

FACTORS AFFECTING FINANCIAL PERFORMANCE IN TECHNOLOGY COMPANIES

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ABSTRACT

The purpose of this study is to examine the effect of independent variables of leverage (as measured by debt to equity ratio [DER]), firm size (as measured by natural logarithm of total assets), and liquidity (as measured by current ratio [CR]) on financial performance (as measured by return on equity [ROE]). The sample in this study was selected using purposive sampling which resulted in 10 technology companies from 21 technology companies listed on the Indonesia Stock Exchange (IDX) during the 2020-2022 period were used as research objects. This study uses a panel data regression model with a Fixed Effect Model (FEM) approach using Eviews version 12 program. Based on the analysis, the results of this study show that firm size has a positive and significant effect on financial performance, while leverage and liquidity have a positive and insignificant effect on financial performance.

Keywords: *leverage, size, liquidity, financial performance.*

1. INTRODUCTION

2020 was a bad year for most corporate sectors due to the COVID-19 pandemic. However, this is inversely proportional to the technology sector which actually experienced an increase due to the pandemic. This attracts the interest of investors because there is a good opportunity to gain profits from investment returns in the technology sector which is rising during the pandemic. In order not to make mistakes in making investments, investors need to analyze the company's financial reports. One of the important things to analyze in financial reports is financial performance. By looking at financial performance, investors will be more confident in making investments. There are several factors that can effect financial performance, including leverage, firm size and liquidity.

Leverage is one of the factors that can relate to financial performance. Leverage is used to measure the extent to which assets are financed with debt and is something that needs to be analyzed. Leverage can also be used for the company's capital ability to pay all its debts.

Firm size is also a factor that is examined in the company's financial performance. Firm size is a reflection of the total assets owned by the company.

The last factor examined in the company's financial performance is liquidity. The liquidity of a company's financial performance in managing its obligations can provide investors with high confidence in the company's financial performance.

In this research, the technology sector was chosen as the research subject because of some reason. The first reason, because the technology sector is a sector that has experienced an increase during the COVID-19 pandemic, and the second reason is because the technology sector is a sector that is still little used as a research subject. The technology sector was also chosen in

order to find out further whether the technology sector has a big relationship with the company's financial performance so that it can attract the attention of investors to invest in technology sector companies.

Based on the background that has been described, this research is entitled "The Effect of Leverage, Firm Size, and Liquidity on Financial Performance in the Technology Sector Listed on the Indonesian Stock Exchange in 2020 - 2022."

Our Contribution

This research is a replication of research by Shimenga & Miroga (2019). The differences between this research and Shimenga & Miroga (2019) are as follows. The first difference is that the independent variables used in this research are leverage, firm size and liquidity. Meanwhile, the independent variables used in Shimenga & Miroga's (2019) research are leverage and liquidity. The second difference is that this research uses a sample of technology sector companies listed on the Indonesia Stock Exchange (IDX). Meanwhile, the sample used in Shimenga & Miroga's (2019) research was manufacturing companies listed on the Nairobi Securities Exchange. The final difference lies in the research period, this research uses the 2020-2022 period.

Paper Structure

The rest of the paper is organized as follows. Section 2 introduces the preliminaries used in this paper, covering the basic theories used in this study. Section 3 presents the research model and hypothesis used in the study. Then, the population, sample count, sample criteria, and proxies are described in Section 4. Section 5 shows the results of the study. Finally, Section 6 concludes the paper and presents direction for future research.

Agency Theory

This research is based on agency theory. Agency theory can explain the relationship as a contract between the principal and agent to perform several services on their behalf by involving the delegation of some decision-making authority to the agent [1]. In this case, the principal is referred to as the investor and the agent is referred to as management. The principal always gives orders to the agent to carry out all activities on behalf of the principal. Agency problems can be caused by companies that separate functions between company management and ownership because management as managers and investors as owners have different interests. Agency costs arise from agency problems, such as monitoring expenses by the principal, bonding expenses by the agent, and residual losses. Agency theory explains the relationship between company financial performance and company information disclosure. A company that has good financial performance can increase company profits and will have an impact on the disclosure of company financial information so that it can reduce agency costs.

