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INTEGRATION OF ISLAMIC AND CONVENTIONAL STOCK INDICES BEFORE, DURING, AND AFTER COVID OUTBREAK: EMPIRICAL INSIGHTS FROM FIVE ASEAN COUNTRIES AND THE US

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ABSTRACT

This study aims to examine the long-term integration among Islamic capital markets in five ASEAN countries namely Indonesia (ISSI), Malaysia (FTSE-MB), Thailand (FTSE-SET), Singapore (FTSE-SGX), and the Philippines (MSCI-PH) along with the U.S. stock market (DJIA) before, during, and after the COVID outbreak. Utilizing a quantitative approach, the study analyzed daily closing prices from November 2018 (a year before the COVID-19 outbreak) to May 2024 (a year following the COVID-19 outbreak). We employed the Johansen cointegration test and the Vector Error Correction Model (VECM) to assess market cointegration. Results reveal that all ASEAN Islamic indices exhibit significant cointegration with the Dow Jones Industrial Average (DJIA). The FTSE-SET and MSCI-PH indices show a strong positive correlation with the DJIA; in contrast, the ISSI and FTSE-SGX indices display a negative correlation, suggesting potential diversification benefits for investors. The Granger Causality Test further identifies causal linkages between certain ASEAN indices and the DJIA. These findings underscore the influence of global dynamics on ASEAN Islamic markets, despite their unique characteristics. The results advocate for portfolio diversification and the formulation of adaptive economic policies to enhance the stability of ASEAN Islamic markets amid global financial volatility.

1 Introduction

COVID-19 outbreak is one of the largest public health crises and economic disruptions worldwide, significantly impacting both domestic and international financial markets. Since the onset of the pandemic, a widespread sentiment of fear has led to augment stock market volatility inefficiencies (Hong et al., 2021). Major global shocks of this magnitude typically escalate systemic uncertainty and intensify price fluctuations, with clear evidence of strong cointegration between structural crisis phases and market responses (Onali, 2020, Baek et al., 2020, and Dash et al., 2022). Beyond short-term volatility, such instability signifies the presence of systemic risk (Bevilacqua et al., 2023) and reveals the transmission pathways through which these risks propagate across financial markets (Zhang et al., 2023).

During the pandemic, systemic risk primarily manifested through the contagion effect, a cross-market volatility transmission mechanism in which stress in a major financial market such as the United States spills over to other markets via abrupt increases in inter-market correlation (Chiang & Zheng, 2015). This contagion is not necessarily driven by changes in macroeconomic fundamentals but is often exacerbated by collective panic, mass sell-offs, and herding behavior among investors (Bouri et al., 2021). Consequently, global stock indices, including Islamic Capital Markets (ICM), experienced interconnected volatility spikes. Corbet et al. (2020) also highlight the intense transmission of shocks across global financial markets during the pandemic, emphasizing that systemic stress is not confined within borders but spreads regionally and globally. These dynamics suggest that Islamic capital markets in ASEAN, while distinct, are not entirely insulated from global financial pressures, thereby underscoring the importance of examining the degree of market integration and cross-border risk transmission within the region.

Despite this global turbulence, financial markets did not all exhibit uniform vulnerability. Empirical findings indicate that Islamic financial markets particularly in the ASEAN region demonstrated relatively higher stability and even attracted increased attention from both domestic and international investors (Hasan et al., 2021). As the world's largest Islamic capital market, Indonesia recorded a 44.15% increase in market capitalization in 2021, despite ongoing pandemic-related challenges (OJK, 2021). Similarly, Malaysia's Islamic Capital Market (ICM) reported a capitalization of approximately RM 1.20 trillion, representing 65.58% of total national market capitalization by the end of 2021, reaffirming its status as a global Islamic finance hub (Malaysia Islamic Capital Market, 2024). These developments reflect not only sound domestic policy responses but also enhanced regional cooperation especially since the establishment of the ASEAN Economic Community (AEC) in 2013. The AEC has facilitated greater economic integration, including capital mobility and cross-border investments, which are likely to influence the interdependence of Islamic stock indices in the region. As such, assessing the degree of Islamic capital market integration within ASEAN particularly during periods of global stress is critical for crafting resilient economic policies and optimizing portfolio diversification strategies.

