

Assessing financial metrics and Sharia Healthcare stock return amid Indonesia's market volatility

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Abstract

The present research aims to analyze how financial metrics reflecting profitability, liquidity, and solvency affect the profit performance of sharia-compliant equities in the healthcare industry amid the COVID-19 pandemic. This investigation employs a panel data regression methodology, utilizing a sample of medical services businesses that are publicly traded on the Indonesia Stock Exchange throughout this time frame from 2020 to 2022. The estimation model applied is the Fixed Effect Model (FEM) using Eviews 13 software. Hypothesis testing is conducted using t-tests and F-tests to ensure the robustness of the results. The findings reveal that simultaneously, ROA, ROE, EPS, NPM, CR, and DER have a significant effect on the return of sharia healthcare stocks. Partially, the results of this study show that EPS, CR, and DER have a significant effect on the return of sharia healthcare stocks. ROA, ROE, and NPM metrics had no substantial statistical implications. Theoretically, this study enriches the Islamic financial literature by showing that some financial ratios can affect Islamic stocks differently than conventional stocks during crises. In practical terms, these findings provide valuable insights for financial professionals to refine investment strategies, particularly in the healthcare sector during market volatility.

Keywords: Sharia investment, sharia stock performance, financial metrics, panel data analysis

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Introduction

Since its inception in 2020, the COVID-19 epidemic has been having a tremendous impact on the world, causing massive disruptions to worldwide public health and placing considerable strain on the global economy (Gagnon et al., 2023). The pandemic has triggered unprecedented market volatility (Naseer et al., 2023). This situation raises important questions about the performance of stocks across various sectors, particularly the healthcare industry (Al-Nassar et al., 2023).

Given the current epidemic, Sharia equities, which adhere to the norms of Islamic finance, are of significant importance (Wahid et al., 2023). In a situation of global economic uncertainty, when many conventional stocks are declining due to high speculative elements, Islamic stocks are considered more stable (Ashraf et al., 2022). This might be credited to the fundamental tenets of Islamic finance that prioritize openness, equity, and equilibrium. These principles also prohibit investment in illicit activities such as *riba* (interest), gambling, and excessive speculation, as well as encourage investment based on the real economy and business ethics (Saputra & Hilabi, 2022).

Nevertheless, it is well recognized that the healthcare sector has demonstrated an exceptional ability to withstand the epidemic, primarily because of the much-increased demand for healthcare products and services (Safitri & Ayuningtyas, 2023). The confluence of these elements renders stocks in the healthcare sector, including those founded on Sharia principles, more resistant to the economic downturn triggered by the epidemic (Lestari et al., 2023). In addition, the defensive nature of the healthcare sector, where demand for healthcare products and services tends to be stable even in challenging economic conditions, adds to the attractiveness of investment in this sector during times of uncertainty (Hermanto et al., 2023).

Yet, substantial obstacles persist. How precisely did the COVID-19 epidemic impact the performance of Sharia-compliant equities in the healthcare industry? More specifically, how do financial factors such as Return on Assets (ROA), Return on Equity (ROE), Earnings Per Share (EPS), Net Profit Margin (NPM), Current Ratio (CR), and Debt to Equity Ratio (DER) affect sharia stock returns in this sector during the pandemic? Understanding the extent to which these financial indicators have affected the performance of Islamic stocks in the healthcare sector during this crisis is critical, as well as how companies' financial dynamics reflect their ability to adapt to uncertain economic conditions.

These financial metrics are selected based on their ability to reflect different aspects of financial performance (Kusmayadi et al., 2018; Utami & Darmawan, 2019). ROA and ROE are essential for understanding a company's efficiency in generating profits from assets and equity. EPS directly indicates profitability, attracting investors seeking dividend growth or stock price appreciation. NPM measures cost management efficiency, which is crucial during economic uncertainty. CR indicates a company's liquidity to meet

short-term obligations (Lalithchandra & Rajendhiran, 2021), while DER provides insight into debt management, affecting financial risk. Understanding the relationships between these variables helps explain why they were selected to assess healthcare sector performance during the pandemic (Pardiansyah et al., 2023).

