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BITCOIN VS GOLD: WHICH ONE IS THE MOST POWERFUL IN BOOSTING THE SHARIAH EQUITY INDEX? GLOBAL EVIDENCE

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Abstract:

The study explores the most powerful between Bitcoin and Gold in boosting the Shariah Equity Index in Malaysia, the United Arab Emirates, China, Indonesia, The United States of America (USA), Japan, Oman, and Saudi Arabia in the short and long term. The study uses analysis of the first and second stages of the Granger Causality Test and Vector Error Correction Model (VECM), then Impulse Response Function (IRF) and Variance Decomposition (VDC) over the period 2013 to 2021. The finding proves that only Gold can affect the Islamic Equity Index in the short term, then Bitcoin and Gold proved to contribute equally to the Islamic Equity Index in the long term. However, Bitcoin has the potential to provide positively correlated shocks and dominate the value of Islamic equity indices in the long term. The results demonstrate that government intervention is decisive in maintaining the stability of the Shariah Equity Index from future Bitcoin threats. The study's finding has practical implications for Islamic capital market Investors, Managers, and Authorities.

Key words: *Bitcoin, gold, shariah equity index, investment*

1. Introduction

Technological developments have encouraged innovation in the economic and financial sectors, so transaction activity has increased (Ball, 1957; Çalışkan, 2015; Feyen et al., 2021; Zekos, 2003). In addition, technology has become an alternative solution for the recovery from economic and financial crises (Alshubiri et al., 2019; Astarloa et al.,

2021; Berawi, 2021). Even the crisis of 2008-2009 has been a catalyst for the creation of financial innovation in overcoming security issues, speed and distribution of financial transactions through cryptocurrency products, namely Bitcoin (Nakamoto, 2008). Bitcoin has revolutionized the transaction system to become more modern through the adoption of blockchain with cryptography, Peer to Peer (P2P) technology, and independent transactions (G. Chen et al., 2018; Harvey, 2014; Rawat et al., 2020). Even central banks have adopted cryptocurrency technology through the Central Bank Digital Currency (CBDC) as a legitimate payment (Bank of England, 2020; Bianco, 2020; Cunha et al., 2021; Engert & Fung, 2017; Richards et al., 2020). In addition, Bitcoin has also grown as the most promising asset and commodities after the Corona Virus Disease 2019 (COVID-19) crisis (Baur et al., 2017; Bouri, Molnár, et al., 2017; Selgin, 2015). Today, Bitcoin has transformed into an alternative hedge and safe haven for investors (Bouri, Molnár, et al., 2017; Hung, 2021; G. Wang et al., 2019) due to its speed in recovering from high volatilities (Antonakakis et al., 2019; Bouri et al., 2019; Paule-Vianez et al., 2020; Urquhart & Zhang, 2019). However, the Islamic capital market has been in the spotlight for its suspension in economic and financial crises (Mensi et al., 2020; Narayan & Phan, 2017; G. Tuna, 2019). This phenomenon encourages most entities to obtain shariah levels so that their shares can also be traded on the Islamic capital market (Alam et al., 2017; Ayedh et al., 2019; Maiyaki, 2013).

The development of Islamic capital markets has encouraged transaction activity and the value of company securities. Even some countries have launched Sharia Equity Indexes because the risks offered are lower than other investments during the crisis, so many investors are interested (Ashraf & Mohammad, 2014; Hassan et al., 2017; Kayed & Hassan, 2011). Islamic capital markets focus on aspects of shariah compliance, including banning interest, uncertainty, gambling, and illicit commodities, so it is different from conventional capital markets (Karim et al., 2010; Mustapha & Masih, 2017). Then, there are considerations to the financial aspects, including the terms of the debt-to-equity ratio smaller than 33% and the debt-to-asset ratio smaller than 37% (Erdoğan et al., 2020; Jebran et al., 2017; Paltrinieri et al., 2019). Besides, the global Islamic capital market also showed an increase in total returns of up to 32.6% in 2019, as well as a year-on-year increase in the global shariah index of 13.6% between the period 2015 – 2020 (Ahmad et al., 2021; Islamic Financial Services Board, 2020), in addition, there are 1.6 billion Muslim populations or 23% of the world's population, contributing to the growth of Islamic Stock Exchange Markets (G. Tuna, 2019; V. E. Tuna et al., 2021). However, the existence of Islamic capital markets is threatened by Bitcoin, which has developed as a store of value and commodity assets (Baur et al., 2017; Paule-Vianez et al., 2020; Selgin, 2015; Sotiropoulou & Guégan, 2017), so there is a substantial interest to allocate investments in Bitcoin (Baur et al., 2017; Bouri, Molnár, et al., 2017; Thaker & Mand, 2021), Even global investment giants such as MicroStrategy, Grayscale Investment, Morgan Stanley Wealth Management, VanEck Global Investment Manager to the State of El Salvador have changed their investment portfolios to Bitcoin (Bonello, 2020; Deloitte, 2021; EFG Asset Management, 2021; Galindo & Shalett, 2021; VanEck, 2021), so bitcoin's influence on the capital market has grown stronger in recent years (Giudici & Abu-Hashish, 2019; Goodell & Goutte, 2021; Kurka, 2019; Matkovskyy & Jalan, 2019; Salisu et al., 2019). However, most

of the Global muslim community has rejected Bitcoin regarding halal or haram issues, fraud, speculative, terrorism funding to incompatible with Islamic financial principles (Abubakar et al., 2019; Baur et al., 2017; Meera, 2018; Polas et al., 2020; Teichmann, 2018; Whyte, 2019). Most Muslim communities prefer to allocate their investments to Gold because it can protect the value from uncertain economic conditions and under Islamic value (A. Abdullah, 2016; Ibrahim, 2012).

Gold has the best performance after the 2008-2009 crisis, with an increase of 18% per year (Gopaul et al., 2020), Even Gold volatility is only in the range of 14%, with a return of 24.20% in 2020. It is the highest performance compared to other commodities (Perlaky et al., 2021). Gulseven & Ekici (2021) said that Gold is a fundamental asset in the investment portfolio because of the small risk and increasing value. It acts as a hedge and safe haven (Wen & Cheng, 2018), Gold is considered for reuse as a financial standard to improve the post-crisis monetary system (Mohamad & Sifat, 2017). In addition, Gold proved to be able to maintain its purchasing power for many years before COVID-19 to affect volatility in the Islamic capital market (Bahloul et al., 2021; Suleman et al., 2021). However, it does not make Bitcoin lose its existence and decrease the value of assets (Naimy & Hayek, 2018; Poongodi et al., 2020; Salisu et al., 2019). Even Bitcoin has been transformed as a threat to the Islamic capital market industry through movement trends (Figure 1).

