



## Evidence of Financial Ratio Impact on Non-Financial Firm Profitability

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### ABSTRACT

**Purpose:** This study is conducted to determine the factors that affect profitability in Indonesia listed companies by using financial ratios. Four independent variables (liquidity, intangible assets, working capital, and company leverage) were empirically tested to determine their relationships with profitability.

**Method:** The data set covers 100 companies during the period of 2019 – 2021, and a random selection method was used in order to achieve credibility and fairness as much as possible and hypotheses were tested using a pooled ordinary least square regression model

**Findings:** These findings show that firm size, working capital, and firm efficiency have a positive and significant relationship with profitability. In addition, these findings show a negative and significant relationship between liquidity and EPS and debt to equity ratio with ROA and EPS, but show a negative insignificant relationship with ROA. This means that the company suffers from low profitability due to the inefficient use of current assets. Interestingly, leverage shows mixed results, debt to equity ratio shows a negative and significant relationship with ROA and EPS, while leverage ratio shows a positive but insignificant relationship with ROA and EPS. In other words, profitability will increase only up to certain point.

**Novelty:** This study differs than previous studies in number of aspects: First, this study examines the impact of four independent factors and two control variables that some of them are new in the context of research in Indonesia such as intangible assets. Second, previous studies focus on financial industry such as banks, however this study focuses on non-financial industry.

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### INTRODUCTION

The Covid-19 pandemic that occurred has caused the financial performance of companies around the world to decline, thus making many companies try to maintain their business, one way is to make a profit. Basically, a business will only be able to survive for a relatively short time if it is unable to manifest profits. The financial health of a business allows investors to make comparisons between companies in the same industrial sector or from different industrial sectors (Donthu & Gustafsson, 2020). Much research has been done on the impact of various factors on company profitability, such as research on the effect of liquidity management on the profitability of manufacturing companies in Sri Lanka (Kobika, 2018), company size on the profitability of construction companies in Malaysia (Mohd Zaid et al., 2014). , company age to the profitability of non-financial companies in Turkey (Akben-Selcuk, 2016), working capital management to the profitability of insurance companies in India (Charumathi, 2012), financial leverage to insurance companies in Ghana (Boadi et al., 2013), the ratio debt on company profitability in Malaysia (Alarussi & Alhaderi, 2018).

There are similar studies on profitability with the same factors, the results found from each existing study show inconsistencies, for example in research conducted by Vinasithamby (2018) concerning the effect of company size on the profitability in the hotel and travel sector in Sri Lanka, showing results that there is a positive relationship between firm size and profitability. However, in contrast to the results of Azhar & Ahmad's (2019) study regarding the relationship between company size and the profitability of textile companies in Pakistan, it shows that there

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is a negative relationship between company size and profitability. Based on this research, it can be concluded that similar research using different factors still make generalizations questionable. Therefore, this research will empirically examine 4 (four) factors that can affect the profitability of companies in Indonesia. This study uses a sample of companies from the Indonesian market because Indonesia is a country with the 5th largest national income in Southeast Asia. Based on data from the World Bank (2022), Indonesia has succeeded in obtaining a GDP per capita of \$ 4,291.8 in 2021.

Several previous studies have only focused on the determinants of profitability by using financial ratios on the same industrial sector, while few studies have focused on several different industrial sectors, including Xu & Ban-chuenvijit (2014), in their research analyzing 28 companies from the Shanghai Stock Exchange period 2008 – 2012, shows that asset utilization and liquidity have a positive relationship, while leverage shows a significant negative relationship to financial performance as measured by ROA and ROE. Other research focuses on profitability in the banking sector (Susanto and Kholis, 2016), Islamic banking (Wulandari & Kusairi, 2017), manufacturing companies (Susilo et al., 2020), and insurance companies (Febriyanti et al., 2021).

This research is different from previous research from many aspects. This study focuses on financial ratios to explain the profitability of companies in Indonesia. This research also has weaknesses, because profitability is not only determined by financial ratios but also influenced by changes in the market economy around the world. Previous research has shown the importance of analyzing financial ratios to explain the profitability of a company. Alarussi & Gao (2021) in their research explained that in analyzing company performance, Earning per Share (EPS) analysis allows investors to make comparisons between companies that use different scales and trends during different periods. Meanwhile, Return on Assets is the most important indicator in measuring company profitability. Pandey & Diaz (2019) in their research emphasized that Return on Assets is the most important indicator of asset utilization in every business organization.