Empirical evidence from the COVID-19 crisis further reinforces the need to examine Islamic capital market behavior through a more granular and time-sensitive lens. While conventional benchmarks such as the S&P 500 and FTSE 100 experienced unprecedented volatility—reflected in spikes of over 80% in the VIX index during March 2020—several Islamic indices demonstrated comparatively muted fluctuations (Salisu & Vo, 2020). Moreover, Islamic equity markets in ASEAN countries exhibited lower downside risk and quicker recovery trajectories, suggesting distinct market dynamics at play (Naifar & Al Dohaiman, 2021). Despite these empirical signals, few studies have systematically analyzed how such resilience evolves across the different phases of a crisis. Existing research often employs static models or treats crises as homogenous events, thereby overlooking temporal variation in market interdependence and systemic risk. Furthermore, while ASEAN's growing financial integration post-AEC suggests increasing cross-border capital mobility, current empirical inquiries rarely adopt a regionally comparative framework that captures intra-ASEAN Islamic market linkages. This empirical void underscores the need for a more rigorous, phase-differentiated analysis of integration and contagion effects among ASEAN Islamic capital markets, particularly in response to large-scale exogenous shocks like the COVID-19 pandemic.

Despite this growing interest, no study to date has systematically examined the dynamic cointegration and contagion mechanisms among multiple ASEAN ICM indices and the U.S. market across the pre-, during-, and post-COVID-19 periods using a rigorous econometric framework. This leaves an important gap in understanding how systemic risk and volatility are transmitted across Islamic financial markets in a globally interconnected environment, especially in response to severe, non-economic shocks like a pandemic. Additionally, the behavioral dynamics seen during the COVID-19 pandemic—such as panic-driven sell-offs and herd-like investor reactions—highlight the need for a more nuanced, time-sensitive approach to understanding how market integration unfolds over the course of a crisis.

This study explicitly incorporates a temporal segmentation approach distinguishing between pre-, during-, and post-pandemic periods to analyze how crisis phases influence market interdependence and risk transmission. By examining five major ASEAN Islamic indices (Indonesia's ISSI, Malaysia's FTSE Bursa Malaysia Hijrah Shariah, Thailand's FTSE SET Shariah, Singapore's FTSE SGX Asia Shariah 100, and the Philippines' MSCI Philippines Islamic Index) alongside the Dow Jones Industrial Average (DJIA), the study adopts a regional perspective that is often overlooked in existing literature. Employing the Johansen cointegration test, Vector Error Correction Model (VECM), and Granger causality analysis, the research captures both long-term equilibrium linkages and short-term dynamic interactions among these markets.

By integrating a regional scope, advanced econometric techniques, and distinct pandemic phases, this study provides nuanced insights into the resilience, integration behavior, and diversification potential of ASEAN Islamic capital markets under systemic stress. These findings offer practical guidance for policymakers, regulators, and investors in designing responsive financial strategies and strengthening regional market stability amid future global shocks.

2 Literature Review

Capital market cointegration describes a long-term equilibrium relationship in which stock prices across different international markets move together. This phenomenon implies increasing interdependence and price alignment among global exchanges, offering both opportunities and risks for cross-border investors (De La Torre and Schmukler, 2007). According to Bekaert and Harvey (1995), such integration arises when assets with similar risk characteristics yield comparable returns across markets, suggesting a high degree of correlation. As financial markets become more interconnected, the potential benefits of international portfolio diversification diminish, particularly during periods of global uncertainty.

Recent literature highlights how global crises have intensified these integration dynamics. For instance, during the COVID-19 pandemic, increased market synchronization was observed, which significantly curtailed investors' ability to hedge risks through traditional diversification strategies (Pardal et al., 2020). The systemic alignment of asset prices in such contexts reflects a shift toward cohesive global market behavior, thereby necessitating a deeper examination of niche asset classes—such as Islamic equities—that may deviate from mainstream financial trends during crises.

