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Article

Is Sukuk Market Efficient? Evidence from The Malaysian Sukuk Market

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ABSTRACT - Market efficiency in capital markets refers to the degree to which prices reflect relevant information about the fundamental value of the securities to help investors make informed decisions. *Sukuk* market is the fastest growing segment in Islamic finance. *Sukuk* are priced according to the value of the assets backing them. The paper aims to measure the market efficiency of three Malaysian *sukuk* indices namely Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM), Bloomberg Malaysian Sukuk Ex-MYR Index (EXMYR) and Malaysian Foreign Currency Sukuk Index (MFCSUKUK). Daily returns of the three sukuk indices are collected from 2010 until 2015. The efficiency was measured using GARCH-in-Mean (GARCH-M) estimation to identify different types of *sukuk* market efficiency. The findings indicate that EX-MYR and MFCSUKUK indices display weak-form efficient market behaviour while AIBIM falls under the inefficient category. The inefficient market signals that all public information might not be fully reflected in the price, hence there is room for a bargaining process or prices could be under or over-valued. For industry players, *sukuk* structural inefficiencies and sectorial mispricing behavior create investment opportunities due to the possible existence of excess profit. For policymakers, an extreme case of an inefficient market leads to market failure and welfare loss.

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INTRODUCTION

Malaysia is seen as a success story of rapid growth and structural change with equity. The country has enjoyed a stable macroeconomic environment with low unemployment and inflation rates for decades. However, due to the 2008 global financial crisis, the economy has experienced a slowdown in the growth rate. The government has introduced the New Economic Model of 2010 (NEM2010) to shift the country from a middle-income economy to a high-income economy by 2020. In support of these goals, the government has taken steps to liberalize its financial sector to further develop the domestic Islamic financial system (Islamic Development Bank, 2016). The domestic *sukuk* industry has become an important component of the global *sukuk* market, with a double-digit average growth per annum. There is also an increase in the issuance of *sukuk* by different entities due to an increase in the borrowing requirements of emerging economies. Since its introduction to the global markets in the 1990s, corporate *sukuk*

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issuance has been relatively small to its potential. As capital markets become more efficient, sukuk could become an attractive alternative to funding from banks.

Sukuk is the Arabic term for Shariah compliance Islamic bond. The Securities Commission Malaysia (SC) defines *sukuk* as 'a financial document or certificate which represents the value of an asset evidencing an undivided pro-rata ownership of an underlying asset'. The real growth in the sukuk market started in 2003 when the Accounting, Auditing and Governance Standards for Islamic Financial Institutions (AAOIFI), the industry's international standard-setter, issued a standard on investment *sukuk* and listed 14 different types of *sukuk*.

The development of the *sukuk* market in Malaysia can be represented by four main phases. The first phase accounted for small local issuances by the Government from 1996 to 2001. The second phase, from 2002 to 2007, started with the Government issuing the first rated international *sukuk*, followed by other local and international issuances. The third phase, from 2008 to 2010, was marked by a series of defaulted events, global financial crisis, and Shariah-compliant issues raised by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). In the fourth phase, from 2011 to date, *sukuk* remain competitive due to a wider range of investors from both Muslim and non-Muslim countries globally (Thomson Reuters, 2012).

Several features in the recent literature motivate this study. Emerging East Asia's countries namely Brunei, China, Indonesia, Malaysia, and Singapore have shown potential growing *sukuk* market share. These markets are affected by the falling of oil prices, slow global growth, the United States monetary policy and the most recent one is the COVID-19 pandemic. However, growth is sustained by the acceptance of *sukuk* as financing demand as well as demand from other regions. Malaysia is the leader in the regional market followed by Indonesia. Even though the *sukuk* market was declining in 2015, the trend is rising in 2019 due to expansionary budget and infrastructure financing, especially in Middle East countries.