Trade-off Theory

Apart from agency theory, this research is also based on trade-off theory. The trade-off theory explains how a high debt value will improve the company's financial performance, but this value will start to decline at a certain point, namely at the optimal debt level, so that a high debt value will result in a high interest rate that the company must pay. That most managers prefer debt because trade-off theory emphasizes that companies use it to the point where the marginal value of tax savings (tax shields) on additional debt is only offset by the increase in the present value of the possible costs of financial distress [1]. The use of debt can benefit the company by using income tax reduction costs to improve the welfare of shareholders. High debt levels can also

create a risk of bankruptcy because the debt to capital ratio increases. Companies must be careful in determining the optimal level of debt, because changes in the value of debt that exceed the optimal level will have a negative impact on the company's financial performance because the value of financial distress costs is greater than the value of tax savings (tax shield). The use of debt capital can only improve company performance above a certain point, after a certain limit the use of debt capital can reduce the company's financial performance, so it is important for companies to determine the optimal level of debt by calculating tax benefits and bankruptcy costs or interest costs on debt so that there is a balance.

Financial Performance

Financial performance is the financial condition that has been achieved by a company in a certain period [2]. Good financial performance can certainly be an attraction for a company to invite investors to invest in a company. In measuring a company's operational activities, it can be seen from the company's financial condition by measuring the health level of the company's financial performance. Assessing a company's financial performance in various industrial sectors is important so that its operational activities can run well. The financial performance of a company can be assessed by analyzing its financial reports with the aim of enabling stakeholders and shareholders to make the right decisions.

Leverage

Leverage is a ratio used to measure the extent to which company assets are financed with debt [3]. Leverage can also measure the balance between debt and equity in a company's capital structure. Companies use funding in the form of loans or capital with the aim of having the ability to improve their company. This cannot be achieved if the leverage value becomes higher and results in the amount of debt the company has becoming greater than its capital, causing the company's profits to decrease and impacting the company's financial performance for the worse. A high level of leverage will also have an impact on the company's cash flow, resulting in high interest expenses and a greater risk of bankruptcy for the company.

Firm Size

Firm size is the size of the company which describes how big or small a company is measured by its total assets or by its total capitalization [4]. The size of a company has an attractiveness to suppliers and competitors. Companies with a large size can easily access the capital market compared to companies with a smaller size. The growth of companies with large sizes is greater than companies with small sizes so that the rate of return on shares in companies with large sizes is greater than companies with small sizes. External capital is easier for companies with a large size to obtain so that investors are interested in investing their capital and a company's financial performance improves. A large firm size can also show the company's prospects for the future and enable the company to account for capital from shareholders and its capital will be managed for the company's operational activities, so that the company's financial performance will be better.

Liquidity

Liquidity is a ratio that is used to measure a company to see how liquid the company is by comparing the components on the balance sheet, namely total current assets with total current liabilities (short-term debt) [3]. The higher the liquidity, the more the company can fulfill its obligations so that the company is in a liquid state. On the other hand, the lower the liquidity ratio, the more the company cannot fulfill its obligations, thus indicating that the company is in an illiquid state. A high level of liquidity in a company can provide and obtain cash fairly

quickly and can be used to pay off its obligations so that the company has good financial performance. A company that can fulfill its obligations can be said to be in a liquid state. The liquidity of a company will have a good impact on the company's financial performance in managing its obligations and can provide high confidence for investors so they can invest their capital in the company.

The Effect of Leverage on Financial Performance

The trade-off theory states that with a high level of leverage there is a reduction in income tax due to the interest expenses that the company must pay. The interest expense is in the form of debt which should be used to purchase company assets and others. A high level of leverage will also have a relationship with the company's cash flow so that it will pay high interest charges and pose a risk of bankruptcy for the company. In this case, leverage has a relationship with the company's financial performance, where the company does not have remaining cash flow to finance the company's operations and invest in existing business opportunities. Based on the description above, companies can consider very appropriately before using leverage because it can cause burdens and risks for the company if it is in a bad financial condition, which will have an impact on the company's financial performance. Therefore, leverage has a negative and significant relationship to financial performance. This hypothesis is in line with research conducted by Schutte [5], Shibusse et al. [6] which states that leverage has a negative and significant effect on financial performance.

