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THE IMPACT OF COVID-19 ON THE PERFORM THE INDONESIAN SHARIAH STOCK INDEX (ISSI) STOCK PORTFOLIO USING THE IDX-IC SECTORAL APPROACH

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Abstract. *The development of the capital market has an influence on a country's economic growth, but the Covid-19 pandemic has caused fluctuations in the stock market, especially the sharia stock market in Indonesia. These fluctuations are accompanied by return volatility due to strong pressure in some sectors and rapid growth in other sectors. The aim of this research is to analyze the impact of the Covid-19 incident on the Islamic capital market in Indonesia through an analysis of the formation and evaluation of the performance of an optimal portfolio of Islamic shares using a sectoral approach for one year before and one year during Covid-19. The portfolio formation method uses the Single Index Model (SIM), and performance testing uses the Sharpe Ratio. The secondary data used are weekly closing stock prices and weekly ISSI closing points from March 3, 2019, to February 28, 2022, with the SR011 Retail Sukuk yield as a reference for risk-free asset returns. There was an increase in return performance and the composition of shares that formed an optimal portfolio due to the general response of securities to increasing market performance, which led to positive figures during Covid-19. The portfolio's Sharpe ratio performance always outperformed market performance in both research periods, with the sectors showing the best performance coming from the financial, energy, and technology sectors. Based on the statistical difference test on the Sharpe ratio, it is known that the Covid-19 pandemic has had a significant impact on the Islamic capital market. Investors are advised to be careful in choosing the right sectors during an economic downturn, while authorities are advised to anticipate policies that strengthen vulnerable sectors and prepare sectors that will become the foundation of the economy in times of crisis.*

Keywords: *optimal portfolio, sharia stock, covid-19, sharpe ratio*

Abstrak. Perkembangan pasar modal memiliki pengaruh terhadap pertumbuhan ekonomi suatu negara, namun pandemi Covid-19 telah menyebabkan fluktuasi di pasar saham, terutama pasar saham syariah di Indonesia. Fluktuasi ini disertai dengan volatilitas imbal hasil akibat tekanan yang kuat di beberapa sektor dan pertumbuhan yang cepat di sektor lain. Tujuan penelitian ini adalah menganalisis dampak insiden

Covid-19 terhadap pasar modal syariah di Indonesia melalui analisis pembentukan dan evaluasi kinerja portofolio optimal saham syariah menggunakan pendekatan sektoral untuk satu tahun sebelum dan satu tahun selama pandemi Covid-19. Metode pembentukan portofolio menggunakan Single Index Model (SIM), sedangkan pengujian kinerja menggunakan Sharpe Ratio. Data sekunder yang digunakan adalah harga penutupan saham mingguan dan titik penutupan ISSI mingguan dari 3 Maret 2019 hingga 28 Februari 2022, dengan imbal hasil SR011 Retail Sukuk sebagai acuan untuk imbal hasil aset bebas risiko. Terdapat peningkatan kinerja imbal hasil dan komposisi saham yang membentuk portofolio optimal akibat respons umum sekuritas terhadap peningkatan kinerja pasar, yang menghasilkan angka positif selama pandemi Covid-19. Kinerja Rasio Sharpe portofolio selalu unggul dibandingkan kinerja pasar pada kedua periode penelitian, dengan sektor-sektor yang menunjukkan kinerja terbaik berasal dari sektor keuangan, energi, dan teknologi. Berdasarkan uji perbedaan statistik pada Rasio Sharpe, diketahui bahwa pandemi Covid-19...
Kata kunci: portofolio optimal, saham syariah, COVID-19, rasio Sharpe

INTRODUCTION

The capital market is a place for investment because it functions as an intermediary between investors and companies in securities trading. The capital market also provides opportunities for companies to obtain funds through the issuance of securities and also offers the public investment options with the best returns. The securities most widely traded in the capital market are shares (stocks) and bonds (bonds) (Tandelilin, 2018). The development of capital markets, particularly the expansion of market capitalization and trading liquidity, has been proven to foster economic growth, with a pronounced impact in middle-income and developing countries. Therefore, strengthening trading activities and broadening the investor base are essential to deepen the market and channel capital into the real sector (World Federation of Exchanges, 2025; OECD, 2025; Korkmaz, 2022).

The number of shares in the Composite Stock Price Index (IHSG) over ten years experienced an average growth of 5.53% with an average of 65% of

them being sharia shares. Likewise, the JCI capitalization value increased by an average of 8.40% with an average of 54.48%, which was obtained from sharia shares. The large composition of sharia shares also influences Indonesia's economic growth, namely by means of sharia shares attracting investors who want investments that are guaranteed to be halal (Widiyanti & Sari, 2019). This indicates that sharia shares have contributed to increasing Indonesia's economic growth.