It can be concluded that the analysis of financial ratios to profitability really helps investors to make the right decisions to evaluate the company's profitability. Therefore this research will empirically examine the impact of working capital, liquidity, leverage, and intangible assets on profitability, with company size and company efficiency as control variables, in order to reinforce the results of the research so that there are no biased calculations.

This study aims to answer the following questions: Is there a relationship between working capital, liquidity, leverage, and intangible assets on company profitability in Indonesia after controlling for company size and company efficiency?

Many theories have been used to explain the relationship between profitability and its determinants such as ultimate property theory (Saleh et al., 2017), agency theory (Bugu & Yucheng, 2018), resource-based view theory (Alarussi & Alhaderi, 2018), value maximization theory (Agiomirgianakis et al., 2013), pecking order theory (Bhutta & Hasan, 2013), managerial theory (Goddard et al., 2005), trade-off theory (Aryantina & Jumonoa, 2021), and cost theory (Lazăr, 2016). This study uses trade off theory and resource-based view theory to explain the relationship between predictor variables and criterion variables.

Profitability is the capability of a company to make a profit. This study examines the association between six variables (including two control variables), namely liquidity, intangible assets, working capital, leverage, firm size, firm efficiency, and profitability. The development of the hypothesis from these factors is described in the following sections:

### **Liquidity**

Liquidity is defined as the fluency of a company in converting its assets into cash. The liquidity ratio measures the safety and capability limits of a company in meeting its short-term obligations. Although liquidity is a necessary condition for the survival of a company, excessive liquidity will cause loss of investment opportunities and lead to decreased profitability (Calcagnini et al., 2022). Based on trade-off theory, high returns on current assets are associated with higher risks and vice versa. Theoretically it could be said that greater liquidity can reduce either risk and profitability. From an operational perspective, liquidity is high means the funds are limited to productive activities or investment, so making current assets inaccessible for profit or get a return on investment.

Several previous studies found inconsistencies in the results of the relationship between liquidity and profitability. Al-Jafari & Alchami (2014) found a strong relationship between liquidity ratios and profitability in banks in Syria. Pratheepan (2014) in his research obtained similar results, the study used samples from 55 manufacturing companies in Sri Lanka. Mohd Zaid et al., (2014) in his research using samples from construction companies in Malaysia for the period 2000 – 2012 found a positive correlation between liquidity and profitability.

Rehman et al., (2015) found different results, in his research in Saudi Arabia found the results of a negative relationship between liquidity and profitability. This negative relationship occurs because company managers may face a dilemma to maintain the company's liquid assets or use liquid assets to add to the company's value so as to increase the company's profitability. Liquid assets such as cash held in banks and easily traded in the securities markets do not generate a high percentage of return, so shareholders do not want companies to invest too much in liquid assets. Therefore, the dilemma experienced by company managers between liquidity and profitability is reflected in a negative correlation (Gitman & Zutter, 2015). Thus this study examines the relationship between liquidity and profitability with the current ratio as a measurement tool. So the development of the first hypothesis as follows:

**H<sub>1a</sub> : Liquidity and ROA have a negative and significant relationship**

**H<sub>1b</sub> : Liquidity and EPS have a negative and significant relationship**

#### **Intangible Assets**

Intangible assets are defined as assets that are not physically tangible such as patents, trademarks or copyrights. Intangible assets are important because they bring economic benefits to the company. Research conducted by Kothari et al., (2002) confirms that future corporate earnings will increase when firms increase Research and Development costs. Madhani (2012) argues that property rights will protect patents, copyrights, franchises and brand usage rights in an advanced industrial economy, these intangible assets can help companies by providing competitive advantages and more revenue. This research empirically examines the impact that intangible assets have on the profitability of companies from several different sectors. Therefore the development of the second hypothesis is as follows:

**H<sub>2a</sub> : Intangible assets and ROA have a positive relationship**

**H<sub>2b</sub> : Intangible assets and EPS have a positive relationship**

#### **Working Capital**

Working capital is defined as the result of reducing the company's current assets with short-term liabilities. Working capital is a financial indicator that represents the operational liquidity of a business, organization or other entity. Effective and efficient working capital management can help smooth operations so as to maximize company revenue and profitability. Aldubhani et al., (2014) in their research showed that there is a significant effect of company working capital management on profitability and companies can also increase their level of profitability through working capital management. Malik (2011) measured the profitability of 35 life and non-life insurance companies in Pakistan and found a positive and strong relationship between working capital and profitability. Research conducted by Burja (2011) has similar conclusions. This study examines the effect of working capital on the profitability of companies in Indonesia. Working capital is measured by the difference between total current liabilities and total current assets. So the development of the third hypothesis is as follows:

**H<sub>3a</sub> : Working capital and ROA have a positive relationship**

**H<sub>3b</sub> : Working capital and EPS have a positive relationship**

#### **Leverage**

Leverage occurs when debt is used as a source of funding to invest in order to expand a company's asset base and manifest returns on venture capital. Company managers must be able to make informed decisions that consider business and financial risks when selecting debt and equity to finance the company's operations. Companies cannot always finance their operations from their internal sources for various reasons, such as limited internal funding sources or to maintain continuity ownership of the company (Yazdanfar, 2013).

However, based on the capital structure trade-off theory, the optimal level of debt is the balance between the cost of debt and the benefits obtained. This explains the existence of an inverse U-shaped relationship between debt and profitability. In other words, the tax benefits derived from debt contribute to increasing profitability, but these benefits will decrease if the cost of debt increases, resulting in lower profits (Aryantinia & Jumonoa, 2021). Andersson & Minnema (2018) found a significant negative relationship between leverage and profitability after analyzing data from 130 management consulting firms in Sweden for the period 2012 – 2016. Identical results were also found in research conducted by Charumathi (2012) on the profitability of life insurance companies. in India. In contrast to research conducted by Boadi et al., (2013), who analyzed data from insurance companies in Ghana found a strong positive relationship between leverage and profitability. Similar results were also found by Burja (2011) in his research on company profitability in the chemical industry in Romania. This study considers the effect of leverage, as measured by the debt ratio and leverage ratio on the profitability of companies in Indonesia. So the fourth hypothesis in the study is as follows:

**H<sub>4a</sub> : Debt to equity ratio and ROA have a negative relationship**

**H<sub>4b</sub> : Debt to equity ratio and EPS have a negative relationship**

**H<sub>4c</sub> : Leverage ratio and ROA have a negative relationship**

**H<sub>4d</sub> : Leverage ratio and EPS have a negative relationship**

**Table 1.** Measurement Variable

Variable name		Measurement	Previous studies
Profitability	Return On Assets (ROA)	Income Before Taxes And Interest/ Total Assets	(Vätavu, 2014)
Liquidity	Current ratio	Current Assets/Current Debt	(Gürbüz' et al., 2010)
Intangible Assets	Intangible assets to total assets ratio	Intangible Assets/Total Assets	(Zhang, 2017)
Working capital	Working capital to total assets	Working Capital/Total Assets	(Alarussi & Gao, 2021)
Leverage	Debt to equity ratio	Total Debt/Total Equity	(Alarussi & Gao, 2021)
	Leverage ratio	Total Debt/Total Assets	(Alarussi & Shmaki, 2016)
Firm size	Ln of total assets	Ln Total Aset	(Alarussi & Gao, 2021)
Firm efficiency	Assets turnover ratio	Net Sales/Average Total Assets	(Alarussi & Gao, 2021)

**RESEARCH METHODS**

**Data Types and Sampling Techniques**

This study used secondary data and as many as 864 populations were used in the study. The research population is all companies listed on the Indonesia Stock Exchange as of 2023. The research sample is a non-financial company. Companies belonging to financial institutions are not used as research samples because of the different nature of their business and integrating them will affect comparability with other non-financial companies.

The sample selection was carried out by taking companies that have complete 2019-2021 annual report information and then randomly selecting them to achieve maximum credibility and fairness. Due to limited time and resources, this study used 100 non-financial companies as research samples.