H1: Leverage has a negative and significant effect on financial performance.

The Effect of Firm Size on Financial Performance

Agency theory explains that the agency relationship between the agent and the principal can involve the delegation of authority in decision making to management. The separation of functions between ownership and company management will give rise to differences in interests between agents and principals. The large size of the company can attract investors to invest their capital in the company, causing the principal to distribute dividends to shareholders or investors, which can cause conflict. A conflict occurs between the principal and the agent because the agent wants to use cash in the company for the company's operational activities, but the principal wants to use the cash to distribute dividends to shareholders. The larger the company, the greater the agency costs due to the continuous increase in monitoring needs in large companies. Large companies have more information and levels of trust than smaller companies, so they have good financial performance. Therefore, firm size has a positive and significant relationship to financial performance. This hypothesis is in line with research conducted by Bahri et al. [7], Nugraha et al. [8], Hossain & Saif [9] which states that firm size has a positive and significant effect on financial performance.

H2: Firm size has a positive and significant effect on financial performance.

The Effect of Liquidity on Financial Performance

Agency theory regarding liquidity explains that if liquidity for agents or management is higher, the company's ability to pay off its short-term obligations will result in lower profitability and lower profits. In this case, investors are not interested in investing their capital because profitability and profits are lower. The principal or owner has different desires, namely wanting to have low or sufficient liquidity in order to get high profitability and high profits so that investors are interested in investing their capital in companies that improve financial performance. In this case, it is important for companies to see how liquid the company's financial performance is in managing its obligations and can provide investors with high confidence in the company's financial performance. Therefore, liquidity has a positive and significant relationship

to financial performance. This hypothesis is in line with research conducted by Alhabsji et al. [10], Zeb et al. [11], Septiano & Mulyadi [12], Wicaksono et al. [13] which states that liquidity has a positive and significant effect on financial performance.

H3: Liquidity has a positive and significant effect on financial performance.

In summary, the hypothesis is shown below:

H1: Leverage has a negative and significant effect on financial performance.

H2: Firm size has a positive and significant effect on financial performance.

H3: Liquidity has a positive and significant effect on financial performance.

The research model of this study as presented in Figure 1 below:

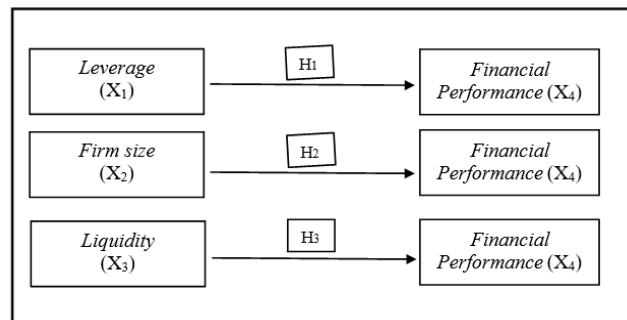


Figure 1. The Research Model

2. RESEARCH METHOD

This research uses secondary data using quantitative methods obtained from the Indonesian Stock Exchange in 2020-2022. The sample selection technique used in this research is purposive sampling in the technology sector with predetermined criteria. The first criterion is companies in the technology sector that are listed consecutively on the Indonesia Stock Exchange for the period 2020 - 2022. Second, companies in the technology sector use the Rupiah currency. Finally, companies in the technology sectors whose financial reporting period ends on December 31. Based on this method, of the 42 companies, only 21 companies met the above criteria. However, after the outlier test was carried out, the number of companies sampled in this study was 10 companies. The amount of data collected from 10 sample companies was 30 data. Data was processed using Eviews 12 software.

