Analysis of The Impact of the Covid-19 Pandemic on Financial Performance (Empirical Study of Information Technology Companies in Asean Countries)

Fina Tazkiya
Universitas Islam Kadiri

ABSTRACT

This study aims to analyze financial performance during and after the covid-19 pandemic in information technology companies in ASEAN countries. Financial performance variables are proxied by profitability ratios using Return On Asset (ROA), liquidity ratios using Current Ratio (CR), activity ratios using Total Asset Turnover (TATO), and solvency ratios using Debt To Equity Ratio (DER). Using company financial data with a cross-country population in countries that are members of the ASEAN countries including Indonesia, Malaysia, Singapore, Philippines, and Thailand. The total number of samples used was 84 information technology companies. This research is a quantitative research with analysis method using Wilcoxon Signed Ranks Test comparative analysis. The results showed significant differences in Indonesia in CR and DER, and in Thailand in TATO. This study also shows from the five countries that Indonesia has the best financial performance because it experiences a significant average increase. compared to other countries that tend to experience an average decrease even though it is not significant. The decline can be seen in Malaysia and Thailand which experienced an average decline, while in Singapore and the Philippines although there was a decrease but there was also an increase.

Keywords: Financial Performance, Covid-19 Pandemic, ASEAN

Corresponding author
Name: Fina Tazkiya
Email: finatazkiya19@gmail.com

INTRODUCTION

The rapid development of the digital technology sector has brought about major changes in people's lives. People are increasingly facilitated by technology. This convenience can be felt in their daily activities. This convenience is then utilized by various aspects both in education, social, and economic. Outside the technology sector, digital technology can have a transformative impact on traditional sectors such as manufacturing, consumers, education, training and others. The increasing use of digital technology to replace long-distance means of communication to exchange ideas, for example in economics and financial markets, has created advantages in new forms of technology-enhanced and facilitated communication (Ben-Ahmed, Ayadi, dan Hamad 2022).

This huge transformation of digital technology in Southeast Asia is due to the Covid-19 pandemic. According to Sugiarto (2021), the dynamics of the Covid-19 pandemic have increased the use of the digital economy and changed lifestyles. Therefore, efforts to accelerate the digital transformation of the business sector can be used as a strategy to ensure that the productive business sector continues to move to support inclusive economic growth. Changes in people's consumption patterns have encouraged MSMEs that previously operated traditionally to enter the realm of e-commerce. One out of every five businesses active on e-commerce platforms is a new player in the industry. The Covid-19 pandemic has changed the way the global community interacts to adapt to the use of digital technology.

The rapid digital transformation in various industrial sectors, accelerated especially by the impact of the COVID-19 pandemic, has increased the utilization of information systems by organizations for both operational and strategic purposes (Ali et al. 2021). In the post-pandemic era, digital technology is the key to improving business competitiveness and resilience in adapting to evolving businesses. Ilahude et al., (2021) stated that in general, the success of a company is reflected in its performance, which includes its ability to create a healthy market and its ability to survive in various conditions. Profit also plays an important role because it can serve as a source of funds for financing and maintaining the sustainability of the company. Companies need financial performance to determine and assess the extent to which their success depends on the financial activities that have been carried out. On the other hand, potential investors often assess financial performance as one of the main considerations when deciding to buy shares. Therefore, to remain in demand by investors, companies must continue to maintain and improve their financial performance (Luayyi, Eliza Nurvianasari, dan Kusumaningarti 2022). Financial performance is the achievement of a company's performance during a certain period obtained from the company's financial management, so with achievements, a company can show how its performance is obtained (Rengganis et al., 2020). From another point of view, financial performance can also describe the company's financial resources and assets that are able to generate profits for the company (Ratih, Oktaviana, dan Kusumaningarti 2022).

Analysis of the financial performance of a company can be done through the use of ratio analysis that can be calculated from the company's financial statement information. The results of the ratio calculation are useful in planning and making decisions for a company in the future and the results of this information can also be useful for investors in considering investments to see the rate of return they will get. Hery (2015) states that financial ratio analysis is the most commonly used analysis to assess the financial condition and financial performance of companies when compared to other financial analysis tools.

