Irwaningtyas, Maulidya Firdaus; Sukmaningrum, Puji Sucia; Rusgianto, Sulistya

Article

Investor sentiments, the COVID-19 pandemic and Islamic stock return volatility in Indonesia

ISRA international journal of islamic finance

Provided in Cooperation with:
International Shariʿah Research Academy for Islamic Finance, Kuala Lumpur

Reference: Irwaningtyas, Maulidya Firdaus/Sukmaningrum, Puji Sucia et. al. (2023). Investor sentiments, the COVID-19 pandemic and Islamic stock return volatility in Indonesia. In: ISRA international journal of islamic finance 15 (3), S. 100 - 114. https://journal.inceif.edu.my/index.php/ijif/article/download/613/439/1175. doi:10.55188/ijif.v15i3.613.

INVESTOR SENTIMENTS, THE COVID-19 PANDEMIC AND ISLAMIC STOCK RETURN VOLATILITY IN INDONESIA

Maulidya Firdaus Irwaningtyas
Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia
Puji Sucia Sukmaningrum
Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia
Sulistya Rusgianto
Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia

Received
6 July 2021

Revised
24 August 2021
24 February 2022
10 September 2023
20 September 2023

Accepted
21 September 2023

ABSTRACT

Purpose — This study aims to investigate the effect of investor sentiments, as measured by the Consumer Confidence Index (CCI), and the impact of COVID-19 on Islamic stock return volatility proxied by the Indonesia Sharia Stock Index (ISSI).

Design/Methodology/Approach — This study employs the GARCH (1,1) model to test the impact of investor sentiments and COVID-19 on the volatility of Islamic stock returns using monthly data from July 2011 to December 2021.

Findings — The findings of this study indicate that investor sentiments negatively impact the volatility of Islamic stock returns; while COVID-19 caused a high and persistent effect on Islamic stock return volatility.

Originality/Value — Research on investor behaviour and volatility in the Islamic capital market (ICM) is limited. Investor sentiment is an essential variable in predicting the volatility level of stock returns. Investors must be aware of major events that are happening globally, such as COVID-19. This research specifically focuses on the sentiments of Islamic stock investors in Indonesia.

Research Limitations/Implications — This study uses a traditional GARCH model for variance and is limited to the Islamic stock market in Indonesia. Only a few variables were assessed, notably investor sentiments and COVID-19 on the impact of stock return volatility, using monthly data.

Practical Implications — Research on market volatility will significantly help investors, companies and regulators determine strategies to overcome risks. This research illustrates how investor behaviour can influence the movement of stock returns. A global event, notably the COVID-19 pandemic, proved to have significantly impacted the conditions of ICMs.

Keywords — Consumer Confidence Index, COVID-19, Financial empowerment, GARCH, Indonesia, Investor sentiments, Sharia Stock Index, Volatility

Article Classification — Research paper

ISRA International Journal of Islamic Finance (IJIF)
Vol. 15 • No. 3 • 2023
pp. 100–114

eISSN:
2289-4365

DOI:
doi.org/10.55188/ijif.v15i3.613

INTRODUCTION

The main objective of investing according to Sharīʿah (Islamic law) principles is attainment of material and spiritual benefits. There are two essential rules to be followed when conducting trade transactions according to Sharīʿah principles: the rules of *al-kharāj bi al-ḍamān* (income is a reward for the liability borne) and the rules of *al-ghunm bi al-ghurm* (benefits are rewards for readiness to bear losses). Every investment contains risk. The greater the expected return, the greater the risk. There is no risk-free concept per se from the Islamic perspective. For investment not to fall within a speculative activity, it should begin with planning and end with an evaluation. Investment analysis has various forms, including observing the incidence of past stock trading to predict future beneficial shares and investment risk.

Behavioural finance predicts investors' vulnerability to biased behaviour (Rupande *et al.*, 2019). For example, some investors trust developing information more than doing fundamental analysis. Thus, investor behaviour can also determine stock price movements (Spilioti, 2016). One of the main factors in behavioural finance is investor sentiments. Investor sentiments—that is, their belief in future cash flows and investment risks—have a substantial impact on any particular company and on the stock market in general (Baker & Wurgler, 2007). Many investors make investment decisions based on sentiments by following good or bad news or other factors such as herding and avoiding losses (Thampanya *et al.*, 2020).

Previous studies have also stated that security demand shocks can boost investor sentiments. These shocks and limited arbitrage capacity can be the main reasons for stock market anomalies (Brown & Cliff, 2004; Baker & Wurgler, 2006). In particular, investor sentiments may be central in explaining the misalignment of asset prices and stock market dynamics (Black, 1986; Baker & Wurgler, 2007). Thus, research on investor sentiments is necessary for two reasons. First, it underlines the need for investors to estimate stock market bias. Second, it highlights how extra returns can be earned by taking advantage of this bias (Fisher & Statman, 2000).

One measurement that can be an indicator of investor optimism and pessimism, in aggregate, is the Consumer Confidence Index (CCI). The CCI is a measuring tool used to examine household consumer behaviour that is impacted by economic factors that influence spending and saving decisions (Benjamin, 2008). Research that examines investor sentiments as measured by the CCI shows that the latter significantly affects the movement of stock market returns and that the CCI can be an excellent variable for predicting expected returns (Schmeling, 2009; Hsu *et al.*, 2011).

