Original Article

The Effect of Liquidity, Leverage and Total Aset Turnover on Profitability; Empirical Study of Manufacturing Companies in Indonesia Stock Exchange 2012 – 2017

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Abstract - *This study is to determine the effect of liquidity, leverage, and total asset turnover on profitability. The research sample consisted of 18 companies through purposeful sampling. Research data is taken from published financial statements. Panel data process using the EViews 6 application. Panel data analysis was carried out root test and regression model selection through the chow test, Hausman test, and Lagrange multiplier test. The results of the study show that simultaneously liquidity, leverage, and total asset turnover have an influence on the profitability of manufacturing companies. Partially liquidity, leverage, and total asset turnover have a significant positive effect on profitability. The results of this study also have successfully identified that asset turnover is the dominant factor that affects profitability and recommends that the Government in infrastructure development better prioritize the auction to listed companies in IDX.*

Keywords - *Liquidity, Leverage, Total asset turnover, Profitability*

I. BACKGROUND

The Government of President Joko Widodo and Vice President Jusuf Kalla has ruled since its inception initiated a massive infrastructure development in all regions of Indonesia. The infrastructure development budget in the long-term plan (RPJMN) reached 2015-2019 Rp 4.700 trillion. It was delivered by the Director-General of management of Risk financing and Treasury, Robert Pakpahan in discussion Forums in West Jakarta, Merdeka Friday 17th November 2017. One failed the competitiveness of domestic products was too expensive transportation costs either by land, sea or air. Infrastructure development can certainly spur the development of the remote region, slash travel time, and open a quiet village area turns into a bustling city. It is the hope of the business world as well as the expectations of all the people of Indonesia. Next to the Government's efforts to build the infrastructure, it will spur economic growth by absorbing the labor force and trigger investment for companies mainly sub-sector construction and infrastructure.

Infrastructure development by the Government will spur spending STATE BUDGET which can be utilized especially by manufacturing company construction services, manufacturers of cement, iron, steel manufacturers, and various completeness of heavy equipment and a variety of other building materials. In the year 2019 ahead begin on Fitri 1 1440 Hijri or date coincide on June 5 2019 has opened facilities in toll road linking Jakarta to Surabaya. Based on the fact that then it would be a positive signal to improve the financial performance of the company sub-sector construction and infrastructure. The management company will capture opportunities in order to improve the financial performance of the company. One of the company's financial performance is a healthy level of profitability of the company is higher than the cost of capital and the company's ability to complete short-term obligations. In addition, the management of the company can use its assets to increase sales on an ongoing basis. This will lead to a positive trend for economic growth.

The ultimate goal to be achieved by an important company is profit or gain the maximum profit. By obtaining maximum profit as had been targeted, the company can do much for the welfare of the owners, employees, as well as improve product quality and perform new investments. Therefore, the company management in practice required must be able to meet the targets that have been set. This means that the magnitude of the advantage must be reached as expected. To measure the level of profit of a company use the ratio of profits or profitability ratios (Kasmir, 2015). The profitability ratio is the ratio to assess the ability of the company in search of profits. This ratio also gives a measure of the level of effectiveness of the management of a company. This is shown by the profit resulting from the sale and investment income, which essentially uses this ratio to indicate the efficiency of the company. The use of profitability ratio can be done using a comparison between various components in the financial statements mainly income statement and balance sheet reports. The goal is to make it look at the development of companies in a certain span of time, either decrease or increase while searching for the

cause of such changes. One ratio that can be used to measure profitability is Return on Equity (ROE). Basically, the net profit strongly depends on the magnitude of the sale, in which the greater the net sales will be increasingly greater net profit to be generated. Management can maximize sales through stability in producing goods primarily supplies from partners, who supported from payment to the counterparties. The company's ability to pay short-term obligations, in this case, needs to be guarded so as not to disturb the good relations which are already entwined. There are two results in the assessment of liquidity ratio measurements, i.e., if the company is able to meet its obligations, the company said in an illiquid, otherwise if the company is not able to meet its obligations then the said company is in a state of illiquid (Kasmir, 2015:130). One of the measurements is to use the liquidity Cash Ratio. Total assets turnover(TATO) is the speed of the cycle of total assets within a certain period. Total Assets Turnover ratio measures how many sales can be created from any rupiah assets, Total assets turnover assets and activity measure the company's ability to getting profit through its capabilities and resources There are such sales activities, cash, capital, number of employee's number of backup and more. This ratio describes the ability of a company to generate profits, also called the operating ratio (Brigham and Ehrhard,2010)). To measure this ratio is obtained by comparing net sales by Total Assets.