The ratio in measuring financial performance consists of the Return On Asset (ROA) profitability ratio, which is to evaluate how effective assets are in creating profits. Assets can come from owner capital or debt. Profit is a management achievement in optimizing revenue and operating cost efficiency, which has a positive impact on the

company's ability to obtain cash flow and provide investment returns (Kusuma 2021), the liquidity ratio Current Ratio (CR) is used to assess the company's liquidity ability to cope with short-term liabilities using assets that can be converted into cash (Devi et al., 2020) This ratio helps evaluate the company's financial health by assessing the extent to which assets can cover liabilities that will mature in a short time, ensuring the continuity of its business going forward, the activity ratio Total Asset Turnover (TATO) is used to assess the efficiency of assets in generating net sales. The higher the TATO, the more efficient the company is in using its assets. Increased sales will have an impact on increasing company profits (Sumertini & Wayan, 2021), and the solvency ratio Debt To Equity Ratio (DER) to assess the company's ability to pay short and long term debt. The lower the DER, the better the condition of the company. Ideally, the company's capital should be greater than the amount of debt (Laiman dan Hatane 2017).

In this study, researchers used a cross-country population, namely in countries that are members of the ASEAN countries. In their publication, Chen & Kimura (2020) state that Southeast Asia is considered a global center for the development of digital financial services (fintech) and, which positively affects the growth of Micro, Small and Medium Enterprises (MSMEs) in the region.

METHOD

The research method used is a type of comparative research. Comparative research is a type of research that compares one or more variables in two or more different samples (Dr. Sugiyono, 2019). This research has a scope on the calculation of financial performance with the help of financial ratio measurements in the form of profitability ratios (ROA), liquidity ratios (CR), activity ratios (TATO), and solvency ratios (DER) calculated using financial statement data for the period 2021 during the covid-19 pandemic and 2022 after the covid-19 pandemic in the information technology sector on the capital market in each country in Southeast Asia (ASEAN Exchanges) obtained a sample of 84 companies consisting of 29 Indonesia, 17 Malaysia, 10 Philippines, 4 Singapore, and 24 Thailand sample companies. The data collection technique used in this research is documentation study. The hypotheses in this study are:

H1: There is a significant difference in financial performance during and after the covid-19 pandemic as viewed by the profitability ratio (ROA).

H2 : There is a significant difference in financial performance during and after the covid-19 pandemic as viewed by the liquidity ratio (CR).

H3 : There is a significant difference in financial performance during and after the covid-19 pandemic as viewed by the activity ratio (TATO).

H4 : There is a significant difference in financial performance during and after the covid-19 pandemic as viewed by the solvency ratio (DER).

The stages to carry out this research are: (1) Collecting financial statements consisting of statements of financial position and income statements for the 2021 period

during the covid-19 pandemic and the 2022 period after the covid-19 pandemic. (2) Calculating financial performance by measuring the profitability ratio (ROA), liquidity ratio (CR), activity ratio (TATO), and solvency ratio (DER). (3) Conduct a normality test of the ratio calculation results. The normality test uses Shapiro-Wilk because the data from each sample is less than 50 with a sig value. (≤ 0,05). This test is carried out as a condition for the Independent Sample T-Test hypothesis test which requires normally distributed data, and the Wilcoxon Signed Ranks Test is used if the data is not normally distributed. (4) Interpreting the assessment of financial performance that occurred during and after the covid-19 pandemic.

FINDING AND DISCUSSION
Calculation of Financial Performance Variables

The following are examples and results of calculating financial performance variables in the currency of each country:

No.	Variabel	calculation
1.	profitability ratio (ROA)	$Return\ On\ Asset = \dfrac{Net\ Income}{Total\ Asset}$
	Anabatic Technologies Tbk	$\dfrac{-243.914.362.045}{4.217.064.302.659} = -0,06$
2.	liquidity ratio(CR)	$Current\ Ratio = \dfrac{current\ assets}{Current\ Liabilities}$
	Anabatic Technologies Tbk.	$\dfrac{2.856.972.046.868}{3.278.315.389.016} = 0,87$
3.	Activity ratio (TATO)	$Total\ Asset\ Turnover = \dfrac{Sales}{Total\ Assets}$
	Anabatic Technologies Tbk.	$\dfrac{6.448.627.581.163}{4.217.064.302.659} = 1,53$
4.	solvency ratio (DER) Anabatic Technologies Tbk.	$Debt\ to\ Equity\ Ratio = \dfrac{Liability}{Equity}$ $\dfrac{4.035.877.299.213}{73.411.677.090} = 54,98$