One recent crucial variable has been the COVID-19 pandemic. The stock market is a macroeconomic barometer, so the impact of infectious diseases on the economy is directly reflected in the volatility of stock market prices (Bai *et al.*, 2020). The COVID-19 pandemic that hit the world in 2020 dramatically influenced stock market returns. COVID-19 had a negative stock return effect in all countries and affected areas. Confirmed COVID-19 cases significantly impacted the performance of the leading stock index, with those in Asia experiencing a more substantial decline in abnormal returns compared to other countries (Liu *et al.*, 2020). Many studies show that stock market returns can react to pandemic diseases (Chen *et al.*, 2007; Chen *et al.*, 2009; Ichev & Marinč, 2018; Alam *et al.*, 2020; Al-Awadhi *et al.*, 2020; Bai *et al.*, 2020; Bowman *et al.*, 2020; Baker *et al.*, 2021).

Volatility causes statistical changes in a security's price. For the general public, volatility is often equated to risk. Stock market volatility in emerging markets is generally much higher than in developed markets (Bekaerta & Harvey, 1997; Wang, 2007). Various studies show that volatility in financial markets can erode investor participation, increase the cost of capital, and hinder business expansion by companies. Therefore, high fluctuations can disrupt the growth and development of the capital market, which plays an important role in long-term national economic growth (Levine & Zervos, 1998).

This research focuses on the Islamic stock market in Indonesia. Indonesia is a developing country with the most significant Muslim population globally. About 88.67 per cent of Indonesia's population is Muslim, representing nearly 13 per cent of the world's Muslim population (World Population Review, 2023). In addition, Indonesia's Islamic capital market (ICM) is rapidly developing at a global level. The Indonesia Stock Exchange (IDX) received the best ICM award at the Global Islamic Finance Awards, the highest honour in the ICM industry (GIFA, 2021).

Therefore, this study aims to investigate the impact of investor sentiments, proxied by the CCI, and COVID-19, on the volatility of Indonesia's Islamic stock return from 2011–2020. This study uses the Generalised AutoRegressive Conditional Heteroskedasticity (GARCH) to predict return volatility.

The research is structured as follows: the second section describes the overview of ICM conditions and COVID-19 in Indonesia, volatility, previous analysis on investor sentiments, and CCI. The third section discusses the research methodology, data sources, empirical models and operational variables. The next section then presents the hypothesis testing and interpretation of research results and analysis. The last section summarises the research results and provides the limitations and implications of the study.

LITERATURE REVIEW

Islamic Capital Market in Indonesia

Indonesia is one of the countries that led the ICM's development. Indonesia provides the world's first Sharia Trading Online Trading System (SOTS) platform. This platform can accommodate investors who undertake transactions according to Islamic law (IDX, 2019). Fourteen securities companies adopted SOTS and had Sharīʿah certification from DSN-MUI in 2021. Based on IDX data, the number of Sharīʿah investors who transacted through SOTS increased by 22.45 per cent to 105,174 at the end of 2021 compared to 85,891 investors in 2020 (OJK, 2021).

The Indonesian Sharia Stock Index (ISSI) showed an increase and gradual recovery at the end of 202. The ISSI increased by 53.07 per cent compared to its lowest position that year. Jakarta Islamic Index (JII) increased by 60.06 per cent and JII-70 increased by 67.18 per cent (OJK, 2020). The ICM has shown resilience during the pandemic by leveraging on existing opportunities, especially technology, and by digitalising financial services.

COVID-19 Pandemic in Indonesia and the Stock Market

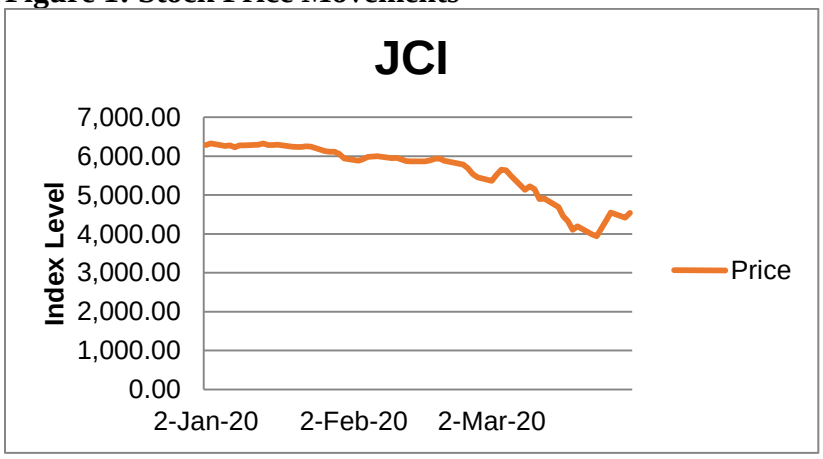
COVID-19 had a significant negative effect on stock market returns in most countries. The stock market in Asian countries reacted faster to the plague. Confirmed COVID-19 cases significantly and adversely impacted the performance of the leading stock index, with those in Asia

experiencing lower stock returns (Liu *et al.*, 2020). Bai *et al.* (2020) found that the pandemic significantly impacted stock market volatility. Different reactions can also occur due to government actions in handling pandemics.

On 2 March 2020, President Joko Widodo announced two Indonesians were infected with the COVID-19 virus. This condition was difficult to predict, so the community was forced to survive amid uncertainty. The announcement inhibited economic activities because several regions implemented regional quarantine (lockdown) and limited human contact to reduce transmission.