The Islamic capital market operates under the principles of Sharia law, which prohibits the collection of interest (riba), excessive uncertainty (gharar), and speculative behavior (maisir). Instead, it promotes equity participation, risk-sharing, and investment in tangible, productive assets (Hassan & Mahlknecht, 2011). This ethical and asset-backed structure distinguishes Islamic finance from conventional financial systems and has been linked to enhanced stability, particularly in turbulent economic periods. Iqbal and Mirakhor (2011) emphasize that Islamic capital markets, due to their grounding in justice and transparency, attract investors who seek financial returns aligned with ethical and religious values. Additionally, the focus on real economic activity provides a cushion during periods of financial distress, thereby enhancing resilience. Hkiri et al. (2017) argue that Islamic markets offer diversification benefits, especially during financial crises, due to their distinct operating mechanisms.

Empirical studies have documented the tendency for financial crises to accelerate market integration. For example, Karim and Karim (2012) and Majid et al. (2009) found that the level of cointegration among capital markets significantly increased during global financial disruptions, reducing the effectiveness of diversification strategies. Similarly, Youssef et al. (2021) observed that market correlations intensify during crises, linking previously less connected exchanges and limiting investors' ability to mitigate risk.

However, Islamic capital markets have demonstrated a degree of decoupling from conventional markets during such periods. Majid et al. (2009) reported that Islamic capital markets in ASEAN countries exhibited greater resilience during the global financial crisis. Likewise, Muharram et al. (2019) found that the contagion effect—defined as the transmission of shocks across markets—was less pronounced among Islamic markets than among their conventional counterparts. This supports the view that Islamic financial systems can serve as a stabilizing force in periods of volatility. Nevertheless, the literature also indicates growing interconnectedness between Islamic and conventional markets. Qizam et al. (2020) confirmed the existence of long-term cointegration among Islamic capital markets within ASEAN, suggesting that despite their foundational differences, Islamic markets are not entirely insulated from global financial dynamics. Importantly, Majdoub and Sassi (2016) highlight that while global cointegration is increasing, the Islamic capital market in Indonesia remains relatively less integrated with developed conventional markets, reflecting deeper structural and institutional asymmetries.

Despite the valuable insights offered by previous studies, several limitations persist. First, much of the existing research does not adequately consider the multi-phase nature of crises like COVID-19, which unfold over distinct pre-crisis, crisis, and post-crisis periods. This temporal oversimplification restricts the applicability of findings for policymakers and investors seeking real-time guidance. Second, there remains a lack of focused inquiry into intra-regional integration within ASEAN's Islamic capital markets. Given the heterogeneity of economic development and financial infrastructure in the region, a more nuanced and dynamic analysis is warranted. This study seeks to address these gaps by examining the level of integration among Islamic capital markets in ASEAN during the COVID-19 pandemic, with particular attention to its implications for portfolio diversification.

To fill these gaps, this study investigates the cointegration behavior of Sharia stock indices across five ASEAN countries and their relationship with a global benchmark—the Dow Jones Industrial Average (DJIA)—throughout the COVID-19 period. The following hypotheses are proposed:

H_1: There is cointegration between the Sharia stock indices in 5-ASEAN countries and the DJIA.

H_2: There is cointegration among the Sharia stock indices in the 5-ASEAN countries.

H_3: Each individual Sharia stock index in the 5-ASEAN countries is cointegrated with the DJIA.