Normality Test

The normality test is used to test whether the variables with the data results used are normally distributed or not. The normality test method uses Shapiro-Wilk because the number of samples / N is less than 50. The results of the normality test in each country are as follows:

Table 1: Normality Test in Indonesia

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA_During	,185	29	,012	,885	29	,004
ROA_After	,295	29	,000	,679	29	,000
CR_ During	,304	29	,000	,651	29	,000
CR_ After	,309	29	,000	,580	29	,000
TATO_ During	,230	29	,000	,718	29	,000
TATO_ After	,259	29	,000	,678	29	,000
DER_ During	,420	29	,000	,254	29	,000
DER_ After	,370	29	,000	,313	29	,000
a. Lilliefors Significance Correction						

Based on the Shapiro-Wilk normality test, all variables in this study (ROA, CR, TATO, and DER during and after) have a significance value of less than 0.05, which indicates that the data is not normally distributed. Thus, the data from the sample of information technology companies in Indonesia in this study does not meet the assumption of normality.

Table 2: Normality Test in Malaysia

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA_During	,126	17	,200[*]	,957	17	,575
ROA_After	,160	17	,200[*]	,882	17	,035
CR_ During	,177	17	,165	,811	17	,003
CR_ After	,164	17	,200[*]	,871	17	,023
TATO_ During	,256	17	,004	,890	17	,047
TATO_ After	,429	17	,000	,353	17	,000
DER_ During	,374	17	,000	,532	17	,000
DER_ After	,239	17	,011	,749	17	,000
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

The Shapiro-Wilk normality test shows that only the ROA variable during is normally distributed with a significance value of 0.575 (> 0.05). Meanwhile, the variables

CR during and after, TATO during and after, and DER during and after have a significance value of less than 0.05, so they are not normally distributed. Therefore, the sample data of information technology companies in Malaysia in this study mostly do not meet the assumption of normality.

Table 3: Normality Test in Singapore

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA_During	,174	10	,200[*]	,927	10	,418
ROA_After	,241	10	,104	,801	10	,015
CR_ During	,235	10	,125	,916	10	,323
CR_ After	,238	10	,113	,847	10	,054
TATO_ During	,205	10	,200[*]	,822	10	,027
TATO_ After	,205	10	,200[*]	,922	10	,376
DER_ During	,364	10	,000	,744	10	,003
DER_ After	,330	10	,003	,766	10	,006

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The Shapiro-Wilk normality test shows that the variables ROA during, CR during and after, and TATO after are normally distributed with a significance value greater than 0.05. However, the variables ROA after, TATO during, and DER during and after have a significance value of less than 0.05, so they are not normally distributed. Since the data to be tested are not all normally distributed, it can be concluded that the data on the sample of information technology companies in Singapore in this study are not normally distributed.

Table 4: Normality Test in Philippines

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA_During	,217	4	.	,957	4	,761
ROA_After	,250	4	.	,903	4	,447
CR_ During	,146	4	.	1,000	4	,999
CR_ After	,307	4	.	,864	4	,274
TATO_ During	,221	4	.	,978	4	,888
TATO_ After	,374	4	.	,752	4	,040
DER_ During	,433	4	.	,650	4	,003
DER_ After	,385	4	.	,785	4	,078

a. Lilliefors Significance Correction

The Shapiro-Wilk normality test shows that the variables ROA during and after, CR during and after, TATO during, and DER after are normally distributed with a significance value greater than 0.05. However, the variables TATO after and DER during have a significance value of less than 0.05, so they are not normally distributed. Since not all data is normally distributed, it can be concluded that the sample data of information technology companies in the Philippines in this study is not normally distributed.

