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Empırıcal Evıdence On The Performance Of Technology Sector Companıes In Asean Countrıes

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Abstract

Internet use is an indicator of sustainable economic development. The internet has become an important tool for people to obtain the information they need. Internet use has increased during the Covid-19 pandemic. Increased internet use should encourage increased demand for hardware and software. Indirectly, this can encourage sales growth and company performance that supports the implementation of information technology. This research examines the association between company profitability and the market performance of technology sector companies on the Stock Exchanges of 6 ASEAN member countries. Data is obtained through the stock exchanges of each country as well as through other data sources. The research year in the analysis is divided into 2 periods, 2017-2019 and 2020-2021, and is treated as an independent variable along with profitability. The dependent variable is company performance. Data were analyzed using multiple linear regression. The test results show that profitability as measured using Return on Assets (ROA) has a positive effect on company performance. Firm performance in this study is measured by abnormal return (AR). This research also analyzes AR in the period before and after the Covid-19 pandemic. The test results show that AR in the period before the Covid-19 pandemic was lower than in the period after or during the Covid-19 pandemic. This research replicates previous research regarding the influence of profitability on company performance but adds the dichotomous variable year (dyear) and the form or system of government in the country being observed (dform).

Keywords: Financial performance, stock return, profitability, return on asset, firm performance, market performance.

1. INTRODUCTION

Earning a profit is one of the company's goals, but maximizing company value is the main thing. The market price of a share reflects a specific assessment of the value of a company (Horne & Wachowicz, n.d.) so that the market price of a share becomes a barometer of company performance (Karamoy & Tulung, 2020; Puspitaningtyas, 2017; Riani et al., 2020). The market value of a share is determined by demand and supply made by market players (Hartono, 2019) based on available financial and non-financial information. Every information received will be responded to differently by each investor. Investors' reactions to the financial and non-financial information obtained can influence stock market prices. Investors' reactions arise from their expectations of a country's economic conditions, company performance, and the level of returns they will receive in the future. This means that the information obtained will be used by investors in making investment decisions (Karamoy & Tulung, 2020; Latif et al., 2021; Puspitaningtyas, 2017; Riani et al., 2020). Based on signal theory, company management attempts to present financial and non-financial information that can indicate increased welfare for shareholders (Hartono, 2019; Karamoy & Tulung, 2020; Puspitaningtyas, 2017; Riani et al., 2020). During the COVID-19 pandemic, investors were afraid of the company's declining profitability and the element of uncertainty in the next period (Latif et al., 2021). This has an impact on share price movements in the capital market (Ahmed et al., 2021; Ashna & Mugdha, 2022).

The COVID-19 and SARS pandemics are part of the events that affect investment and company business risks (Ashna & Mugdha, 2022; Babu et al., 2022). According to Anh and Gan (2020), the COVID-19 pandemic was able to change the direction of the relationship between non-financial events and stock returns in Vietnam from negative to significantly positive, especially in the financial sector. Huang and Liu (2021) show that there has been a significant decline in the stock prices of energy companies in China after the COVID-19 period. Meanwhile, COVID-19 has a negative impact on stock market performance in India (Ahmed et al., 2021) evenly across all sectors (Shankar & Dubey, 2021). However, variations in the amount of returns can differ according to the characteristics of each company (Latif et al., 2021).

The increase in the use of information technology from 2020 to 2021 will increase the profitability of supporting companies and information technology equipment providers. This is suspected to be due to restrictions on direct physical contact to avoid the spread of Covid-19 (Ashna & Mugdha, 2022; Hu et al., 2022; Q. Wang & Liu, 2022). The policy of several state governments is that company operational activities continue to run, and employees in

certain industries can work from home so that all social interactions and so on are shifted to digital. Several industries experienced obstacles in carrying out operational activities and others were forced to stop business activities in the short term. Ashna and Mugdha (2022) revealed that the COVID-19 pandemic affected company profitability in all affected countries. The worst impact was experienced by capital markets in Asia. Companies in the technology sector have the opportunity to improve performance, along with increasing technological transformation in business (Bernardino et al., 2022; Ghobakhloo & Ching, 2019).