Understanding the role of these financial metrics in influencing the returns of Sharia stocks can provide insight into how Sharia stocks perform in times of crisis and market volatility (Noman et al., 2023). The answers to these questions will deepen our understanding of the dynamics in Sharia-compliant equity markets during such periods and provide investors with crucial information for making more informed and ethically sound investment decisions in the future (Maghfira & Putra, 2023).

This research is fundamental because the COVID-19 pandemic has created unique and unprecedented challenges for the global stock market, including Indonesia (Rinofah & Sedera, 2023). While most research has concentrated on the immediate consequences of the pandemic on specific sectors, studies on how sharia stocks in the healthcare sector are responding to this crisis are still limited. Given the importance of the healthcare sector in this global crisis and the potential of Sharia stocks as a stable investment instrument, this research is not only urgent but also highly relevant to provide a better understanding of market dynamics during times of crisis (Chowdhury et al., 2022).

As an additional benefit, the research has the potential to offer investors, regulators, and businesses valuable insights into how to enhance their resilience in the face of future crises. This study intends to investigate the primary financial elements affecting the return of sharia equities in the healthcare industry during the pandemic. Additionally, this study has an opportunity to contribute significantly to the advancement of Islamic financial literature and Sharia-based investment management.

While many studies address the effect of the global outbreak on the performance of markets in general, very few specifically explore the achievement of sharia stocks in the healthcare industry during the COVID-19 pandemic. Most of the existing studies have focused on conventional stock markets and more general economic sectors (Dhasmana et al., 2023; Flannery & Protopapadakis, 2002; Gagnon et al., 2023; Khan et al., 2023; Liu et al., 2024), with little attention paid to sharia stocks and the healthcare sector specifically. This generates a space in the scientific community that needs to be filled to deeply understand how sharia stocks in this sector behave during times of crisis.

The uniqueness of the current research lies in its specific focus on Sharia stocks in the healthcare sector during the COVID-19 pandemic by exploring the influence of critical financial factors on stock returns. While most previous studies have been more general or focused on the conventional stock market, this study provides a more specific perspective and is relevant to current conditions.

This investigation aims to evaluate the consequences of critical financial factors, including ROA, ROE, EPS, NPM, CR, and DER, on the sharia stock returns of Islamic

healthcare businesses during the COVID-19 pandemic. This investigation attempts to offer a more comprehensive comprehension of how these financial indicators influence stock performance during economic instability. The study also seeks to identify which financial factors significantly affect stock returns, focusing on the healthcare sector. This will provide improved information for investors and stakeholders when handling the investments they own during times of crisis.

Method

Criteria and Sample Selection

This research is quantitative, and it employs a specific methodology known as panel data regression. Within this investigation's scope, the population includes all healthcare firms provided on the **Bursa Efek Indonesia** (Indonesia Stock Exchange) for the period between 2020 and 2022. Nevertheless, the researcher can only investigate some of these businesses; hence, a sample is required.

The prerequisites for this sampling include that by 2020, corporations in the healthcare sector adhering to Sharia principles were officially listed on the Indonesia Stock Exchange. Additionally, the Sharia-compliant healthcare firms listed in the **Daftar Efek Syariah** (Sharia Securities Register) on the Indonesia Stock Exchange between 2020 and 2022 are considered. Furthermore, the company must have released its annual financial statements for the years 2020 to 2022, and these business enterprises must report their annual financial accounts using the national currency, the Rupiah.

Based on these criteria, the sample in the study is as follows:

Table 1. List of Research Samples

| No. | Code | Companies |
|-----|------|-------------------------------------|
| 1. | DVLA | Darya - Varia Laboratoria Tbk. |
| 2. | HEAL | Medikaloka Hermina Tbk. |
| 3. | IRRA | Itama Ranoraya Tbk. |
| 4. | KLBF | Kalbe Farma Tbk. |
| 5. | MERK | Merck Tbk. |
| 6. | MIKA | Mitra Keluarga Karyasehat Tbk. |
| 7. | PEHA | Phapros Tbk. |
| 8. | PRDA | Prodia Widyahusada Tbk. |
| 9. | PRIM | Royal Prima Tbk. |
| 10. | SIDO | Industri Jamu dan Farmasi Sido Tbk. |
| 11. | SILO | Siloam International Hospitals Tbk. |
| 12. | TSPC | Tempo Scan Pacific Tbk. |

Source: Sharia Securities Register 2020-2022

All of this information can be accessed by visiting the official website of the IDX, available at www.idx.co.id.