The Indonesian capital market is a developing market, so it is vulnerable to general macroeconomic conditions as well as changes in global economic conditions and world capital markets, such as the Covid-19 pandemic. The first confirmed positive case of the SARS-CoV-2 or coronavirus was announced in Indonesia on March 2, 2020 (Handayani, Rahmawati, Haryanto & Wahyuni, 2020). In general, changes in stock price volatility during the pandemic have proven to be sensitive to Covid-19 news (Baek, Mohanty & Glambosky, 2020). This news also caused a significant decline in stock market liquidity and stability (Baig, Butt, Haroon & Rizvi, 2020). The Covid-19 pandemic has had a negative impact on stock market returns in all affected countries and regions. Stock markets in the Asian region reacted more quickly to Covid-19 news with a sharp decline in abnormal returns. This influence is caused by fearful sentiment from investors (Liu et al., 2020).

The performance of the equity sector is closely linked to prevailing economic conditions: macroeconomic shocks, policy uncertainty, and changes in real activity and supply-chain pressures all significantly affect stock returns and sectoral performance across both emerging and advanced economies (Chauhan et al., 2025; Riaz & Muhammad, 2025; Zhao & Park, 2024)

There was disruption to trade flows in most industrial sectors during the pandemic. At the business level, companies that are experiencing pressure include tourism, accommodation, travel, and aviation companies, while others are actually gaining momentum to grow, such as technology and telecommunications companies (Donthu & Gutafsson, 2020). Sherif (2020) and

Agustin (2021) found that the performance of sharia shares in the consumer goods, mining, trade, and information technology sectors was better than the performance of the market itself during Covid-19. Therefore, it is important to analyze the impact of the Covid-19 pandemic event study on capital market performance through relevant portfolio analysis.

From the perspective of the efficient-markets framework, information shocks, including the COVID-19 pandemic, alter capital-market equilibrium by being reflected in stock prices, thereby generating a new pricing equilibrium that is observable in changes in expected returns (Okorie & Lin, 2021; Özkan, 2021; Ji et al., 2024; Huynh et al., 2021). This research will continue the analysis of the formation of a sharia stock portfolio against the background of Covid-19 taken from the constituents of the Indonesian Sharia Stock Index (ISSI) as well as a reference for market returns. Portfolio formation to produce expected return and portfolio risk using the Single Index Model (SIM) method will be carried out in each sector. Furthermore, to analyze whether the returns generated by the portfolio reflect inferior or superior performance, a portfolio performance evaluation is needed. One of the analytical processes is conducted using the widely employed risk-adjustment measure, the Sharpe Ratio. Recent literature confirms that the Sharpe Ratio remains a benchmark metric for evaluating portfolio performance on a risk-adjusted basis, while ongoing developments (e.g., the shrinkage-adjusted Sharpe) aim to mitigate in-sample bias and enhance out-of-sample predictive accuracy (Levy & Roll, 2023; Malhotra, Mooney, Poteau, & Russel, 2023; Kan, Wang, & Zheng, 2024). Therefore, it is hoped that this research can increase understanding of portfolio analysis and sharia stock performance during the Covid-19 pandemic.

LITERATURE REVIEW

Stock

Shares are securities that represent an investor's ownership interest in a company (Brealey, Myers, Allen, & Edmans, 2025) because shares are securities

that prove capital participation in the company (OJK, 2019). Provisions regarding sharia shares in Indonesia are regulated in DSN-MUI Fatwa No. 40/DSN-MUI/X/2003 concerning Capital Markets and General Guidelines for the Application of Sharia Principles in the Capital Market Sector and DSN-MUI Fatwa No. 135/DSN-MUI/V/2020 concerning Shares. According to the Financial Services Authority (2019), the Sharia Securities List (DES) is a collection of securities that comply with sharia principles in the capital market.

Efficient Capital Market and Event Study

According to the efficient market theory, capital markets are considered efficient if they swiftly and accurately process information. Traditional assumptions include homogeneous beliefs and common expectations among investors, all receiving identical information. However, recent literature challenges these assumptions, demonstrating that information processing varies across investors, introducing heterogeneous beliefs and information asymmetries into modern models of market efficiency (Sharma, Dutta, & Mukherjee, 2025; Park, 2024). Security prices in balanced market conditions will persist until new information changes them to a new balanced price. If this reaction occurs quickly and accurately, then such market conditions are called efficient markets (Hartono, 2017). Fama's 1970s framework continues to be upheld in contemporary literature: markets efficiency is classified into weak-form, semi-strong–form, and strong-form efficiency. Weak-form implies that current prices reflect all past price information; semi-strong means prices fully incorporate all publicly available information; and strong-form asserts that prices reflect both public and private (insider) information (MDPI, 2024).

According to Hartono (2017), event studies are studies that study the capital market's reaction to an event in the form of information published in the form of an announcement. According to Tandelilin (2018), an event study is research that analyzes the impact of the announcement of information on security prices. Using an event-study framework, researchers can identify whether observed market reactions are attributable to a pre-specified event by

estimating abnormal returns around the event window and conducting placebo/pre-event checks (Miller, 2023).

Capital Asset Pricing Model (CAPM)

Capital Asset Pricing Model (CAPM) is a balance model that describes the relationship between return and risk using one variable, namely Beta (β) in balanced market conditions. According to Tandelilin (2018), in the CAPM balance model, the beta value greatly influences the expected return on a risky asset. The higher the beta value, the higher the level of expected return expected by investors.

