

The Influence of Asset Management on Financial Performance, with Panel Data Analysis

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Abstract—One of the main concerns of the company is the effort to achieve the desired level of profit. That goal can be achieved through good asset management. Good asset management reflects that the company is able to control its financial performance efficiently and effectively. The purpose of this study is to determine the effect of asset management on financial performance. The approach taken to measure asset management is Fixed Asset Turn Over (FATO), while financial performance is measured by profitability using Return on Assets (ROA). This research model looks simple and uses only one independent variable. The selection of the best model is done after testing several other variables, and the more relevant variable to explain the diversity of ROA dependent variables is FATO. This study uses panel data analysis, which consists of six companies in the period 2013-2017. The analytical method used is Panel Data Regression Analysis. Based on the results of hypothesis testing, it is found that the independent variable FATO has a positive and significant effect on ROA. This means that asset management is needed to improve the profitability of the company.

Keywords: *panel data regression, fixed effect model, asset management, profitability*

I. INTRODUCTION

Sea transportation as part of the national transportation system needs to be developed in order to realize the Archipelago Insight which unites the entire territory of Indonesia, including the archipelago sea as a unified national territory. The development of sea transportation must be able to drive the development of Indonesia. Given Indonesia's geographical situation as the world's largest archipelagic country and two-thirds of its territory is water, Indonesia requires large amounts of mass sea transportation to support the distribution of goods as well as for passenger mobilization. An effective and efficient and integrated transportation system between modes of transportation is important to create a reliable and dynamic national distribution pattern. It cannot be denied that sea transportation in an archipelago such as Indonesia has become the main backbone of the movement of large-scale distribution of goods using ships.

As one of the main components in the sea transportation system, an important role of the port is needed. The port is a

work environment and the berth of ships and other water vehicles to carry out the loading and unloading of goods and passengers, the work environment is an environment consisting of water area, including port boundaries and land area for terminal purposes. The working environment of the port includes all technical facilities for the implementation and operation of sea transportation and terminal businesses. The port as a terminal for ships and other water vehicles is a component that can not be separated from the implementation of sea transportation [1].

Transportation is very influential on the distribution of logistics, both on land, sea and air. Indonesia's sea transportation system is not good. This can result in expensive domestic products, because shipping goods from one island to another takes a long time, as well as the loading and unloading process. Most vessels owned by Indonesian companies are old. This can make maintenance costs high, so the total cost to transfer goods becomes more expensive. Besides that, capital problems related to investment. Ships are expensive items, but investment recovery is difficult. Because the company must pay ship obligations to port managers, high cost components at sea and fuel. This high cost is due to differentiation, such as ship waiting time that is too long which also costs a total cost, because it is expensive. Ports in Indonesia have problems, sea access experiences a lot of siltation of dockside ponds which results in the movement of space boundaries, as well as on boarding ships. Indonesia has containers piled up in ports. Even though the goods in containers should be distributed to the destination or source of production. But the problem with the port to the road is problematic.

From an economic and business perspective the use of transportation facilities by ship is more effective and has great benefits. So that with the availability of sea transportation infrastructure for moving goods from one place to another, it is hoped that community economic activities will have a positive impact on improving the economy of a region.

The main objective of company management is to maximize company performance. A good company condition is a strength for a company to survive and develop for the achievement of company goals. But in the era of globalization like now, resulting in increasingly fierce competition between

companies. Good or bad condition of the company can be seen from the company's financial performance. Financial performance can be interpreted as a prospect or future, growth potential for good development for the company. Information on financial performance is needed to assess potential changes in economic resources, which may be controlled in the future and to predict the production capacity of existing resources. While the financial statements that have been analyzed are needed by company leaders or management to be used as a tool for further decision making in the future.

The companies selected in this study are companies whose shares are listed on the Indonesia Stock Exchange in 2013-2017 and are included in the marine transportation industry group consisting of 6 companies.

Profit and a high level of profitability are the main objectives of an established company, all company activities carried out both operational and non-operational are the means to achieve these goals. Profit can provide a positive signal about the company's future prospects about the company's performance. Because profit is a measure of the performance of a company, the higher the profit achieved by a company, indicating that the better the company's financial performance.