Variables and Measurement

There are six financial ratios used as variables in this study, namely Return on Asset (ROA), Return on Equity (ROE), Earnings Per Share (EPS), Net Profit Margin (NPM), Current Ratio (CR), and Debt-to-Equity Ratio (DER) as independent variables, and Sharia Stock Return as a dependent variable. The Return on Assets is computed using the following formula:

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\% \quad \dots\dots\dots (1)$$

Return on equity (ROE) is calculated using the following formula:

$$ROE = \frac{\text{Net Income}}{\text{Shareholders' Equity}} \times 100\% \quad \dots\dots\dots (2)$$

The following formula is used to calculate Earnings Per Share (EPS):

$$EPS = \frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Average Outstanding Shares}} \times 100\% \quad \dots\dots\dots (3)$$

Net Profit Margin (NPM) is measured using the following formula:

$$NPS = \frac{\text{Net Profit}}{\text{Revenue}} \times 100\% \quad \dots\dots\dots (4)$$

The fifth variable, namely the Current Ratio (CR), is calculated with the following formula:

$$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\% \quad \dots\dots\dots (5)$$

The Debt-to-Equity Ratio (DER) is measured using the following formula:

$$DER = \frac{\text{Total Debt}}{\text{Shareholders' Equity}} \quad \dots\dots\dots (6)$$

Meanwhile, the following formula is used to calculate the Y variable, namely Sharia Stock Return:

$$DER = \frac{\text{Ending Price} - \text{Beginning Price} - \text{Dividends}}{\text{Beginning Price}} \times 100\% \quad \dots\dots\dots (7)$$

Analysis Method

The analysis method used in the study was panel data regression using Eviews 13 software. Data analysis is carried out in several stages: model determination, classical assumption testing, and data analysis. The model assignment determines the best model between the Fixed Effect Model, Common Effect Model, or Random Effect Model (Septianingsih, 2022).

Meanwhile, some classical assumption tests that will be used (depending on the model used) are multicollinearity and heteroscedasticity tests, depending on the model used. Some statistical significance tests were administered, involving the t-test, the F test, and the determination coefficient test (R^2).

Result and Discussion

Model Estimation

Estimating the model is carried out to ascertain which model is the most suitable for use in this study. Based on the Chow test and the thurst test, it is known that the Fixed Effect Model (FEM) is the best model that can be used in this analysis.

Heteroscedasticity and Multicollinearity Test

A test for heteroscedasticity was performed, and the findings indicate that the t-statistics for all variables show probabilities greater than 0.05, suggesting that there are no symptoms of heteroscedasticity present. The results of the multicollinearity test show that the correlation coefficients among the independent variables do not surpass 0.80, indicating that there is no multicollinearity present.

Coefficient of Determination Test

Here are the findings of the determination coefficient test.

Table 2. Coefficient of Determination Test

| Metric | Value | Interpretation |
|--|----------|---|
| Coefficient of Determination (R^2) | 0.721750 | Indicates that the model explains 72.18% of the variance. |
| Adjusted R^2 | 0.458958 | Adjusted for the number of predictors in the model. |

Source: Research finding: Eviews output

Several 0.722, or 72.2%, is the R-squared value, as seen in the table above. According to the determination coefficient value, 72.2% of the variance in stock return can be described by the independent variables comprising ROA, ROE, EPS, NPM, CR, and DER; a further 27.8% may be caused by factors not included in this study.

F Test

The results of the F test show an F-statistic of 2.746466, indicating the overall effectiveness of the regression analysis. Additionally, the probability value is 0.019940, which is below the 0.05 threshold, confirming that the predicted outcome is statistically significant. Based on these findings, this study posits that the combined effects of ROA, ROE, EPS, NPM, CR, and DER significantly impact Sharia Stock Returns.

t-Test

The t-test's findings are laid out in the following table.