Table 5: Normality Test in Thailand

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA_During	,117	24	,200[*]	,966	24	,574
ROA_After	,478	24	,000	,256	24	,000
CR_ During	,261	24	,000	,840	24	,001
CR_ After	,243	24	,001	,869	24	,005
TATO_ During	,175	24	,056	,830	24	,001
TATO_ After	,198	24	,016	,754	24	,000
DER_ During	,260	24	,000	,586	24	,000
DER_ After	,415	24	,000	,372	24	,000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The Shapiro-Wilk normality test shows that only the ROA variable during is normally distributed with a significance value of 0.574 (> 0.05). Meanwhile, the variables CR during and after, TATO during and after, and DER during and after have a significance value of less than 0.05, so they are not normally distributed. Therefore, it can be concluded that the data on the sample of information technology companies in Thailand in this study are not normally distributed.

Wilcoxon Signed Ranks Test

The Wilcoxon Signed Ranks Test is used as an alternative to the Paired Sample T-test if the data is not normally distributed. The Sig. value in the Wilcoxon Signed Ranks Test is lower than 0.05, so there is a significant difference and vice versa. The results of the Wilcoxon Signed Ranks test on the rank output in the table are as follows:

Tabel 6: Wilcoxon Signed Ranks Test In Indonesia

Test Statistics[a]

	ROA_After - ROA_During	CR_ After – CR_ During	TATO_ After - TATO_ During	DER_ After - DER_ During
Z	-1,781[b]	-2,184[c]	-1,103[c]	-1,991[b]
Asymp. Sig. (2-tailed)	,075	,029	,270	,046
a. Wilcoxon Signed Ranks Test				
b. Based on positive ranks.				
c. Based on negative ranks.				

Based on the results of the Wilcoxon Signed Ranks test on information technology companies in Indonesia, the Asymp. Sig. (2-tailed) for ROA (0.075) and TATO (0.270) is higher than 0.05, so hypotheses H1 and H3 are rejected, which means there is no difference in financial performance during and after the COVID-19 pandemic in terms of ROA and TATO. However, for CR (0.029) and DER (0.046), the Asymp. Sig. values are lower than 0.05, so hypotheses H2 and H4 are accepted, indicating that there are differences in financial performance during and after the COVID-19 pandemic in terms of CR and DER.

Tabel 7: Wilcoxon Signed Ranks Test In Malaysia

Test Statistics[a]

	ROA_After - ROA_During	CR_ After – CR_ During	TATO_ After - TATO_ During	DER_ After - DER_ During
Z	-,888[b]	-,672[b]	-1,444[b]	-1,065[c]
Asymp. Sig. (2-tailed)	,375	,501	,149	,287
a. Wilcoxon Signed Ranks Test				
b. Based on positive ranks.				
c. Based on negative ranks.				

Based on the results of the Wilcoxon Signed Ranks test on information technology companies in Malaysia, the Asymp. Sig. (2-tailed) values for ROA (0.375), CR (0.501), TATO (0.149), and DER (0.287) are all higher than 0.05. This indicates that hypotheses H1, H2, H3, and H4 are rejected. That is, there is no significant difference in the financial performance of information technology companies in Malaysia during and after the COVID-19 pandemic when viewed from ROA, CR, TATO, and DER.

Tabel 8: Wilcoxon Signed Ranks Test In Singapore

Test Statistics[a]

	ROA_After - ROA_During	CR_ After – CR_ During	TATO_ After - TATO_ During	DER_ After - DER_ During
Z	-1,780[b]	-,204[b]	-,771[c]	-,612[c]
Asymp. Sig. (2-tailed)	,075	,838	,441	,541

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Based on the results of the Wilcoxon Signed Ranks test on information technology companies in Singapore, the Asymp. Sig. (2-tailed) values for ROA (0.075), CR (0.838), TATO (0.441), and DER (0.541) are all higher than 0.05. This indicates that hypotheses H1, H2, H3, and H4 are rejected. That is, there is no significant difference in the financial performance of information technology companies in Singapore during and after the COVID-19 pandemic when viewed from ROA, CR, TATO, and DER.