3 Research Methods

This study investigates the long-term and short-term linkages between Shariah-compliant stock indices in selected ASEAN countries and a leading global conventional index. Daily closing price data were collected from 1 November 2018 to 31 May 2024, sourced from Investing.com to ensure data consistency and availability. The sample comprises five Shariah indices from ASEAN markets and one global benchmark:

a. Indonesia : Indonesia Sharia Stock Index (ISSI)
b. Malaysia : FTSE Bursa Malaysia EMAS Shariah Index (FTSE MB)
c. Thailand : FTSE SET Shariah Index
d. Singapore : FTSE SGX Shariah Index
e. Philippines : MSCI Philippines IMI Islamic Index (MSCI PH)
f. United States : Dow Jones Industrial Average (DJIA)

The ASEAN countries were selected based on their strategic economic positions and active development of Islamic capital markets. Indonesia and Malaysia are considered global leaders in Islamic finance, while Thailand, Singapore, and the Philippines are gradually integrating Shariah principles into their financial systems. The DJIA is included as a conventional benchmark representing the global market influence, allowing examination of inter-regional financial integration between Shariah markets and Western conventional indices

This study employs a multivariate time series framework to examine market integration, cointegration, and causality among the selected indices. The analytical procedure includes the following steps:

To assess stationarity, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are applied. Variables must be integrated of order one, I (1), to be included in the cointegration analysis. The Johansen method (Johansen, 1988) is used to test for the existence of long-run cointegration relationships among the indices. This approach is preferred in a multivariate context and allows for multiple cointegrating vectors. If cointegration is confirmed, the VECM framework (Engle and Granger, 1987) is employed to capture both short-run dynamics and long-run equilibrium relationships. The error correction term reflects the speed at which deviations from equilibrium are corrected. The Granger causality test (Granger, 1969) is applied within the VECM framework to determine the direction of causal relationships among indices. This test identifies whether movements in one market precede or influence another.

To ensure the reliability and robustness of the empirical results, the following diagnostics are performed:

a. Lag Selection Criteria, the optimal lag length for the VAR and VECM models is determined using the Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC), ensuring efficient model estimation.
b. Residual Diagnostics Autocorrelation is tested using the Breusch-Godfrey LM test. Residual normality is assessed via the Jarque-Bera test, and heteroskedasticity is examined using the White test.
c. Stability Tests, Stability of the VECM model is verified through the CUSUM and CUSUMSQ tests. Additionally, the eigenvalue stability condition is checked to ensure that all characteristic roots lie within the unit circle.
d. Structural Robustness, To examine the consistency of results across different market regimes, a sub-sample analysis is conducted to compare pre-pandemic and post-pandemic periods. This helps to account for structural changes during the COVID-19 shock.

4 Results and Discussion

This chapter presents the results of the data analysis and their interpretation. The discussion section will then elaborate on the implications and significance of the findings.

4.1. Result

The analysis begins with descriptive statistics, followed by a stationarity test using the Augmented Dickey-Fuller (ADF) test. Subsequently, the Johansen cointegration test, Granger causality test, and impulse response analysis are conducted to examine the dynamic relationships among the variables.

4.1.1 Descriptive Statistics

Table 1 provides initial insights into the behavior and volatility of Islamic stock indices across ASEAN and the benchmark DJIA, offering a baseline for evaluating market integration and diversification potential. The mean values indicate the general performance level of each market over the observed period, where DJIA recorded the highest average, reflecting the scale and maturity of the U.S. capital market. In contrast, ASEAN Islamic indices such as ISSI and FTSE MB exhibited more moderate averages, consistent with their status as emerging markets with strong domestic and regional orientations. The descriptive statistics further highlight a clear differentiation between mature and emerging Islamic markets, as evidenced by the higher average and volatility of the DJIA. This distinction aligns with Modern Portfolio Theory (Markowitz, 1952), which suggests that investors may benefit from diversifying into emerging Islamic markets to mitigate risks associated with developed markets.

Table 1. Descriptive Statistics

	ISSI	FTSEMB	FTSESGX	FTSESET	MSCIPH	DJIA
Mean	188.3405	12776.34	9309.979	1166.113	1215.323	33557.60
Median	189.2100	12887.04	9721.490	1166.760	1210.140	34463.69
Maximum	222.0000	15111.75	10665.68	1330.600	1413.000	39512.84
Minimum	115.9500	10860.64	6643.250	871.9200	901.4300	21413.44
Std. Dev.	21.09185	910.8867	894.6790	67.60639	86.14773	4339.726
Skewness	-0.814513	0.548528	-1.232683	0.182273	-0.036977	-0.655944
Kurtosis	3.085734	3.276867	3.119535	2.476233	1.692158	2.068335

Source: data processed (2024)

The relatively stable mean values of the ISSI (188.34), MSCI PH (1215.32), and FTSE MB (12776.3) suggest resilience and consistency in these markets, potentially attributable to the real-sector grounding and ethical filters inherent in Islamic finance. In particular, the lower standard deviation of ISSI (21.09) and MSCI PH (86.15) highlights their lower volatility compared to DJIA (4339.73), implying a steadier investment environment, especially during times of global distress such as the COVID-19 crisis.