Table 3. t-Test

| Var. | Coeff. | Std. Error | t-Stat. | Probability | Hypothesis |
|------|-----------|------------|-----------|-------------|------------|
| C | -0.313292 | 0.578537 | -0.541525 | 0.5948 | |
| ROA | -0.657441 | 0.337156 | -1.949960 | 0.0669 | Rejected |
| ROE | -4.214766 | 3.915891 | -1.076324 | 0.2960 | Rejected |
| EPS | 0.005735 | 0.001464 | 3.918060 | 0.0010 | Accepted |
| NPM | -0.976543 | 5.930120 | -0.164675 | 0.8710 | Rejected |
| CR | -0.236551 | 0.109604 | -2.158235 | 0.0447 | Accepted |
| DER | 2.082497 | 0.639733 | 3.255261 | 0.0044 | Accepted |

Source: Research finding, Eviews output

The table above shows that EPS, CR, and DER significantly affect Sharia Stock Returns, so H4, H6, and H7 are accepted. Meanwhile, ROA, ROE, and NPM affect Sharia Stock Returns, but they are not significant, so H2, H3, and H5 are rejected.

H1 : Effect of ROA, ROE, EPS, NPM, CR, and DER on Sharia Stock Returns

The analysis results show that ROA, ROE, EPS, NPM, CR, and DER significantly affect Sharia Stock Returns. These findings show that shareholders are likely to dedicate interest to various financial indicators when assessing the potential profits from stock investments. Companies with high ROA and ROE are perceived as more efficient at generating profits. In contrast, high EPS can increase investor interest as it indicates the potential for more enormous dividends or stock price growth. A high NPM signifies effective cost management, which can be attractive amid economic uncertainty such as the pandemic. A good CR indicates the company has sufficient liquidity to deal with short-term liabilities, reducing liquidity risk for investors. Meanwhile, a controlled DER shows that the firm does not become overly reliant on monetary obligations, thus reducing the risk of bankruptcy. This overall combination makes sharia stocks in the healthcare sector an attractive option for investors during the pandemic, where stability and investment ethics have become increasingly important.

The findings of this investigation confirm that, in general, economic viability and financial stability are the primary considerations for investors when they are considering investing in Sharia-compliant stocks. Several previous studies have also identified several key factors that can determine the Sharia Stock Return Rate, including ROA, ROE, EPS, NPM, CR, and DER (Aldiena & Al Hakim, 2019; Aryanti & Mawardi, 2016; Endri et al., 2019; Erzad & Erzad, 2017; Al Faruk, 2022; Lusyana & Sherif, 2017; Sya'bani & Fathoni, 2022; Utami & Darmawan, 2019; Widagdo et al., 2020)

As such; these outcomes coincide about the existing literature, which suggests that investors are likely to look for companies with solid financial performance and controlled risk, especially in an unstable economic context such as during the COVID-19 pandemic. So, in addition to strengthening the results of earlier studies, this research is also an essential reference for investors in the healthcare sector.

H2 : Effect of ROA on Sharia Stock Returns

As in previous studies (Firdausia, 2021; Al Salamat & Mustafa, 2016; Sausan et al., 2020; Yap & Firnanti, 2019), the findings of this investigation suggest that Return on Assets (ROA) does not play a significant role in influencing the returns of sharia-compliant stocks in the healthcare industry around the COVID-19 pandemic. This could have been due to the specific characteristics of Sharia stocks and the healthcare sector, where investors may have been more focused on prosperity and stability for years than the immediate profit indicated by ROA (Rostami et al., 2016). In addition, during the pandemic, outside considerations involving economic instability worldwide, government policies related to handling the pandemic, and drastic changes in demand for healthcare products and services tend to significantly influence investment decisions compared to the company's profitability ratio.