Tabel 9: Wilcoxon Signed Ranks Test In Philippines

Test Statistics[a]

	ROA_After - ROA_During	CR_ After – CR_ During	TATO_ After - TATO_ During	DER_ After - DER_ During
Z	-,447[b]	,000[c]	-1,633[b]	-,365[b]
Asymp. Sig. (2-tailed)	,655	1,000	,102	,715

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Based on the results of the Wilcoxon Signed Ranks test on information technology companies in the Philippines, the Asymp. Sig. (2-tailed) values for ROA (0.655), CR (1.000), TATO (0.102), and DER (0.715) are all higher than 0.05. This shows that hypotheses H1, H2, H3, and H4 are rejected, so there is no significant difference in the financial performance of information technology companies in the Philippines during and after the COVID-19 pandemic when viewed from ROA, CR, TATO, and DER.

Tabel 10: Wilcoxon Signed Ranks Test In Thailand

Test Statistics[a]

	ROA_After - ROA_During	CR_ After – CR_ During	TATO_ After - TATO_ During	DER_ After - DER_ During
Z	-1,516[b]	-,729[b]	-2,328[b]	-1,372[c]
Asymp. Sig. (2-tailed)	,129	,466	,020	,170

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Based on the results of the Wilcoxon Signed Ranks test on information technology companies in Thailand, the Asymp. Sig. (2-tailed) values for ROA (0.129), CR (0.466), and DER (0.170) are all higher than 0.05, so hypotheses H1, H2, and H4 are rejected. That is, there is no significant difference in financial performance during and after the COVID-19 pandemic for ROA, CR, and DER. However, the TATO value (0.020) is lower than 0.05, so hypothesis H3 is accepted, indicating a significant difference in financial performance regarding TATO.

