

*Research Article*

## Comparative Analysis of Financial Performance before and during Covid-19 Pandemic

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### Abstract

This study assesses the financial performance of technology sector firms listed on the IDX by utilizing various financial ratios, including Return on Assets, Total Assets Turnover, Current Ratio, Debt to Equity Ratio, and Sales Growth. The study employs a quantitative approach with multiple regression analysis, and the research relies on secondary data gathered from financial reports spanning from the third quarter of 2018 to the second quarter of 2021. The sample selection method employed purposive sampling, resulting in a sample size of nine companies. The normality of the data was assessed using the Kolmogorov-Smirnov method, revealing a non-normal distribution. As a result, the non-parametric Wilcoxon Signed Rank test was applied. The findings indicate significant disparities in the financial performance of technology sector companies listed on the IDX before and during the Covid-19 pandemic, particularly in metrics such as Total Assets Turnover, Current Ratio, Debt to Equity Ratio, and Sales Growth. However, the Return on Assets variable did not significantly differ before and during the Covid-19 pandemic. These insights can be valuable for stakeholders such as investors, creditors, and regulators in comprehending the associated risks and potential impacts when considering investment or extending credit to these entities.

Keywords: Return on Assets (ROA), Total Assets Turnover (TATO), Current Ratio (CR), Debt to Equity Ratio (DER), Sales Growth (SG), Covid-19 Pandemic, Financial Performance.

JEL Classification: E63, L32

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## 1. Introduction

In December 2019, a novel strain of the Coronavirus, known as Coronavirus Disease (Covid-19), was identified in China and subsequently proliferated to every corner of the globe. By March 2020, the initial cases of Covid-19 were confirmed in Indonesia, leading to a growing number of infections among Indonesian citizens. The World Health Organization (WHO) officially designated Covid-19 as a worldwide pandemic. Following this global declaration, the Indonesian government implemented measures to halt the transmission of the Covid-19 virus.

This policy is called the Large-Scale Social Restrictions Policy (PBB), which limits people's activities from meeting one another. Ultimately, all activities previously carried out offline became online through the available communication and social media platforms. This condition causes companies engaged in the Information and Communication Technology sector in Indonesia to become leaders of Indonesia's economic growth in 2022 (Nursaid, 2022).

The pandemic made many changes in all fields, including in education. Everyone has to learn to adapt and use new digital technology tools to keep up. The pandemic has led to a remarkable surge in the adoption of digital technology within education. Sathirathai explained that nearly 70,000 ASEAN youth participating in the 2020 WEF Youth Survey said that 87% used digital devices more frequently during the pandemic (Sebayang, 2020).

Digital technology is also widely used by the public to do online shopping (e-commerce). For example, e-commerce was still not very popular before Covid-19 because there were no restrictions on outdoor activities, so people could still go to shopping centers. However, during this pandemic, people's habits changed, so shopping online through e-commerce is a choice. Besides that, many conveniences are obtained (Suari, 2022). The e-commerce business in Indonesia has increased by 5-10 times during the Covid-19 pandemic. An increase in new customers reached 51%, but the process of sending or distributing goods experienced delays due to transportation restrictions during the lockdown (Laming, 2020).

The use of digital technology in health services has also developed, and some even argue that this service has experienced rapid acceleration during the Covid-19 pandemic, both in the use of telemedicine (online consultation) and telehealth (Santosa, 2021). However, in reality, several technology sector companies on the Indonesia Stock Exchange are experiencing problems in making money and selling products, which has an impact on their financial performance, as shown in the table below:

**Table 1. Profit and Loss Reports and Sales of Technology Sector Companies**

No	Stock Code	Profit and Loss		Sales	
		Before Covid-19 Pandemic	During Covid-19 Pandemic	Before Covid-19 Pandemic	During Covid-19 Pandemic
		Quarter 4 2019	Quarter 4 2020	Quarter 4 2019	Quarter 4 2020
1	ATIC	57,370,051,160	(526,026,907,367)	5,552,209,122,095	6,157,619,315,277
2	DIVA	98,389,349,094	64,367,755,965	3,550,041,010,067	3,687,861,850,042
3	EMTK	(2,343,106,373)	1,717,376,472	11,100,064,611	11,936,381,982
4	KIOS	(5,329,200,311)	(41,857,334,776)	2,900,162,397,309	912,535,369,280
5	LUCK	7,000,740,791	(5,140,430,527)	133,545,749,744	99,250,082,878
6	MCAS	212,328,570,495	72,398,107,264	11,090,421,731,942	11,334,436,937,908
7	MLPT	125,178,000,000	160,646, 000,000	2,455,526,000,000	2,685,797,000,000
8	MTDL	535,110, 000,000	541,671, 000,000	15,069,692,000,000	14,021,687,000,000
9	NFCX	57,271,215,065	54,310,551,270	6,153,637,893,298	7,597,266,302,278

Referring to the table, it is evident that the financial performance of several technology sector firms witnessed a decline in 2020. Conversely, several other companies saw an upturn in their financial performance, indicated by their profit and loss statements and company sales, which can be attributed to the impact of the Covid-19 pandemic. This condition ultimately requires companies to become more competitive in order to survive during a pandemic.

The company's financial performance represents the company's financial condition over a certain period by taking into account aspects of financing and distribution of funds, as measured by indicators of capital adequacy, liquidity, and profitability (Agustin et al., 2013). Financial performance is an indicator to determine the soundness of a company and whether the company

is in good health during a certain period by analyzing a company's financial statements.

According to Hery (2015) and (Santosa et al., 2022), financial performance analysis is a way to see a company's financial transactions and see how it is performing over a certain period. This information can be found in a company's financial statements, which show how much money a company has, what its income and expenses are, and how its assets and liabilities have changed. Financial reports can also tell you the company's financial condition.

This study offers a distinct perspective on company performance compared to prior research, examining different subjects and time frames. Specifically, it focuses on the technology sector and utilizes quarterly financial reports from the third and fourth quarters of 2018, as well as all four quarters of 2019, to analyze pre-Covid-19 pandemic data. Additionally, financial data for the first, second, third, and fourth quarters of 2020, along with reports for the first two quarters of 2021, provide insight into financial performance during the Covid-19 pandemic. Furthermore, this study integrates an Islamic perspective in evaluating the financial performance of technology sector companies listed on the IDX, both prior to and amid the Covid-19 pandemic.

## 2. Literature Review and Hypothesis

Hery (2015) states that ROA is a ratio that helps measure how effectively a company uses its assets to generate profits. Profitability ratios measure how well a company can generate profits. During this pandemic, many companies have decided to implement a work-from-home system, which can reduce productivity. If the management of the company is effective, the company's performance and profitability will remain the same. Research from Gunawan (2021) shows that the company's return on assets (ROA) had a major impact on financial performance before and during the pandemic. Kusuma & Widiarto (2021) and Kumala (2021) also gave the result that the return on assets (ROA) for companies changed a lot due to the pandemic. This had a significant impact on the company's financial performance before and during the pandemic.

**H1 = Return on Assets (ROA) is thought to significantly differ in financial performance before and during the Covid-19 pandemic in the technology sector.**

Total Assets Turnover (TATO) is a metric to assess a company's performance by gauging the relationship between its sales volume and total assets. A higher TATO ratio signifies a more favorable performance for the company (Kasmir, 2016). The proficiency of overall management is reflected in the magnitude of profits generated from sales and investments. Fluctuations in profitability arise from the scenario where current assets yield lower returns than fixed assets. This ratio shows that the better the company is in managing its assets, the company's sales will increase, which will increase profitability. Research conducted by Mantiri & Tullung (2021) and Ediningsih & Satmoko (2022) shows that total asset turnover before and during the Covid-19 pandemic is significant. Furthermore, research by Amalia et al. (2021) and Violandani (2021) also shows that total asset turnover experienced a significant difference between before and during the Covid-19 pandemic.