Moreover, skewness and kurtosis values demonstrate the asymmetric risk tendencies in several indices with FTSE SGX showing negative skewness (-1.23), indicating higher vulnerability to downside shocks, while the more balanced skewness in ISSI and MSCI PH suggests limited extreme fluctuations. Overall, Table 1 highlights that ASEAN Islamic indices, despite being part of emerging markets, offer varying degrees of stability, risk exposure, and potential hedging benefits supporting the motivation to further analyze their integration and co-movement with global indices like the DJIA.

4.1.2 Augmented Dickey-Fuller (ADF) Test

The Augmented Dickey-Fuller (ADF) test was conducted to check the stationarity of the data. The results show that at the initial level, the ISSI and FTSE MB indices were not stationary, indicating the presence of a long-term trend. However, after first differentiation, all indices ISSI, FTSE SET, FTSE MB, FTSE SGX, MSCI PH, and DJIA became stationary. This indicates that changes in values between periods are stable yet non-deterministic, allowing for cointegration analysis to explore long-term equilibrium relationships among the indices. Such behavior reflects the stochastic trend commonly observed in financial time series, as noted by Nelson and Plosser (1982), and supports the integration degree of I(1) required for robust long-term financial modeling.

4.1.3 Johansen's Cointegration test

The cointegration test is conducted to identify the existence of a long-term equilibrium relationship between the ASEAN stock index and the DJIA. Using the Johansen method on the Vector Error Correction Model (VECM), this test analyzes whether the related variables move together in the long term. The presence of cointegration indicates that these indices have a stable equilibrium relationship despite short-term fluctuations.

Table 2. Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.** Critical Value
None *	0.305641	1324.142	95.75366	0.0000
At most 1 *	0.204000	859.0646	69.81889	0.0000
At most 2 *	0.195997	568.1659	47.85613	0.0000
At most 3 *	0.127620	290.0222	29.79707	0.0000
At most 4 *	0.085773	115.9457	15.49471	0.0000
At most 5	0.001261	1.608586	3.841465	0.2047

Source : data processed (2024)

The results of the Johansen cointegration test provide strong evidence of a long-term relationship between the ASEAN Shariah stock indices and the DJIA, supporting the hypothesis of simultaneous cointegration between the Shariah capital markets in five ASEAN countries and the global market. With five significant cointegrations during the study period (November 2018 - May 2024), this finding emphasizes the important role of the DJIA in maintaining the long-term stability of the ASEAN Shariah markets, especially during times of uncertainty, such as the COVID-19 pandemic crisis. Before the pandemic, the cointegration between the ASEAN Shariah markets and the global market was particularly strong, with six significant cointegrations indicating close market integration. This finding aligns with research showing that the integration of ASEAN's financial markets is heavily influenced by global market dynamics (Majid et al., 2009). In a stable economic environment, global macroeconomic stability plays a crucial role in strengthening market connectivity, thus fostering a more balanced market equilibrium.

However, when the COVID-19 pandemic emerged, the number of cointegrations decreased to five, reflecting the significant impact of this major shock. Although the long-term relationship between the ASEAN Shariah markets and the DJIA remained intact, this decline illustrates how the high volatility induced by the pandemic weakened the links between the markets. After the pandemic, the cointegration level remained at five, indicating a recovery in stability, although not as robust as before the pandemic. This suggests that while the ASEAN Shariah markets have been able to adapt and maintain their stability, the global influence particularly from the DJIA continues to play a key role in sustaining the balance of regional markets. These findings align with studies Abbes et al., (2015), Kamaludin et al., (2021), Youssef et al., (2021) that suggest global crises tend to increase long-term cointegration between developed and emerging markets, including Shariah-based markets. However, these results also present inconsistencies with other research that claims that Shariah stock markets tend to have weak correlations with the US market (Majdoub and Mansur, 2014).