**Definition and Measurement Variables**

There are three types of variables used in this study. The dependent variable (profitability), independent variables (liquidity, intangible assets, working capital and leverage), and control variables (company size and company efficiency).

**Descriptive Analysis**

Descriptive analysis displays descriptive statistics of the selected companies. The research variables are measured by calculating the average (mean), data median (median), minimum value, maximum value, and standard deviation of each variable.

**Correlation Analysis**

Correlation analysis shows the relationship between four factors (independent variable) and profitability (dependent variable) and two control variables. A high correlation indicates that there is a strong relationship between variables while a low correlation indicates that the variables are weakly related.

**Multicollinearity**

Kyereboah-Coleman (2007) suggests that every empirical test conducted on panel data must be reviewed for its multicollinearity. If the value of the variance inflation factor (VIF) <10 and the tolerance value (1/VIF) > 0.1 then there is no multicollinearity.

**Heteroscedasticity**

Kyereboah-Coleman (2007) suggests that any empirical test performed on panel data must be reviewed for heteroscedasticity. The Breusch-Pagan / Cook-Weisberg test was used to test heteroscedasticity. If the probability value of chi2 > 0.05 then there is no heteroscedasticity, whereas if the probability value of chi2 <0.05 then there is heteroscedasticity.

**Regression Analysis**

Pooled ordinary least squares regression was applied to analyze the data. Two models are used in this study to measure profitability (equation 1 and 2).

$$ROA = \alpha + \beta_1 \text{CRIO} + \beta_2 \text{DTERIO} + \beta_3 \text{INTARIO} + \beta_4 \text{WCTARIO} + \beta_5 \text{LEVRIO} + \beta_6 \text{LTA} + \beta_7 \text{ASTRIO} + \varepsilon \dots\dots\dots 1$$

$$EPS = \alpha + \beta_1 \text{CRIO} + \beta_2 \text{DTERIO} + \beta_3 \text{INTARIO} + \beta_4 \text{WCTARIO} + \beta_5 \text{LEVRIO} + \beta_6 \text{LTA} + \beta_7 \text{ASTRIO} + \varepsilon \dots\dots\dots 2$$



**Table 2.** Descriptive Analysis

Variabel	N	Mean	Median	Minimum	Maximum	Std. Deviation
ROA	284	0.01356	0.01345	-0.204	0.1955	0.0567525
EPS	284	1.510015	2.090001	-4.287	5.897154	2.422003
CRIO	284	1.820504	1.495	0.22	9.21	1.398536
INTARIO	284	0.176571	0.011947	1.21E-06	2.352095	0.4507584
WCTARIO	284	0.138542	0.12333	-0.583333	0.725419	0.2288036
DTERIO	284	0.634881	0.52545	0.0015	1.9609	0.4681474
LEVRIO	284	0.25205	0.2198	0.0004	1.1496	0.1835802
LTA	284	28.64947	28.68531	24.95824	33.53723	1.578587

Source: Output STATA 14, 2023.

With the following information

ROA	: Return On Assets
EPS	: Earning Per Share
$\alpha$	: Constant
$\beta_1$ CRIO	: Current Ratio
$\beta_2$ DTERIO	: Debt to Equity Ratio
$\beta_3$ INTARIO	: Intangible Assets to Total Assets Ratio
$\beta_4$ WCTARIO	: Working Capital to Total Assets Ratio
$\beta_5$ LEVRIO	: Leverage Ratio
$\beta_6$ LTA	: Logaritma natural of Total Assets
$\beta_7$ ASTRIO	: Assets Turnover Ratio
$\varepsilon$	: Error Term

Pooled ordinary least squares regression is used in research because it gives unbiased results and consistent parameter estimates even when constant time attributes are presented and is recommended in panel data studies (Alarussi & Gao, 2021). Concatenated least squares regression is more suitable for data that do not have a dummy variable, which is appropriate in this study. (Ashhari & Hassan, 2009; Zhang, 2013).

## RESULTS AND DISCUSSIONS

Non-financial companies listed on the Indonesia Stock Exchange are the essence of the research object. The annual report of 100 non-financial companies for the 2019-2021 period is a research sample. The sample selection was carried out by taking companies that have complete 2019-2021 annual report information and then randomly selecting them with the aim of achieving as much credibility and fairness as possible. A total of 284 observations were examined after excluding outliers to test the impact of the independent variables on the dependent variable.