This research aims to empirically test the influence of company performance as measured by profitability on stock returns in technology sector companies listed on the Stock Exchanges of several ASEAN countries. Technological developments in the 21st century are very rapid and have a big influence on business management and trade (Bouwman et al., 2019; Ghobakhloo & Ching, 2019; Hamundu et al., 2020). The development of information technology has changed some of the education, trade, and business marketing processes to become more effective and efficient to carry out. According to Kumar et al. (2020), the Internet of Things is a new paradigm that changes the traditional way of life towards a more modern life with high technology. Survey results from the Indonesian Central Statistics Agency show that the number of households accessing the internet has continued to increase from 2017 to 2021. The percentage increase is higher than the percentage of households that have a computer or laptop. The results of a Google survey, as reported by Katadata in 2022, showed that the number of internet users in 6 countries in the Southeast Asia region increased by around 11% in 2020, 10% in 2021, and 5% in 2022. It is hoped that the results of this research will strengthen the research results previously based on the theory used, and can be taken into consideration by investors in making investment decisions

2. LITERATURE REVIEW

2.1 Signaling Theory in the Relationship Between Financial Performance and Stock Returns

A company's reaction to information received from other companies in the same industry will be different. Issuers who innovate business strategies using information technology tend to experience an increase in share trading. Company share prices reflect the information contained in the capital market and the company's special characteristics (Gupta et al., 2022; Hartono, 2019). Management tries to provide signals in the form of information to investors to be used in decision-making. Signaling theory is related to

economic contract theory which focuses on the information asymmetry of several entities, such as individuals and organizations. Specifically, signaling theory relates to the ability of an entity, through agents or management, to take action to provide quality signals to reduce information asymmetry.

Information content testing is intended to see the reaction to an announcement. If the announcement contains information, it is hoped that the market will react when the announcement is received by the market. The market reaction is shown by changes in the price of the security. This reaction can be measured by using stock returns as the value of price changes or by using abnormal returns (Hartono, 2019; Karamoy & Tulung, 2020; Puspitaningtyas, 2017; Riani et al., 2020).

Stock Return or return as the excess value of an investment. Returns can be realized returns that have occurred or expected returns that have not yet occurred but are expected to occur in the future (Hartono, 2019). In making investment decisions there are always risks and levels of return, so investors need to consider risk in every investment decision. Investors must ensure that the investment decisions they take provide returns commensurate with the risks they bear.

Signaling theory, concerning company financial performance is the disclosure of good financial performance reflected in the company's financial reports will provide a positive signal to stakeholders, giving rise to positive returns and abnormal returns. This is supported by Rheynaldi et.al (2023), Karamoy and Tulung (2020), Riani et.al (2020), and Atikah et.al (2018), that profitability provides a positive signal for investors to make investment decisions. Even though it has a positive direction, several studies show that the impact of profitability on share prices is not statistically significant (Karamoy & Tulung, 2020; Puspitaningtyas, 2017).

2.2. Research Framework and Hypothesis Development

The technology sector is one of the sectors that has developed rapidly in recent years, especially during the Covid-19 pandemic. In China, companies that demonstrate their identity as companies that innovate through the use of technology produce negative abnormal returns during trade conflicts between China and the United States (Ma et al., 2020). Company characteristics, such as operational flexibility, are positively correlated with cumulative abnormal returns (Liu et al., 2021). The positive direction increases when the company is located in an area affected by the pandemic (Liu et al., 2021). Share prices of energy sector companies have declined further due to the problems following the Covid-19

pandemic. However, if the company carries out social activities or corporate social responsibility (CSR), the decline in share prices will be reduced (Huang & Liu, 2021). The research results of Rheynaldi, et.al (2023), Karamoy and Tulung (2020), Riani et.al (2020), and Atikah et.al (2018) show that profitability has a positive effect on stock prices so that it can provide attractive stock returns for investors. The research framework described in picture number 1. Thus, the hypotheses that can be proposed in this research are as follows:

H1: Profitability has a positive effect on stock returns

H2: Stock returns during the Covid-19 pandemic period are lower than stock returns in the pre-Covid-19 period