However, some studies show the opposite fact, that ROA has an essential influence on Stock Return (Aminah, 2021; Bintara & Tanjung, 2019; Endri et al., 2019; Nadyayani & Suarjaya, 2021; Simorangkir, 2019). The findings of these studies imply that in some contexts, especially in specific sectors or periods, the profitability of companies measured by ROA can be a vital determining factor for investors in assessing the potential return of stocks. This may happen when investors see ROA as a reflection of management's efficiency and effectiveness in utilizing assets to generate profits, which is ultimately believed to enhance the worth of the business and stock returns.

H3 : Effect of ROE on Sharia Stock Returns

The investigation findings further provide that Return on Equity (ROE) had little effect on the returns of sharia-compliant stocks in the healthcare sector throughout the COVID-19 pandemic. This finding aligns with results from several previous studies (Adawiyah & Setiyawati, 2019; Nadyayani & Suarjaya, 2021; Riani & Mala, 2024). In this context, ROE is typically used to indicate an organization's effectiveness in making gains from shareholder equity, which may be a minor factor that investors pay attention to. This could be due to the priorities of Sharia investors, who tend to focus on stability and compliance with Sharia principles rather than equity-based profitability. Additionally, in moments of recession, or, for instance, a global epidemic, financiers might devote more interest to an enterprise's capacity to withstand and adjust in uncertain situations rather than just looking at traditional economic performance metrics such as ROE.

Furthermore, these results indicate that Sharia investors in the healthcare sector are considering other factors, such as the company's long-term resilience, social impact, and how it adheres to its operations principles. When faced with the uncertainty caused by the pandemic, more indicators such as ROE may be needed to convey a comprehensive representation of an entity's prospects, making it less relevant in predicting stock returns. Therefore, ROE is not a significant determinant of investment decisions in Islamic stocks in this sector during this challenging period.

Although statistically, ROA and ROE did not significantly influence the returns of sharia stocks in the health sector during the COVID-19 pandemic, these two variables still have significant relevance in the context of the theory and the sectors analyzed. In Islamic financial theory, ROA and ROE are often used to measure the efficiency of asset use and a company's ability to generate profits from equity. Although in the healthcare sector, other factors such as liquidity and debt management dominate during times of uncertainty, ROA and ROE still provide insight into how companies manage their resources as a whole, which can ultimately affect investors' confidence in the company's long-term stability. On the other hand, in the context of the healthcare sector, despite the increased demand for medical services during the pandemic, ROA and ROE may be influenced by larger external factors, such as government policies and changes in market demand, which reduce their impact on stock returns. Therefore, although neither is statistically significant, they remain essential as fundamental indicators in fundamental analysis (Atthahiry et al., 2024; Sausan et al., 2020).

H4 : Effect of EPS on Sharia Stock Returns

The findings of this investigation suggest that Earnings Per Share (EPS) significantly affected the returns of Sharia-compliant stocks within the healthcare sector during the COVID-19 pandemic. EPS, which describes the net profit available for each outstanding share, is a crucial indicator for investors when reviewing the financial health of an organization. The significance of EPS to Sharia stock returns suggests that shareholders in this sector are highly concerned about a business's capacity to bring in earnings per share, one of the most accessible and understandable indicators of direct profitability. In the context of the pandemic, when many sectors are experiencing financial stress, strong EPS may be considered a sign that the company has a solid performance and can survive even in challenging conditions, thus attracting investors' interest.

This study's results reinforce previous studies' findings (Chaira et al., 2024; Endri et al., 2019; Hidajat, 2018; Yap & Firnanti, 2019). However, some other studies state that EPS does not substantially impact Stock Returns (Al Salamat & Mustafa, 2016; Sausan et al., 2020; Yap & Firnanti, 2019). The studies may be based on different contexts, such as different sectors or periods that do not involve global crises, such as pandemics.

H5 : Effect of NPM on Sharia Stock Returns

Findings of the present inquiry suggest that Net Profit Margin (NPM) did not significantly impact the returns of sharia-compliant stocks throughout the healthcare industry during the COVID-19 pandemic, consistent with findings from prior research (Riani & Mala, 2024; Yap & Firnanti, 2019). NPM, which measures a proportion of net profit compared to total revenue, is usually considered necessary for evaluating an organization's operational effectiveness. However, this factor is not a top priority for shareholders within the context of Islamic stocks during the worldwide outbreak. The crisis conditions caused by the pandemic may make investors focus more on the company's ability to survive and adapt rather than just the operational efficiency measured by NPM.