### Descriptive Analysis

Table 2 below displays the descriptive statistics of the selected sample companies. The mean and median values of ROA and EPS are 0.01356 (0.01345) and 1.510015 (2.09001) respectively, which indicates that the sample companies taken do not experience losses at the average calculated level. The average value (mean) and the median current ratio (liquidity) are 1.8205 and 1.495, which shows that the average company in Indonesia operates with good liquidity. The mean (mean) and median ratios of intangible assets are 0.17657 and 0.01195 which show the significance of intangible assets to total assets in Indonesian companies.

**Table 3.** Correlation Analysis

	ROA	EPS	CRIO	INTARIO	WCTARIO	DTERIO	LEVRIO	LTA	ASTRIO
ROA	1								
EPS	0.7779	1							
CRIO	0.1323	-0.0979	1						
INTARIO	-0.1707	-0.1445	-0.1279	1					
WCTARIO	0.28	0.0405	0.7302	-0.1012	1				
DTERIO	-0.3408	-0.1253	-0.3436	0.0852	-0.453	1			
LEVRIO	-0.0206	-0.0191	-0.1012	0.0722	-0.0755	-0.0211	1		
LTA	0.2163	0.334	-0.1235	-0.274	-0.166	0.1138	-0.1311	1	
ASTRIO	0.3474	0.327	0.0015	0.0453	0.1342	-0.1075	-0.0829	-0.0261	1

Source: Output STATA 14, 2023.

**Table 4.** Regression Analysis

Variabel	Model (1) ROA			Model (2) EPS		
	Coefficient	t	p-value	Coefficient	t	p-value
CRIO	-0.0041751	-1.39	0.166	-0.3722626	-2.8	0.005
INTARIO	-0.0104298	-1.57	0.118	-0.3713445	-1.27	0.207
WCTARIO	0.0586304	3.02	0.003	1.589163	1.85	0.045
DTARIO	-0.0313341	-4.6	0.000	-0.6729025	-2.24	0.026
LEVRI	0.0145185	0.92	0.357	0.5696122	0.82	0.413
LTA	0.0094771	4.93	0.000	0.5247251	6.19	0.000
ASTRIO	0.0380859	5.92	0.000	1.658463	5.84	0.000
Cons	-0.2632397	-4.62	0.000	-13.71085	-5.45	0.000
<i>F</i> (7,276)	18.22			14.42		
Prob > <i>F</i>	0.000			0.000		
<i>R-squared</i>	0.316			0.2678		
Adj <i>R-squared</i>	0.2987			0.2492		
N	284			284		
Mean VIF	1.48			1.48		
Heteroscedasticity test	Chi2 (1) = 1.57			Chi2 (1) = 1.17		
	Prob>Chi2 = 0.2097			Prob>Chi2 = 0.2803		

Source: Output STATA 14, 2023

The average (mean) and median working capital ratios are 0.13854 and 0.1233, which shows that the average current assets are greater than current liabilities. The average (mean) and median debt to equity (leverage) ratios are 0.63488 and 0.52545, however, the average and median leverage ratios are 0.25205 and 0.2198 which shows companies in Indonesia use debt to finance its activities, but its total debt is almost 20% of its total assets. The average (mean) and median Ln values of total assets are 28.64947 and 28.68531, and the average (mean) and median asset turnover ratio (company efficiency) are 0.59966 and 0.4785, which indicates that the average company registered in Indonesia can generate revenue of IDR 0.60 from each use of IDR 1 of its assets.

#### Correlation Analysis

Table 3 below shows the correlation between the four factors (independent variable) with profitability (the dependent variable), and the two control variables. A high correlation indicates that there is a strong relationship between variables, while a weak correlation indicates that the variables are weakly related. From the table above it can be seen that there is a significant positive correlation between EPS, current ratio, working capital ratio, total assets, and asset turnover ratio with ROA. However, the intangible asset ratio, leverage ratio and debt ratio are negatively correlated with ROA and EPS. Likewise the ratio of working capital, total assets, and asset turnover ratio has a significant positive correlation with EPS. However, the current ratio has a negative correlation with EPS. In the correlation table, the maximum value between ROA and EPS is 0.78 which is a normal value because they both measure profitability.