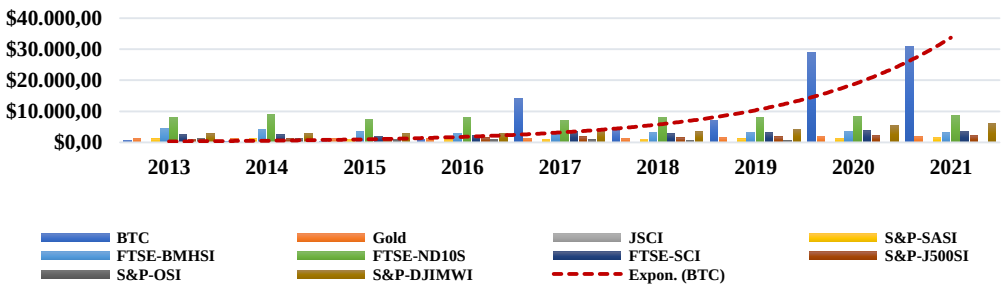

Figure 1. Bitcoin, Gold and Shariah Equity Index Trends

Source: investing.com, market insider, spglobal.com; Note: Bitcoin (BTC), Gold, Jakarta Shariah Composite Index (JSCI), S&P Saudi Arabia Shariah Index (S&P-SASI), FTSE Bursa Malaysia Hijrah Shariah Index (FTSE-BMHSI), FTSE NASDAQ Dubai 10 Shariah (FTSE-ND10S), FTSE Shariah China Index (FTSE-SCI), S&P Japan 500 Shariah Index (S&P-J500SI), S&P Oman Shariah Index (S&P-OSI), S&P Dow Jones Islamic Market World Index USA (S&P-DJIMWI), Data period 31 May 2013 – 16 July 2021

Figure 1 shows that Bitcoin is consistent with the upward movement trend during the period 2013 - 2021. Although the spread of COVID-19 has shaken the global economic and financial sectors, it has not resulted in a decrease in the value of Bitcoin in the annual period. Meanwhile, the Sharia Equity Index fluctuates. Even its performance in several countries decreased in 2020 - 2021. In addition, Gold also showed stagnant performance over the past few years. The decline in investment performance is strongly related to the impact of COVID-19, so almost all sharia issuers have poor financial performance (Abdullahi, 2021; Atayah et al., 2021; Golubeva, 2021). Besides, people's purchasing power for Gold also decreased by 28% at the beginning of the emergence of COVID-19 in

2020 (Street et al., 2021), which shows that not only people's consumption preferences are changing but also investment preferences (Aljanabi, 2021; Gupta et al., 2021). It can be seen from the explosion of the value of Bitcoin up to $ 23,665.78 per coin during 2019 - 2021(Investing.com, 2021).

Bitcoin Catalyst not only encourages the creation of decentralization finance with blockchain-based cryptocurrency products but also transforms as a good asset (Baur et al., 2017; Böhme et al., 2015; Kyriazis, 2021; Poongodi et al., 2020). Bitcoin is getting more popular, becoming hype among investors (Uddin et al., 2020). Even Zhang et al. (2021) and Kurka (2019) agreed that Bitcoin's extreme rise had impacted investments in capital markets and commodity goods through changing investment decisions and managing investors' risks. In addition, Uddin et al. (2020) and Rehman et al. (2020) said that Bitcoin's influence on Islamic and conventional capital markets has become stronger since the middle east political turmoil, Britain's Exit and the trade war between the United States of America (the USA) and China. That is because capital markets rely heavily on shocks in Bitcoin based on their correlation to stock returns (Hung, 2021). Narayan et al. (2019), Thaker & Mand (2021) and Zhang et al. (2021) confirmed that the explosive movement of Bitcoin has caused instability in the capital market. Even the impact of Bitcoin is more vital than macroeconomic conditions (Ahmed, 2021; Salisu et al., 2019), so Bitcoin becomes a magnet for everyone (Gil-Alana et al., 2020). In addition, Dyhrberg (2016) said that Bitcoin has the same hedging capabilities as Gold. However, Bouri, Jalkh, et al. (2017), Paule-Vianez et al. (2020) and Antonakakis et al. (2019) confirmed that Bitcoin proved more flexible than Gold and other investment assets in the face of crises through low correlation to commodities, oil and currencies (Uddin et al., 2020).

On the other hand, Zeng et al. (2020) and Bouri, Molnár, et al. (2017) said that placing Bitcoin as safe heaven is very risky due to its speculative and zero fundamental nature, thus potentially creating an economic bubble in the future (Cheah & Fry, 2015; López-Cabarcos et al., 2021). Mensi et al. (2020) revealed that hedging on Bitcoin is only limited to the short term because most governments have not regulated Bitcoin in the financial system (Sotiropoulou & Guégan, 2017), so it has not had a significant impact on Islamic capital markets. Meanwhile, Gold through intrinsic value, the value of store and regulation has been tested as a hedge and safe haven for decades (Baur, 2012; Baur & McDermott, 2010; Cheong, 2019; Dyhrberg, 2016; Othman et al., 2019), bahkan G. Tuna (2019) and Nagayev et al. (2016) mentioned that Gold directly affects the movement of Islamic capital markets, because Gold offers high returns with low risk, besides that the Muslim community believes that investing in Gold is a religious recommendation (Sifat & Mohamad, 2018). Lim & Masih (2017) said that there is no correlation between Bitcoin movements and Islamic capital markets, while Antonio et al. (2013), Madaleno & Pinho (2014), and Nagayev et al. (2016) conveyed that Islamic capital market movements are not influenced by Bitcoin, due to aspects of economic growth and commodity goods, even Bitcoin movements are also influenced by both aspects in bullish and bearish conditions (Bouri et al., 2018).

Currently, most studies on Bitcoin, Gold and Islamic Capital Markets lead to proof of which ones are most considered the best hedges and safe havens through various methods, including Quantile Regression, The Dynamic Conditional Correlation -

Generalized Autoregressive Conditional Heteroskedasticity (DCC-GARCH), and GARCH (Akhtaruzzaman et al., 2021; Bahloul et al., 2021; Baur & McDermott, 2010), in addition Chkili et al. (2021) also conducted tests through the DCC - Fractionally Integrated GARCH (DCC-FIGARCH) model to prove who is most useful as a safe haven between Bitcoin and Gold, if grouping the portfolio with Shariah stocks. While Mensi et al. (2020) and Rehman et al. (2020), in their research through the Approach wavelet Coherence (WTC), Cross-Wavelet Transformation (XWT), and Autoregressive Fractionally Integrated Moving Average – FIGARCH (ARFIMA-FIGARCH), conducted tests on co-movement and correlation between Bitcoin and Sharia Stocks. At the same time, some countries such as Malaysia, Indonesia, the USA are still conducting studies on sharia aspects and the legality of Bitcoin in economic activity (Evans, 2015; Polas et al., 2020; Rizqi Febriandika & Sukmana, 2018; Sotiropoulou & Guégan, 2017). However, there is still little understanding of the potential interaction between Bitcoin and Gold on the Islamic Capital Market in the future because Gold has been a favorite hedging instrument for Sharia issuers for decades (R. Robiyanto, 2018), so its stability can create a spillover effect on Sharia stocks (Mensi et al., 2017). In addition, Gold is one of the recommended investments in Islam (Agha et al., 2015; Hussin et al., 2013). Nevertheless, what if Bitcoin with high volatility contributes more than Gold to the Islamic Capital Market in the future.

This study contributes to the risk management literature with three approaches. First, the study aims to test the most powerful between Bitcoin and Gold in boosting the value of Islamic capital markets in the short and long term. Second, forecasting the most powerful shock between Bitcoin and Gold to the Islamic capital market in the future. Third, forecasting the most powerful component of the percentage value of Islamic Capital Market between Bitcoin and Gold. The study analyzed the dynamics between Bitcoin and Gold in boosting the value of the Islamic capital market. In addition, this forecasting aims to reduce the potential risk of investment. Then, the Islamic capital market can respond to the movement of Bitcoin and Gold with the right policies.

2. Literature Review

The New Era of Financial Innovation

Economic growth depends on supporting the development of knowledge science and technology, the dynamics of change force each entity to innovate to create the effective and efficient performance. It created a more modern system by adopting a digital approach to every economic and financial activity. The emergence of the digital era began with the adoption of the internet in all aspects, especially the global economy and finance, through the application of information technology, big data, artificial intelligence, cloud computing to the blockchain (S. Chen & Zhang, 2021; Fu et al., 2021). Jiao & Sun (2021) believes that digitalization in the economy will bring sustainable economic growth, but internal and external factors must be controlled. Although COVID-19 has accelerated the transition of conventional systems to digital, the digital approach must be carried out evenly (Gibson, 2003), so that there is no gap in technology access (van Deursen & van Dijk, 2014). The financial industry as economic support must take advantage of the

momentum by innovating in every aspect (Paun et al., 2019; Pomfret, 2010). Tufano (1989) proved that financial institutions that innovate products could reduce spending compared to their competitors. Miller (1992) and Achieng et al. (2015) believe financial innovation can generate low risk and increase the role of intermediaries. In addition, the availability of various transaction tools and ease of service access can increase capital mobility directly (Mishra, 2008).