The following is an increase and decrease in financial performance from the Wilcoxon Signed Ranks Test results presented in a bar chart:
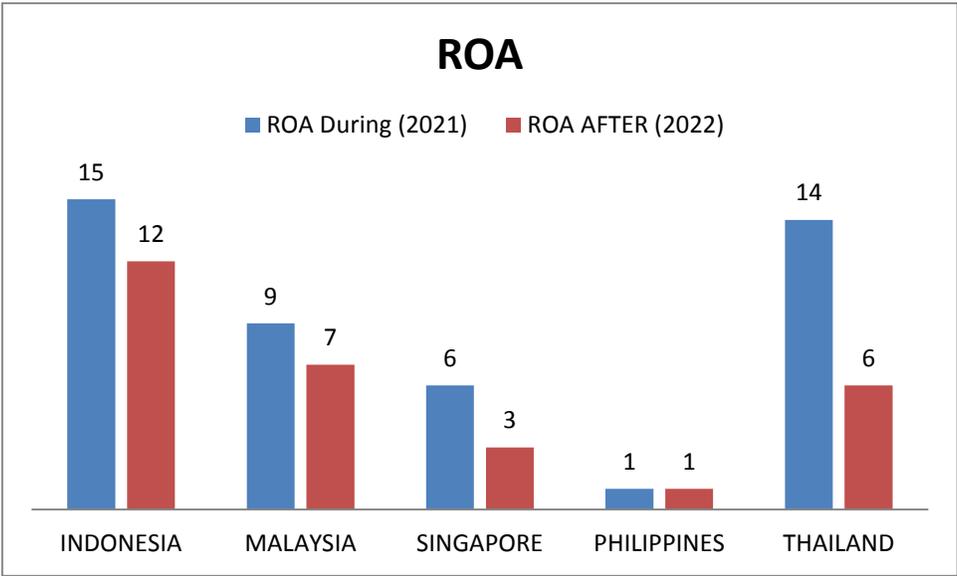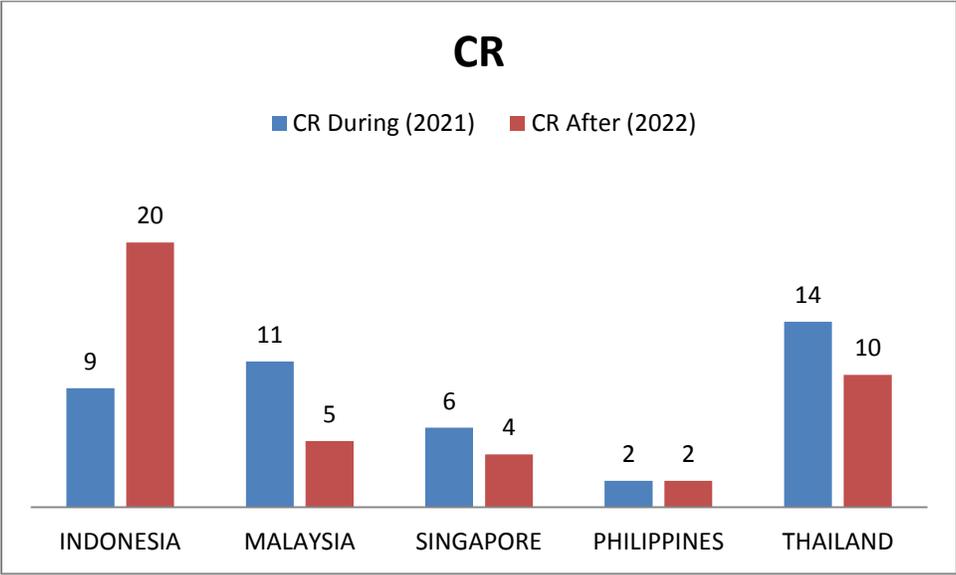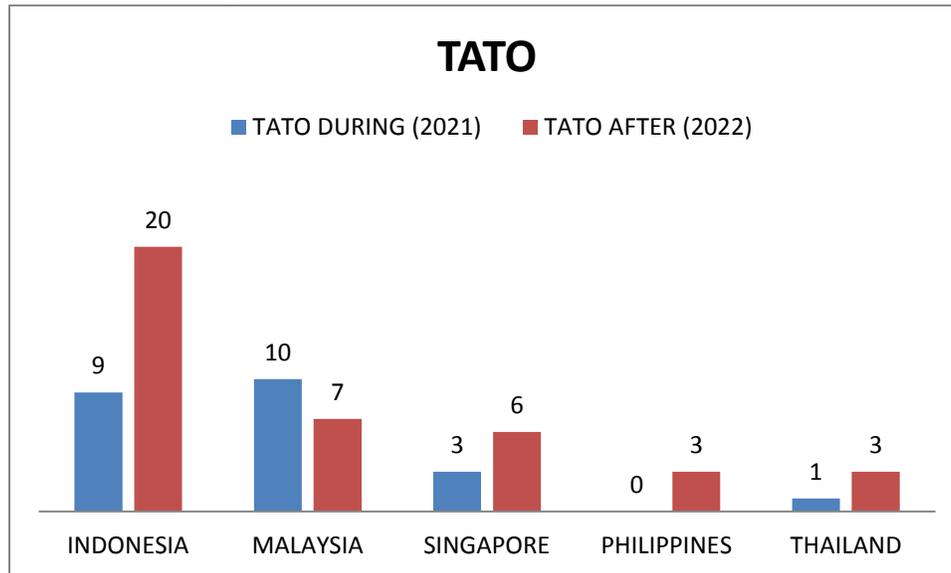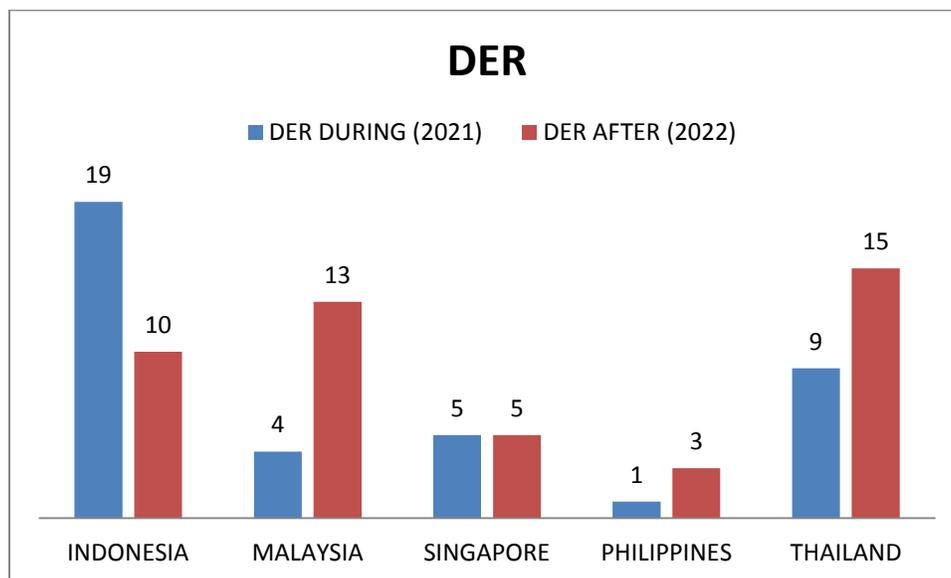