Profit is certainly influenced by several aspects that are also interrelated with one another. Sea shipping companies in Indonesia already have quite good operational capabilities and are supported by a number of regulations and government regulations. While one of the problems faced by companies as a business entity in shipping companies is asset management. Whether or not asset management is bad or high or low Fixed Asset Turn Over (FATO) will affect company profits.

This study will discuss modeling with panel data regression. Panel data is a combination of time series data and cross section data [2]. Time series data usually includes one object but covers several periods. Cross section data consists of several or many companies, with several variables within a certain time period. Because panel data is a combination of cross section and time series data, it certainly will have more observation than cross section data or time series data. As a result, when combined into a data pool, in order to make a regression that only uses cross section or time series data only.

If the panel data analysis approaches the time series model approach such as a transfer function, then there is diversity information from the cross section unit that is ignored in the model. One of the advantages of panel data regression analysis is to consider the diversity that occurs in the cross section unit [3].

- The advantages of panel data regression according to Wibisono [4] include:
- Panel data is able to calculate individual heterogeneity by allowing individual specific variables;
- This ability to control heterogeneity further makes panel data usable for testing and building more complex behavioral models;

- Panel data is based on repeated cross-section observations (time series), so that the panel data method is suitable for use as a study of dynamic adjustment;
- The high number of observations has implications for data that are more informative, more varied and more collinearity between the data decreases and the degree of freedom is higher so that more efficient estimation results can be obtained;
- Panel data can be used to study complex behavioral models; and
- Panel data can be used to minimize bias that might be caused by aggregation of individual data.

This research was conducted using panel data regression analysis with the Common Effect Model, Fixed Effect Model and Random Effect Model methods to determine several factors that affect Return on Assets (ROA) as dependent variable. While the independent variables is Fixed Asset Turnover (FATO).

The objectives of this research is to analyze the influence of Fixed Asset Turnover (FATO) on Return on Assets.

II. LITERATURE REVIEW

A. Return on Asset

Return on assets identifies the level of profitability. This ratio measures the return on total assets after interest and taxes. The return on total assets or total investment shows the performance of management in using company assets to generate profits [5]. Meanwhile, according to Lestari and Sugiharto [6] Return on Assets is the ratio used to measure the net profit gained from the use of assets. In other words, the higher this ratio, the better the productivity of assets in obtaining net profits. This will further increase the attractiveness of the company to investors. Increasing the attractiveness of the company makes the company more attractive to investors, because the rate of return or dividends will be even greater. This will also have an impact on the company's stock price in the capital market which will increase so that ROA will affect the company's stock price.

Then According to Kasmir [7], Return on Assets is a ratio that shows the return on the amount of assets used in the company. Thus it can be said that a company with a high level of return on assets will attract investors to invest their capital in the company, because it is considered that the company can generate high profits and will ultimately have a positive impact on the value of dividends to be received by the company's shareholders. With so many investors interested in the company's shares, it will affect the stock price in the capital market. The more investors who want to buy the company's shares, the price of the company's shares will tend to increase.

According to Munawir [8] the usefulness of the Return on Asset (ROA) analysis is stated as follows:

- As one of its principal uses is its holistic nature. If the company has implemented good accounting practices, management using the Return on Asset (ROA) analysis technique can measure the efficiency of working capital use, production efficiency and sales department efficiency.
- If a company can have industry data so that industry ratios can be obtained, then the analysis of Return on Assets (ROA) can be compared to the efficiency of capital use in its company with other similar companies, so it can be known whether the company is under, the same, or in above average. Thus it will be known where the weaknesses and what is already strong in the company compared to other similar companies.
- Analysis of Return on Assets (ROA) can also be used to measure the efficiency of the actions taken by the division/section, namely by allocating all costs and capital into the relevant section. The importance of measuring the rate of return at the part level is to be able to compare the efficiency of a part with other parts of the company concerned.
- Analysis of Return on Assets (ROA) can also be used to measure the profitability of each product produced by the company by using a good product cost system, capital and costs can be allocated to various products produced by the company concerned, so as such will can be calculated the profitability of each product. Thus the management will be able to find out which products have an essential profit in the long run.
- Return on Assets (ROA) in addition to being useful for control purposes, also useful for planning purposes. For example, Return on Assets (ROA) can be used part of the basis for returning decisions if the company will expand.