However, in the analysis that only includes 5-ASEAN countries without the DJIA, there are four significant cointegrations that support the second hypothesis, that the ASEAN sharia capital market has a strong long-term relationship between countries. This is in line with study Qizam et al., 2020), which shows a strong interconnection among the 5-ASEAN sharia markets. Even without the influence of the DJIA, the interconnection among ASEAN markets remains intact, albeit at a lower level. These findings indicate that although the ASEAN markets have long-term resilience, global factors are still needed to achieve full stability. They still require external support.

4.1.4 Granger Causality Test

The results of the Granger Causality test in Table 3 show a significant short-term relationship between Islamic stock indices in ASEAN and the DJIA. The ISSI has a two-way relationship with the FTSE MB and MSCI PH, indicating that the movement of the ISSI can predict the movements of the FTSE MB and MSCI PH, and vice versa. Additionally, there is a two-way relationship between FTSE SET and DJIA, as well as FTSE SGX and DJIA, which means that movements in the Islamic markets of Thailand and Singapore have a significant relationship with the U.S. market, reflecting dynamic interdependence.

This indicates the potential for reciprocal influence between the ASEAN Islamic markets and DJIA, emphasizing the relevance of global market signals for regional investor behavior. Furthermore, MSCI PH also shows a two-way relationship with FTSE SGX, suggesting that investors in the Philippines and Singapore may monitor each other's index movements to inform portfolio decisions or risk assessments.

These findings affirm the close connection between the ASEAN sharia market and the global market, particularly through the bidirectional relationships that emerge in several ASEAN sharia indices and the DJIA. The presence of such mutual causality highlights the increasing integration and sensitivity of regional Islamic markets to global financial developments, even in the short run.

Table 3. Granger Causality Test Result

Index	F-Statistic	Prob	Index	F-Statistic	Prob	Index	F-Statistic	Prob
FTSE SET → ISSI	0.28671	0.8867	FTSE MB → FTSE SET	0.66936	0.6133	MSCI PH → FTSE MB	3.60472	0.0063
ISSI → FTSE SET	0.40363	0.8061	FTSE SET → FTSE MB	3.4841	0.0077	FTSE MB → MSCI PH	1.4002	0.2317
FTSE MB → ISSI	2.39895	0.0484	FTSE SGX → FTSE SET	8.37205	1.00E-06	DJIA → FTSE MB	1.61468	0.1681
ISSI → FTSE MB	8.11646	2.00E-06	FTSE SET → FTSE SGX	7.66805	4.00E-06	FTSE MB → DJIA	1.34476	0.2512
FTSE SGX → ISSI	0.56355	0.6892	MSCI PH → FTSE SET	23.7246	6.00E-19	MSCI PH → FTSE SGX	12.4151	7.00E-10
ISSI → FTSE SGX	0.34849	0.8452	FTSE SET → MSCI PH	19.0941	3.00E-15	FTSE SGX → MSCI PH	15.5208	2.00E-12
MSCI PH → ISSI	0.81725	0.5141	DJIA → FTSE SET	7.5161	6.00E-06	DJIA → FTSE SGX	5.38618	0.0003
ISSI → MSCI PH	2.40078	0.0482	FTSE SET → DJIA	8.11468	2.00E-06	FTSE SGX → DJIA	30.9044	1.00E-24
DJIA → ISSI	0.9538	0.432	FTSE SGX → FTSE MB	1.0914	0.3593	DJIA → MSCI PH	36.6669	5.00E-29
ISSI → DJIA	2.9954	0.0178	FTSE MB → FTSE SGX	0.31667	0.8669	MSCI PH → DJIA	14.167	3.00E-11

Source: Data Processed (2024)

4.1.5 Impulse Response

Based on the impulse response analysis of the main stock indices in ASEAN and the global market, it is evident that the DJIA has a significant influence on the FTSE SGX, suggesting a strong connection with the global market. This reflects the high sensitivity of the FTSE SGX to global movements, aligning it closely with major international market trends. On the other hand, the ISSI and MSCI PH exhibit minimal responses to innovations from other indices, indicating a relatively high degree of independence. This independence positions both indices as favorable options for investors seeking diversification, as their movements are less impacted by fluctuations in global markets.