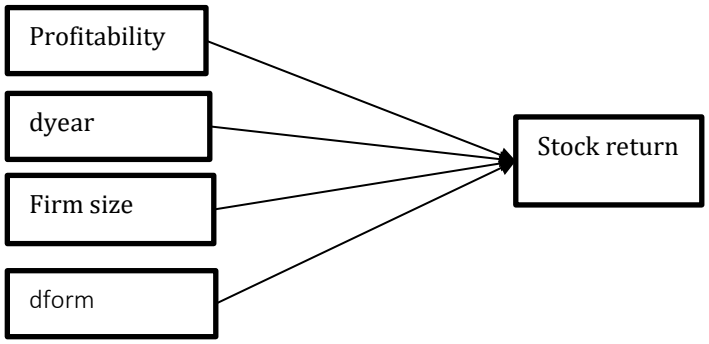

Figure 1. the research conceptual framework

3. RESEARCH METHOD

The objects in the research are companies listed on the ASEAN Stock Exchange in the 2017-2021 period. The company belongs to the technology sector. Analysis was carried out using multivariate analysis. Based on the proposed hypothesis, an equation model can be prepared as follows:

$$AR_{i,t} = \alpha + \beta_0 ROA_{i,t} + \beta_1 lnsize_{i,t} + \beta_2 dform_{i,t} + \beta_3 dyear_{i,t} + \zeta_1$$

Equation 1

AR : abnormal return in year t for each company i

ROA : financial performance, Return on Assets

dyear : time or period during which the Covid-19 pandemic occurred, as a dummy variable

dform : the form of government of a country, as a control variable

Lnsize : natural log of total assets, as a control variable

The explanation of these variables is as follows:

- Stock returns or stock returns (AR) which is the difference between the market price at the end of the period and the beginning of the period using the closing price, as stated by Sun, Yang, et.al (2020) in equation (2):

$$RETURN_{i,t} = Ln\ (PRICE_{i,t}) - Ln\ (PRICE_{i,t-1}) \quad \text{Equation 2}$$

- Abnormal return is the difference between the return of each company minus the individual return and the individual's expected return, as seen in the following model (Liu et al., 2021; Ma et al., 2020; Rahman et al., 2021; Q. Wang & Liu, 2022):

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \quad \text{Equation 3}$$

while the expected return is calculated by:

$$E(R_{i,t}) = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad \text{Equation 4}$$

- ROA in this research is the company's ability to earn profits from each asset it owns. ROA is obtained from the following equation [4] (Bătae et al., 2021; Jansen & Garcia-Feijoo, 2020; Luo et al., 2021, 2021; Ni et al., 2021; Su & Wang, 2021; Sun, Liu, et al., 2020; Sun, Yang, et al., 2020; Ullah et al., 2020; Q. Wang & Liu, 2022; X. Wang et al., 2021):

$$ROA = \frac{Earning\ Before\ Interest\ and\ Tax}{Total\ Asset} \quad \text{Equation 5}$$

- dyears in this research show 2020 and 2021 as the period when the COVID-19 pandemic occurred (which is marked with code 0) and the period where the COVID-19 pandemic did not occur (code 1), namely 2017, 2018, and 2019.
- Size is an indicator of company size in terms of total assets, measured using the natural log of total assets. This variable is a control variable.
- dform in this research is the form of government of a country. The form of government "Not a Republic" is coded 1, and the form of government "Republican" is coded 0. This variable is a control variable.

4. RESULT

The results of this research obtained 154 companies selected as research samples from Stock Exchanges in six countries, namely Indonesia, Thailand, Malaysia, Singapore, the Philippines, and Vietnam. Each country has a different number of sample companies, as shown in Table 1.

Table 1 Overview of data available for processing.

Country	N	n	Jumlah data
Indonesia	21	8	40

Thailand	59	41	205
Malaysia	59	47	235
Singapore	51	36	180
Philipina	12	6	30
Vietnam	17	16	80
Total	219	154	770

The COVID-19 pandemic, which began at the end of 2019, affected the economic conditions of several companies in the six countries selected in this research. This can be seen in Figure 2. Negative Return On Asset (ROA) values obtained from the average for each company in 2020 occurred in Indonesia and the Philippines. However, overall, the average ROA in 2020 in six countries decreased from the previous year. However, if we look at the average ROA over 6 years (see table 2), the average company can manage its assets efficiently so that it can obtain a return of 2.19. The results of this research are in line with Rababah et.al (2020) who stated that the Covid-19 pandemic put pressure on the company's financial performance. Average financial performance has improved again in line with economic policies decided by the governments of each country as well as increased investor confidence, as happened in Vietnam, Singapore, Indonesia, Malaysia, and Thailand, which have had resilience and rapid recovery during the COVID-19 pandemic (Anh & Gan, 2020).