The stock movement was bearish; i.e., it experienced reduction, since the emergence of COVID-19 in 2020 (see **Figure 1**). On the day the first COVID-19 case was announced in Indonesia, the Composite Stock Price Index (or Jakarta Composite Index, JCI) decreased by 91 points (1.67 per cent). The JCI went further down as the number of COVID-19 cases increased. As per data on 9 March 2020, the JCI had experienced a 6.5 per cent decline. This condition forced the regulator to implement the trade termination policy (trading HALT) to prevent the stock market from plunging further after the World Health Organization (WHO) declared the disease to have reached pandemic status (Simorangkir, 2020).

Figure 1: Stock Price Movements



Source: IDX (2020)

Market Volatility

Market volatility in the financial market illustrates the distance between the fluctuations in the value of an instrument in a certain period. The existence of volatility leads to risks and uncertainties for market players. Therefore, the interest of market participants to invest is unstable. It also impacts on the global financial market. In statistical science, volatility is interpreted as a change in fluctuations against the average financial time series of the securities return (Sari *et al.*, 2018).

The simplest estimation tool for measuring volatility is the standard deviation, which can provide uniform observation weights. However, standard deviation has two weaknesses: symmetrical and constant (Yavas & Dedi, 2016). High return volatility shows the securities value has fluctuated dramatically. Conversely, low return volatility indicates that the securities

value is at a low level of volatility. In that case, changes in securities value will tend to move stably (Bumi, 2013).

Investor Sentiment

Investor sentiment relates to beliefs about future cash flows and investment risks based on fundamentals. Investor sentiment consists of investor beliefs, moods and emotions. The positive feeling makes investors more confident about their ability to evaluate situations and their willingness to take risks. Several studies have documented a significant relationship between investor sentiments and stock returns, both time-series and cross-sectional (Schmeling, 2009). However, the intensity of the relationship between investor sentiments and stock returns varies widely across countries. This difference can be caused by stock characteristics and cultural and institutional differences in respective countries (Corredor *et al.*, 2013).

The impact of investor sentiments on conventional stock markets of developed countries has been widely discussed in the financial literature. According to theoretical and empirical studies, investor sentiments substantially impact stock prices and returns. Many studies prove that noise traders or irrational investors may not apply the company's fundamental analysis when making investment decisions. Therefore, unpredictable changes caused by irrational investors can significantly impact stock prices. Even if rational investors and irrational investors act together, the trading behaviour of irrational investors can have a significant effect on stock prices (Black, 1986; Shefrin & Statman, 1994; Fisher & Statman, 2000; Brown & Cliff, 2004; Baker & Wurgler, 2006, 2007).

Based on the authors' observations, only a few studies have examined the relationship between investor sentiments and stock returns in developing countries. For example, in Mexico, the effect of investor sentiments on stock returns seems to change over time, indicating that there are specific periods where investor sentiments have a greater or lesser impact on stock market returns. In addition, small-cap stocks have a more significant correlation coefficient with investor sentiments than large-cap stocks (Baker & Wurgler, 2006; Liston-Perez *et al.*, 2018). Other studies have shown that investor sentiments are considered a systematic risk factor in the Indian market and are vital in predicting future returns and volatility (Kumari & Mahakud, 2015).

Consumer Confidence Index

The CCI is a leading economic indicator to measure optimism or consumer sentiments towards the economy. The CCI was developed through a monthly survey of household consumers that is conducted by the Central Bank of Indonesia. It represents consumers' beliefs about overall economic conditions, general price levels, household income and consumption plans for the next three to six months. The survey was conducted on around 4,600 households from the upper middle economic group (income IDR1 million and above) who were randomly selected (stratified random sampling) in 18 cities (Bank Indonesia, 2022).

The CCI reflects consumers' subjective state of mind, which cannot be inferred from economic variables. Several studies used the CCI as a proxy for investor sentiments and found that the CCI significantly affects the return of a stock market index. It also can be an excellent variable to predict the expected return. The findings of these studies are consistent with behavioural finance theory, which states that investor sentiments affect stock returns (Yacob *et*

al., 2020). Surprisingly, changes in the CCI have a more substantial effect on stock market returns in various countries than changes in the Business Confidence Index (BCI) (Sum, 2012). Another CCI-related research was conducted by Hsu *et al.* (2011) using the Granger-causality test. It proves that consumers consider stock returns the leading indicator in forecasting future situations.

Research conducted by Vuong and Suzuki (2020) examining the relationship of future stock returns in six Asia-Pacific stock markets shows that the CCI can be a valid predictor of stock returns in the short term. In addition, Rahman (2015) researched the impact of the CCI on stock market return volatility in Turkey. The results show that changes in rational and irrational investor sentiments positively impact stock returns on the Istanbul Stock Exchange.

Most research on investor sentiments with stock market returns focuses on developed markets, and only a few studies have been carried out in the context of emerging markets. In addition, previous studies have focused more on conventional stocks, and there has been no research on the Islamic stock market. Therefore, this study aims to examine the effect of investor sentiments on Islamic stock market returns in a developing country, Indonesia, by using the return value of the ISSI. Since the CCI measures how optimistic consumers are about the economic conditions, it is used to obtain insights into the impact of irrational investors' views on their investment decisions.

METHODOLOGY

Data and Variables

This study uses monthly data from July 2011 to December 2021. **Table 1** shows the formulae and data sources used.