However, based on the researcher's recommendation, it is essential to treat any econometric problems, such as serial correlation, multicollinearity and heteroskedasticity, before proceeding with regression analysis. Kyereboah-Coleman (2007) suggested that any empirical analysis done on panel data should be controlled for heterogeneity and multicollinearity. In addition, the variance inflation factor (VIF) values should not exceed 10. In the case of this study, the VIF values are well below 10, at 1.48, meaning that multicollinearity is not a problematic issue. The Breusch-Pagan/Cook-Weisberg test was used for homoscedasticity and heteroscedasticity (Table 4 displays the results of the test).

#### Regression Analysis

Table 4 displays the results of the two models in this study. The first model displays the relationship between independent variables and ROA. It can be seen that there is a significant positive relationship between working capital ratio (WCTARIO), Ln of total assets (LTA), and asset turnover ratio (ASTRIO) with ROA. This shows that an increase in this variable contributes to increasing the company's ROA.

The thing to note is that the working capital ratio (WCTARIO) has the largest coefficient, namely 0.0586 at a significance level > 0.05, namely 0.003, which means that every increase in working capital to the average total assets causes ROA to also increase by 0.059. Similarly, the asset turnover ratio (ASTRIO) has the second highest significant positive effect on ROA, with a coefficient of 0.038 and a significance level > 0.05, which is 0.000, in other

words, every increase in the asset turnover ratio causes an average increase of 0.038 in ROA.

Furthermore, there is a positive relationship between Ln total assets (LTA) and ROA, a significance level  $> 0.05$ , which is 0.000. When Ln of total assets increases by 1, ROA increases by 0.0095 simultaneously. Because total assets are a measure of company size, in other words, company size is an important determinant of ROA.

The ROA model shows a negative and significant relationship between debt to equity ratio (DTERIO) with a coefficient of -0.0313, at a significance level  $> 0.05$ , which is 0.000. If there is a 1% decrease in the debt to equity ratio, the ROA will increase by 0.0313 as a consequence. Another variable, namely the ratio of debt to total assets (LEVRIO) has a positive but not significant relationship with ROA, while the current ratio (CRIO) and the ratio of intangible assets (INTARIO) have a negative but not significant relationship with ROA. In the first model the R-squared value is 0.3160 and the adjusted R-squared is 0.2987, meaning that in this model the independent variables explain well the effect of 29.87% on the dependent variable in the regression model.

The second model measures the relationship between the independent variable and EPS, and found a positive and significant relationship between EPS and asset turnover ratio (ASTRIO) with a coefficient of 1.6584 and a significance level of  $> 0.05$ , which is 0.000. In other words, when the percentage of asset turnover increases by one unit, EPS will increase by 1.6584. The ratio of working capital to total assets (WCTARIO) ranks second, where the coefficient is 1.5892 at a significance level  $> 0.05$ , namely 0.045, this shows that an increase in one unit of working capital to total assets ratio will increase EPS simultaneously by 1.59.

Furthermore, the results show that Ln of total assets (LTA) with a coefficient of 0.5247 at a significance level  $> 0.05$ , namely 0.000, this shows that an increase in sales of one unit will increase EPS by 52.47% simultaneously. The current ratio (CRIO) shows a negative relationship with the coefficient -0.3722, this indicates that an increase in one unit of the current ratio will cause EPS to decrease by 0.3722, at a significance level  $> 0.05$ .

Debt to equity ratio (DTERIO) also shows a negative relationship, with a coefficient of -0.6729, this indicates that an increase in the debt to equity ratio by one unit will cause EPS to decrease by 0.6729, at a significance level  $> 0.05$ . Another variable, namely the leverage ratio (LEVRIO) shows a positive relationship that is not significant, with EPS while the ratio of intangible assets (INTARIO) shows a negative relationship that is insignificant. In the second regression model, the R-squared is 0.2678 and the adjusted R-squared is 0.2492, which is much lower than the first model. In other words, in this model the independent variable explains its effect well at 24.92% on the dependent variable in the regression model.