According to Febrianto and Rachman (2016), not all assumptions in the standard CAPM can be accepted by Muslim investors. There is an assumption that is contrary to sharia principles, namely the assumption that all investors can lend or borrow an unlimited amount of funds at a risk-free interest rate. This assumption also makes the next assumption, namely the possibility of short sales. The conventional concept of a risk-free rate is incompatible with Sharia principles, which prohibit interest (riba). Consequently, modern Islamic-finance literature proposes replacing this component with Sharia-compliant alternatives—such as profit-sharing returns like mudharabah deposits—that serve the same benchmark function without violating religious precepts (Assyakiri et al., 2024). This means that the standard formula in CAPM can be modified to become Sharia CAPM (SCAPM). Short sale transactions themselves are declared not permitted based on DSN-MUI Fatwa No. 80/DSN-MUI/III/2011 concerning the Application of Sharia Principles in Equity Securities Trading Mechanisms in the Regular Market of the Stock Exchange.

Optimal Portfolio with Single Index Model

A portfolio is a diversified collection of financial assets—such as equities, fixed-income instruments, and cash equivalents—held together to pursue a specific set of financial goals while balancing risk and return (Jin, 2024). The optimal portfolio is the portfolio chosen by investors based on their preferences for return and risk from the various choices contained in the

efficient portfolio collection (Tandelilin, 2018). An efficient portfolio is one that delivers a higher expected return for the same variance or a lower variance for the same expected return (Fransisca et al., 2024). The assumption in the optimal portfolio is that investors are risk averse (Tandelilin, 2018) and act rationally (Hartono, 2017). According to Hartono (2017), Markowitz's optimal portfolio is not really an optimal portfolio but is optimal for the smallest portfolio variance (minimum variance portfolio).

The Single Index Model and CAPM are developments from Markowitz's basic portfolio selection theory, where SIM and CAPM complement the shortcomings of the Markowitz method, which only includes risky assets without considering the rate of return on risk-free assets. The mathematical calculations in SIM regression are identical to CAPM. Thus, according to Hadiyoso, Firdaus & Sasongko (2015), it is possible to modify the mathematics in SIM as in SCAPM introduced. This is done by replacing the risk-free asset return rate component based on conventional interest rates with another risk-free asset return rate that is in accordance with sharia principles.

Portfolio Performance Evaluation

Portfolio performance evaluation remains a crucial step to determine whether an investment strategy outperforms or underperforms the market, with risk-adjusted measures such as the Sharpe ratio widely applied as benchmarks (Kyriazis, 2022). The Sharpe ratio, by relating excess returns to portfolio risk, continues to be the most commonly used risk-adjusted metric for assessing portfolio performance in both academic research and practical investment management (Le et al., 2023). Sharpe ratio calculations can be used to evaluate market performance (Ex Post CML), namely with the formula (arm – arf) / σm). If SRp is greater than Ex Post CML, it indicates that portfolio performance outperforms market performance, and vice versa (Tandelilin, 2018).

DATA AND METHODS

Research Design and Data Sources

This type of research is quantitative research with descriptive statistical analysis. Research data in the form of weekly closing prices of single shares and market closing was obtained from the Indonesia Stock Exchange taken from the investing.com website, while the SR011 Retail Sukuk yield data was obtained from the Press Statement on Sales Results of the SR011 Series Retail Government Sukuk by the Directorate General of Financing and Risk Management, Ministry of Finance of the Republic of Indonesia. The data will then be analyzed using the Single Index Model method to form a sectoral portfolio of sharia shares and calculate expected portfolio returns and portfolio risk. Meanwhile, portfolio performance analysis is based on the Sharpe Ratio.

The sample in this study was selected using a purposive sampling method. Purposive sampling includes non-probability on a purposive basis, namely determining objects to be sampled based on certain objectives (Sukardi, 2018). The sample selection criteria in this research include:

1. Shares listed in the Indonesian Sharia Stock Index (ISSI) for the period March 2019 to February 2021.
2. Not carrying out corporate actions in the form of stock splits and reverse stock.
3. Distribute dividends in 2019, 2020, or 2021.
4. Including the 10 largest capitalization stocks in their sector (IDX-IC).

The input required for analysis is quantitative data in the form of time series. The type of data used in this research is secondary data. The data required in this research includes:

1. Weekly sharia stock closing prices.
2. Weekly Indonesian Sharia Stock Index (ISSI) closing points.
3. SR011 Sukuk yield level.
4. Data on dividend distribution by issuers.

The scope of the research is divided into 2 (two) periods, namely the period before the Covid19 Pandemic and the period during the Covid19 Pandemic. Each period is limited to one year so that the total scope of the period is 2 (two) years. The first period starts March 3, 2019, until March 1, 2020, before the announcement of the coronavirus in Indonesia, while the second period starts from March 8, 2020, to February 28, 2021. The focus of this research is the return and risk components of sharia stocks and the ISSI sharia stock market index in the period from March 3, 2019, to 2020. February 28, 2021.