Table 1: Formulae and Data Sources

Variable	Formula	Data Sources
Return of ISSI	$\frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$	Indonesia Stock Exchange (IDX)
CCI	$\frac{CCI - CCI_{t-1}}{CCI_{t-1}}$	Bank Indonesia
COVID-19 Pandemic	Dummy Variable: 0 = the month when COVID-19 pandemic did not occur 1 = the month when COVID-19 pandemic did occur	
Exchange Rate (USD)	$USD_t = \frac{USD_t - USD_{t-1}}{USD_{t-1}}$	Ministry of Trade
Dow Jones Islamic Market World Index (DJIMI)	$DJMI_t = \frac{DJMI_t - DJMI_{t-1}}{DJMI_{t-1}}$	Yahoo Finance

Source: Authors' own

Volatility Estimation Using the GARCH Model

The analytical model used in this study is the GARCH model. It was first developed by Bollerslev (1986) to generalise the ARCH model. The GARCH model includes the lagged conditional variance terms as autoregressive to fill a drawback of the ARCH model that looked like a moving average specification (Asteriou & Hall, 2021). GARCH includes a conditional

variant left as an autoregressive. In the GARCH model, the conditional residual variance (h_t) is affected by the previous period's residual and the previous period's conditional residual variance.

This study uses the GARCH(1,1) model as a reference for the return volatility of the ISSI. The mean equation return model used is as follows:

$$return_t = \alpha + \beta_1 USD_t + \beta_2 DJIMI + u_t \quad (1)$$

The residual (u_t) was assumed identically independently normally distributed (iid) with a zero mean and a constant variance (σ^2). Meanwhile, the variance model used for the ISSI return volatility is as follows:

$$h_t = \gamma_0 + \sum_{i=1}^{p} \gamma_1 \, u_{t-j}^2 + \sum_{j=1}^{q} \delta_1 \, h_{t-i} + CCI + Covid\_19 \quad (2)$$

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 shows the descriptive statistics of the collected data. The data consists of 630 observations covering four variables for 126 months between July 2011 and December 2021.

Table 2: Descriptive Statistics

Variable	Mean	Median	Max	Min	Std. Dev.
ISSI	-0.004077	0.008688	0.126794	-0.976448	0.097831
CCI	113.0468	116.2500	128.2000	77.30000	11.96568
COVID-19	0.174603	0.000000	1.000000	0.000000	0.381143
USD	12746.15	13351.00	16367.00	8508.000	1909.571
DJIMI	3402.973	2978.950	6454.140	1918.110	1100.571

Source: Authors' own

The Indonesian stock market was in a downtrend during the observation period. It is indicated by the negative average return value of -0.004. Meanwhile, the return standard deviation of 0.9764 indicates a relatively volatile market. The CCI as a consumer indicator tends to be volatile, as indicated by the standard deviation value of 11.9657, with a minimum value of 77.3 and a maximum value of 128.2. The dummy variable of COVID-19 was assigned for 22 observations, which covered the period from March 2020 to December 2021. As for the control variables, the USD and DJIMI show high volatility at 1909.571 and 1100.571 standard deviations compared to the average value of 12746.15 and 3402.973, respectively.

GARCH(1,1) Volatility Modeling

Table 3 shows the regression results of the GARCH(1,1) model for modelling the ISSI return volatility.

Table 3: GARCH(1,1) Test Result

	Coefficient	**Std. Error**	**Prob.**
Mean Equation			
C	0.005751	0.005011	0.2510
USD	-0.715861	0.214774	0.0009
DJIMI	0.406964	0.145409	0.0051
Variance Equation			
γ_0	0.000875	0.000179	0.0000
ARCH(γ_1)	0.259855	0.152679	0.0888
GARCH(δ_1)	0.557351	0.097469	0.0000
CCI	-0.038387	0.011737	0.0011
COVID-19	0.002864	0.000893	0.0013

Source: Authors' own

The mean equation shows that the US dollar has a significant and negative effect on the return of the ISSI at a one per cent significance level. It means that the weakening of the Indonesian rupiah causes market returns to decrease, and vice versa. Since foreign investors have become relatively big players in the Indonesian stock market, the finding indicates that the US dollar has a significant role in transmitting foreign investor behaviour into the Indonesian Islamic stock market. Meanwhile, the DJIMI, as a representation of the global stock market, significantly and positively impacts the ISSI's return. The significant effect of the control variables, the US dollar and DJIMI, indicates that the Indonesian stock market is cointegrated with other financial markets globally.

Based on the variance equation section in **Table 3**, the GARCH(1,1) volatility model can be written as follows:

$$h_t = 0.0009 + 0.26u_{t-1}^2 + 0.56h_{t-1} - 0.038CCI + 0.003Covid\_19 \quad (3)$$

The ARCH (γ_1) coefficient represents the effect of volatility information from the previous period, and GARCH (δ_1) coefficient measures the impact of the conditional variance from the previous period (Lim & Sek, 2013). Both ARCH and GARCH coefficients are statistically positive and significant at 10 and one per cent significance levels, respectively. It means large changes in stock returns seem to be followed by further large changes, and vice versa. The finding indicates a volatility clustering behaviour in the market in which the expected value of the magnitude of the disturbance terms may be greater (high volatility) in the riskier period than in other lower-risk periods (lower volatility).