Excess Return on Assets (ROA) according to Syamsudin [9], namely:

- Besides ROA is useful as a control tool, it is also useful for planning purposes. For example ROA can be used as a basis for decision making if the company will expand. The company can system ROA which must go through investments in fixed assets.
- ROA is used as a tool to measure the profitability of each product produced by the company, by implementing a good production cost system, then capital and costs can be allocated to various products produced by the company, so that the profitability of each product can be calculated.
- The most principle use of ROA is related to the efficient use of capital, production efficiency and sales efficiency. This can be achieved if the company has implemented accounting practices correctly in the sense.

Based on the explanation above, it can be stated succinctly that Return on Assets is a ratio that measures the total rate of return on assets to generate a company's net profit from the acquisition of assets, so that by using ROA the company can make the ratio as a control over investments made. From the results of Return on Assets size can be used as a basis for decision making when a company will expand its business, then it can also be used as a measurement of the profitability of products produced by the company, the higher the profitability achieved, the higher the likelihood that the company will distribute dividends to investors. ROA is used as a tool to measure the profitability of each product produced by the company

B. Asset Management

Basically, assets can be classified into two main parts, namely current assets and non-current assets. Current assets include the following: (a) Cash can be used to finance the company's operations. (b) Short-term investments (marketable securities). (c) Receivable notes. (d) Trade receivables / trade receivables, are claims to other parties (to creditors or customers). (e) Inventory. Whereas what is meant by non-current assets are: (a) Long-term investment. (b) Fixed assets, are assets owned by companies that are physically visible (concrete / real). (c) Intangible fixed assets. (d) Deferred charges. (e) Other assets.

Asset management ratios are used to measure how effectively a company manages its assets. Brigham and Houston [10] say that "asset ratios are designed to answer the following question: does the total amount of each type of asset reported in the balance sheet look reasonable" too high, or too low when compared to the level current sales and projections? "If a company has too many assets, the capital costs will be too high, so the profits will be depressed. On the other hand, if the assets are too low, profitable looting will also be lost.

C. Research Hypothesis

Based on the objectives, theoretical basis, previous research, and research paradigm, the hypothesis can be formulated as follows:

H1: Fixed Asset Turn Over (FATO) has a positive effect on Return on Assets (ROA)

III. RESEARCH METHODOLOGY

A. Types of Research

This type of research is research conducted is associative research, according to Sugiyono [11] research with associative problem formulation is research conducted to determine the effect or also the relationship between two or more variables. The things that will be examined, analyzed and interpreted are all things related to dividend policy decisions that are influenced by net profit margin, return on assets, return on equity, and cash ratio. In this study the approach used is a quantitative approach. According to Efferin [12], a quantitative approach is "research that emphasizes testing

theories, and or hypotheses through measurement of research variables in numbers and conducting data analysis with statistical procedures and or mathematical modeling".

B. Population and Research Samples

The population that will be the object of this research is companies that report audited annual financial statements and are published on the Indonesia Stock Exchange in 2013-2017. From this population, six companies were selected purposively. The six companies are sea transportation companies with good liquidity value, as state Table 1.

TABLE I. LIST OF RESEARCH SAMPLES

| No | Code | Company List |
|----|------|--|
| 1 | CANI | PT Capitol Nusantara Indonesia Tbk |
| 2 | HITS | PT Humpuss Intermoda Transportasi Tbk |
| 3 | LEAD | PT Logindo Samudramakmur Tbk |
| 4 | BBRM | PT Pelayaran Nasional Bina Buana Ray Tbk |
| 5 | WINS | PT Wintermar Offshore Marine Tbk |
| 6 | MBSS | PT Mitrahaatera Segara Sejati Tbk |

C. Operational Definitions of Research Variables

Each variable in this study can be defined as follows:

$$\text{Return on Asset} = \frac{\text{Net Income}}{\text{Average Total Asset}}$$

$$\text{Fixed Asset Turnover} = \frac{\text{Net Sales}}{\text{Fixed Asset}}$$

The Variable Operationalization of research is presented in Table 2 below:

TABLE II. VARIABLE OPERATIONALIZATION

| Variable | Dimension | Indicator | Concept |
|------------------|-----------------------|--------------------------------|---|
| Profitability | Return on Asset | Net Income Average Total Asset | Net Income divided by Average Total Asset |
| Asset Management | Fix Aset to Turn Over | Net Sales Fixed Asset | Net Sales divided by Fixed Asset |

D. Panel Data Estimation Model

In this study, the method used is panel data analysis. Panel data regression model is a regression that uses panel data, in the form of using time series panel data and cross section data. There are several methods that can be used to estimate the panel data regression model, including the common effect model, the fixed effect model and the random effect model. To choose the best estimation model, the testing step is used as described below.

1) *Chow test*: Chow Test is a technique that aims to choose the best model between the Common Effect model and the Fixed Effect Model, with the hypothesis:

Ho: The model follows the Common Effect

Ha: The model follows the Fixed Effect

If the F-statistic probability value is smaller than the significance level (5%), then reject Ho. Vice versa if the F-

statistical probability value is greater than the significance level (5%), then accept Ho. It can be concluded that the model will follow the fixed effect approach if the statistical F probability value is significant <5%.

2) *Hausman test*: The Hausman Test aims to choose between the Fixed Effect Model (FEM) or the Random Effect Model (REM), or the test that aims to see whether there are random effects in the data panel. The value that must be considered in the Hausman Test is the probability value of a random cross-section. The hypotheses in the test are as follows:

Ho: The model follows the Random Effect

Ha: The model follows the Fixed Effect

The F test provisions use a significance level of 0.05 (5%). The test results will be seen by meeting the following requirements: F statistic < The level of significance, Ho is rejected or F statistic > Significance level, Ho received.

3) *Lagrange multiplier test*: The Lagrange Multiplier Test (Breusch - Pagan Random Effect) is performed to choose the best model whether common effect or random effect. This test is carried out if the results of the fixed and random tests are not consistent in the chow test and Hausman Test. The hypotheses in the test are as follows:

Ho: The model follows the Common Effect

Ha: The model follows the Random Effect

If probability Breusch – Pagan < 0.05 then Ho is rejected, in other words the suitable model is the Random Effect Model.

IV. FINDINGS AND DISCUSSION

A. Description of Variables

By using data from eight companies and the 2007-2017 period, the following are descriptive statistics of the research variables (Table3).

TABLE III. DESCRIPTIVE STATISTICS OF RESEARCH VARIABLES

| ITEMS | FATO | ROA |
|--------------------|---------|---------|
| Mean | 10.272 | 4.766 |
| Standard Error | 1.835 | 0.377 |
| Median | 6.087 | 4.736 |
| Mode | | 5 |
| Standard Deviation | 10.052 | 2.068 |
| Sample Variance | 101.034 | 4.275 |
| Kurtosis | 3.842 | -0.912 |
| Skewness | 1.725 | 0.197 |
| Range | 44.134 | 7.480 |
| Minimum | 1.385 | 1.231 |
| Maximum | 45.520 | 8.711 |
| Sum | 308.150 | 142.967 |
| Count | 30 | 30 |

Source: Financial Statement for 2013-2017 (processed).

In Table 3 above, the average (average) value of each variable is presented, namely FATO = 10.272, and ROA =

4.766. The standard deviation of ROA is 2.068 or relatively smaller than FATO, meaning that the data do not have high diversity. This is supported by the value of variance = 4,275. ROA have negatif Kurtosis, where the data is in the platykurtic category, meaning that the data distribution tends to be low and stable.

B. Model Test Results

In summary, the three estimation models give results that are not much different. FATO has a positive effect on ROA with different regression coefficients. In addition, all three models show a significant effect. The highest Adjusted R-squared is the Fixed Effect Model, which is 89.68%, as shown in Table 4.