II. THEORITICAL BASIS

Profitability according to Brigham and Ehrhard,(2010), is the net result of a number of policies and decisions. The ratios examined thus far provide useful clues as to the effectiveness of a firm's operations, but the profitability ratios go on to show the combined effects of liquidity, asset management, and debt on operating results. Kasmir (2015) stated that profitability is the ability to generate profits and the proxy of profitability is return on equity, return on asset, and net profit margin.

Return on Equity according to Alpi (2018) is the ratio between the earnings after taxes to the total own capital (Equity) of capital deposit owners. The higher the Return on Equity shows the more efficient companies in managing their own capital to generate profits/net profit. This ratio is used to measure the rate of return of the company or company's effectiveness in generating profits by leveraging the equity owned by the company. Prihadi (2012:114) explains the profitability ratio is the ratio to assess the ability of the company in search of profits or profit in a certain period.

Liquidity According to Kasmir (2015:128) Liquidity is a comparison between current assets and current debt in the company's balance sheet report. One ratio for measuring liquidity using cash ratio. A cash ratio is a tool used to measure how much cash is available to repay debts. Irwadi and Choiruddin

(2015), stated that liquidity is a description of a company's ability to meet its short-term obligations in a smooth and timely manner. Martono and Harjito (2010:53) describe the ratio of liquidity that is the ratio that indicates the relationship between the company with cash and other current assets with debt well, liquidity ratio is used to measure a company's ability to meet financial obligations that must be filled immediately or short-term obligations. The liquidity ratio is the ratio that describes the capabilities of the company in the short-term obligations that have immediately due.

Leverage Prihadi (2012:113) describes the leverage ratio as a ratio used to measure the extent to which assets the company was financed with debt. This means the large amount of debt that companies use to finance their business activities when compared to using their own capital. In order to make a comparison of the use of both this ratio can be seen clearly, we can use the leverage ratio. According to Weston & Copeland (1997) when the use of the debt turns out to be the level of returns on assets (return) is greater than the cost of debt, are profitable and leverage the results of the returns of the top capital with the use of leverage is also increased, on the contrary, if the results return on assets is less than the cost of debt, then leverage will reduce the rate of return on capital. Martono and Harjito (2010:53) describe the financial leverage ratio i.e. the ratio measures how many companies use funds from debt (loans). Whereas Prastowo (2014:76) describes the ratio of solvency ratio/leverage as to know the company's ability to pay short-term obligations in pending liquidation if you have a company where this ratio is also used to rate-limit the company borrowed money (owed).

Total Asset Turn Over (TATO) Sutrisno (2012:221) describes the total assets turnover as a measure of the effectiveness of utilization of assets in generating sales. The larger the turnover assets the effective companies in managing its assets to maximize sales. Meanwhile Prihadi (2012:162) explained that the total assets turnover ratio is to know the effectiveness of the use of the company's operating assets in generating sales when the company produces the same asset sales more a little mean the company is increasingly effective because it requires a lower investment level, where the more effective company uses its assets, the less asset that needs to exist in the company. In the end, when the asset is used less than the cost of the use of the asset (Cost of capital) will be getting a little bit and so on profitability would increase.

Total assets turnover is a ratio that is used to measure the turnover of all assets owned by the company and measure how much sales are obtained from each rupiah of assets (Kasmir, 2015:185).
The results of the previous research suggest that the liquidity effect is positive towards profitability, Sunjoko and Arilyn (2016), Amrita et, al.(2016),

Syafei (2017) Alpi (2018), and Nurlaela et, al. (2019).

Kartikasari and Marisa, and Nurlaela et,al. (2019) findings that leverage positively affects profitability, while according to Alpi (2018) leverage does not affect profitability.

Nurlaela et, al.(2019) states that the total asset turnover is a positive effect on profitability, but Sunjoko and Arilyn (2016) find that total asset turnover does not affect profitability.