The FTSE SET demonstrates resilience against global influences, maintaining a stable response despite a slight connection to the DJIA. In contrast, the FTSE MB and FTSE SGX show stronger ties to the DJIA, indicating a higher sensitivity to global market movements, particularly from the U.S. market.

4.2 Discusion

The cointegration test results reveal that market integration is not static and is significantly influenced by global crisis contexts. This finding reinforces the notion that integration across markets is shaped not only by economic fundamentals but also by investor expectations, systemic sentiment, and the adaptive capacity of financial institutions in responding to global uncertainty.

In the pre-crisis period, the presence of six cointegrating equations indicates strong long-run comovement, a typical feature of markets that are well-connected within the global financial ecosystem. Under such conditions, the potential for cross-country portfolio diversification tends to be limited, as previously noted by Bekaert and Harvey (1995). High correlations across markets enhance the narrative of cross-border information efficiency and reflect that investors have aligned their portfolios on a regional and global scale.

During the COVID-19 crisis, the reduced number of cointegrating relationships signifies partial disintegration, a common phenomenon in financial markets under systemic stress. In the literature, this condition is associated with the "flight to quality" behavior, where investors reallocate capital away from high-risk assets toward safer options (Forbes & Rigobon, 2002). Interestingly, the Sharia index (ISSI) maintained a relatively stable position and exhibited low correlation movement with other indices. This indicates the potential of the Sharia index to serve as a crisis-mitigating asset—not merely due to its ethical appeal, but also owing to its real-asset-based characteristics and low leverage exposure.

Furthermore, the FTSE Bursa Malaysia index displayed relative independence throughout the crisis. This can be attributed to the maturity and depth of Malaysia's domestic Islamic capital market and the consistent policy support from its financial regulators. This relative independence signals that cross-country cointegration is also affected by the resilience of domestic market structures and national policy direction.

The uniqueness of ISSI lies not only in its resilience during crises, but also in its decorrelated behavior while other markets experience extreme convergence. This suggests that ISSI may play a strategic role in absorbing global volatility shocks. In this regard, partial integration during crises becomes a strength, allowing ISSI to function as an active diversification tool. These results support contemporary literature positioning Islamic finance as a stability mechanism (Al Dohaiman 2013 and Khan et al. 2020).

Post COVID-19, cointegration structures did not fully revert to their pre-crisis patterns. This does not necessarily reflect structural damage but instead signals a process of market restructuring and adaptation to long-term systemic risks. Within this framework, Sharia indices demonstrate structural consistency and resilience, making them relevant for long-term portfolio design particularly in a post-pandemic era marked by uncertainty and demand for investments that are both value-driven and risk-conscious.

The Impulse Response Function (IRF) and Variance Decomposition analyses provide further insights into the dynamics of Islamic capital market integration in ASEAN, especially in terms of how markets respond differently to shocks and what drives volatility in the short and long term.

Generally, the response of indices to innovations indicates asymmetric and non-uniform relationships in both intensity and duration. For instance, a shock originating from the DJIA (US) produces an immediate and significant response in its own trajectory, which is expected due to the endogenous nature of the system. Notably, FTSESGX (Singapore) reacts positively and sharply in early periods, indicating its openness to global market dynamics, including those from major financial centers. In contrast, ISSI's response to external shocks is minimal and nearly flat, reflecting high shock insulation and limited exposure to systemic global pressures. This reinforces the argument that the Indonesian Sharia index operates with considerable resilience to external volatility.