Besides, the recent COVID-19 pandemic highlights *sukuk*'s potential to be used as monetary and fiscal policy tools in battling COVID-19. While the stimulus packages injected by governments are necessary and will potentially widen the fiscal deficit, it is a temporary solution that is needed to prevent the economy from spiraling down. However, there is a need to carefully evaluate policy side effects in the long run, especially higher national debt and the risk of the asset bubble. High national debt due to crisis leads to a potential default. When a country defaults, public debt affects the poor the most. This is because the poor have little knowledge, and no choice, in *sukuk* or any debt instrument issuances of the country.

Market efficiency refers to the degree to which prices reflect all available and relevant information. If the market price of an investment represents its true value, then it is efficient. There is evidence suggesting that the bond or *sukuk* market is more efficient as compared to the stock market (Hossain et al., 2018). There are many tests of market efficiency or market returns on bond. However, similar exercises on *sukuk* market efficiency are relatively few. In an efficient market, prices of the assets reflect their risk and expected return estimations. As such, there will be no undervalued or overvalued assets. All assets will be appropriately priced in the market. Those who are willing to take risks will be rewarded at an optimum level. The optimal investment strategy requires knowledge of the risk and return behavior of the asset.

The securities prices are known to move at random. This randomness implies that all relevant information related to security prices are quickly incorporated and adjusted in the market prices. It follows that the efficiency of security prices depends on the speed of price adjustment to new news and information. The higher the speed of adjustment, the more efficient is the price (Imafidon & Arowoshegbe, 2015). For the present study, the above definition is used to explain the concept of market efficiency. The different types of *sukuk* market efficiency are estimated based on the efficient market hypothesis (EMH) and random walk theory. The random walk theory states that market and securities prices are random and not influenced by historical events (Lo & MacKinley, 1999).

The findings of the study highlight how *sukuk* market players behave. A greater understanding of *sukuk* market behavior decreases uncertainty and improves market sentiments. More importantly, the results of the study would record *sukuk* market performance post-2008 financial crisis. A thorough analysis of the post-crisis market reactions in terms of market efficiency is important in balancing the demand and supply side of global *sukuk* issuances.

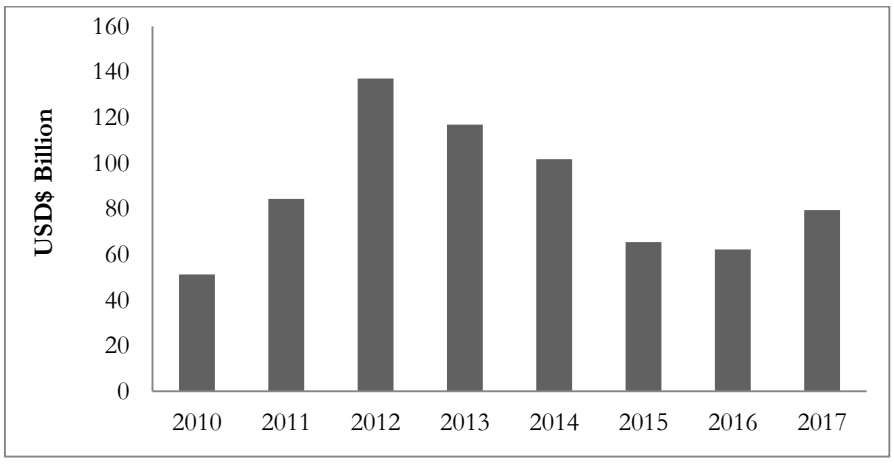
The present study investigates the types of *sukuk* market efficiency of three Malaysian Sukuk indices namely Malaysia Sukuk Ex-MYR Index (EX-MYR), Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM), and Malaysia Foreign Currency Sukuk Index (MFC Sukuk) over the period of 2010 until 2015.