Hypothesis The research hypothesis is Effect of Liquidity on Profitability H0: Liquidity (Cash ratio/CR) does not affect profitability H1: Liquidity (Cash ratio) has a positive effect on profitability.

Effect of Leverage on Profitability H0: Leverage (Debt to Equity Ratio/DER) does not affect profitability H1: Leverage (Debt to Equity Ratio) has a negative effect on profitability.

Effect of Total asset turnover on Profitability H0: Total asset turnover (TATO) does not affect profitability H1: Total asset turnover (TATO) has a positive effect on profitability.

III. METHODOLOGY

The type of research used in this thesis is causative research. According to Sari and Budiasih (2014), causative research is research designed to measure the relationship between research variables or analyze the influence of a variable on other variables. In this study, the data used is panel data and analyzed using EViews 6.

Definition of Variable Operations and Variable Measurement The independent and dependent variables used in this study are:

Liquidity (X1) Liquidity is the company's ability to meet short-term financial liabilities in the form of short-term debt (short time debt). Liquidity formula (Brigham and Ehrhard,2010): Cash ratio=(Cash and marketable securities/Current Liability)x100 %.

Leverage (X2) Leverage is the company's ability to fulfill its financial obligations if the company is liquidated, both short and long term liabilities Leverage formula (Brigham and Ehrhard,2010): DER = Total Debt / Equity

Total Aset Turn Over (X3) Sutrisno (2012:221) describes the total assets turnover as a measure of the effectiveness of utilization of aset in generating sales. Total asset turnover formula (Brigham and Ehrhard,2010): TATO = Total NetSales / Total Asset

Profitability is the ability to generate profits for a certain period by using productive assets or capital, both capital as a whole and own capital. Profitability formula (Brigham and Ehrhard,2010):
ROE = (Net Profit / Total Equity) x 100 %

Population and Research Sample In this study the population used is manufacturing companies listed on the Indonesia Stock Exchange (IDX) sub-sector construction, sub-sector cement industries, and sub-sector toll roads, ports, airports, and the like in 2012-2017. The data collection technique used as a sample is purposive sampling, which is the technique of determining the sample with certain considerations (Sugiyono, 2014). The sample of this study consisted of 18 companies for 6 years, so the total sample studied was 108datas.

IV. ANALYSIS METHOD

Descriptive statistics are statistics used to analyze data by describing or describing data that has been collected as it is without intending to make conclusions that apply to the public (Sugiyono, 2014). This descriptive statistic was carried out to describe the overall sample taken in this study.

Panel Data Regression Model Selection According to Widarjono (2007: 258), there are three tests to choose panel data estimation techniques. First, the chow test is used to choose between a common effect or fixed-effect model. Second, the thirst test is used to choose between the best-fixed effect model or random effect in estimating panel data regression. The three Lagrange multiplier tests are used to ascertain which models will be used, the basis for this test is if the results of fixed and random tests are inconsistent.

Classic Assumption Test Testing classical assumptions depend on the estimates used (Ekananda, 2016). If in the model testing, a common effect model or fixed effect model is chosen, it is necessary to test the classical assumption, otherwise, if the model is chosen random effect model, it is not necessary to test the classic assumption. The classic assumption test used is the multicollinearity test and heteroscedasticity test.

Hypothesis Testing Determination Coefficient The coefficient of determination is a variation of the effect of independent variables on the dependent variable, or it can also be said as a proportion of the effect of all dependent variables.

Simultaneous Testing F statistic test is used to show whether all independent variables entered into the model have a joint influence on the dependent variable (Ghozali, 2012: 44). Partial Testing Statistical tests basically show how far the influence of an explanatory/independent variable is individually in explaining the variation of the dependent variable (Ghozali, 2012: 44).