Data Analysis Techniques

The analytical technique used to analyze data and test hypotheses is quantitative analysis with a descriptive statistical approach. This goes through several stages as follows:

1. Determining sharia shares that are candidates for preparing a sectoral portfolio of sharia shares and calculating data to form the portfolio using the Single Index Model. The portfolio is formed based on 2 (two) periods, namely before and during Covid-19.
2. Measuring the performance of the sharia stock sectoral portfolio using the Sharpe Ratio for two periods.
3. Hypothesis testing through a difference test between the performance of sharia stock sectoral portfolios before and during Covid-19 using 2 paired sample t-tests.

RESULTS AND DISCUSSION

Formation of an Optimal Sectoral Portfolio of Sharia Shares

The first step in forming an optimal sectoral portfolio of sharia shares is to determine the realized return of the shares selected as the sample in the previous section. The average sectoral returns of sharia stocks between the periods before and during Covid-19 show differences, where before Covid-19 the average sectoral returns were all negative while during Covid-19 they were all positive, as in Table 1 below:

Table 1. Sharia stock sectoral return statistics before Covid-19 and during Covid-19.

	Enrg.	**Basic**	**Ind.**	**Cyc.**	**NC.**	**Heal.**	**Fin.**	**Prop.**	**Tech.**	**Infra.**	**Tran.**
Before Covid-19											
Min	-10,2%	-10,8%	-5,2%	-4,9%	-9,2%	-9,4%	-12,2%	-7,4%	-14,1%	-9,0%	-7,4%
Max	6,1%	9,9%	4,6%	5,7%	4,2%	6,5%	4,6%	7,3%	13,5%	5,6%	11,3%
Avg	**-0,7%**	**-0,3%**	**-0,1%**	**-0,1%**	**-0,1%**	**-0,2%**	**-0,4%**	**-0,4%**	**-0,8%**	**-0,3%**	**-0,3%**
During Covid-19											
Min	-16,2%	-18,3%	-10,3%	-14,7%	-16,0%	-14,1%	-17,8%	-14,3%	-15,3%	-18,9%	-8,7%
Max	14,9%	14,5%	10,2%	8,0%	14,1%	14,1%	23,3%	19,0%	35,3%	15,3%	12,4%
Avg	**0,8%**	**1,7%**	**0,5%**	**0,2%**	**0,4%**	**0,9%**	**1,5%**	**0,6%**	**1,9%**	**0,5%**	**1,0%**

Sumber: Data Diolah (2024)

A change in the average sectoral return of sharia shares in a positive direction can provide a good signal for the formation of market return performance in a positive direction, which in turn provides an opportunity for the formation of a sharia stock portfolio with better performance. This can be proven empirically through the next steps.

After determining the realized return from selected sharia stocks, the second step is to determine the return from the market index (Rm). The following is a statistical summary of ISSI returns for the period before and during Covid-19:

Table 2. Expected market return and ISSI risk before and during

Before Covid-19		**During Covid-19**	
Min	-7,58%	Min	-12,96%
Max	4,11%	Max	6,88%
Expected return [E(Rm)]	**-0,33%**	Expected return [E(Rm)]	**0,28%**
Market Risk (σ^2m)	0,04%	Market Risk (σ^2m)	0,12%

Source: Data processed by researcher.

Based on the table above regarding ISSI market return performance in the two periods, it is known that there has been a change in the form of an

increase in expected market return performance from being negative before Covid-19 to positive during Covid-19.

The third step is to determine the return on risk-free assets. The performance of SR011 Sukuk as a proxy for risk-free assets has previously been proven in research by Subekti, Abdurakhman & Rosadi (2019), Widianingsih (2019), and Hakim, Hamid & Meera (2016). To estimate stock returns, the sukuk yield proxy is the closest to the performance of the reference interest rate for estimating stock returns in both conventional and sharia indices and in both short- and long-term periods. Therefore, this study uses a risk-free asset proxy from the SR011 Tribe yield.

Through a press statement from the Director General of Financing and Risk Management, Ministry of Finance of the Republic of Indonesia regarding the Sales Results of the SR011 Series Retail Government Sukuk, the SR011 reward/coupon rate is 8.05% per year. This reward level is then decomposed according to the number of weeks in determining the return on the shares that make up the portfolio. The number of weeks for one year before Covid-19 and during Covid-19 was 52 weeks each, so the decomposition result of the SR011 sukuk return rate was 0.158%.

Fourth step. After determining the realized stock return, realized return, expected market return, and the level of return from risk-free assets, stock alpha (αi), stock beta (βi), expected stock return [E(Ri)], and unsystematic risk or stock residual variance ($\sigma^2 \varepsilon i$) as candidates for optimal portfolio composition, they can be analyzed.

Based on the analysis carried out, the average expected sectoral stock return overlaps with unsystematic risk and alpha. Meanwhile, the average beta value of sectoral shares shows a pattern that is not identical to alpha, expected return, and unsystematic risk, where beta is a value that shows sensitivity to movements in market performance in general.

The fifth step is the selection of shares that are included in the optimal portfolio from the candidate shares for the optimal portfolio selected based on purposive sampling.

Table 3. Proportion of shares in the optimal portfolio.