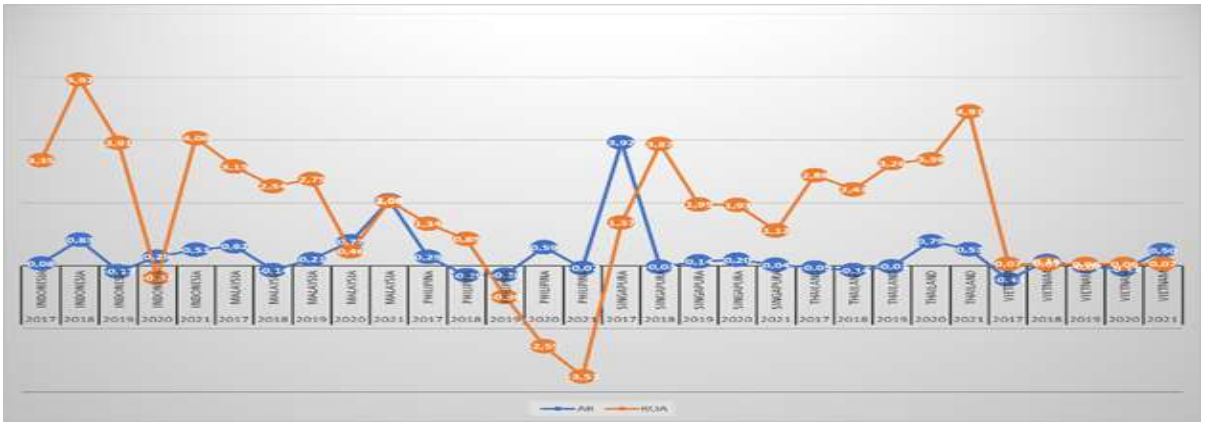

Figure 2 Grafik Rerata ROA dan AR tahun 2017-2021

The data analyzed in this research has weaknesses in fulfilling the linearity element. The results of the normality test using the Shapiro-Wilk test show a significance level lower

than 5%. The data also shows signs of heteroscedasticity but is free from autocorrelation and multicollinearity. Based on the conditions faced, the data is processed using robust regression syntax.

The test results of the effect of ROA on AR show that AR will increase if ROA increases by 0.9% assuming other variables do not change (see table 3). Judging from the company size, AR decreases if the company's total assets increase by 0.1%. Regarding the form of government of the country, the AR in a country shaped like "Not a Republic" is higher by 4.2% compared to a "Republican" form of government. In years where there was no pandemic, namely 2017-2019, the AR obtained was 16.3% lower compared to 2020 and 2021.

Table 2. Descriptive statistic

Variabel	Obs	Mean	Std. Dev.	Min	Max
AR	770	.495	4.574	-.894	92.368
ROA	770	2.19	9.825	-76.2	33.92
LNSIZE	770	21.639	2.433	11.877	29.091

Even though the influence of ROA and the COVID-19 pandemic period on AR tends to be small, amounting to 0.9%, internal information and pandemic conditions are considerations used by investors in making decisions to acquire AR. This is indicated by R2 of 9.2% and probability F which is lower than alpha of 1%. If we review the test results for each variable, ROA has a positive effect on AR and is significant at the 1% alpha level. This result answers the challenge to the statistical hypothesis, that the alternative hypothesis or H_a cannot be rejected. These results do not support the research of Huang & Liu (2021) and Ma et al. (2020), but are in line with research by Liu et al. (2021). It can be said that ROA provides a positive signal for investors to make financial decisions, in line with the research results of Rheynaldi et al. (2023), Karamoy & Tulung (2020), Riani et al. (2020) and Atikah et al. (2018).