**H2 = Total Assets Turnover (TATO) is suspected to have a significant difference in financial performance before and during the Covid-19 pandemic in the technology sector.**

Cashmere (2016:113) The current ratio tells us how much money a company has to pay off its short-term debt immediately. A low current ratio can be perceived negatively, indicating potential liquidity issues within the company. Conversely, an excessively high current ratio may not be favorable, as it suggests an excess of idle funds, which could impede the company's capacity to generate profits. The research results by Hilman & Laturette (2021) and Mantiri & Tullung (2022) show that the current ratio of food and beverage companies listed on the IDX differed significantly before and during the pandemic. Esomar & Christianty (2021) and Wulandari & Patrisia (2021) also stated a significant difference in the current ratio before and during the Covid-19 pandemic.

**H3 = Current Ratio (CR) is suspected to have a significant difference in financial performance before and during the Covid-19 pandemic in the technology sector.**

According to Kasmir (2016), this ratio measures the ratio of long-term debt to capital, which determines the amount of money creditors provide to entrepreneurs. This ratio is also used to see how much an entity covers its debts to other parties. In general, an increase in DER will increase the company's risk. DER describes the company's ability to pay off its debts using equity. The increase in DER indicates an increase in corporate debt. The continuous addition of debt causes companies to use more debt than their equity. The company's solvency will also be low so that the risk of default is relatively high. The results of research conducted by Esomar & Christianty (2021) show that during the Covid-19 pandemic, the number of companies in the hotel, restaurant, and tourism subsector experienced a significant decline. In addition, research from Albart et al. (2020) and Pura (2021) shows that the analysis of the solvency ratio proxied by the debt to equity ratio (DER) has significant differences before and during the Covid-19 pandemic.

**H4 = Debt to Equity Ratio (DER) is suspected to have a significant difference in financial performance before and during the Covid-19 pandemic in the technology sector.**

Sales growth is growth ratio is a way to measure how much a company increases its sales compared to its total sales. This is important because it helps us see how successful the company is in selling more products (Kasmir, 2016). Based on data from the Indonesia Stock Exchange, the technology sector in 2021 noted that this sector experienced accelerated development, reaching a growth of 707.56%. This was driven by the prospects for digital technology in the future and the digitalization trend. Research by Hilman & Laturette (2021) shows that the growth ratio performance in consumer goods companies, proxied by Sales Growth, experienced a significant difference before and during the Covid-19 pandemic.

**H5 = Sales Growth (SG) is suspected to have a significant difference in financial performance before and during the Covid-19 pandemic in the technology sector.**

### 3. Data and Method

This section delineates the data, both population and sample and the research methodology. The research methodology employed in this study is characterized as comparative quantitative research utilizing secondary data. The population encompasses all technology sector companies that were listed on the Indonesia Stock Exchange between the periods of 2018:2 and 2021:2. Hypothesis testing was conducted using SPSS version 25. The sampling approach employed was purposive sampling. Data collection was executed through the documentation method, involving the retrieval and access of data from the Indonesia Stock Exchange website, specifically [www.idx.co.id](http://www.idx.co.id). The data utilized in this study comprised quarterly reports registered on the IDX during the period of 2018:2 to 2021:2. The following is the operational variable table:

**Table 2. Operationalization of Research Variables**

Indicator	Operational Definition	Measurement	Scale
Return on Assets (ROA)	Measuring the effectiveness of the company with all the assets used for the company's operations in generating profits or profits (Hery, 2015: 228).	$\frac{\text{Net Profit}}{\text{Total Asset}}$	Rasio
Total Assets Turnover (TATO)	Measure how many sales will be generated from each rupiah of funds embedded in total assets (Kasmir, 2016: 186).	$\frac{\text{Sales}}{\text{Total Asset}}$	Rasio
Current Ratio (CR)	Measuring the company's ability to meet its short-term obligations must be paid immediately (Kasmir, 2016: 113).	$\frac{\text{Current Asset}}{\text{Current Liabilities}}$	Rasio
Debt to Equity Ratio (DER)	Measuring the ratio of long-term debt to capital determines the amount of money creditors provide to businesses (Kasmir, 2016: 114).	$\frac{\text{Total of Debt}}{\text{Equity}}$	Rasio

Sales Growth (SG)	Measure the extent to which the company can improve sales compared to total sales (Kasmir, 2016).	$\frac{\text{Salest} - \text{Salest} - 1}{\text{Salest}} \times 100$	Rasio
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Source: Author, 2022

## 4. Results

### Descriptive statistics

Descriptive statistical analysis is a method employed to offer a summary or depiction of the variables under scrutiny. It achieves this by examining the dataset for key metrics such as the minimum and maximum values, the average (mean) value, and the standard deviation, providing valuable insights into the characteristics and distribution of the data.

**Table 3. Results of Descriptive Statistics**

N	Min	Max	Mean	Std. Deviation
ROA_Before	54	-.1336	.4270	.032010
TATO_Before	54	.0327	45.8844	3.041556
CR_Before	54	1.1686	11.9663	3.615587
DER_Before	54	.0902	3.9743	.978927
SG_Before	54	-.9742	19.1236	.797376
ROA_During	54	-.2227	.3699	.021322
TATO_During	54	.1133	6.1762	1.584043
CR_During	54	.7628	16.5328	3.500483
DER_During	54	.0847	9.8650	1.400555
SG_During	54	-.8959	1.5437	.202311
Valid N (listwise)	54			

Source: Processed Data, 2022

The processed data from SPSS program version 25, as depicted in Table 3, provides descriptive statistics. This table reveals that 54 data points were utilized in this study. These data were sourced from 9 technology sector companies listed on the IDX, spanning 6 quarters (9 companies x 6 quarters = 54 data points) for the periods before and during the Covid-19 pandemic. Furthermore, the results indicate that the study assessed differences in 5 financial ratios between these two periods.

### Normality test

According to Santosa & Hidayat (2014), the normality test aims to test whether, in the regression model, the confounding or residual variables have a normal distribution. The normality test employed in this study utilizes the One-Sample Kolmogorov-Smirnov formula. It assesses whether the data conforms to a normal distribution. A significance level greater than 0.05 indicates that the data can be considered normally distributed, whereas a significance level lower than 0.05 suggests that the data does not follow a normal distribution.

**Table 4. Results of the Normality Test**

Financial performance	Asymp. Sig. (2-tailed)	Significance Level	Conclusion
ROA, TATO, CR, DER, SG Before the Covid-19 Pandemic	0,000	0,05	Data is not normally distributed
ROA TATO, CR, DER, SG During the Covid-19 Pandemic	0,000	0,05	Data is not normally distributed

Source: Processed Data, 2022



Referring to Table 4, it is evident that the financial performance, as evaluated by the five financial ratios, does not exhibit a normal distribution. Consequently, the appropriate test for this scenario is the non-parametric method, specifically the Wilcoxon Signed Rank Test (Bramantoro et al., 2020).

#### **Difference Test (Wilcoxon Signed Rank Test)**

Exactly, the Wilcoxon signed rank test is employed when the data does not follow a normal distribution (Wahyuddin et al., 2023). This test compares two sets of paired observations, such as measurements taken before and after a treatment or event. It assesses whether there is a significant difference between the two data sets.