IDX-IC sector	**Optimal Portfolio Proportion of Shares**	
	Before Covid-19	During Covid-19
1. *Energy*	0%	HRUM (46%), TCPI (24%), KKGI (10%), ELSA (8%), RAJA (7%), AKRA (5%)
2. *Basic Materials*	MDKA (31%), ANTM (28%), BRPT (23%), INCO (16%), DFKT (2%)	MDKA (32%), ANTM (17%), BRMS (16%), SMBR (14%), INCO (10%), TPIA (7%), DFKT (4%), WSBP (1%)
3. *Industrials*	IMPC (68%), KBLI (32%)	IMPC (56%), ARNA (24%), MARK (10%), SKRN (5%), UNTR (4%)
4. *Noncyclicals*	CLEO (66%), ULTJ (34%)	PALM (33%), MYOR (30%), GOOF (22%), SIMP (13%), JPFA (2%)
5. *Cyclicals*	MNCN (50%), MSIN (50%)	TURI (58%), SCMA (40%), MAPI (2%)
6. *Healthcare*	SILO (80%), SRAJ (20%)	HEAL (26%), MERK (21%), KAEF (15%), KLBF (15%), MIKA (14%), DVLA (6%), TSPC (4%)
7. *Finance*	BTPS (100%)	BRIS (100%)
8. *Property*	CTRA (100%)	JRPT (43%), PPRO (23%), CTRA (10%), INPP (7%), BEST (5%), SMRA (5%), DMAS (4%), PWON (3%)
9. *Technology*	MTDL (100%)	MLPT (57%), MCAS (43%)
10. *Infrastructure*	JKON (100%)	ISAT (48,4%), PTPP (24,6%), PPRE (20,2%), META (5,1%), WIKA (2,6%), WEGE (0,1%)
11. *Transportation*	AKSI (100%)	TRUK (55%), SMDR (35%), LRNA (11%)

Source: Data processed by researcher

The sixth step is to analyze the portfolio's expected return [E(Rp)] and portfolio risk, which is formed based on the grouping of sharia share sectors. The following is a summary table of expected portfolio returns and optimal portfolio risks for sharia share sectors:

Table 4. Expected return and optimal portfolio risk of sectoral sharia shares before and during Covid-19.

		Before Covid-19		During Covid-19	
11 IDX-IC		**E(Rp)**	**σ^2p**	**E(Rp)**	**σ^2p**
1	*Energy*	0,000%	0,000%	2,180%	1,145%
2	*Basic Materials*	0,302%	0,547%	1,990%	1,532%
3	*Industry*	0,411%	0,146%	0,933%	0,312%
4	*Noncyclical*	0,759%	0,203%	0,930%	0,483%
5	*Cyclical*	0,721%	0,554%	0,945%	0,628%
6	*Healthcare*	1,179%	0,540%	1,307%	1,495%
7	*Finance*	1,459%	0,422%	5,929%	4,426%
8	*Property*	0,160%	0,549%	0,754%	0,812%
9	*Technology*	1,038%	0,388%	2,582%	1,751%
10	*Infrastructure*	0,646%	0,417%	1,798%	2,481%
11	*Transportation*	0,601%	4,594%	1,575%	0,878%

Source: Data processed by researcher

Based on Table 4 above, the sectoral sharia share portfolios that meet the EV-Rule criteria in the period before Covid-19 come from the industrials, noncyclical, cyclical, healthcare, finance, technology, and infrastructure sectors, while the portfolios that meet the EV-Rule criteria in the period during Covid-19 come from the energy, basic materials, industrials, noncyclical, cyclical, finance, technology, and transportation sectors.

Analysis of optimal sectoral portfolio performance of sharia shares using the Sharpe Ratio

Table 5. Portfolio Sharpe Ratio and Market Sharpe Ratio Values

		Before Covid-19		During Covid-19	
11 IDX-IC		**SRp**	**SRm**	**SRp**	**SRm**
1	*Energy*	0,00000		0,18923	
2	*Basic Materials*	0,01951	-0,24166	0,14825	0,03609
3	*Industrials*	0,06631		0,11649	

4	*Noncyclical*	0,13338		0,09326
5	*Cyclical*	0,07575		0,08364
6	*Healthcare*	0,13906		0,08383
7	*Finance*	0,20033		0,27445
8	*Property & Real Estate*	0,00030		0,05237
9	*Technology*	0,14138		0,17385
10	*Infrastructure*	0,07572		0,09624
11	*Transportation*	0,02069		0,13799

Source: Data processed by researcher

Based on Table 5 above, it is known that in the period before Covid-19, the Sharpe Ratio value of the sectoral optimal portfolio showed a positive number above zero except for the Energy sector because there were no shares that were included in the criteria for making up the optimal portfolio. The market Sharpe Ratio shows a negative number, namely below SRp for each sector. Thus, the sectoral optimal portfolio performance in the period before Covid19 can be said to have outperformed market performance. The sectoral optimal portfolio Sharpe Ratio value was obtained by the finance sector, while the lowest value was obtained by the property & real estate sector.

In the period during Covid-19, the market Sharpe Ratio increased positively to 0.03609 but was still below the SRp value for all sectors. This shows that the sectoral optimal portfolio has performance that outperforms market performance. The highest SRp value was obtained by the finance sector, while the lowest value was still obtained by the Property & Real Estate sector.