Table 3. Regression test results

Variabel	**Koefisien**	**P> |t|**	**t**	**Simpulan**
constanta	.06	0.648	0.46	
ROA	.009	0.000	6.51	***
Lnsize	-.001	0.872	-0.16	

1.dbentuk	.042	0.145	1.46	
1.dtahun	-.163	0.000	-5.76	***
Prob>F	0.000			***
F-test	19,269			
R-squared	0.092			

*** p<.01, ** p<.05, * p<.1

Market performance as measured by the company's AR is influenced by non-economic events such as the Covid-19 pandemic. This can be seen from the probability value of the variable "dyear" which is lower than alpha 1% with a negative coefficient value. The results of this research show that AR in the years before Covid-19 occurred was lower than during the pandemic, and contributed significantly. Thus, the second alternative hypothesis was not successfully accepted, in line with, Anh & Gan (2020) and Liu et al. (2021). Ma et al. (2020) show that negative AR occurs during trade conflicts. The high AR during the COVID-19 pandemic could be driven by the growth in the number of investors in each country's capital market, as happened in Indonesia (see Figure 3). The growth in the number of retail investors, apart from being triggered by the "work from home" condition, is also driven by their level of confidence and trust in the state government's policies in tackling the COVID-19 pandemic (Anh & Gan, 2020).

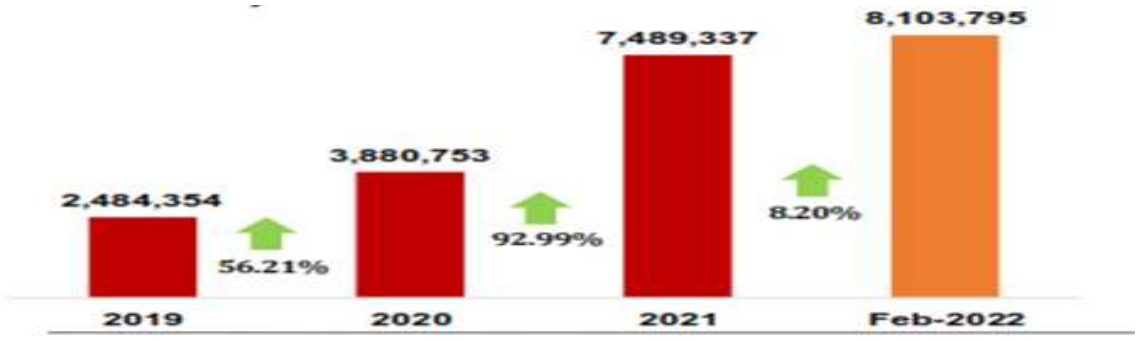

Figure 3. Number of investor in the Indonesian Capital Market

Even though the coefficient of determination obtained is 9.2%, all the variables used in this research equation model can explain the AR variable. The financial performance represented by ROA can provide a positive signal for investors in the technology sector to make financial decisions. The results of this study support the signal theory. Investors

consider the issuer's financial performance to obtain the expected returns. The declining financial performance of issuers during the COVID-19 pandemic has made investors cautious in making investment decisions. The COVID-19 pandemic during the research period had a significant impact on investors' decisions to acquire AR. The results of this study are in line with Liu et al. (2021), Rheynaldi et.al (2023), and Atikah et.al (2018) who found that information generated from company internals, such as high operational flexibility, provides better stock performance.

5. CONCLUSİON

Based on the test results, it can be concluded as follows:

a. ROA has a positive and significant effect on the abnormal returns of companies in the technology sector. The results of this study support the research of Rheynaldi et al. (2023), Liu et al. (2021), Riani et al. (2020) and Atikah et al. (2018).
b. AR in the period before the COVID-19 pandemic was lower than in the period after or during the Covid-19 pandemic. The results of this study do not support the research results of Ma et al. (2020).

This research provides empirical evidence on the influence of profitability on market performance as measured by changes in share prices or share returns (AR) of technology sector companies during the COVID-19 pandemic and before in the ASEAN group of countries. However, this research has not provided more detailed empirical evidence, such as company characteristics, specific characteristics of a country, and the policies taken by the government in dealing with the crisis. For investors, the results of this research can be used as a reference in making investment decisions. Investors can consider the issuer's financial performance and non-economic events in developing investment strategies.

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