Financial innovation has brought many changes in the aftermath of the 2008-2009 crisis, including the emergence of cryptocurrency products to become virtual payments, stores of value, and loyalty schemes to the community (Prieto Munoz, 2020). Cryptocurrency is considered the most significant financial innovation of the century through a peer-to-peer digital cash system to accelerate the process of transactions without intermediaries (J.-P. Li et al., 2021; Polat & Kabakçı Günay, 2021). Unlike other currencies, every transaction on cryptocurrency is transparent and recorded (Härdle et al., 2020; Rawat et al., 2020). In addition, transactions are very secure because cryptography algorithms cover them on a blockchain ledger (Nakamoto, 2008; Rejeb et al., 2021). Although cryptocurrency is a product of financial innovation, there is debate regarding regulation and financial consequences if it is used as a legitimate currency (Loke, 2015; Prieto Munoz, 2020) because cryptocurrencies use a decentralized system which means that the control center in the community not on financial authorities (Corbet et al., 2019). Moreover, as the first cryptocurrency, Bitcoin has gained recognition as a legitimate currency in El Salvador (Gorjón, 2021). Because it has a low cost, accessible and inclusive to reduce the dependence on dollars in foreign transactions, this phenomenon can bring progress to the digital economy and finance in El Salvador and globally. It could inspire other countries to regulate Bitcoin and other cryptocurrencies as legitimate payments (Arslanian et al., 2021).

Bitcoin as the Future of Digital Asset

Bitcoin catalyst has attracted attention for investors, financial institutions, regulators and the media, as it has grown fantastically in the last five years (J.-P. Li et al., 2021). However, at the beginning of its emergence, Bitcoin was often associated with criminal activity because it was used as payment for illegal transactions, money laundering and funding for terrorist activities (Butler, 2019; Teichmann, 2018). It impacts the perception of Bitcoin at the beginning of its presence (Harvey, 2014). In addition, most countries refuse to use Bitcoin as a currency because its value is very volatile and depends on market sentiment, so it has the potential to destabilise macroeconomics. Besides that, everyone must have good literacy about Bitcoin (Arslanian et al., 2021). Nevertheless, it does not affect large companies such as Tesla, Microsoft, Subway, Starbucks and PayPal to accept payments with Bitcoin (Bergman et al., 2019; J.-P. Li et al., 2021). Bitcoin was also transformed into a commodity asset through bitcoin futures contracts launched on the Chicago Mercantile Exchange (CME) and the Chicago Board Options Exchange (CBOE) in December 2017 (Corbet et al., 2018; López-Cabarcos et al., 2021). The transformation of Bitcoin as a digital asset and commodity has encouraged investors to invest due to its increasing value and widespread utilization of Blockchain technology (Poongodi et al., 2020). In addition, J.-N. Wang et al. (2020) said that Bitcoin

trading volume tends to be higher at the same time as trading opens on capital markets in Europe and the USA because Bitcoin is increasingly in demand so that it can have a negative and positive spillover effect on other assets under certain conditions (Paule-Vianez et al., 2020; Y.-J. Zhang et al., 2021).

The classification of Bitcoin as a digital commodity and asset is based on scarcity that is designed automatically through algorithms and centralized for validators to complete the consensus of each transaction competitively (Baur et al., 2017). Bitcoin is only available several 21 million coins without being added and deducted. Besides, bitcoin ownership can be obtained through mining, namely the validation process on each transaction on the blockchain made by validators. Miners automatically get a reward of 50 Bitcoins for the validation process carried out on each block in 2009. The award amount will decrease 2 times smaller every four years (halving) with automatic. Such as gold, whose mining process is equally complicated from year to year, creates the scarcity and long-term increase in the price of Bitcoin (Banthanavasi et al., 2014; Goorha, 2019). Even Kristoufek (2013) and (Bouoiyour & Selmi, 2015) said that the price formulation in Bitcoin cannot be explained by economic theory because its voltage is more influenced by demand and supply than inflation, interest rates, people's purchasing power and cash flow (Ciaian et al., 2016). López-Cabarcos et al. (2021) believe that investor decisions in Bitcoin ownership are firmly based on technical analysis and market sentiment, not on market data, due to its nature as a store of value and its ability to significantly increase the value of investment portfolios (Bouri et al., 2018; Brière et al., 2015; VanEck, 2021).

Switching Behaviors of Investment

Gold is one of the most desirable investments in the history of investing because it represents a symbol of wealth and prosperity. Besides that, Gold can provide benefits in the long term through hedging functions that offer a smaller level of risk than other investments (Garg, 2021; Singh & Nadda, 2013). Gold price increases are in line with economic conditions. Therefore, Gold investment is a solution in the face of inflation (Robiyanto Robiyanto et al., 2021; Shahbaz et al., 2014). In addition, Gold has an essential role in the monetary system because it is used as a foreign exchange reserve. Even some countries have Gold as a backup asset. In addition, currently conventional and Sharia banks in the regions of Malaysia, Indonesia, Pakistan, Turkey, Bahrain, Saudi Arabia and the United Arab Emirates also offer Gold investments in financing, instalments and pawns, so that access to Gold investments to the public is widespread (Deloitte & Touche, 2021; Ghazali et al., 2015). However, technological developments have brought other investment instruments closer to investors (ECLAC, 2021; Flor & Hansen, 2013), even innovation has created investment products that are easily accessible, without physicality and attractive returns, thus affecting investor behaviour (Nawaz & V. R., 2013; Yermack, 2015).

Before the emergence of the Bitcoin Catalys phenomenon, it was complicated to find promising investments after the economic crisis of 2008 – 2009, but technological developments have created investment options for investors (Sun et al., 2020). The investment decisions of individual investors are not only based on profits but also regulations and the potential for product popularity so that they can become the first generation to have more knowledge than others (Lin & Filieri, 2015). In addition, investors'

personal innovations also influence the switching behaviour of traditional to modern investments because most novice investors feel interested when they have opportunities for new investments that offer excellent returns (Liu & Tsyvinski, 2021; Sun et al., 2020). Later, Fisher & Yao (2017) and Lemaster & Strough (2014) said that some investors like to take significant risks for higher returns, but they also understand every consequence of investing decisions (Bucciol & Zarri, 2015; Jacobsen et al., 2014; Lammer et al., 2019).

3. Methodology

This study predicts the most powerful among Bitcoin and Gold in boosting the Shariah Equity Index by involving control variables such as Commodity prices represented by coal, oil brent, and palm oil prices. This research model will be tested in several countries, including Malaysia with FTSE Bursa Malaysia Hijrah Shariah Index (FTSE-BMHSI), the United Arab Emirates with FTSE NASDAQ Dubai 10 Shariah (FTSE-ND10S), China with FTSE Shariah China Index (FTSE-SCI), Indonesia with Jakarta Shariah Composite Index (JSCI), the USA with S&P Dow Jones Islamic Market World Index (S&P-DJIMWI), Japan with S&P Japan 500 Shariah Index (S&P-J500SI), Oman with S&P Oman Shariah Index (S&P-OSI) and Saudi Arabia with S&P Saudi Arabia Shariah Index (S&P-SASI).