Inferential Statistical Test (Hypothesis Testing)

The following is a summary of the results of the normality test for the optimal sectoral portfolio performance of sharia shares (Sharpe Ratio) in the two research periods:

Table 6. Test results for normality data on optimal sectoral portfolio performance of sharia shares using Kolmogorov Smirnov and Ryan Joiner for the period before Covid-19 and during Covid-19

Period	**Kolmogorov Smirnov**				
	Mean	*St. Dev.*	*N*	*KS*	*P-Value*
Before Covid-19	0,07931	0,06688	11	0,173	> 0,15

During Covid-19	0,1318	0,06296	11	0,168	> 0,15
	Ryan Joiner				
	Mean	*St. Dev.*	*N*	*RJ*	*P-Value*
Before Covid-19	0,07931	0,06688	11	0,966	> 0,100
During Covid-19	0,1318	0,06296	11	0,952	> 0,100

Source: Data processed by researchers

Based on Table 6 above, it can be seen that the data normality test value using both Kolmogorov Smirnov (KS) and Ryan Joiner (RJ) in all research periods was always greater than the significance level (P-Value).

The next stage is testing the differences in average portfolio performance data using the 2 Paired Sample T-Test as well as testing the research hypothesis presented in the previous section.

Table 7. Summary of T test results on Portfolio Sharpe Ratio.

2 Paired Sample T-Test	**T-Value/T-Stat.**	**T-Critical**	**P-Value**	**Sig.**
	2,40	0,228	0,038	0,05

Source: Data processed by researchers

The final stage is decision-making through testing the research hypothesis by referring to the data presented in Table 6 above. It is known that the T-Count (T-Value/T-Stat) is greater than the T Table (T-Critical), so H0 is rejected and H1 is accepted. This means that there is a significant difference between the Sharpe Ratio of the optimal sectoral portfolio of sharia shares between the period before and during Covid-19 ($\mu_1 \neq \mu_2$).

Discussion

The results of this research show that the Covid-19 pandemic is one of the economic events that the stock exchange, especially the sharia stock index, responded to, but the response differed from one sector to another. There is sector performance that outperforms the performance of other sectors. This is in line with previous research by Ambarita & Soekarno (2013) "Sector Rotation Investment Strategy in Indonesia Stock Exchange".

The sectoral optimal portfolio of sharia shares formed using the Single Index Model method and the Sharpe Ratio performance test in this research

shows the results that the average portfolio performance (SRp) both in the period before Covid-19 and during Covid-19 outperforms market performance (SRm). This is in line with research by Priyanti, Nurhayati & Aminda (2020) "Analysis of Stock Portfolio Performance Evaluation using the Sharpe Method.". There was a significant increase in Sharpe Ratio performance in the period during Covid-19 compared to the period before Covid-19, which is also in line with research by Nugroho, Irawan & Aruddy (2021) "Portfolio Analysis Using Single Index Method in The Covid-19 Pandemic Period.".

The results of this research show that the Basic Materials, Energy or Mining, and Property & Real Estate sectors are among the sectors that show increased performance in line with research by Baiq Wardah (2021) "Optimal Sharia Stock Portfolio Policy on the Indonesian Sharia Stock Index (ISSI) using a Single Index during the Covid-19 Pandemic.". Apart from these three sectors, there are also other sectors that have shown increased performance during Covid-19, namely the transportation sector. This is in line with research by Dilla, Sari & Achsani (2020) "Estimating the Effect of the Covid-19 Outbreak Events on the Indonesia Sectoral Stock Return.".

However, the results of this research are not in line with the results of previous studies conducted by Chasanah, Abdullah, Valentika, Kitfiyani & Nuha (2020) "Analysis of the Optimal Portfolio Formation of Jakarta Islamic Index Shares during the Covid19 Pandemic", Nurhayati, Endri, Suharti, Aminda & Muniroh (2021) "The Impact of Covid19 on Formation and Evaluation of Portfolio Performance, A Case of Indonesia", and Wahyuningsih, Montolalu & Manurung (2021) "Single Index Model in Forming an Optimal Portfolio Before and During the Covid19 Pandemic for LQ45 Shares".

The difference in results with several previous studies is caused by several factors, including a shorter research period so that volatility still occurs due to market panic, the analytical tools used, reference for risk-free asset returns, stock sample selection criteria, and reference for stock closing prices or market points.

