Management, Intellectual Capital, namely VACA, VAHU and STVA, and Effortency Ratio (SFA)) in explaining the dependent variable (Price to Book Value) is 49.2% and the rest is 50.8% explained by other factors not included in this study.

D. Multiple Regression Analysis

Multiple linear regression analysis was performed to examine the effect of the independent variables on the dependent variable. The independent variables in this study are

Earnings Management, Intellectual Capital, namely VACA, VAHU and STVA, and Effort Ratio (SFA). Whereas the dependent variable in this study is Price to Book Value. The results of the multiple regression test in this study are as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

$$PBV = 1.0011178 - 0.19MNJ_LABA + 2.397VACA + 0.003VAHU - 1.054STVA - 1.0046930 SFA + \varepsilon$$

The results of this study found that earnings management has a negative effect on firm value, only Intellectual Capital (VACA) is able to affect positively on firm value, while Intellectual VAHU and STVA have no effect on firm value, for efficiency ratio negatively affects firm value.

V. CONCLUSION AND SUGGESTIONS

A. Conclusion

The conclusion of this study is that earnings management measures can reduce the value of the company, intellectual capital related to the added value of capital can increase the value of the company and efficiency ratio can reduce the value of the company, while intellectual capital related to the improvement of Soft Skill and R&D and infrastructure facilities are not enough to be able to affect the value of the company.

B. Suggestions

Companies should prepare financial statements more openly because earnings management actions actually weaken the value of the company and also pay more attention to the added value of existing capital and promote effectiveness rather than efficiency.

So that investors should be able to understand the relevant information published by the company, and be careful of information on corporate earnings management actions. Information in the form of financial statements and non-financial reports needs to be considered more carefully so that it can determine business actions that benefit investors and be able to provide the best investment decisions.

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