**Table 5. Results of Difference Test (Wilcoxon Signed Rank Test) before – during the Covid-19 pandemic**

Financial Performance	Z	Asymp.Sig. (2-tailed)
ROA	-1.812	0.070
TATO	-2.165	0.030
CR	-2.880	0.004
DER	-3.250	0.001
SG	-2.140	0.032

Source: Processed Data, 2022

The results of the Wilcoxon Signed Rank Test show that there is no significant difference in the ROA variable between the period before and during the Covid-19 pandemic, as evidenced by the Asymp Sig (2-tailed) value of  $0.070 > 0.05$ . TATO, CR, DER, and SG have significant differences in financial performance between the period before and during the Covid-19 pandemic. This result is proven by the Asymp Sig (2-tailed) value  $< 0.05$ .

## **5. Discussion**

### **Financial performance before and during the Covid-19 pandemic in terms of Return on Assets (ROA)**

The research results show no difference in ROA between the period before and during the Covid-19 pandemic, as evidenced by a significance level of  $0.07 > 0.05$ . This result shows that ROA has remained relatively consistent during the pandemic. The average company ROA was 3.2% before and 2.13% during the pandemic. This decline was caused by the fluctuating nature of company profits amid the Covid-19 pandemic. When compared with industry standards, which have a minimum average of 30%, it can be concluded that the company's ROA is below industry standards. This means that these companies are less effective in optimizing their investment resources for operational activities in order to generate profits. This finding aligns with previous research conducted by Hidayat (2021) and Wahyuni & Dharmawan (2021).

### **Financial performance before and during the Covid-19 pandemic in terms of Total Assets Turnover (TATO)**

The research results show a significant difference in TATO before and during the Covid-19 pandemic, indicated by a significance level of  $0.03 < 0.05$ . Compared with the industry's average total asset turnover, which is 2 times, these findings show a striking gap. Before the Covid-19 pandemic, the average total asset turnover was 3.04 times, while during the pandemic, the average total asset turnover decreased to 1.58 times. This finding shows that the average total asset turnover during the Covid-19 pandemic was below the general industry average. This decline indicates that TATO's financial performance experienced a decline during the Covid-19 pandemic. A low total asset turnover indicates the company may have excess assets because they are not fully utilized to generate sales. As a result, most assets need to be more active and contribute to income generation. This can create challenges for companies in utilizing their assets effectively to drive sales. This

finding is in line with previous research conducted by Santosa (2010), Amalia (2021), and Violandani (2021).

#### **Financial performance before and during the Covid-19 pandemic in terms of Current Ratio (CR)**

The research findings indicate that a significant difference in financial performance, as assessed by CR before and during the Covid-19 pandemic, was supported by a significance level of  $0.004 < 0.05$ . For comparison, the industry average CR is 200% or 2 times. Before the Covid-19 pandemic, the average CR was 361.55%, while during the pandemic, it decreased slightly to 350.04%. These results indicate that financial performance in the form of CR is still satisfactory. Even though the current ratio has decreased, this ratio still exceeds the general industry standard average, thus indicating a safe financial position. The current ratio in this study is safe because it exceeds the industry average standard. This finding is in line with previous research conducted by Hilaliyah (2021), and Hilman & Laturette (2021).

#### **Financial performance before and during the Covid-19 pandemic in terms of the debt-equity ratio (DER)**

The research results show a significant disparity in financial performance as measured by DER before and during the Covid-19 pandemic, supported by a significance level of  $0.001 < 0.05$ . Compared with the industry average standard, where the maximum acceptable debt-to-equity ratio is 80%, these findings indicate a significant deviation. Before the Covid-19 pandemic, the average DER was 97.89%, while during the pandemic, it jumped to 149.05%. This result shows a substantial increase in the average debt-to-equity ratio during the Covid-19 pandemic. It is important to note that, unlike other financial ratios where a higher average indicates improvement, a higher DER in this context indicates increasing debt. As a result, the DER in this study exceeds general industry standards, which indicates less than ideal financial conditions because most of the funding comes from debt, thereby increasing the company's risk.