Figure 1: increase and decrease in ROA value

Figure 2: increase and decrease in CR value

TATO

■ TATO DURING (2021)   ■ TATO AFTER (2022)

Indonesia: 9, 20; Malaysia: 10, 7; Singapore: 3, 6; Philippines: 0, 3; Thailand: 1, 3

Figure 3: increase and decrease in TATO value

DER

■ DER DURING (2021)   ■ DER AFTER (2022)

Indonesia: 19, 10; Malaysia: 4, 13; Singapore: 5, 5; Philippines: 1, 3; Thailand: 9, 15

Figure 4: increase and decrease in DER value

The analysis shows that the average ROA in ASEAN countries has decreased, indicating difficulty in maintaining return on assets. This decline may be due to costly business expansion during the pandemic demand surge, followed by a decline in demand as the pandemic subsided. An increasing CR indicates a company's ability to meet short-term obligations, while a decreasing CR may indicate difficulties caused by high debt. However, an excessively high CR could indicate idle funds, which means the company is not effectively utilizing its assets. A decrease in TATO indicates difficulty in utilizing assets

efficiently. A high TATO indicates efficiency, while a low TATO indicates ineffective use of resources. An increase in DER indicates the company's inability to meet its liabilities with equity, as well as the risk of decreased profits due to high levels of debt. Conversely, a low DER reflects good financial resilience, with sufficient capital to meet both long and short-term obligations.

CONCLUSION

This study was conducted to analyze the impact of the covid-19 pandemic on financial performance in information technology companies during and after the 2021-2022 covid-19 pandemic in ASEAN countries. Based on the research results discussed in the previous chapter, the following conclusions can be drawn:

1. Profitability Ratio (ROA) there are no significant differences in Indonesia, Malaysia, Singapore, the Philippines, and Thailand from these five countries ROA has decreased but not significantly.
2. Liquidity Ratio (CR) there is a significant increase in Indonesia while Malaysia, Singapore, and Thailand CR has decreased but insignificant Unlike the Philippines which did not experience a significant difference in CR.
3. Activity Ratio (TATO) there is a significant decrease in Thailand as well as in Malaysia has decreased but not significant while TATO in Indonesia, Philippines, and Singapore has increased but not significant.
4. Solvency Ratio (DER) there is a significant decrease in Indonesia while Malaysia, the Philippines, and Thailand DER has increased but not significantly. Unlike in Singapore which did not experience a significant difference in DER. The lower the DER value, the better and vice versa.

The results above show that of the five countries that Indonesia has the best financial performance because it has experienced a significant average increase. compared to other countries which tend to experience an average decrease even though it is not significant. The decline can be seen in Malaysia and Thailand which experienced an average decline, while in Singapore and the Philippines although there was a decrease but there was also an increase.

This study has several limitations, including the period used in this study is only 2 years, namely the period during the covid-19 pandemic in 2021 and after the covid-19 pandemic in 2022 and the population of ASEAN countries taken is only 5 countries. For future research, we recommend adding a longer period so that this research continues to develop. Future research is also recommended to be able to expand the population and add more varied variables and develop analysis so that it can develop this research more broadly.