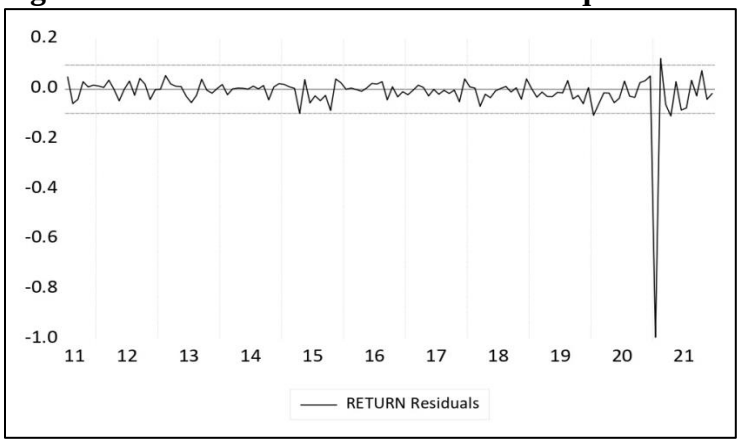
The results also show that the CCI has a substantially negative effect on the volatility of ISSI returns at the 99 per cent confidence level. Increasing customer sentiments represented by increasing CCI will make the market less volatile, and vice versa. On the contrary, COVID-19 significantly and positively affects the volatility of ISSI returns at the 99 per cent confidence level. It means that during the COVID-19 period, the stock market was more volatile than in other periods.

Effect of Investor Sentiments on Stock Return Volatility

The volatility of stock returns is an essential indicator for investors to determine the right time to sell, hold, or buy shares. This study provides evidence that behavioural factors are important determinants of stock volatility. Investors' expectations about the future can cause an increase or decrease in stock prices. Investor sentiments are motivated by their beliefs about future cash flows and investment risks (Baker & Wurgler, 2007). This behaviour also applies to the Islamic stock market in Indonesia, as shown by a negative significant effect of the CCI on the volatility of Islamic stock returns. Thus, this study's results align with previous studies' results, which confirm that the higher CCI value will cause a decrease in return volatility (Brown & Cliff, 2004; Verma & Soydemir, 2010; Yacob *et al.*, 2020).

The behaviour of stock return volatilities is illustrated in **Figure 2**, which shows the volatility of stock returns derived from residuals of the mean equation model. The figure explains the volatility of ISSI returns before being modelled with the GARCH approach. The figure shows the existence of volatility clustering, as discussed previously, in which there are some periods of higher volatility followed by periods of lower volatility.

Figure 2: Return Residuals of the Mean Equation

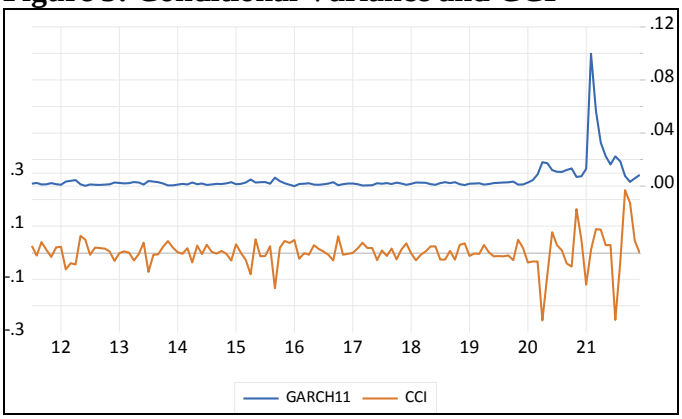


Source: Authors' own

Meanwhile, **Figure 3** shows the behaviour of conditional variance (GARCH) and CCI. The figure supports the finding of CCI's negative effect on market volatility in which the market reacts in the opposite direction in response to increasing or decreasing investor sentiments. The rising trend in CCI can be interpreted to mean the economic situation is good, making the market more calm and stable. Consumers have strong confidence and an optimistic attitude towards business or investment situations in the future. Positive expectations of economic conditions will motivate consumers to invest in the capital market and reduce the risk of uncertainty. It can minimise return volatility and investment risk in the stock market (Brown & Cliff, 2004; Verma & Soydemir, 2010; Rahman, 2015).

The finding implies that Islamic stock investors can use CCI conditions to predict stock return volatility. The risk perceived by investors will decrease when CCI increases. In addition, regulators must pursue various policies and stimulants to increase consumer confidence, which will positively impact the CCI and improve capital market stability.

Figure 3: Conditional Variance and CCI



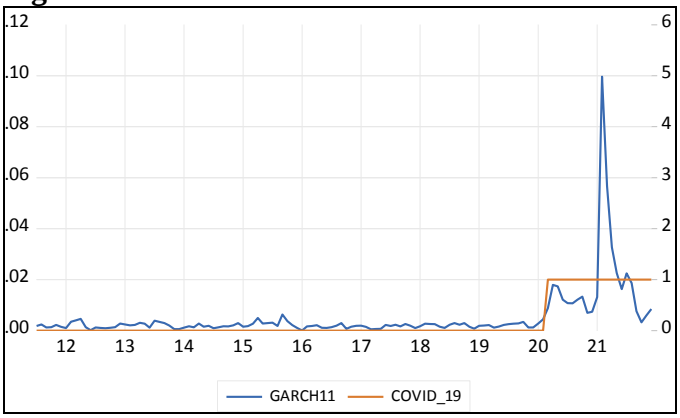
Source: Authors' own

Effect of COVID-19 on Stock Return Volatility

This study also found that the COVID-19 coefficient has a positive and significant effect, which means that COVID-19 caused extreme shocks to the Indonesian Islamic stock market. **Figure 4** shows the explosive Islamic stock return volatility during the COVID-19 pandemic. The impact of the COVID-19 pandemic began to appear in the Indonesian capital market in early 2020. However, the new virus that caused the pandemic was identified in Wuhan, China at the end of 2019. The negative stock market response occurred in early 2020, which can be expected to be related to the announcement of the first case of COVID-19 by the President of the Republic of Indonesia on 2 March 2020. Meanwhile, the explosion of market volatility in early 2021 could be attributed to the increasing number of victims and the protracted handling of COVID-19.