V. Results and Discussion
Table 1. Descriptive Analysis of Research Variables

	ROE	CR	DER	TATO
Mean	0.138206	1.317397	1.558204	0.691202
Median	0.124743	0.486305	1.106342	0.698653
Maximum	0.342573	12.13893	5.666058	2.421725
Minimum	-0.10533	0.056354	0.076958	0.127213
Std. Dev.	0.081268	2.162134	1.245957	0.356712
Skewness	0.204849	3.22124	1.312307	1.503775
Kurtosis	3.112291	14.16969	4.561702	8.070427

	ROE	CR	DER	TATO
Jarque-Bera	0.812076	748.2034	41.97379	156.3956
Probability	0.666285	0.0000	0.0000	0.0000
Sum	14.9263	142.2789	168.286	74.64982
Sum Sq. Dev.	0.706686	500.2061	166.1078	13.61503
Observations	108	108	108	108

Source: EViews 6 Output Results

Based on table 1, it is known that the average ROE of 13.82% has a number of 25% being in the average and the rest on the average ROE. Cash Ratio has an average number of 1.32 times and a number of 67% have a Cash Ratio rate below the average. The DER had an average number of 1.56 times and a number of 60% had below average DER numbers. TATO has an average number of 0.69 times and a number of 40% have below average TATO numbers.

Selection of Regression Models Chow Test in Table 2, you can see the Prob value. Cross-section Chi-square of 0.00 <0.05. Prob value. The Chi-square cross-section is smaller than 0.05, then H0 is rejected and the regression model that is right to use in this study is the fixed effect model.

Table 2

Redundant Fixed Effects Tests

Equation:
FEM1

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.286647	(17,87)	0.0000
Cross-section Chi-square	76.628573	17	0.0000

Source: EViews 6 Output Results

Hausman Test In Table3 The results of the Hausman test indicates the Prob value. The random cross-section in this study was 0.6513. This value is greater than 0.05, so H0 is accepted and the regression model that is right to use in this study is a random effect model.

Table 3

Correlated Random Effects - Hausman Test

Equation:
REM1

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.121352	3	0.1059

Source: EViews 6 Output Results

Lagrange Multiplier Test**,** the test results of Lagrange multiplier in Table 4 can be seen from the Prob value. Breusch-Pagan (BP-value) obtained is 0.0000. This value is smaller than 0.05 so Ho is

rejected and the right regression model to be used is a random effect model.

Table 4

Lagrange multiplier (LM) test for panel data

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	
Breusch-Pagan	31.84262	1.001032	32.84365
	0.0000	-0.3171	0.0000

Source: EViews 6 Output Results

Panel Data Regression Analysis The results of the selection of the regression model show that the random effect model is the most appropriate model used in this study. The results of panel data regression analysis with a random effect model can be seen in Table

Table 5

Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Total panel (balanced) observations: 108
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001669	0.019801	-0.084284	0.933
CR	0.009099	0.002988	3.0532	0.0029
DER	0.017565	0.006732	2.609373	0.0104
TATO	0.145426	0.021004	6.923576	0.0000

Effects Specification		
	S.D.	Rho
Cross-section random	0.043242	0.4205
Idiosyncratic random	0.050765	0.5795

Weighted Statistics			
R-squared	0.41281	Mean dependent var	0.059733
Adjusted R-squared	0.395872	S.D. dependent var	0.066286
S.E. of regression	0.051521	Sum squared resid	0.276064
F-statistic	24.37155	Durbin-Watson stat	1.565817
Prob(F-statistic)	0.0000		

Unweighted Statistics			
R-squared	0.317453	Mean dependent var	0.138206
Sum squared resid	0.482346	Durbin-Watson stat	0.954657

resid

The results of panel data analysis in Table 7 can form panel data regression equations as below:

Y= -0.0017+0.0091X₁ +0.0017X₂+0.1454X₃+ ε

Description: Y: Profitability (ROE) X_1: Cash Ratio (CR) X_2: Leverage (DER) X_3: Total Asset Turn Over (TATO). The interpretation of the regression equation above is as follows:

1) Constants

The profitability value is -0.0017 or minus 0,17% if the variables of liquidity, leverage and total asset turnover do not affect profitability.

2) Liquidity against profitability

The coefficient of liquidity is 0.0091 or 0,91%, meaning that if liquidity has increased by one unit, profitability will increase by 0.0091 or 0,91% assuming the value of other variables remains.

3) Leverage on profitability

The coefficient of leverage is 0,0017 or 0,17%, meaning that if leverage has increased by one unit then profitability will increase by 0,0017 or 0,17% assuming the value of other variables remains.

4) Total Aset Turn Over

The coefficient of leverage is 0,1454 or 14,54%, meaning that if leverage has increased by one unit then profitability will increase by 0,1454 or 14,54% assuming the value of other variables remains.