CONCLUSION

Conclusions from the results of the research and discussion in the previous section: several conclusions can be drawn as follows: (1) Based on the results of forming an optimal sectoral portfolio of sharia shares in the period between before and during Covid-19, there was an increase in return performance and the composition of shares making up the optimal sectoral portfolio during Covid-19, which was caused by the common response of securities to the increase in ISSI market performance towards positive values after previously being negative in the period before Covid-19. The portfolio performance produced by calculating the Sharpe ratio has improved during the second period and always outperforms the market. The sectors that showed the best performance during Covid19 were Finance, Energy and Technology, which means that investors had a better chance of making a profit if they invested in these three sectors during the pandemic; (2) based on event study testing through a 2 paired sample T-Test on the Sharpe ratio of the optimal sectoral portfolio, the Covid19 incident has had a significant impact on the sectoral portfolio of sharia shares in particular and the sharia capital market in general; (3) based on the results of the Sharpe Ratio analysis of the portfolio, it was found that the average performance of the sharia stock portfolio increased during the period during the pandemic. This increase shows that, in general, the performance of sharia shares is good in the sense that there is nothing negative and it is getting better during the pandemic. This also indicates that Islamic shares have the opportunity to continue to be developed as an investment instrument, especially for hedging when economic conditions worsen in order to minimize risk through diversification strategies.

LIMITATIONS

The following is an explanation of the limitations of this research, namely (1) the period in this research only uses a time span of one year before Covid19 and one year during Covid19. Precisely the weekly closing data from

March 3 2019 to 1 March 2020 and 8 March 2020 s.d. February 28, 2021; (2) the reference for risk-free asset returns only uses the SR011 Retail Sukuk yield as a proxy for the BI-Rate interest rate, while there are other proxy options such as SBIS, Islamic bank deposit ratio, corporate sukuk yield, and so on; (3) the method for forming a stock portfolio in this research only uses the Single Index Model (SIM), while there are other method options such as Markowitz, Constant Correlation Model (CCM), Capital Asset Pricing Model, and so on; and (4) the portfolio performance analysis method in this research only uses one method, namely the Sharpe Ratio, while there are other method options such as the Treynor Index and Jensen's Alpha.

REFERENCES

Assyakiri, A. S., Muslimin, M., & Faisol, A. (2024). Comparing CAPM and SCAPM for Sharia-compliant portfolios: Mudharabah as a substitute for the risk-free rate (2019–2023). International Journal of Economics and Capital Markets, 9(1), 171–181.

Baek, E., Mohanty, S. K., & Glambosky, E. (2020). Impact of COVID-19 on Stock Markets: Evidence from Developed and Emerging Economies. International Journal of Finance & Economics, 25(4), 459-471.

Baig, Ahmed S., Butt, Hassan A., Haroon, Omair & Rizvi, Syed A. D. (2021). "Death, Panic, Lockdowns and US Equity Markets: The Case of COVID-19 Pandemic". Finance Research Letters, 38 (2021) 101701.

Brealey, R. A., Myers, S. C., Allen, F., & Edmans, A. (2025). Principles of Corporate Finance (10th ed.). McGraw-Hill Education.

Chasanah, Sri I. U., Abdullah, S., Valentika, N., Kiftyani, U. & Nuha, A. R. (2020). "Analysis of Optimal Portfolio Formation in Jakarta Islamic Index (JII) Stocks During the Covid-19 Pandemic". Jurnal Sains dan Matematika UNPAM, Vol. 3 No. 1. 54-67.

Chauhan, S. S., Suri, P., Twala, B., Priyadarshi, N., & Ali, F. (2025). Exploring the relationship between macroeconomic indicators and sectoral indices of the Indian stock market. F1000Research / Figshare. https://doi.org/10.6084/m9.figshare.28123442

Dilla, Salsa, Sari, Linda K. & Achsani, Noer A. (2020). "Estimating The Effect of The Covid19 Outbreak Events on The Indonesia Sectoral Stock Return". Jurnal Aplikasi Manajemen dan Bisnis, Vol. 6 No. 3. 662-668.

Donthu, Naveen & Gutafsson, Anders. (2020). "Effect of COVID-19 on Business and Research". Jornal of Business Research, 117. 284-289.

Fransisca, D. C., Sukono, Chaerani, D., & Halim, N. A. (2024). Robust portfolio mean-variance optimization for capital allocation in stock investment using the genetic algorithm: A systematic literature review. Computation, 12(8), 166. https://doi.org/10.3390/computation12080166.

Hartono, J. (2017). Portfolio theory and investment analysis. Yogyakarta: BPFE.

Huynh, T. L. D., Foglia, M., Nasir, M. A., & Angelini, E. (2021). Feverish sentiment and global equity markets during the COVID-19 pandemic. Journal of Economic Behavior & Organization, 188, 1088–1108. https://doi.org/10.1016/j.jebo.2021.05.024.

Ji, X., Bu, N. (Tom), Zheng, C., Xiao, H., Liu, C., Chen, X., & Wang, K. (2024). Stock market reaction to the COVID-19 pandemic: An event study. Portuguese Economic Journal, 23(1), 167–186. https://doi.org/10.1007/s10258-022-00227-w.

Jin, Y. (2024). The Role of Portfolio Management in Achieving Financial Goals. Journal of Stock & Forex Trading, 11, Article 273. https://doi.org/10.35248/2168-9458.24.11.273.

Jones, Charles P. (2013). Investments Analysis and Management. Hoboken, NJ: Wiley.

Kan, R., Wang, X., & Zheng, X. (2024). In-sample and out-of-sample Sharpe ratios of multi-factor asset pricing models. Journal of Financial Economics, 155, Article 103837. https://doi.org/10.1016/j.jfineco.2024.103837.