The stock market responded to the COVID-19 case as a negative signal, giving rise to negative investor sentiments, which was indicated by high stock return volatility. It could be due to investors' concerns about companies' performance during the COVID-19 pandemic. They would look for companies whose performance is less affected by the pandemic. An outbreak could result in irrational market responses, for example, stock selling, panic and the negative impact of uncertainty on the stock market (Chen *et al.*, 2007).

Figure 4: Conditional Variance and COVID-19



Source: Authors' own

The finding implies the vital role of the capital market regulator during such a crisis in the future. In such crisis conditions, regulations should be directed towards stabilising capital market conditions. The COVID-19 pandemic can be classified as a Black Swan event, an unexpected and high-impact event with inevitable effects.

CONCLUSION

The main objective of this study is to investigate the impact of investor sentiments and the condition of the COVID-19 pandemic on the volatility of Islamic stock returns in Indonesia. Investor sentiment is proxied by the CCI, and Islamic stock returns are proxied by the ISSI's return. The study also included an IDR exchange rate variable against the USD and the Dow Jones Islamic Market Index (DJIMI) as proxies for the global market. This study uses the GARCH model, the most suitable model for measuring return volatility in the stock market because it can meet the characteristics of time series data that allow heteroscedasticity and dependence on past and present fluctuations.

This study proves that behavioural factors, in this case, investor sentiments, are essential determinants of stock volatility. Investor sentiments are motivated by investors' beliefs about future cash flows and investment risks. CCI has a significant dampening effect on the volatility of Islamic stock returns in Indonesia. When the CCI value is higher, investors tend to have positive expectations about the Indonesian economy. This optimism can reduce uncertainty, which helps reduce stock return volatility. The study also found that the COVID-19 pandemic significantly impacted return volatility. It indicates that investors' confidence declined and were doubtful about economic conditions, as indicated by increased volatility in stock returns.

The study also revealed that the global market, proxied by the USD exchange rate and the DJIMI, significantly affects the Islamic stock returns. The finding implies that the behaviour of the domestic market cannot be separated from global market behaviour. Therefore, investors must be aware of changes in the global market.

Stock market players may use this study's results to predict stock returns. In addition, investors can develop a portfolio strategy when market sentiments change or a big global event occurs. For regulators, developing policies that maintain or increase investor sentiments is necessary. Regulators must also formulate an appropriate approach to stabilise the capital market during and after the occurrence of significant global events.

This research is limited to the Islamic stock market in Indonesia, and there is a possibility of different results in other countries. The study employs a simple GARCH model with two studied variables in the variance model. It is suggested that future research add different variables and expand the study to include more countries. In addition, high-frequency data, such as daily or weekly data, could be used. Using more advanced volatility modelling is also recommended to get more profound results.

REFERENCES

Al-Awadhi, A.M., Alsaifi, K., Al-Awadhi, A. & Alhammadi, S. (2020), 'Death and contagious infectious diseases: impact of the COVID-19 virus on stock market returns', *Journal of Behavioral and Experimental Finance*, Vol. 27. https://doi.org/10.1016/j.jbef.2020.100326

Alam, M.N., Alam, M.S. & Chavali, K. (2020), 'Stock market response during COVID-19 lockdown period in India: an event study', *Journal of Asian Finance, Economics and Business*, Vol. 7 No. 7, pp. 131–137. https://doi.org/10.13106/jafeb.2020.vol7.no7.131

Asteriou, D. & Hall, S.G. (2021), *Applied Econometrics*, 4th edn., Macmillan Education Limited.

Bai, L., Wei, Y., Wei, G., Li, X. & Zhang, S. (2020), 'Infectious disease pandemic and permanent volatility of international stock markets: a long-term perspective', *Finance Research Letters*. https://doi.org/10.1016/j.frl.2020.101709

Baker, M. & Wurgler, J. (2006), 'Investor sentiment and the cross-section of stock returns', *The Journal of Finance*, Vol. LXI No. 4, pp. 1645–1680.

Baker, M. & Wurgler, J. (2007), 'Investor sentiment in the stock market', *The Journal of Economic Perspectives*, Vol. 21 No. 2, pp. 129–151. https://doi.org/10.1257/jep.21.2.129

Baker, M., Wurgler, J., Zhou, L., Yang, C., Hudson, Y., Yan, M., Zhang, D., Affuso, E., Lahtinen, K. D., Podgorny, B., Sreenu, N., Naik, S., Khawaja, M.J., Alharbi, Z.N., Ahmad, Z., Ibrahim, H., Tuyon, J., Tauni, M.Z., Rao, Z.U.R. & Schmeling, M. (2021), 'A study of factors influencing investor behaviour towards gold as an investment avenue with factor analysis', *Finance Research Letters*, Vol. 37 No. 4, pp. 394–408. https://doi.org/10.1108/IJSE-07-2020-0496

Bank Indonesia (2022), 'Metadata Indeks Keyakinan Konsumen Indonesia', available at: https://www.bi.go.id/id/statistik/Metadata/Survei/Documents/1-Metadata-SK-2022.pdf (accessed 7 September 2023).