Table 1. Definition Operational

Variable	Description	Status	Source
BTC	Bitcoin Price (US Dollar)	Exogenous	Market Insider
Gold	Gold Price (US Dollar)	Exogenous	Market Insider
Coal	Coal Price (US Dollar)	Control	Market Insider
Oil Brent	Oil Brent Price (US Dollar)	Control	Market Insider
Palm Oil	Palm Oil Price (US Dollar)	Control	Market Insider
FTSE-BMHSI	FTSE - Bursa Malaysia Hijrah Shariah Index (US Dollar)	Endogenous	Investing.com
FTSE-ND10S	FTSE - NASDAQ Dubai 10 Shariah (US Dollar)	Endogenous	Investing.com
FTSE-SCI	FTSE - Shariah China Index (US Dollar)	Endogenous	Investing.com
JSCI	Jakarta Shariah Composite Index (US Dollar)	Endogenous	Investing.com
S&P-DJIMWI	S&P Dow Jones Islamic Market World Index (US Dollar)	Endogenous	Spglobal.com
S&P-J500SI	S&P Japan 500 Shariah Index (US Dollar)	Endogenous	Investing.com
S&P-OSI	S&P Oman Shariah Index (US Dollar)	Endogenous	Investing.com
S&P-SASI	S&P Saudi Arabia Shariah Index (US Dollar)	Endogenous	Investing.com

This study analyzed short term and long term using time series data collected from May 2013 to July 2021 in US Dollars. In the initial stage, data quality tests were conducted through the Stationer Test, Lag Criteria Test, and Johansen's Co-Integration Test gradually, then the Granger Causality Test was carried out in two stages. First, testing involves only exogenous variables (Bitcoin and Gold) and endogenous (Shariah Equity Index). Second, add variable control (Coal, Brent Oil, and Palm Oil) to ensure the relationship between variables in the short term approach with the equation estimation model (Asari et al., 2011; Granger, 1969).

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \cdots + \alpha_i Y_{t-i} + \beta_1 X_{t-1} + \cdots + \beta_i X_{t-i} + \mu \quad (1)$$

$$X_t = \alpha_0 + \alpha_1 X_{t-1} + \cdots + \alpha_i X_{t-i} + \beta_1 Y_{t-1} + \cdots + \beta_i Y_{t-i} + \mu \quad (2)$$

The estimation model shows that the period and μ is a White Noise Error. Parameter 0 represents the constant organization level of Y and X, meaning the General Movement of Cointegration between X and Y refers to the Root Unit process. This analysis investigates causality relationships between variables based on the results of hypothesis tests, if the estimation results show that only X Not Granger-Cause Y is significant, meaning that there is only Unidirectional Causality between variables, but if the two affect each other means that there is Bidirectional Causality between variables (Boţa-Avram et al., 2018; Duasa, 2007; Karahan & Yilgor, 2017; Kashif et al., 2020). Furthermore, the Vector Error Correction Model (VECM) analysis process was carried out with two previous stages to estimate volatility from Shariah Equity Index based on long term analysis with the following estimation model (Asari et al., 2011).

$$\Delta Y_t = \alpha_1 + p_1\, e_1 + \sum_{i=0}^{n} \beta_i\, \Delta Y_{t-i} + \sum_{i=0}^{n} \delta_i\, \Delta X_{t-i} + \sum_{i=0}^{n} \gamma_i\, Z_{t-i} \quad (3)$$

$$\Delta X_t = \alpha_2 + p_2\, e_{i-1} + \sum_{i=0}^{n} \beta_i\, \Delta Y_{t-i} + \sum_{i=0}^{n} \delta_i\, \Delta X_{t-i} + \sum_{i=0}^{n} \gamma_i\, Z_{t-i} \quad (4)$$

The equation shows that any short term relationship that fluctuates will impact the stability of the relationship between variables. In addition, the study also conducted an Impulse Response Function (IRF) Analysis to forecast the response of the Shariah Equity Index to the shocking caused by all exogenous variables in the long term through one-standard-deviation shocks and alternative shocks (Dang et al., 2020; Koop et al., 1996; Mohd. Yusof & Bahlous, 2013; Nath Sahu et al., 2014). In addition, VECM test results are also developed through Variance Decomposition (VDC) analysis which aims to evaluate the interaction of relationships between variables and describe the role and composition of each exogenous variable to endogenous variables in the long term (Abduh & Azmi Omar, 2012; Shakil et al., 2018; Trošt & Bojnec, 2015; Ziaei & Bhatti, 2017).

4. Funding and Discussion

In the early stages, the study conducts data description analysis to see the characteristics of each variable. The data description includes the mean, median, maximum, minimum, standard deviation values and the number of observations. The data consists of 99 observations from May 2013 to July 2021. This Analysis Focuses on Bitcoin, Gold and all Shariah Equity Index.

Table 2. Descriptive Statistic

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
Bitcoin	6973.64	2519.27	58689.51	95.94	11390.44	99
Gold	1367.31	1287.95	1975.90	1060.82	227.37	99
Coal	55.81	54.30	133.10	34.05	14.22	99
Oil Brent	65.66	61.37	114.01	22.74	22.22	99
Palm Oil	746.33	728.81	1156.00	535.02	132.17	99
FTSE-BMHSI	3565.07	3372.49	4598.57	2709.30	481.65	99
FTSE-ND10S	8008.93	7845.10	11042.05	6387.09	869.82	99
FTSE-SCI	2748.98	2729.65	3802.38	1829.26	503.17	99

JSCI	0.04	0.05	0.06	0.02	0.01	99
S&P-DJIMWI	3518.42	3275.84	6044.20	2374.13	893.17	99
S&P-J500SI	1478.12	1484.26	2188.35	877.82	331.97	99
S&P-OSI	799.24	874.40	1273.89	42.13	400.69	99
S&P-SASI	1059.48	1054.68	1519.17	740.99	170.97	99

Source: Author's analysis.

The average value of Bitcoin is higher than the value of Gold which is 6973.64, with a median value of 2519.27. Table 2 shows that about 50 of the 99 Bitcoin data observations are below 2519.27. That value is far from the mean value. Bitcoin has risen above $10,000 since the beginning of 2020. Moreover, the maximum value of Bitcoin is 58689.51 in March 2021. Because of the policies of several countries and large companies that support cryptocurrencies (Bouri, Molnár, et al., 2017; Patacca & Focardi, 2021). The minimum value of Bitcoin occurred in June 2021, and it was caused by the issue of global warming in Bitcoin mining activities. Besides, the mean, median, maximum and minimum values of Gold look stable. Even though 50 observations are below the value of 1287.95 with a mean value of 1367.31, it is not a big difference because it is supported by the maximum and minimum value range of Gold. Then, the highest stock value of several regions belongs to Dubai, while the lowest is in Indonesia. As one of the seven Emirates, Dubai has launched a smart country that is part of the sophistication of technology across the economy, health, and public sectors. Dubai is one of the technological countries with a high financial literacy society and supports Bitcoin (S. Abdullah, 2020; Singhal & Rafiuddin, 2014).

The data quality test is carried out through the level of stationarity at the Level and First Difference stages with the Augmented Dickey-Fuller Value (ADF) and Phillip-Perron (PP) test based on a significance of 5% (Abduh & Chowdhury, 2012; AL-Oqool et al., 2014). The results of stationarity testing in this model equation are in Table 3.