### Interpretations

This study concentrates on financial indicators (independent variables), namely liquidity, intangible assets, working capital, and leverage. ROA and EPS were chosen as the measurement of profitability (the dependent variable). The results are described as follows:

#### Company Liquidity

The current ratio is used to measure a company's liquidity. This research reveals unexpected results regarding liquidity, and shows the heterogeneity of the results. Referring to table 4 of the first ROA model, it shows a negative and insignificant relationship as reflected by a coefficient value of -0.00418 with a significance value of 0.166 then  $H_{1a}$  is rejected because the results obtained cannot confirm a significant relationship between liquidity and ROA. This is similar to the findings of Pratheepan (2014) and Mohd Zaid et al (2014).

Whereas in the second EPS model, it shows a significant but negative relationship as evidenced by the coefficient value -0.3722 and a significance value of 0.05, then  $H_{1b}$  is accepted. This supports the view of Calcagnini et al., (2022) and Bibi & Amjad (2017). An increase in the current ratio by one unit will cause EPS to decrease by around 37 units.

In general, liquidity is necessary for short-term survival and profit for long-term survival, both of which are important for company management. The negative relationship is consistent with the trade-off theory whereby higher returns are associated with higher risks and vice versa. Theoretically it could be argued that greater liquidity reduces both risk and profitability. From an operational perspective, high liquidity means that funds are limited to productive or investment activities, thus making current assets inaccessible for making profits or getting a return on investment.

#### Intangible Assets

Intangible assets reflect the company's core competencies. Table 4 shows a negative and insignificant relationship between the ratio of intangible assets to total assets on ROA and EPS. In the first ROA model, the coefficient value is -0.0104 and the significance value is 0.118. Whereas in the second EPS model, the coefficient value is -0.3713 and the significance value is 0.207. Therefore  $H_{2a}$  and  $H_{2b}$  are rejected because the results obtained show a negative relationship between intangible assets and profitability, this is similar to the findings of Marwa et al., (2017) but contradicts the findings of Nijun (2017).

It can be concluded that companies have to invest in intangible assets at certain point so that it can help the company by providing competitive advantage and more revenue. However when a company invests too much in intangible assets it will reduce the company's profitability because the cost of capital incurred will increase, so it will be reflected in a negative relationship.

#### Working capital

Referring to table 4 there is a positive relationship between working capital and profitability (as measured

by EPS and ROA). The first model of ROA shows a coefficient of t-statistics of 0.0586 and a significance value of 0.003, and the second model of EPS shows a coefficient of t-statistics of 1.5891 and a significance value of 0.045. Therefore,  $H_{3a}$  and  $H_{3b}$  are accepted. Furthermore, compared to other variables, it was found that working capital has a greater positive effect on profitability, based on the results of the mathematical coefficients.

This shows that companies in Indonesia are able to maximize their profitability by increasing the proportion of working capital to total assets. A greater proportion of working capital will help achieve higher profitability, according to the empirical evidence in this study. This finding is similar to Aldubhani et al (2014), Malik (2011), Burja (2011), Alarussi & Alhaderi (2018).

Effective working capital management is a fundamental prerequisite for successful business continuity, as it will increase the company's rate of return on short-term capital investment and overall profitability. In addition, having the right working capital ensures smooth day-to-day operations, production, sales, receipt and disbursement of cash, which is essential for the company's profitability and growth.

#### **Company Leverage**

Table 4 shows various results, in the first model ROA shows a coefficient value of DTERIO of -0.0313 and a significance value of 0.000, and a LEVRIO coefficient value of 0.0145 and a significance value of 0.357. Whereas in the second model EPS shows a coefficient value of DTERIO of -0.6729 and a significance value of 0.026, and a LEVRIO coefficient value of 0.5696 and a significance value of 0.412. In other words DTERIO shows a negative and significant relationship to ROA and EPS, while LEVRIO shows a positive and insignificant relationship to ROA and EPS. Therefore  $H_{4a}$  and  $H_{4b}$  are accepted, while  $H_{4c}$  and  $H_{4d}$  are rejected.