However, the opposite fact has also been shown by several previous studies (Aminah, 2021; Chaira et al., 2024; Nadyayani & Suarjaya, 2021; Simorangkir, 2019). These studies show that NPM has a substantial impact on Stock Returns. In the study's findings, NPM was considered an important indicator that reflected the organization's capacity to oversee costs and achieve gains from sales, which in turn was believed to increase the stock's intrinsic worth and attract investors. A high NPM indicates good operational efficiency and effective management in more stable market conditions.

H6 : Effect of CR on Sharia Stock Returns

The findings of this study reveal how the Current Ratio (CR) strongly influenced the returns of Sharia-compliant stocks in the healthcare industry during the COVID-19 pandemic, but the influence was negative. CR, which determines a business's financial health by analyzing its present wealth to present liabilities, is typically considered an indicator of how prepared it is to fulfill its immediate obligations. Nevertheless, within the context of Sharia-compliant stocks, particularly in the healthcare sector during the pandemic, a rise in CR correlates with a decline in stock returns.

This negative influence may reflect investors' view that excessively high liquidity could signal that a business fails to fully utilize its resources for growth or expansion, which can ultimately reduce the potential profitability and return on shares. In addition, in pandemic conditions, where many companies may maintain high liquidity as a precautionary measure, investors may see this as a sign of uncertainty or a lack of profitable investment opportunities, reflected in the decline in Sharia stock returns.

Several previous studies have also identified that CR significantly affects Stock Return (Aminah, 2021; Bintara & Tanjung, 2019; Oman et al., 2021), albeit with different directions of influence. However, other studies point to different findings, where CR is only sometimes the main factor affecting stock returns, especially in uncertain economic situations (Endri et al., 2019).

H7: Effect of DER on Sharia Stock Returns

The findings of the current inquiry show how the Debt-to-Equity Ratio (DER) strongly impacts the return of sharia stocks in the health industry during the COVID-19 pandemic. This information matches up with the results of prior research (Bintara & Tanjung, 2019; Endri et al., 2019; Oman et al., 2021; Sausan et al., 2020), which also found that DER can be a determining factor in Stock Returns. The significant influence of DER on Islamic stock returns shows that shareholders submit consideration for the company's debt level in their choices about investing.

In the context of the pandemic, where economic uncertainty is increasing, high debt levels can be a significant risk factor for companies. Investors may see DER as an essential indicator that reflects a business's capacity to manage its cash commitments under challenging conditions. Companies with higher DER may have greater risk, which can significantly affect stock returns, both in the form of increased risk and in the potential for greater returns if the company manages its debt well.

Nevertheless, this investigation's findings also disagree with multiple other research findings that state that DER does not have an essential influence on Stock Return (Chaira et al., 2024; Dita & Murtaqi, 2014; Firdausia, 2021; Yap & Firnanti, 2019). These differences are frequently brought about by several variables, such as differences in the economic context, the sectors studied, or periods.

Conclusion

Simultaneously, ROA, ROE, EPS, NPM, CR, and DER significantly affected the return of sharia stocks in the health sector during the COVID-19 pandemic. Partially, EPS and DER have a significant positive influence, indicating that investors are paying attention to net income per share and the company's ability to manage risk. On the other hand, CR has a significant negative effect on stock returns. Meanwhile, ROA, ROE, and NPM did not show a significant effect partially. These findings enrich the Islamic financial literature by showing that traditional financial indicators can affect Islamic stocks differently in crisis conditions than conventional stocks, where Islamic investors tend to focus more on liquidity and long-term stability indicators.

The practical implication of this study is that it provides guidance for investors and portfolio managers in making investment decisions in the healthcare sector, especially when market conditions are volatile. Healthcare companies also need to pay attention to their liquidity management and debt structure, as these factors affect investor perception and stock performance. This study has limitations in the scope of sectors and time periods, the use of secondary data, and does not include policy and macroeconomic variables. Further research can expand this scope to provide more comprehensive insights.

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