The surge in DER during the pandemic can be attributed to the fact that technology sector companies sought additional funding sources, including debt, to sustain their operations. With most sampled technology sector companies on the IDX experiencing declining net profit or sales, additional working capital became imperative, partly met through debt. A higher DER indicates that the proportion of debt/liabilities surpasses the total net capital owned by the company, resulting in a substantial burden on the company and its external stakeholders. This finding aligns with previous research conducted by Esomar & Christianty (2021) and Pura (2021).

#### **Financial performance before and during the Covid-19 pandemic in terms of Sales Growth (SG)**

The research findings reveal a significant disparity in financial performance, specifically in sales growth, before and during the Covid-19 pandemic. This is supported by a significance level of 0.032, which is less than the threshold of 0.05. Examining the average sales growth variable during the Covid-19 pandemic, it is evident that there was a substantial decrease, registering at 20.23%, compared to the average sales growth variable before the Covid-19 pandemic, which stood at 79.73%. This finding indicates a significant downturn in sales growth during the pandemic.

The primary factor contributing to this decline in the sales growth ratio is the reduction in sales attributable to the Covid-19 pandemic. Within the sample of research companies, this is reflected in the reduced interest of Micro, Small, and Medium Enterprises (MSMEs) in utilizing digital technology provider platforms or consulting services in the technology sector. This trend is a direct result of many MSMEs experiencing a decline in financial performance during the Covid-19 pandemic, which subsequently impacts their inclination to engage with technology consulting services. This finding is consistent with prior research by Hilman & Laturette (2021) and Hakim (2021).

## **6. Conclusion**

Based on the results of the research that has been carried out, researchers can conclude that there is no significant difference in ROA before and during Covid-19. The pandemic does not provide a

significant difference when viewed from ROA. TATO shows a significant difference between before and during Covid-19. This decline was caused by unstable sales results or income generated by each company. Several companies in the technology sector also experienced a decline due to the Covid-19 pandemic, causing many assets to become idle because these assets are not used optimally to generate sales.

CR shows that there is a significant difference between before and during Covid-19, this decline was caused by market demand, which continued to decline due to limited community activities due to the Covid-19 pandemic, causing the company's profits to decline, making it difficult for the company to fulfill its current obligations. DER shows a significant difference between before and during Covid-19, the cause of DER being higher during the pandemic compared to before the Covid-19 pandemic could be due to the need for additional operational funds for business continuity through additional debt. SG shows that there is a significant difference between before and during Covid-19, this decline was caused by a decrease in sales due to the Covid-19 pandemic, where the sample companies in this research saw a lack of interest among Micro, Small, and Medium Enterprises (MSMEs) in using the platform digital technology providers or consultants in their fields technology sector due to the pandemic. Covid-19 has also caused many MSME business actors to experience a decline in financial performance, thus affecting the interest of these MSMEs in using services in the technology consulting sector.

### Recommendation

Based on the results of the research that has been carried out, the advice given is for investors to be able to make this research a reference and analytical material in making decisions before investing, especially in technology sector companies, namely by paying attention to the financial performance of these companies and withholding funds first, which is to be invested until economic conditions recover due to the conditions of the Covid-19 pandemic which have caused many companies to experience losses and go bankrupt.

For the company, which recorded a low net profit and even a loss accompanied by increased operational costs in order to be able to reduce costs further and increase sales by carrying out various innovations and new marketing strategies that are more effective and efficient and able to make the best use of debt proceeds and make assets the company is not idle (be productive) so that the company can obtain maximum profit and can pay off the company's debts.

For future researchers, it is hoped that they can conduct research by researching other industries so that insights regarding financial performance before and during the pandemic can be more widely understood, and the financial ratios used should be expanded so that they can complement knowledge from previous research such as using market ratios to measure stock value.

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### **Ethics declarations**

Availability of data and materials

Data sharing does not apply to this article as no new data were created or analyzed in this study.

Competing interests

The authors reported no potential competing interest.