The use of debt that is too high will result in large interest expense costs which will cause degradation of the company's profits. This is in accordance with what was stated by Andersson & Minnema (2018) who in their research explained that the lower the level of debt, the profitability will increase and vice versa the higher the utilization of debt in company capital, the company's profitability will decrease due to the high utilization of debt in company capital. will have implications for financial risk, namely the company's impotence to fulfill its obligations due to the large interest expense. These results are similar to the findings of Aryantina & Jumonoa (2021) and Charumathi (2012).

#### **Firm Size**

Table 4 shows a positive and significant relationship between LTA (an indicator to measure company size) with ROA and EPS (to measure profitability). In the first model of ROA, the coefficient value is 0.00948 and the significance value is 0.000. Whereas in the second EPS model, the coefficient value is 0.52473 and the significance value is 0.000.

Therefore, if companies in Indonesia are expanded, then profitability will increase as shown in the empirical results, which also support the resource-based-view theory, where the bigger the company, the more financial resources that can be accessed, leading to higher capital costs. lower and higher profits. This is similar to the findings of Gaio & Henriques (2018) and Sritharan (2015).

Because the coefficient value is 0.52 for EPS and only 0.0095 for ROA, it can be concluded that the change in profitability is relatively small along with the size of the company. This may occur due to agency problems, where managers of large companies pursue personal interests rather than maximizing profits. Overall, the research results show the significance of Indonesian companies in increasing and expanding their business to various regions and places.

#### **Firm Efficiency**

The asset turnover ratio is used to measure company efficiency. The results in table 4 show that there is a positive and significant relationship between the asset turnover ratio and ROA and EPS, as evidenced in the first ROA model, the coefficient value is 0.0381 and a significance value of 0.000, while in the second EPS model, the coefficient value is 1.6585 and a significance value of 0.000.

In other words, a high level of asset turnover can optimize company profitability. Companies can increase profitability by increasing the efficiency of the company. Increasing company efficiency can be done by maximizing the use of owned assets, the more optimally a company uses owned assets, the income earned will also increase so that it will also have an impact on increasing profitability. This is similar to the findings of Mouzas (2006).

## **CONCLUSIONS**

This research was conducted to determine the factors that affect the profitability of companies listed in Indonesia. Four independent variables (liquidity, intangible assets, working capital, and leverage) of the company were tested empirically to determine their relationship with profitability, besides that two control variables (company size and company efficiency) were also used in this study. The research data consists of 300 samples, and is taken from the company's annual report. Then, least squares regression was used to analyze the data. The results of the data analysis emphasize the strong and positive relationship between working capital, company size, and company efficiency and profitability. The results also show a strong and negative relationship between liquidity and debt to equity ratio and profitability. This means that external funds are important for companies to increase their profitability but do not have to be presented significantly in company assets. These findings conclude that large companies



with maximum efficiency and well-managed working capital can increase operating income so that it has an impact on increasing profitability.

The implications of the results of this study are important because knowing the determinants of profitability will lead to the sustainability and stability of a company. This is very important for many parties including management, employees, customers, creditors, shareholders, government and regulators. Therefore, these findings can support stakeholders in making decisions in evaluating the profitability of companies listed in Indonesia, especially with the Covid-19 pandemic which has greatly affected financial performance throughout the world, including Indonesia. Specifically, managers should pay more attention to working capital management, optimizing company efficiency, and expanding the company to increase company profitability. Similarly, investors can use financial ratios to evaluate the company's profitability targets so that they can make the right investment choices. Banks and other creditors can also predict their future cash receipts based on their cognition of the relationship between financial ratios and profitability. Profitability is also crucial for employees, if the company can provide sustainability and stability, then employees will participate in obtaining higher company profitability by utilizing company resources effectively. In other words, managers, shareholders and employees are able to maximize company profitability by increasing working capital, meeting debt obligations and managing assets owned. Companies are also encouraged to increase their sales and market share by internal expansion, external growth (merger) or diversification into related industries.

Like other studies, this study has limitations, namely the database is limited to 300 observations and only covers three years from 2019 to 2021. Future research is expected to cover a larger sample size and longer time span to achieve more comprehensive results. Future research can also add external factors, such as interest rates, inflation rates, environmental factors, and other economic factors to confirm their implications for company profitability.

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