Summary table of operationalization of variables and measurements used by each variable in this research, namely:

Table 1. The Operationalization of Research Variables

No.	Variable	Proxy	Scale	Source
1.	Financial Performance	$ROE = \frac{\text{Earning After Tax}}{\text{Total Equity}}$	Ratio	Shimenga dan Miroga [1]
2.	Leverage	$DER = \frac{\text{Total Debt}}{\text{Total Equity}}$	Ratio	Shimenga dan Miroga [1]
3.	Firm Size	Natural logarithm of total assets	Ratio	Mardaningsih [14]
4.	Liquidity	$CR = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$	Ratio	Septiano & Mulyadi [12]

3. RESULTS AND DISCUSSIONS

The result of descriptive statistical test of 30 samples of dependent and independent variable in technology company can be seen in the following table.

Table 2. Descriptive Statistics
 Source: Data Processing using EViews 12

	ROE	DER	LN	CR
Mean	0.091537	0.679276	27.53594	3.704560
Median	0.084372	0.429921	27.33677	2.352897
Maximum	0.267333	2.384143	31.42581	23.97794
Minimum	-0.082574	0.114607	24.90152	0.445514
Std. Dev.	0.097650	0.578106	1.847207	4.662154
Skewness	0.066248	1.258649	0.475780	3.252653
Kurtosis	1.973878	3.865936	2.311195	13.70390
Jarque-Bera	1.338103	8.858292	1.724899	196.1157
Probability	0.512194	0.011925	0.422127	0.000000
Sum	2.746112	20.37828	826.0783	111.1368
Sum Sq. Dev.	0.276533	9.691979	98.95305	630.3348
Observations	30	30	30	30

The following are the results of the classical assumption tests that have been carried out, namely the residual normality test, auto correlation test, heteroscedasticity test and multicollinearity test:

Table 3. Classic Assumption Test
 Source: Data Processing using EViews 12

Classic Assumption Test	Method	Criteria	Result	Conclusion
Normality Test	Jarque-Bera	p-value prob. > 0.05	0.537279	Free from normality test
Autocorrelation Test	Durbin watson	-2 < DW < 2	1.799480	Free from autocorrelation test
Heteroscedasticity Test	Breusch-Pagan-Godfrey	Prob. Chi-Square (3) > 0.05	0.4603	Free from heteroscedasticity test
Multicollinearity Test	Variance Inflation Factor	Centered VIF < 10 Coefficient Variance < 0.80	Centered VIF DER: 1.234529 LN: 1.182716 CR: 1.391366 Coefficient Variance DER: 0.000293 LN: 0.0000275 CR: 0.00000508	Free from multicollinearity test

The chow test shows the cross-section chi-square probability value is 0.0000. It is smaller than the level 5% significance. It indicates H_a is accepted and the estimation model chosen from the Chow Test is Fixed Effect Model (FEM).

Table 4. Chow Test Result
 Source: Data Processing using EViews 12

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.370054	(9,17)	0.0015
Cross-section Chi-square	40.387364	9	0.0000

After Chow Test, Hausman test is used to prove the model used in this research is Fixed Effect Model (FEM). The Hausman test shows that the probability value of random cross-section is 0.0117, smaller than the level 5% significance. Therefore, H_0 is accepted and the model used in this research is Fixed Effect Model (FEM).

Table 5. Hausman Test Result
 Source: Data Processing using EViews 12

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.001834	3	0.0117

From the multiple regression analysis result (shown in Table 6), the adjusted R2 value is 0.904008 shows that 90.40% of the dependent variables in this study are financial performance can be explained by independent variables in the form of leverage, firm size and liquidity. While the rest, which is 9.60% is explained by other variables apart from the variables in this study. The simultaneous significance test (F-test) results show that the independent variable in this study concurrently affects the dependent variable, with a Prob value (F-Statistic) of 0.000000.