Table 3. Stationery Test

Variable	ADF		PP	
	Level	First Difference	Level	First Difference
Bitcoin	0.9778	0.0000*	0.6851	0.0000*
Gold	0.8571	0.0000*	0.9024	0.0000*
Coal	0.9976	0.0000*	0.9941	0.0000*
Oil Brent	0.2230	0.0000*	0.3633	0.0000*
Palm Oil	0.1814	0.0000*	0.5290	0.0000*
FTSE-BMHSI	0.3788	0.0000*	0.3587	0.0000*
FTSE-ND10S	0.0609	0.0000*	0.0981	0.0001*
FTSE-SCI	0.6844	0.0000*	0.6591	0.0000*
JSCI	0.0607	0.0000*	0.0607	0.0000*
S&P-DJII	0.9990	0.0000*	1.0000	0.0000*
S&P-J500SI	0.8628	0.0000*	0.8913	0.0000*
S&P-OSI	0.9591	0.0000*	0.9645	0.0000*
S&P-SASI	0.8149	0.0000*	0.7329	0.0000*

Note: * Significant at 0.05 alpha; Source: Author's analysis.

The results of data quality tests on ADF and PP show that most of the data on variables is not stationary at the Level stage. However, at the First Difference stage, all variables show a probability value of <5%, meaning that the data used is stationer so that the next stage of testing can be carried out using the VECM model (Khasanah & Wicaksono, 2021; Satyanarayana Murthy et al., 2014). Furthermore, lag criteria test results based on indicates lag order selected by criterion on Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC) and Hannan-Quin Criterion (HQ) (Abrigo & Love, 2016; Pham, 2019). Optimal Lag results show that most research models set optimal lag at lag 10, namely regional Malaysia, Dubai, China and Saudi Arabia. Each exogenous variable can influence endogenous variables with up to 10 periods (Bruns & Stern, 2019; Gutierrez et al., 2009; Nath Sahu et al., 2014). At the same time, Indonesia and the USA have an optimal lag of 2. then Japan has an optimal lag of 3 and Oman 7. Table 4 is the result of the Cointegration Rank Test to show the long term relationship of each variable.

Table 4. Johansen Cointegration Test

Hypothesized No. of CE(s)	Cointegration Rank Test (Trace)			Cointegration Rank Test (Maximum Eigenvalue)		
	Trace Statistic	0.05 Critical Value	Prob	Max-Eigen Statistic	0.05 Critical Value	Prob
Malaysia FTSE-BMHSI	385.68	95.75	0.0001*	192.09	40.07	0.0001*
Uni Arab Emirates FTSE-ND**10**S	275.43	95.75	0.0000*	84.80	40.07	0.0000*
China FTSE-SCI	325.78	95.75	0.0000*	102.51	40.07	0.0000*
Indonesia JSCI	136.15	95.75	0.0000*	52.57	40.07	0.0012*
USA S&P-DJIMWI	154.08	95.75	0.0000*	55.17	40.07	0.0005*
Japan S&P-J500SI	129.69	95.75	0.0000*	44.69	40.07	0.0141*
Oman S&P-OSI	189.56	95.75	0.0000*	71.25	40.07	0.0000*
Saudi Arabia S&P-SASI	289.69	95.75	0.0000*	106.91	40.07	0.0000*

Note: * Significant at 0.05 alpha; Source: Author's analysis

The results of the Cointegration Rank Test in all regions indicate the relationship of Cointegration through Trace and Maximum Eigenvalue based on significance at the level of 0.05 and the comparison of trace statistic and max-eigen statistic values with critical value (Abduh & Chowdhury, 2012; Iyer & Mahajan, 2021; Kim, 2020). Table 4 shows the relationship between variables, thus establishing VECM as the best-estimated model in the study. Then the short term analysis stage is tested by the Granger Causality Test to investigate causality relationships between exogenous and endogenous variables. Testing is divided into two stages, first; this analysis involves only endogenous and exogenous

variables in the model testing process, secondly; Testing involves all variables, including endogenous, exogenous and control variables, to test the feasibility of the model so that if the results at both stages have similarities, then the model is robust (Kasperski & Zieliński, 2017; Shang et al., 2020).

Table 5. Frist Stage of Granger Causality in Short Term

Variabel (Bitcoin, Gold) does not cause Shariah Equity Index		Variabel (Shariah Equity Index, Gold,) does not cause Bitcoin		Variabel (Shariah Equity Index, Bitcoin,) does not cause Gold	
Malaysia (FTSE-BMHSI)					
Bitcoin	0.8445	Shariah Equity Index	0.4368	Shariah Equity Index	0.0819
Gold	0.6417	Gold	0.0017*	Bitcoin	0.3961
Uni Arab Emirates (FTSE-ND10S)					
Bitcoin	0.9730	Shariah Equity Index	0.8826	Shariah Equity Index	0.3098
Gold	0.9880	Gold	0.0017*	Bitcoin	0.3961
China (FTSE-SCI)					
Bitcoin	0.4661	Shariah Equity Index	0.4399	Shariah Equity Index	0.4898
Gold	0.1560	Gold	0.0017	Bitcoin	0.3961
Indonesia (JSCI)					
Bitcoin	0.1264	Shariah Equity Index	0.3075	Shariah Equity Index	0.0934
Gold	0.0387*	Gold	0.0001	Bitcoin	0.2981
USA (S&P-DJIMWI)					
Bitcoin	0.4207	Shariah Equity Index	0.0002*	Shariah Equity Index	0.6549
Gold	0.0118*	Gold	0.0001*	Bitcoin	0.2981
Japan (S&P-J500SI)					
Bitcoin	0.8147	Shariah Equity Index	0.0218*	Shariah Equity Index	0.6490
Gold	0.0170*	Gold	0.0004*	Bitcoin	0.5669
Oman (S&P-OSI)					
Bitcoin	0.2504	Shariah Equity Index	0.0019*	Shariah Equity Index	0.0034*
Gold	0.4120	Gold	0.0004*	Bitcoin	0.4012
Saudi Arabia (S&P-SASI)					
Bitcoin	0.4431	Shariah Equity Index	0.9264	Shariah Equity Index	0.8793
Gold	0.0104	Gold	0.0017*	Bitcoin	0.3961

Note: * Significant at 0.05 alpha; Source: Author's analysis.

Table 6. Second Stage of Granger Causality in Short Term

Variabel (Bitcoin, Gold, Coal, Oil Brent, Palm Oil) does not cause Shariah Equity Index	Variabel (Shariah Equity Index, Gold, Coal, Oil Brent, Palm Oil) does not cause Bitcoin	Variabel (Shariah Equity Index, Bitcoin, Coal, Oil Brent, Palm Oil) does not cause Gold