Bekaerta, G. & Harvey, C.R. (1997), 'Emerging equity market volatility', *Journal of Financial Economics*, Vol. 43 No. 1, pp. 29–77. https://doi.org/10.1016/S0304-405X(96)00889-6

Benjamin, C. (2008), *Consumer Confidence - Global Monitor of Consumer Sentiment Index Reports and Country Update on Consumer Confidence Changes*, Marshall Place Associates.

Black, F. (1986), 'Noise', *The Journal of Finance*, Vol. XLI No. 3, pp. 529–543. https://doi.org/10.1111/j.1540-6261.1986.tb04513.x

Bollerslev, T. (1986), 'Generalized autoregressive conditional heteroskedasticity', *Journal of Econometrics*, Vol. 31, pp. 307–327. https://doi.org/https://doi.org/10.1016/0304-4076(86)90063-1

Bowman, R.G., Li, K., Chen, M.-H., Jang, S.C. (Shawn), Kim, W.G., Buhagiar, R., Cortis, D., Newall, P.W.S., Kowalewski, O., Śpiewanowski, P., Al-Awadhi, A.A.M., Alsaifi, K., Alhammadi, S., Liu, H., Manzoor, A., Wang, C., Zhang, L., Manzoor, Z. & Warner, J.B. (2020), 'Infectious disease pandemic and permanent volatility of international stock markets: a long-term perspective', *Finance Research Letters*, Vol. 27 No. 1. https://doi.org/10.1016/j.frl.2020.101709

Brown, G.W. & Cliff, M.T. (2004), 'Investor sentiment and the near-term stock market', *Journal of Empirical Finance*, Vol. 11 No. 1, pp. 1–27. https://doi.org/10.1016/j.jempfin.2002.12.001

Bumi, O.C. (2013), 'Volatilitas return saham di indonesia: pola dan perbandingan dengan Malaysia dan Singapura', *Jurnal BPPK*, Vol. 6 No. 1, pp. 61–74.

Chen, C.-D., Chen, C.-C., Tang, W.-W. & Huang, B.-Y. (2009), 'The positive and negative impacts of the SARS outbreak: a case of the Taiwan industries', *The Journal of Developing Areas*, Vol. 43 No. 1, pp. 281–293. https://doi.org/10.1353/jda.0.0041

Chen, M.-H., Jang, S.C. (Shawn) & Kim, W.G. (2007), 'The impact of the SARS outbreak on

Taiwanese hotel stock performance: an event-study approach', *International Journal of Hospitality Management*, Vol. 26 No. 1, pp. 200–212. https://doi.org/10.1016/j.ijhm.2005.11.004

Corredor, P., Ferrer, E. & Santamaria, R. (2013), 'Investor sentiment effect in stock markets: stock characteristics or country-specific factors?', *International Review of Economics and Finance*, Vol. 27, pp. 572–591. https://doi.org/10.1016/j.iref.2013.02.001

Fisher, K.L. & Statman, M. (2000), 'Investor sentiment and stock returns', *Financial Analysts Journal*, Vol. 56 No. 2, pp. 16–23. https://doi.org/10.2469/faj.v56.n2.2340

GIFA (2021), '11th Global Islamic Finance Awards 2021', available at: https://www.gifaawards.com/winners.php (accessed 25 August 2023).

Hsu, C.-C., Lin, H.-Y. & Wu, J.-Y. (2011), 'Consumer confidence and stock markets: the panel causality evidence', *International Journal of Economics and Finance*, Vol. 3 No. 6, pp. 91–98. https://doi.org/10.5539/ijef.v3n6p91

Ichev, R. & Marinč, M. (2018), 'Stock prices and geographic proximity of information: evidence from the Ebola outbreak', *International Review of Financial Analysis*, Vol. 56, pp. 153–166. https://doi.org/10.1016/j.irfa.2017.12.004

IDX (2019), 'Pasar modal Syariah', available at: https://idxislamic.idx.co.id/edukasi-pasar-modal-syariah/pasar-modal-syariah/ (accessed 7 September 2023).

IDX (2020), *IDX Monthly Statistics*, available at: https://www.idx.co.id/id/data-pasar/laporan-statistik/statistik (accessed 7 September 2023).

Kumari, J. & Mahakud, J. (2015), 'Does investor sentiment predict the asset volatility? Evidence from emerging stock market India', *Journal of Behavioral and Experimental Finance*, Vol. 8, pp. 25–39. https://doi.org/10.1016/j.jbef.2015.10.001

Levine, R. & Zervos, S. (1998), 'Capital control liberalization and stock market development', *World Development*, Vol. 26 No. 7, pp. 1169–1183. https://doi.org/10.1016/S0305-750X(98)00046-1

Lim, C.M. & Sek, S.K. (2013), 'Comparing the performances of GARCH-type models in capturing the stock market volatility in Malaysia', *Procedia Economics and Finance*, Vol. 5 No. 13, pp. 478–487. https://doi.org/10.1016/S2212-5671(13)00056-7

Liston-Perez, D., Torres-Palacio, P. & Bayram, S.G. (2018), 'Does investor sentiment predict Mexican equity returns?', *International Journal of Managerial Finance*, Vol. 14 No. 4, pp. 484–502. https://doi.org/10.1108/IJMF-05-2017-0088

Liu, H., Manzoor, A., Wang, C., Zhang, L. & Manzoor, Z. (2020), 'The COVID-19 outbreak and affected countries stock markets response', *International Journal of Environmental Research and Public Health*, Vol. 17 No. 8, pp. 1–19. https://doi.org/10.3390/ijerph17082800

OJK (2020), 'Peluang di tengah tantangan: laporan perkembangan pasar modal Syariah 2020', in *Direktorat Pasar Modal Syariah*, available at: https://www.pasarmodalsyariah.com/p/publikasi/laporan-perkembangan (accessed 7 September 2023).