REFERENCES

Ali, Syed Emad Azhar, Fong Woon Lai, P. D. D. Dominic, Nicholas James Brown, Paul Benjamin Benjamin Lowry, dan Rao Faizan Ali. 2021. "Stock market reactions to favorable and unfavorable information security events: A systematic literature review." *Computers & Security* 110:102451. doi: 10.1016/J.COSE.2021.102451.

Ben-Ahmed, Kais, Imen Ayadi, dan Salah Ben Hamad. 2022. "COVID-19 impact on digital companies' stock return: A dynamic data analysis." *Finance Research Letters* 46. doi: 10.1016/J.FRL.2021.102340.

Chen, Lurong, dan Fukunari Kimura. 2020. *E-commerce connectivity in ASEAN*.

Cipta Wayan, Luh Sumertini. 2021. "Pengaruh Current Ratio, Debt Equity Ratio, dan Total Asset Turnover, terhadap Return On Asset pada Perusahaan Sub Sektor Advertising, Printing dan Media yang terdaftar di Bursa Efek Indonesia." *Jurnal akuntansi profesi* 21(2):147–61.

Eddy Cahyono Sugiarto. n.d. "Akselerasi Transformasi Digital dan Pemulihan Ekonomi | SekretariatNegara." (https://www.setneg.go.id/baca/index/akselerasi_transformasi_digital_dan_pemulihan_ekonomi).

Hery. 2015. "Analisis Laporan Keuangan: Pendekatan Rasio Keuangan."

Kusuma, Marhaendra. 2021. "Measurement of Return on Asset (ROA) based on Comprehensive Income and its Ability to Predict Investment Returns: an Empirical Evidence on Go Public Companies in Indonesia before and during the Covid-19 Pandemic." *Ekuilibrium : Jurnal Ilmiah Bidang Ilmu Ekonomi* 16(1):94. doi: 10.24269/ekuilibrium.v16i1.3238.

Laiman, Lisa, dan Saarce Elsye Hatane. 2017. "Analisis Dampak Merger dan Akuisisi Terhadap Kinerja Keuangan pada Perusahaan Non Keuangan Yang Terdaftar di Bursa Efek Indonesia Periode Tahun 2007-2014." *Business Accounting Review* 5(2):517–28.

Luayyi, Sri, Eliza Eliza Nurvianasari, dan Miladiah Kusumaningarti. 2022. "Pengaruh Arus Kas Dan Rasio Hutang Terhadap Nilai Perusahaan Dengan Kinerja Keuangan Sebagai Variabel Moderating." *Jurnal Ilmiah Akuntansi dan Keuangan (JIAKu)* 1(3):213–29. doi: 10.24034/jiaku.v1i3.5424.

Oktalia Rengganis, Reva Maria Valianti, Oktariansyah. 2020. "Analisis Kinerja Keuangan Pada PT. Bank Pembangunan Daerah Sumatera Selatan dan Bangka Belitung." *Jurnal Media Akuntansi (Mediasi)* 2(2):111–35.

Putri Aprilia Ilahude, Joubert Barens Maramis, Victoria Neisye Untu 2021. 2021. "Analisis Kinerja Keuangan Sebelum dan Saat Masa Pandemi Covid-19 pada Perusahaan Telekomunikasi yang Terdaftar di BEI." *Jurnal EMBA* 9(4):1144–52. doi: https://doi.org/10.35794/emba.v9i4.37229.

Ratih, Nur Rahmanti, Dwi Oktaviana, dan Miladiah Kusumaningarti. 2022. "Kinerja Keuangan Koperasi Sebelum Dan Saat Pandemi Covid-19 Terhadap Sisa Hasil Usaha." *JAS (Jurnal Akuntansi Syariah)* 6(2):184–97. doi: 10.46367/jas.v6i2.806.

Sunitha Devi, Ni Made Sindy Warasniasih, Putu Riesty Masdiantini, Lucy Sri Musmini 2020. 2020. "The Impact of COVID-19 Pandemic on the Financial Performance of Firms on the Indonesia Stock Exchange." *Journal of Economics, Business, & Accountancy Ventura* 23(2):226–42. doi: 10.14414/jebav.v23i2.2313.