Malaysia (FTSE-BMHSI)					
Bitcoin	0.8445	Shariah Equity Index	0.4368	Shariah Equity Index	0.0819
Gold	0.6203	Gold	0.0017*	Bitcoin	0.3961
Coal**	0.9973	Coal**	0.1954	Coal**	0.6214
Oil Brent**	0.1857	Oil Brent**	0.8715	Oil Brent**	0.2710
Palm Oil**	0.0061*	Palm Oil**	0.1590	Palm Oil**	0.2482
Uni Arab Emirates (FTSE-ND10S)					
Bitcoin	0.9730	Shariah Equity Index	0.8826	Shariah Equity Index	0.3098
Gold	0.9880	Gold	0.0017*	Bitcoin	0.3961
Coal**	0.0491*	Coal**	0.1954	Coal**	0.6214
Oil Brent**	0.4544	Oil Brent**	0.8715	Oil Brent**	0.2710
Palm Oil**	0.6709	Palm Oil**	0.1590	Palm Oil**	0.2482
China (FTSE-SCI)					
Bitcoin	0.4661	Shariah Equity Index	0.4399	Shariah Equity Index	0.4898
Gold	0.1560	Gold	0.0017*	Bitcoin	0.3961
Coal**	0.8133	Coal**	0.1954	Coal**	0.6214
Oil Brent**	0.1562	Oil Brent**	0.8715	Oil Brent**	0.2710
Palm Oil**	0.8646	Palm Oil**	0.1590	Palm Oil**	0.2482
Indonesia (JSCI)					
Bitcoin	0.1264	Shariah Equity Index	0.3075	Shariah Equity Index	0.0934
Gold	0.0387*	Gold	0.0001*	Bitcoin	0.2981
Coal**	0.4192	Coal**	0.9436	Coal**	0.8347
Oil Brent**	0.4786	Oil Brent**	0.2494	Oil Brent**	0.2345
Palm Oil**	0.6219	Palm Oil**	0.3620	Palm Oil**	0.2715
USA (S&P-DJIMWI)					
Bitcoin	0.4207	Shariah Equity Index	0.0002*	Shariah Equity Index	0.6549
Gold	0.0118*	Gold	0.0001*	Bitcoin	0.2981
Coal**	0.3429	Coal**	0.9436	Coal**	0.8347
Oil Brent**	0.4821	Oil Brent**	0.2494	Oil Brent**	0.2345
Palm Oil**	0.5404	Palm Oil**	0.3620	Palm Oil**	0.2715
Japan (S&P-J500SI)					
Bitcoin	0.8147	Shariah Equity Index	0.0218*	Shariah Equity Index	0.6490
Gold	0.0170*	Gold	0.0004*	Bitcoin	0.5669
Coal**	0.5209	Coal**	0.7101	Coal**	0.8785
Oil Brent**	0.0426	Oil Brent**	0.4128	Oil Brent**	0.2679
Palm Oil**	0.1229	Palm Oil**	0.4214	Palm Oil**	0.1976
Oman (S&P-OSI)					
Bitcoin	0.2504	Shariah Equity Index	0.0019*	Shariah Equity Index	0.0034*
Gold	0.4120	Gold	0.0004*	Bitcoin	0.4012
Coal**	0.8135	Coal**	0.0298*	Coal**	0.9778

Oil Brent**	0.2678	Oil Brent**	0.4662	Oil Brent**	0.5737
Palm Oil**	0.0925	Palm Oil**	0.1013	Palm Oil**	0.4460
		Saudi Arabia (S&P-SASI)			
Bitcoin	0.4431	Shariah Equity Index	0.9264	Shariah Equity Index	0.8793
Gold	0.0104*	Gold	0.0017*	Bitcoin	0.3961
Coal**	0.0720	Coal**	0.1954	Coal**	0.6214
Oil Brent**	0.6799	Oil Brent**	0.8715	Oil Brent**	0.2710
Palm Oil**	0.7302	Palm Oil**	0.1590	Palm Oil**	0.2482

Note: * Significant at 0.05 alpha, ** Control Variable; Source: Author's analysis.

First stage results in Granger causality test for Shariah Equity Index based on the significance level of 0.05 (Ilalan & Pirgaip, 2019; J. Li & Huang, 2021; Salman & Shukur, 2004) showed that Gold has a unidirectional relationship to the Shariah Equity Index in several regions, namely Indonesia, the USA and Japan. Furthermore, the granger causality test for Bitcoin shows that Shariah Equity Indexes in the USA, Japan and Oman have a unidirectional relationship with Bitcoin. At the same time, Gold has a unidirectional relationship with Bitcoin in almost all regions except China and Indonesia. The first stage of granger causality also confirmed that only the Shariah Equity Index in Oman is unidirectionally related to Gold. Then the results of the second first stage of the Granger causality test for Shariah Equity Index showed that Gold has a unidirectional relationship on the Shariah Equity Index in Indonesia, the USA, Japan, Oman and Saudi Arabia. In contrast, Palm Oil in Malaysia and Coal in the United Arab Emirates have a unidirectional relationship to the Shariah Equity Index. In addition, the short term results show that Gold has a unidirectional relationship with Bitcoin across the region, meaning that the rise and fall in the value of Gold will lead to a change in the value of Bitcoin. However, this does not apply otherwise. At the same time, the Shariah Equity Index has unidirectional relations only in Japan, Oman and the USA.

The findings on the first stage and second stage of granger causality (Table 5 and 6) show that overall in the short term, Bitcoin and Gold have no unidirectional and bidirectional relationship to the Shariah Equity Index throughout the region, it is because Bitcoin received a significant price decline in the period March to July 2021 (Elsayed et al., 2022; Qian et al., 2022), so investors tend to mitigate risk by diverting their investments in other instruments (Akhtaruzzaman et al., 2021; Kumar & Padakandla, 2022; Qian et al., 2022). However, some people consider Bitcoin a safe haven asset in times of crisis (Bouri, Molnár, et al., 2017; Urquhart & Zhang, 2019). In addition, Gold showed stable growth after the economic crisis due to COVID-19. It shows that Gold is one of the productive assets as a safe haven for capital markets, especially during the global crisis (Hasan et al., 2021; Kinateder et al., 2021; Yousaf, 2021). Overall the granger causality test also showed that only Shariah Equity Indexes in the USA, Japan and Oman had unidirectional relationships on Bitcoin at both stages. It is possible because the two countries positively view virtual currencies and Blockchain technology (Mensi et al., 2020). like Japan which has recognized the existence of Bitcoin and cryptocurrency as digital assets (Bouri, Molnár, et al., 2017; Dyhrberg, 2016; Mensi et al., 2020).

Table 7. First Stage of VECM in Long Term

Variabel	Malaysia	Uni Arab Emirates	China	Indonesia	USA	Japan	Oman	Saudi Arabia	T-Table
	FTSE-BMHSI	FTSE-ND10S	FTSE-SCI	JSCI	S&P-DJIMWI	S&P-J500SI	S&P-OSI	S&P-SASI	
Bitcoin	0.106	0.139	-0.133	1.131	-0.099	-0.093	0.063	-0.002	1.984
	3.042*	1.783	-5.959*	4.167*	-7.652*	-6.387*	7.466*	-0.194	
Gold	-4.163	-9.088	1.583	-0.000	0.792	2.533	-0.679	-1.388	
	-3.753*	-3.294*	2.261*	-4.099*	1.187*	4.139*	-2.439*	-2.798*	

Note: * Significant; Source: Author's analysis.

Table 8. Second Stage of VECM in Long Term

Variabel	Malaysia	Uni Arab Emirates	China	Indonesia	USA	Japan	Oman	Saudi Arabia	T-Table
	FTSE-BMHSI	FTSE-ND10S	FTSE-SCI	JSCI	S&P-DJIMWI	S&P-J500SI	S&P-OSI	S&P-SASI	
Bitcoin	0.101	0.042	-0.034	-1.312	0.193	-0.028	0.001	0.036	
	4.251*	0.907	-3.742*	-3.452*	3.848*	-5.257*	0.428	3.420*	
Gold	-1.027	3.410	-1.159	4.327	-6.070	-0.642	0.648	0.172	
	-1.854	2.548*	-5.271*	3.013*	-3.108*	-3.313*	4.290*	0.473*	
Coal**	-4.534	33.206	4.391	0.000	-67.113	-1.686	13.441	18.776	1.985
	-0.512	1.886	0.961	0.496	-1.831	-0.512	6.973*	3.237*	
Oil Brent**	-22.805	-6.898	-12.558	0.000	-10.405	6.602	-0.524	-14.106	
	-6.555*	-1.045	-5.979*	1.056	-0.574	3.990*	-0.561	-8.330*	
Palm Oil**	12.761	3.662	4.037	-9.647	10.839	0.684	-1.569	4.660	
	-10.343*	2.234*	8.331*	-4.151*	3.507*	2.337*	-8.779*	8.891*	

Note: * Significant, ** Control Variable; Source: Author's analysis.