Classic Assumption Test The results of the selection of panel data regression model selection obtained the best model used is a random effect model so that the classical assumption test is not necessary.

Hypothesis Testing Determination Test The coefficient of determination in this study is used to determine the amount of contribution given by the independent variable to the dependent variable. The results obtained by the R-square value of 0.395872 shows that the independent variables (liquidity, leverage, and total asset turnover) simultaneously provide an influence on the profitability of 39.58% while the rest is influenced by other variables outside the research.

F Test Regression analysis results in table 5 can be seen the significant value of Prob (F-statistics) obtained at 0.0000. This value is smaller than 0.05, H0 is rejected and it can be concluded that the independent variables (liquidity, leverage, and total asset turnover) simultaneously affect profitability.

T-test P-value value of the cash ratio variable is 0.0029 with a positive coefficient, the value is smaller than 0.05 then H0 is rejected and H1 is accepted so that it can be concluded that liquidity (cash ratio) has a significant positive influence on profitability. The value of the P-value of the variable leverage is 0.0104 with a positive coefficient, the value is smaller than 0.05 then H0 is rejected and H1 is accepted so that leverage (DER) has a significant positive influence on profitability. The P-value value of the total asset turnover variable is 0.0000 with a positive coefficient, the value is smaller than 0.05 then H0 is rejected and H1 is accepted so that it can be concluded that total asset turnover (TATO) has a significant positive influence on profitability.

VI. DISCUSSION

Effect of liquidity (Cash Ratio) on profitability the amount of cash owned by construction companies, toll roads, and cement companies is generally required for initial funding in order to obtain the project. Management can also obtain raw materials at a cheap price if the purchase is in cash. This will result in lower production costs that increase efficiency that can ultimately increase profits. In line with that, the findings corroborate that liquidity is a positive and significant impact on profitability. These findings correspond to the research results of the previous research suggests that the liquidity effect is positive towards profitability, Sunjoko (2016), Amrita et, al.(2016), Syafei (2017) Alpi (2018), and Nurlaela et, al. (2019).

Effect of leverage (DER) on profitability Leverage describes funds obtained from other than shareholders. The ratio used to measure leverage is DER. Panel data regression results show that leverage has a significant positive effect on profitability. Basically, road construction projects, bridges, and waterways that are in funding with government projects are still possible to obtain a margin of almost 15%. Management will seek long-term loan funding such as investment credits or bond issuance that interest rates below 10%. Adding debt offset by increasing sales with higher margin rates will result in increased profits which will ultimately increase the profitability of the company. These findings correspond to the research results of the previous research suggests that the leverage effect is positive towards profitability. Kartikasari and Marisa (2016), andNurlaela et, al. (2019) findings that leverage positively affects profitability, while according to Alpi (2018) leverage does not influence profitability.

Effect of total asset turnover (TATO) on profitability Total asset turnover indicates the effectiveness of the use of company assets to create (earn) income. Lower to shows too many companies put their funds in the form of asset base, whereas high tato shows the company uses very little asset or asset that is used is outdated (Keown, et al, 2010). Panel data regression results show that total asset turnover has a significant positive effect on company profitability. An asset is made up of a current asset

and a fixed asset. Current assets consist of cash, trade receivables, inventory, and advance payments. Sufficient cash availability for operational activities, fast receivables converted into cash, high inventory turnover, and project progress of advance payments will affect profitability. Furthermore, the high amount of productive assets will result in increased sales, so that high-feeding assets (current assets and fixed assets) will affect positively profitability. These findings correspond to the research results of the previous research suggests that the total asset turnover effect is positive towards profitability. Nurlaela et, al.'s (2019) findings that total asset turnover positively affects profitability. The results of this research also identified that the variable total assets turnover is the dominant variable so that implicates that the management should continue to focus on increasing sales with the available assets.

VII. CONCLUSION

The results of this study can be concluded that liquidity (Cash Ratio) has a positive effect on profitability, leverage (DER) has a positive effect on profitability and total asset turnover (TATO) has a positive effect on profitability. Liquidity, leverage, and total asset turnover together have a significant influence on the profitability of manufacturing companies on the IDX. In order to increase sales and performance of the company, the government should more emphasize the construction of road infrastructure, toll roads, and other construction developments involving the companies listed on IDX. This will improve the company's financial performance in the country, add employment and increase economic growth.

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