The FTSE Bursa Malaysia (FTSEMB) also exhibits a consistently contained response to various shocks, which reflects its operation within a self-contained market structure. This is likely a result of the well-developed Islamic finance ecosystem in Malaysia and the dominant role of domestic institutions.

Variance decomposition results confirm the dominance of own shocks especially for ISSI and FTSEMB as the main source of volatility. This has strategic implications: regional Sharia indices appear less vulnerable to external shocks, underscoring their value as defensive diversification instruments within a broader portfolio architecture.

From a policy standpoint, these findings highlight that the Islamic Capital Market (ICM) not only demonstrates resilience but also serves a buffering function that could be leveraged as a systemic stabilization strategy at the ASEAN level. Strengthening interconnection among ICMs across ASEAN while adhering to the foundational principles of Islamic finance could serve as a viable pathway to enhancing regional financial stability.

5 Conclusion

This study provides empirical evidence of a robust long-term relationship between ASEAN Islamic capital markets and the Dow Jones Industrial Average (DJIA), as demonstrated by the existence of five significant cointegration vectors in the ASEAN + DJIA model. These results highlight that despite adhering to Shariah principles, ASEAN Islamic markets are not isolated from global financial dynamics. The findings suggest that the DJIA, a proxy for global investor sentiment and macroeconomic performance, plays a crucial role in shaping the long-term equilibrium of Islamic markets in the region.

In the 5-ASEAN model (excluding DJIA), the presence of four significant cointegration vectors further affirms a strong internal link among ASEAN Islamic markets. Notably, the integration was observed to be stronger in the pre-COVID-19 period, indicating a higher degree of interconnectedness and regional resilience prior to global shocks. The Vector Error Correction Model (VECM) results reveal that the integration intensity varies across countries. The FTSE SET and MSCI Philippines indices demonstrate high responsiveness to DJIA shocks, implying closer alignment with global financial movements. Conversely, ISSI (Indonesia) and FTSE SGX (Singapore) exhibit a negative or inverse movement against DJIA, which may position them as useful tools for risk diversification during periods of global instability. The Granger causality tests underscore both unidirectional and bidirectional short-term linkages between ASEAN indices and DJIA, suggesting that not only does the U.S. market influence ASEAN Islamic markets, but certain ASEAN markets also exert feedback effects, underscoring emerging reciprocal relationships.

From a theoretical perspective, this research contributes to the literature on Islamic financial integration by empirically confirming the partial decoupling of Shariah-compliant markets from global conventional indices. It validates the hybrid behavior of Islamic markets: principled independence in asset selection coupled with structural susceptibility to global capital flows. Moreover, from a practical standpoint, investors seeking Shariah-compliant diversification options are advised to consider ISSI and FTSE SGX for portfolio hedging due to their inverse relationship with the DJIA. These indices may serve as financial buffers during periods of global market correction. On the other hand, strong co-movement between FTSE SET and MSCI PH with DJIA suggests that these indices may mirror global market trends, making them more suitable for investors aiming to capitalize on global upswings. In addition, for policymakers, the findings imply the need to balance between market openness and economic sovereignty. ASEAN financial regulators are encouraged to strengthen intra-regional cooperation in Islamic finance, enhance market transparency, and adopt adaptive monetary and fiscal frameworks that can buffer the effects of global shocks—particularly in times of crisis like the COVID-19 pandemic.

Investors might consider incorporating ISSI and FTSE SGX into their portfolio diversification strategies, given their negative correlation with the DJIA, which can help mitigate risks associated with global market volatility. For ASEAN governments and policymakers, enhancing the stability of Islamic markets by reducing reliance on global dynamics particularly during crises could become a priority. Adaptive policies would help minimize external impacts and strengthen the resilience of ASEAN's Islamic markets. Building on these findings, future research may explore, sectoral-level analysis: disaggregating indices into sectors (e.g., banking, energy, tech) to examine which Islamic sectors exhibit the strongest or weakest global linkages. Policy Shocks, assessing how domestic monetary and fiscal policies in ASEAN countries affect the sensitivity of Islamic indices.

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