In the next stage, VECM analysis is carried out in the long term (Table 7 and 8) to determine the influence of exogenous variables on endogenous variables in the long term. This analysis is carried out through two stages, namely the first stage and the second stage. Table 7 show that Bitcoin has a significant effect on the Shariah Equity Index in Malaysia, China, Indonesia, the USA, Japan and Oman based on a more excellent T-statistic value than T-table (Kasperski & Zieliński, 2017; Lutkepohl & Kratzig, 2005; Nugraha & Osman, 2019; Shang et al., 2020), while Gold also showed a significant influence on Shariah Equity Index in Malaysia, the United Arab Emirates, China, Indonesia, the USA, Japan, Oman and Saudi Arabia. Meanwhile, table 8 confirms that Bitcoin significantly influences the Shariah Equity Index in all regions except the United Arab Emirates and Oman. The second stage results (Table 8) also showed that Bitcoin negatively correlates to the Shariah Equity Index in China of -0.034, Indonesia by -1,312, and Japan by -0.028. It means that if Bitcoin increases in the long term by 1%, it will impact the decline of the Shariah Equity Index in China by 0.034%, Indonesia by 1,312%, and Japan by 0.028%. In addition, the results showed that Gold has a negative correlation to the Shariah Equity Index in China, the USA and Japan with values of -1,159, -6,070, and -0.642, respectively. If Gold increases by 1%, it will affect the decline of the Shariah Equity Index in China by 1,159%, the USA by 6,070% and Japan by 0.642%.

Bitcoin's role in the volatility of the Shariah Equity Index is due to the excitement of the capital market. The excitement is caused by the difference between market expectations and existing trading activities, thus creating a perception of long term and short term investments that influence investment decisions (Kwon, 2020; Mensi et al., 2020). In addition, the main factors forming the price of Bitcoin with the Shariah Equity Index are also different. It certainly makes the Bitcoin market different from the Shariah Equity Index market, which is more suitable for portfolio diversification (Kang et al., 2019; Narayan, Narayan, et al., 2019; Narayan, Phan, et al., 2019). Even Bitcoin as the most prominent cryptocurrency, affects not only the cryptocurrency market but also assets and other commodities (Bouri, Lucey, et al., 2020; Koutmos, 2018; Platanakis et al., 2018). Most investors prefer to allocate their funds to Bitcoin purchases over securities when the uptrend (Chkili, 2022; Kwon, 2020; H. Zhang et al., 2022). Some investors sell their securities to divert their investments in these digital assets (Bahloul et al., 2021; Camgöz & Topal, 2022), so it can potentially harm the Global Sharia Equity index in the long term. Meanwhile, Gold prices are predicted to positively influence the Index because most companies' members of the Global Shariah Equity Index are engaged in commodities and mining, which will indirectly affect the company's revenue (Nagayev et al., 2016; Shaikh, 2021). Although Bitcoin and Gold have different correlations in each country, they contribute equally to the value of the Global Islamic Equity Index in the long term.

Researchers tested the exogenous influence in one variable with another through the Impulse Response Function (IRF) to see the relationship between Bitcoin, Gold, and Shariah Equity Index over the next five years. Based on Figure 2, Bitcoin movements have the potential to provide shocks with a positive correlation to the Shariah Equity Index in Indonesia, the USA, Japan, Oman, and Saudi Arabia, so that when the price of Bitcoin rises, the Shariah Equity Index will respond with an increase in the value of the index. However, some regions such as Malaysia, the United Arab Emirates, and China are predicted to respond with fluctuating shocks over the next five years. The movement of Bitcoin will be responded to differently by the Shariah Equity Index depending on future political and economic conditions because these countries have not been consistent in implementing regulations on digital assets. Meanwhile, Gold has the potential to give a negative shock to the Shariah Equity Index in Indonesia, the USA, and Oman in the long term. When Gold increases, it will impact the decline of the Shariah Equity Index. In addition, Gold's movements in Saudi Arabia and Japan were responded positively by Shariah Equity Index index. However, Gold has the potential to provide shocks with a fluctuating correlation to the Shariah Equity Index in Malaysia, the United Arab Emirates, and China. Overall, Bitcoin is more powerful than Gold (Ciaian et al., 2016; Gandal et al., 2018; X. Li & Wang, 2017) for its ability to influence the rise and fall of value on the Shariah Equity Index (Florin et al., 2021; Polas et al., 2020; Yousaf & Yarovaya, 2022). Although Bitcoin is not a safe haven, the return given is proportional to the risk received (Bouri, Shahzad, et al., 2020; Uddin et al., 2020), In contrast, Gold has not been able to rival Bitcoin's returns even though it is a safe haven (Corbet et al., 2020; Salisu et al., 2020; Yousaf & Yarovaya, 2022). So that the role of Bitcoin is more powerful than Gold in boosting the value of the Shariah Equity Index.