OJK (2021), 'Laporan perkembangan pasar modal Syariah 2021: bertumbuh di masa pemulihan ekonomi', available at: https://pasarmodalsyariah.id/storage/files/laporan-perkembangan-pasar-modal-syariah-2021-1653957519.pdf (accessed 7 September 2023).

Rahman, M.S.H. (2015), 'The relationship between individual investor sentiment, stock return and volatility: evidence from the Turkish market', *International Journal of Emerging Markets*, Vol. 10 No. 3, pp. 504–520. https://doi.org/10.1108/IJoEM-07-2012-0060

Rupande, L., Muguto, H.T. & Muzindutsi, P.F. (2019), 'Investor sentiment and stock return volatility: evidence from the Johannesburg Stock Exchange', *Cogent Economics and Finance*, Vol. 7 No. 1, pp. 1–16. https://doi.org/10.1080/23322039.2019.1600233

Sari, L.K., Achsani, N.A. & Sartono, B. (2018), 'Pemodelan volatilitas return saham: studi kasus pasar saham asia', *Jurnal Ekonomi Dan Pembangunan Indonesia*, Vol. 18 No. 1, pp. 35–52.

Schmeling, M. (2009), 'Investor sentiment and stock returns: some international evidence', *Journal of Empirical Finance*, Vol. 16, pp. 394–408. https://doi.org/10.1016/j.jempfin.2009.01.002

Shefrin, H. & Statman, M. (1994), 'Behavioral capital asset pricing theory', *The Journal of Financial and Quantitative Analysis*, Vol. 29 No. 3, pp. 323–349.

Simorangkir, E. (2020), *Entah Apa yang Merasukinya, IHSG Nyungsep 6,5%*.

Spilioti, S.N. (2016), 'Does the sentiment of investors explain differences between predicted and realized stock prices?', *Studies in Economics and Finance*, Vol. 33 No. 3, pp. 403–416. https://doi.org/http://dx.doi.org/10.1108/SEF-11-2014-0218

Sum, V. (2012), 'Random effects of business and consumer confidence on stock market returns: cross-sectional evidence', *SSRN Electronic Journal*, pp. 1–7. https://doi.org/10.2139/ssrn.2117679

Thampanya, N., Wu, J., Nasir, M.A. & Liu, J. (2020), 'Fundamental and behavioural determinants of stock return volatility in ASEAN-5 countries', *Journal of International Financial Markets, Institutions and Money*, Vol. 65. https://doi.org/10.1016/j.intfin.2020.101193

Verma, R. & Soydemir, G. (2010), 'The impact of U.S. individual and institutional investor sentiment on foreign stock markets', *The Journal of Behavioral Finance*, Vol. 7 No. 3, pp. 128–144. https://doi.org/10.1207/s15427579jpfm0703

Vuong, N.B. & Suzuki, Y. (2020), 'Impact of financial development on sentiment-return relationship: Insight from Asia-Pacific markets', *Borsa Istanbul Review*, Vol. 20 No. 2, pp. 95–107. https://doi.org/10.1016/j.bir.2020.01.003

Wang, J. (2007), 'Foreign equity trading and emerging market volatility: evidence from Indonesia and Thailand', *Journal of Development Economics*, Vol. 84 No. 2, pp. 798–811. https://doi.org/10.1016/j.jdeveco.2006.05.001

World Population Review (2023), 'Muslim population by country 2023', available at: https://worldpopulationreview.com/country-rankings/muslim-population-by-country (accessed 7 September 2023).

Yacob, N., Mustapha, M., Abdullah, S.M.M. & Ya'acob, F.F. (2020), 'Incorporating investor behaviour in portfolio management in developed and emerging OECD stock markets', *Polish Journal of Management Studies*, Vol. 22 No. 1, pp. 611–625. https://doi.org/10.17512/pjms.2020.22.1.39

Yavas, B.F. & Dedi, L. (2016), 'An investigation of return and volatility linkages among equity markets: a study of selected European and emerging countries', *Research in International Business and Finance*, Vol. 37, pp. 583–596. https://doi.org/10.1016/j.ribaf.2016.01.025

ABOUT THE AUTHORS

Maulidya Firdaus Irwaningtyas graduated with a bachelor's degree in Islamic Economics from the Department of Islamic Economics, Faculty of Business and Economics, Universitas Airlangga, Indonesia. Currently, she is a finance staff in a shipping and freight forwarding company.

Puji Sucia Sukmaningrum is an associate professor in Islamic finance at the Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia. She holds a Bachelor of Management (Universitas Airlangga, Surabaya, Indonesia), is a Chartered Islamic Finance Professional (INCEIF University, Malaysia), and is currently a doctoral student in Islamic economics (Universitas Airlangga, Surabaya, Indonesia). Her research interests are in Islamic capital markets, *takāful*, Islamic banking and Islamic social finance. She is the corresponding author and can be contacted at puji.sucia@feb.unair.ac.id

Sulistya Rusgianto, Phd, is an assistant professor in Islamic finance at the Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Indonesia. He holds a bachelor's degree in Economics (Universitas Airlangga, Indonesia), a master's in Islamic Finance (INCEIF University, Malaysia), and a PhD in Economics and Muamalat Administration (USIM, Malaysia).