Table 6. Multiple Regression Analysis Results
 Source: Data Processing using EViews 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	0.036217	0.022668	1.597733	0.1285
LN	0.071018	0.025462	2.789180	0.0126
CR	0.002585	0.002796	0.924709	0.3681
C	-1.898193	0.697910	-2.719826	0.0146
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.943729	Mean dependent var	0.091537	
Adjusted R-squared	0.904008	S.D. dependent var	0.097650	
S.E. of regression	0.030255	Akaike info criterion	-3.859650	
Sum squared resid	0.015561	Schwarz criterion	-3.252464	
Log likelihood	70.89475	Hannan-Quinn criter.	-3.665406	
F-statistic	23.75896	Durbin-Watson stat	3.314896	
Prob(F-statistic)	0.000000			

The multiple linear regression is obtained as follows:

According to the results of the partial significance test (T-test), independent variables that affect the dependent variable are firm size where the Prob value of the variable is below 0.05. The results are shown as follows:

Table 7. The Results of Hypothesis Testing

Hypothesis	Coefficient	Significance	Conclusion Ha
H1: Leverage has negative and significant effect on financial performance	0.036217	0.1285	H1 Rejected
H2: Firm size has positive and significant effect on financial performance	0.071018	0.0126	H2 Accepted
H3: Liquidity has positive and significant effect on financial performance	0.002585	0.3681	H3 Rejected

4. CONCLUSIONS AND SUGGESTIONS

First, the first hypothesis is rejected, meaning that leverage has no significant effect on financial performance. The test results in the research are not in accordance with the trade-off theory. Based on trade-off theory, the higher the level of leverage, the lower the income tax will be due to the interest expense that the company must pay. A high level of leverage will also have an impact on the company's cash flow so that it will pay high interest charges and create a risk of bankruptcy for the company. It is important for companies to manage leverage well because the higher the leverage, the greater the amount of debt the company has compared to its capital. In this case, it can be related to the company's financial performance where the company does not have remaining cash flow to finance the company's operations and invest in existing business opportunities. This research is in line with research conducted by Rahman et al. [15], Mardaningsih [14] which states that leverage has no effect on financial performance.

Second, the second hypothesis is accepted, meaning that firm size has a positive and significant effect on financial performance. The test results in this research are in accordance with agency theory. Based on agency theory, the larger the company, the greater the agency costs due to the continuous increase in monitoring needs in large companies. Large companies have more information and levels of trust than smaller companies so they have good financial performance and can reduce agency costs that occur. Large companies tend to attract greater attention and are likely to be under greater public scrutiny than small companies. This research is in line with research conducted by Bahri et al. [7], Nugraha et al. [8], Hossain & Saif [9] which states that firm size has a positive and significant effect on financial performance.

Third, the third hypothesis is rejected, meaning that liquidity has no significant effect on financial performance. The test results in this research are not in accordance with agency theory. Based on agency theory, the higher the liquidity ratio, the more the company can fulfill its obligations so that the company is in a liquid state and can provide high confidence for investors and will have a good impact on the company's financial performance. This research is in line with research conducted by Nariman [2] which states that liquidity has no effect on financial performance.

Based on the results above, it can be concluded that firm size has a positive and significant effect on financial performance. Meanwhile, leverage and liquidity have no significant effect on financial performance.

This research has several limitations due to various existing factors. First, there are limitations in the use of variables that can be factors in explaining financial performance, consisting of only three variables, namely leverage, company size and liquidity. Second, the research sample used in this study only focused on technology sector companies. Third, the period in this research

consists of three years, namely from 2020 to 2022. Fourth, each variable in this research is only measured using one proxy, namely financial performance is measured using the return on equity (ROE) proxy, leverage is measured using the debt to equity ratio proxy, company size is calculated using the natural logarithm of total assets, and liquidity is measured using the current ratio proxy. Based on the limitations that have been described, there are several suggestions for further researchers. First, further research can use variables that can be factors to explain financial performance other than leverage, firm size, and liquidity, namely firm age, employee stock ownership program (ESOP), capital structure, and so on. Second, further research can use other company sectors besides the various industrial sectors as research samples so that investors can obtain information about financial performance. Third, further research can increase or extend the number of research periods, namely more than three years, to obtain more accurate results. Fourth, further research can use different proxies from those used in this research, for example the financial performance variable uses the return on assets (ROA) proxy, leverage uses the Debt to Asset Ratio (DAR) proxy and liquidity uses the quick ratio or cash ratio proxy.

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