Korkmaz, T. (2022). Stock market development and economic growth: Evidence from Singapore. Future Business Journal, 8(1), 1–13. https://doi.org/10.1186/s43093-022-00144-6.

Kyriazis, N. A. (2022). A survey on efficiency and profitable trading opportunities in cryptocurrency markets. Annals of Operations Research, 312(1), 135–157. https://doi.org/10.1007/s10479-020-03759-9.

Le, T. H., Pham, L., & Nguyen, D. K. (2023). Portfolio performance evaluation with higher-moment risk-adjusted measures: Evidence from international equity markets. Mathematics, 11(3), 543. https://doi.org/10.3390/math11030543.

Levy, M., & Roll, R. (2023). The Shrinkage Adjusted Sharpe Ratio: An Improved Method for Mutual Fund Selection. Journal of Investing, 32(2), 7–23. https://doi.org/10.3905/joi.2022.1.252

Liu, Hai Yue, Manzoor, Aqsa, Wang, Chang Yu, Zhang, Lei & Manzoor, Zira. (2020). "The COVID-19 Outbreak and Affected Countries Stock Markets Response." International Journal of Environmental Research and Public Health, Vol. 17. 2800.

Malhotra, D. K., Mooney, T., Poteau, R., & Russel, P. (2023). Assessing the performance and risk-adjusted returns of financial mutual funds. International Journal of Financial Studies, 11(4), 136. https://doi.org/10.3390/ijfs11040136.

MDPI. (2024). Review on Efficiency and Anomalies in Stock Markets. Economies, 12(1), Article 20. https://doi.org/10.3390/economies12010020.

Miller, D. L. (2023). An introductory guide to event study models. Journal of Economic Perspectives, 37(2), 203–230. https://doi.org/10.1257/jep.37.2.203.

Nugroho, Sulistyo A., Irawan, Tony & Aruddy. (2021). "Portfolio Analysis Using the Single Index Method in the Covid19 Pandemic Period". International Journal of Research and Review, Vol. 8. Issue 6. 215-225

Nurhayati, Immas, Endri, Endri, Suharti, Titing, Aminda, R. S. & Muniroh, Leny. (2021b). "The Impact of Covid19 on Formation and Evaluation of Portfolio Performance: A Case of Indonesia". Investment Management and Financial Innovations, Vol. 18. No. 3. 63-73.

OECD. (2025). Asia Capital Markets Report 2025: Equity markets. Paris: OECD Publishing.

Okorie, D. I., & Lin, B. (2021). Adaptive market hypothesis: The story of the stock markets and COVID-19 pandemic. The North American Journal of Economics and Finance, 57, 101397. https://doi.org/10.1016/j.najef.2021.101397.

Özkan, O. (2021). Impact of COVID-19 on stock market efficiency: Evidence from developed countries. Research in International Business and Finance, 58, 101445. https://doi.org/10.1016/j.ribaf.2021.101445.

Park, J. (2024). Heterogeneous Beliefs Model of Stock Market Predictability [Preprint]. arXiv. https://doi.org/10.48550/arXiv.2406.08448.

Priyanti, N., Nurhayati, H., & Aminda, M. (2020). Stock Portfolio Performance Evaluation Analysis using the Sharpe Method. Journal of Management and Finance, 6(2), 75-83.

Riaz, A., Ullah, A., & Muhammad, B. (2025). The impact of global supply chain pressure on the stock market: A sectoral view. Humanities and Social Sciences Communications, 12, Article 284.

Sharma, K., Dutta, A., & Mukherjee, R. (2025). An analysis of capital market through the lens of integral transforms: exploring efficient markets and information asymmetry [Preprint]. arXiv. https://doi.org/10.48550/arXiv.2506.06350.

Sukardi. (2018). Educational Research Methodology, Competencies and Practices. Jakarta: Bumi Aksara.

Tandelilin, Eduardus. (2018). Investment Analysis and Portfolio Management. Yogyakarta: BPFE.

Wahyuningsih, Vita I., Montotalu, C. E. J. C. & Manurung, Tohap. (2021). "Single Index Model in Forming an Optimal Portfolio Before and During the Covid-19 Pandemic on LQ-45 Shares". d'Cartesian: Journal of Mathematics and Applicationsi, Vol. 10 No. 1. 24-30.

Widianingsih, Yuni P. N. (2019). "Analysis of Capital Asset Pricing Model According to Shariah Principle: Indonesian Evidence". International Journal of Economics, Business and Accounting Research (IJEBAR), Vol. 3. Issue 3. 171-184.

Widiyanti, Marlina & Sari, Novita. (2019). "Study of the Sharia Capital Market in Influencing Economic Growth in Indonesia". Ekonomikawan: Journal of Economics and Development Studies, Vol. 19. No. 1. 21-30.

World Federation of Exchanges (WFE). (2025). Do stock markets contribute to economic growth? Evidence from 77 countries. London: WFE Research.

Zhao, M., & Park, H. (2024). Research on the dynamic interrelationship between economic policy uncertainty and stock market returns. Journal of Risk and Financial Management, 17(8), 347. https://doi.org/10.3390/jrfm17080347