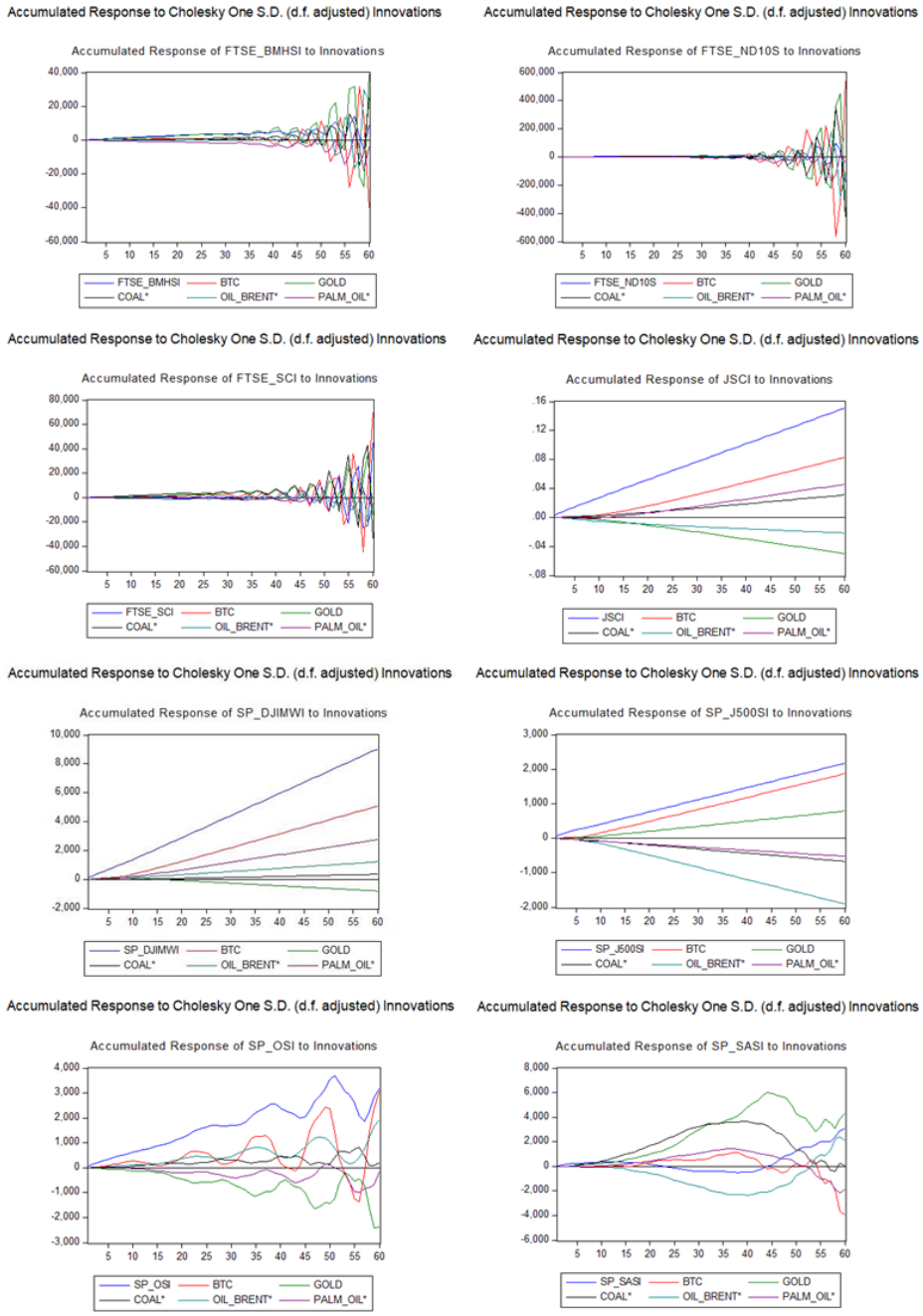

Figure 2. Impulse Response Function

Note: * Control Variable; Source: Author's analysis

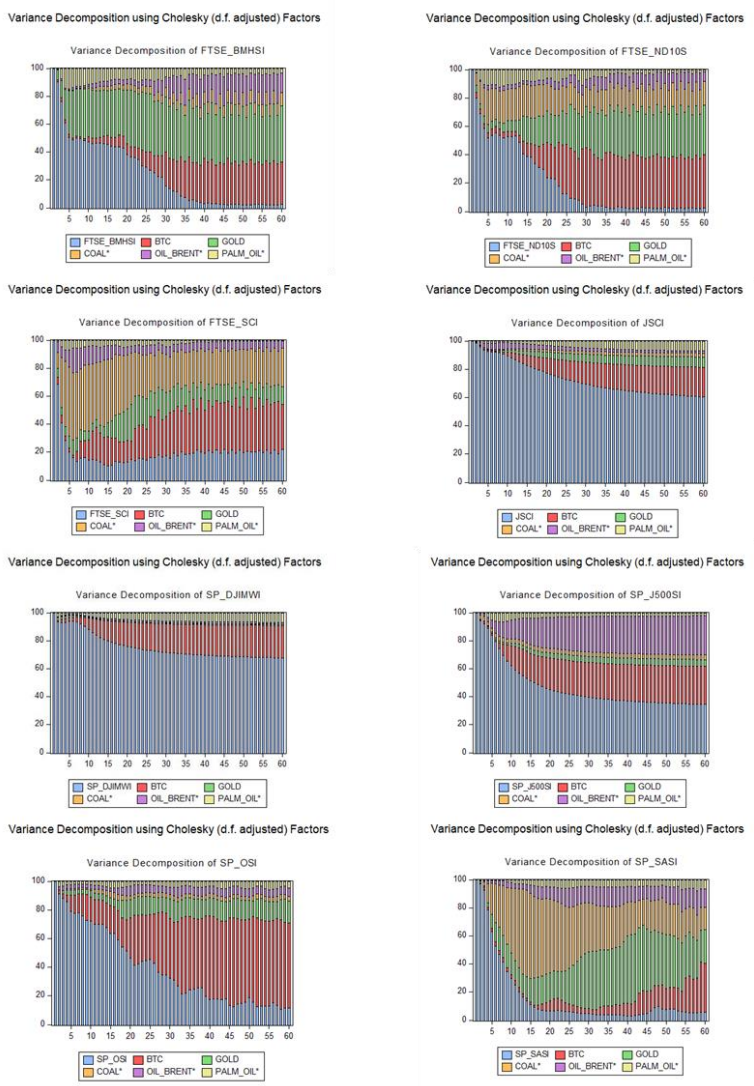

Figure 3. Variance Decomposition

Note: * Control Variable; Source: Author's analysis.

Furthermore, the Decomposition Variance Value (VDC) is the composition of the variance value in the Shariah Equity Index (Figure 3). The VDC analysis aims to test the most influential variants of the Shariah Equity Index among Bitcoin, Gold, and control variables. This research focuses only on Bitcoin and Gold, not on control variables. Figure 3 shows that Gold only dominates on the Shariah Equity Index in Saudi Arabia and Malaysia, but Bitcoin dominates in other regions. In addition, the analysis also predicts that the proportion of Bitcoin will be more significant than Gold in the Shariah Equity Index in China, Indonesia, the USA, Japan, and Oman over the next five years. Because of technological advances have changed investor behavior (Nawaz & V. R., 2013; Yermack,

2015), especially in the central region of the world economy (S. Abdullah, 2020; Whyte, 2019). Some countries have accepted Bitcoin as a payment and tradable digital asset (Taylor, 2021). Even Bitcoin has become a global community donation tool for Ukraine, which conflicts with Russia (Ossinger, 2022; Sigalos, 2022; Wilson, 2022). Because Bitcoin has a decentralized nature, no one can interfere with the flow of funds through Bitcoin. The accuracy of this prediction depends heavily on the utilization of Bitcoin in the long term. If many countries adopt it, the influence will be more powerful in booting the Shariah Equity Index and other asset.

5. Conclusion

This study aims to determine and forecast the most powerful between Bitcoin and Gold against the Shariah Equity Index in the short and long term by involving control variables in the form of Coal, Brent Oil, and Palm Oil Prices in several countries. Including Malaysia with FTSE Bursa Malaysia Hijrah Shariah Index (FTSE-BMHSI), thr United Arab Emirates with FTSE NASDAQ Dubai 10 Shariah (FTSE-ND10S), China with FTSE Shariah China Index (FTSE-SCI), Indonesia with Jakarta Shariah Composite Index (JSCI), the USA with S&P Dow Jones Islamic Market World Index (S&P-DJIMWI), Japan with S&P Japan 500 Shariah Index (S&P-J500SI), Oman with S&P Oman Shariah Index (S&P-OSI) and Saudi Arabia with S&P Saudi Arabia Shariah Index (S&P-SASI).

The study results based on testing in the first and second stages in the short term showed that Bitcoin does not affect the value of the Islamic Equity Index in all countries, neither unidirectional nor bidirectional relationships. In contrast, Gold showed a unidirectional relationship to the Shariah Equity Index in Indonesia, the USA, and Japan. In addition, Gold also shows a unidirectional relationship with Bitcoin, especially in Malaysia, the United Arab Emirates, the United States, Japan, Oman, and Saudi Arabia. Then the test results on the first and second stages in the long term showed that Bitcoin and Gold contribute equally to boosting the value of the Islamic Equity Index. Furthermore, the results of the IRF in the next five years show that Bitcoin causes shocks in the Shariah Equity Index in all regions, while the shock caused by Gold does not have a significant impact on the Shariah Equity Index in all countries. In addition, VDC predicts that the value of the Shariah Equity Index will be dominated by Bitcoin for the next five years, while Gold only contributes in Saudi Arabia and Malaysia. Hence, the proportion of Bitcoin is more significant than Gold. Overall, this study shows that Bitcoin is most powerful in boosting the value of the Islamic Equity Index based on shocks and variant value composition in the Long term. At the same time, Gold only contributes in the short term.

This study contributes to the development of Islamic economic literature, especially in most Muslim countries. Because most researchers focus on the Haram aspect of Bitcoin, they thus ignore the essence of Bitcoin's emergence as one of the investment instruments that threaten the Islamic capital market industry in the future. This study has implications for Islamic capital market investors to carry out a risk mitigation process in the portfolio by considering the movement of Bitcoin. In addition, Islamic capital market managers in each country must prioritize innovation in the operating system so that investor preferences do not shift to Bitcoin investment. Even Islamic capital market

authorities can innovate by changing the value of 1 lot of stock to 10 stocks to reach more retail investors. In addition, The government needs to improve Islamic financial literacy and improve the rules to anticipate the effect of Bitcoin on the Islamic capital market in the future. This study also has limitations on the scope of research that only accommodates the Shariah Equity Index in eight countries. Besides that, this study only involves commodity prices as a control variable. Further research can conduct forecasting by involving more Shariah Equity Index and control variables.

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