TABLE IV. SUMMARY OF COMMON EFFECT, FIXED EFFECT AND RANDOM EFFECT MODEL

| Variable | Common Effect Model | | Fixed Effect Model | | Random Effect Model | |
|--------------------|---------------------|--------|--------------------|--------|---------------------|--------|
| | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| C | 2.860580 | 0.0000 | 3.632318 | 0.0000 | 3.150925 | 0.0000 |
| FATO | 0.185459 | 0.0000 | 0.110326 | 0.0000 | 0.157192 | 0.0000 |
| R-squared | 0.812963 | | 0.918117 | | 0.706662 | |
| Adjusted R-squared | 0.806283 | | 0.896756 | | 0.696186 | |
| Log likelihood | -38.70317 | | -26.31298 | | | |
| F-statistic | 121.7033 | | 42.98141 | | 67.45301 | |
| Prob(F-statistic) | 0.000000 | | 0.000000 | | 0.000000 | |

C. Test Requirements in The Panel Data Analysis

1) *Chow test*: Chow Test is a test to determine which model is best for use between the Fixed Effect model or the Common Effect model. The basis for evaluating the chow test can be seen from the probability value (prob) for the chi-square cross section. If the value is > 0.05 then the model chosen is the Common Effect model. But if the value is < 0.05 then the Fixed Effect model is chosen. The following are the results of the Chow Test conducted in this study:

TABLE V. CHOW TEST RESULT

| Effects Test | Statistic | d.f. | Prob. |
|--------------------------|-----------|--------|--------|
| Cross-section F | 5.907288 | (5,23) | 0.0012 |
| Cross-section Chi-square | 24.780384 | 5 | 0.0002 |

The results of Table 5, the Prob-value in the Chi Square cross-section is 0.0000, it means the probability value < 0.05, so that the regression model is Fixed Effect Model.

2) *Hausman test*: This Hausman Test is used in conducting statistical tests to choose whether the Fixed Effect or Random Effect model is more appropriate to use. In this test, measured using the probability value (Prob) in Random Cross-section. If the Cross-section is Random > 0.05 then the model chosen is Random Effect. Likewise, on the contrary, if the probability value (Prob) < 0.05, the chosen model is Fixed Effect. The following are the results of the Hausman Test:

TABLE VI. HAUSMAN TEST RESULTS

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 24.675118 | 4 | 0.0001 |

The results from the Table 6, it can be seen that the Prob value for Cross-section Random is smaller than the significance value, which is 0.0001 < 0.05. Thus it can be

concluded that Ha is accepted and Ho is rejected, which means the best model that can be used in this study is the Fixed Effect Model.

The two tests above, the Chow Test and the Hausman Test provide a consistent and satisfying decision, so that the Lagrange Multiplier Test no longer needs to be continued, and the model suggested in this study is the Fixed Effect Model.

D. Fixed Effect Model

Based on the fixed effect method data regression table, the significance test carried out consisted of the Adjusted R-squared and t-test. Following are the results of tests conducted using EViews 10 using the Fixed Effect Model (see Table 7).

TABLE VII. THE ESTIMATION OF PARAMETER WITH FIXED EFFECT MODEL

| Variable | Coefficient | Std. Error | t-Statistic | Prob. | Significance |
|---------------------------------------|-------------|--------------------|-------------|--------|--------------|
| C | 3.632318 | 0.251865 | 14.42169 | 0.0000 | Significant |
| FATO | 0.110326 | 0.021490 | 5.133852 | 0.0000 | |
| Cross-section fixed (dummy variables) | | | | | |
| R-squared | 0.918117 | Mean dependent var | | 4.7655 | |
| Adj. R-squared | 0.896756 | S.D. dependent var | | 2.0675 | |
| F-statistic | 42.98141 | Durbin-Watson stat | | 1.6638 | |
| Prob(F-statistic) | 0.000000 | | | | |

Source: Data Analysis Output with EViews 10.

The estimation model that is built is good, this is reflected in the value of F Statistics of 42.98141 with Prob (F-statistic) 0.0000, with the following regression equation.

$$ROA = 3.632318 + 0.110326 FATO **$$

FATO has a positive effect on the ROA with a parameter coefficient of 0.110326. If FATO increases by one unit, ROA

will increase by 0.11 percent. Hypothesis testing results indicate that FATO has a positive influence and obtained a t-statistic value greater than t-table ($t_{0.05;df:28} = 2,0484$) or with a probability value smaller than 0.05, meaning that FATO has a significant influence on the ROA as a dependent variable. Thus the results of testing the hypothesis is accepted. The results of this study are not in line with research by Fatima et al [13] which shows that partially fixed asset turnover has no significant effect on company profitability. Research conducted by Achmad and Hidayat [14] shows that the assets management of PT Holcim Indonesia Tbk. and PT Astra International Tbk. by indicator FATO does not have significant influence to Profitability (OPM). In contrast to Fatima [13] and Achmad [14], the results of this study is in line with research by Andi [15] which proves that there is a significant effect of fixed asset turnover on company profitability, and in accordance with the research hypothesis.

The findings in this study provide important information in financial analysis, where there are very diverse characteristics in each company. In this research sample, the results show that the company needs good management in managing FATO, which has an important role in increasing company profitability.

V. CONCLUSION

This research shows that panel data analysis gives more satisfying results compared to multiple regression analysis, where multiple regression analysis uses the common effect model, whereas in panel data analysis the best estimation model can be determined whether Common Effect Model, Fixed Effect Model or Random Effect Model. In this study, with the Chow and Hausman Test, the best model is the Fixed Effect Model.

This study examines how much the influence of independent variables FATO on the ROA (as the dependent variable). Furthermore, the hypothesis test results obtained: H1 which states "*Fixed Asset Turnover has a positive effect on*

Return on Assets" is accepted. This finding will encourage company management to properly manage fix assets to improve company profitability.

REFERENCES

- [1] M. Salim, *Hukum Pengangkutan Laut Internasional*, Fakultas Hukum Universitas Andalas, 1991.
 - [2] D.N. Nachrowi and H. Usman. *Penggunaan Teknik Ekonometrika*. Jakarta: PT Raja Grafindo Persada. 2002.
 - [3] I.G.N.M. Jaya and N. Sunengsih, *Kajian Analisis Regresi dengan Data Panel*. Prosiding Seminar Nasional Penelitian. Universitas Negeri Yogyakarta, Yogyakarta. 2009.
 - [4] D. Wibisono, *Manajemen Kinerja, Konsep, Desain, dan Teknik Meningkatkan Daya Saing Perusahaan*. Jakarta: Erlangga. 2006.
 - [5] A. Sartono, *Manajemen Keuangan: Teori dan Aplikasi*. Edisi Keempat. Yogyakarta: BPFE. 2015.
 - [6] M.I. Lestari and T. Sugiharto, *Kinerja Bank Devisa dan Bank Non Devisa dan Faktor-faktor yang Mempengaruhinya*. PESAT Vol. 2 Fakultas Ekonomi Gunadarma. 2007.
 - [7] K. Kasmir, *Analisis Laporan Keuangan*. Jakarta: PT. Raja Grafindo Persada. 2012.
 - [8] S. Munawir, *Analisis Laporan Keuangan*. Edisi Kesebelas. Yogyakarta: Liberti. 2007.
 - [9] L. Syamsudin, *Manajemen Keuangan Perusahaan*. Cetakan ke-8. Penerbit PT Raja Grafindo Persada. Jakarta. 2009.
 - [10] Brigham and Houston, *Dasar-dasar Manajemen Keuangan*. Edisi Sepuluh, Alih Bahasa Ali Akbar Yulianto. Jakarta: Salemba Empat. 2013.
 - [11] Sugiyono. *Metode Penelitian Bisnis* Bandung: CV. Alfabeta. 2003.
 - [12] S. Efferin, S.H. Darmadji, and Y. Tan, *Metode Penelitian Akuntansi*. Yogyakarta: Graha Ilmu. 2008.
 - [13] F. Anum and M. Bastri. "Analisis Pengaruh Rasio Aktivitas terhadap Profitabilitas pada Pt. Barata Indonesia (Persero) UUM Medan". *Jurnal Riset Akuntansi dan Bisnis* Volume 14 (2): 187. 2014.
 - [14] N. Achmad and L. Hidayat, "Pengaruh Manajemen Aset Terhadap Kinerja Keuangan Perusahaan". *Jurnal Ilmiah Manajemen Kesatuan* Vol 1 (1) : 23-38. 2013.
- K. Andi. Faktor-Faktor yang Mempengaruhi Audit Delay pada Perusahaan Manufaktur yang Terdaftar di BEI. *Dinamika Keuangan dan Perbankan*. Vol 3 (2): 152-171. 2011.