LITERATURE REVIEW

Sukuk Market Development

Malaysia is the largest sukuk market in emerging East Asia and the world. It represents almost 87 percent share of the region's total sukuk issuances. The Global Islamic Finance Report 2016 named Malaysia as the global leader in Islamic banking and finance based on Islamic Finance Country Index (IFCI). The IFCI was first introduced in 2011 to indicate the government's commitment to use Islamic banking and finance as a policy tool. Islamic financial products and services are now offered in many jurisdictions worldwide (Islamic Development Bank, 2016). Therefore, there is a need to explore the sustainability of sukuk market. The corporate sector is the main sukuk issuer in the top sukuk market such as Malaysia, the Gulf Cooperation Council (GCC), and the Middle East and North Africa sovereigns (IIFM Sukuk Report, 2016; MIFC Sukuk Report, 2017). However, the 2008 global financial crisis and the 2009 Dubai debt crisis put a dent in the global sukuk market.Investing in sukuk enhances potential returns relative to conventional bonds and reduces portfolio volatility. Investors rely on the form of market efficiency to determine whether to involve in frequent trading or to have a simple buy-and-hold strategy (Alam & Rizvi, 2016).

Figure 1 shows the historical trend of global sukuk issuance from 2010 to Q1:2017. The issuance peaked in 2012, continued to decline afterward, and started to increase in 2017. The domestic sukuk market in Malaysia is an important platform for the government and corporate entities to raise long term funds for various projects. In the first half of 2018, sukuk issuances by the government and corporate sector represented approximately half of the total bond issuances. Corporate sukuk issuances represented about two-thirds of the total corporate bonds and sukuk issuances. As at end of November 2018, corporate sukuk outstanding constituted 75.94 percent of total outstanding bonds (IIFM Sukuk Report, 2019).



Source: Adapted from Thomson Reuters

Figure 1: Global Sukuk Issuances 2010-2017

Efficient Market Hypotheses (EMH)

One of the theories explaining market efficiency is the efficient market hypothesis (EMH). According to the theory, the current stock prices reflect all available information about firms' value. Gaining profits using the information is not possible if the market is fully efficient. On average, any competition in an efficient market would result in the full and immediate impact of the latest information on the fundamentals to be included in the actual prices (Fama, 1965). Therefore, investors try to identify underestimated securities with higher future values to outperform market performance. Many valuation techniques and investment strategies are used to make final business decisions.

The ability of a particular stock exchange to efficiently reflect all available information into share prices is important. Fama (1965) categorises the speed at which the information is reflected in the market prices into three levels: (1) weak-form EMH; (2) semi-strong form EMH; and (3) strong-form EMH.

In a strong form EMH category, a market is perceived as efficient and resourceful if all information relevant to the value of a share is quickly and accurately displayed in the market prices. The prices displayed should reflect the information retrieved from both the public and private sectors (Fama, 1970). However, the market is more concerned with the efficiency of information transmission rather than the pricing efficiency of the financial instruments.

On the other hand, the semi-strong form EMH postulates that a market is efficient if the price reflects all publicly available information. As such, no investors could outperform the market. The fast reaction shown in the movement of stock price suggests that no investors can earn an abnormal return. On the other hand, the weak-form EMH is limited to historical information regarding the share prices. There are no established relationships between the current and previous share prices resulting from the new data. In short, according to weak-form EMH, past prices and historical values are not useful in predicting future prices (Fama, 1970).

Other researchers define an efficient market as one in which prices of traded securities always fully incorporated all relevant information. Prices will react to public information, private information, or all information. The higher the speed of adjustment, the more efficient the price regardless of whether the reaction is under, over, early, or delayed around the information (Imafidon & Arowoshegbe, 2015). The price changes are independent of one another, which is in line with the random walk theory. The random walk theory suggests that future changes in stock prices cannot predict its future trend (Brealey et al., 2005).

Previous Studies on Market Efficiency

There are many studies on market efficiency. One such study finds evidence of a weak-form efficiency market while examining 43 stocks in the United Arab Emirates (UAE) in early 2000 (Moustafa, 2004). Black and McMillan (2006) examine whether returns exhibit a positive risk premium and their relative size using the asymmetric GARCH-M model. They apply monthly returns on portfolios of value and growth stock for the United States of America (USA) from 1975 to 2000. Their findings show that following a shock, volatility and expected future volatility are elevated. Increased volatility subsequently raises the required rates of return, and further reduces current prices. These effects are more prominent for value stock overgrowth stock and negative shocks over positive shocks. Countries such as South Africa, Bulgaria, Romania and India represent a non-Muslim investor base.

Squalli (2006) examines market efficiency in Dubai Financial market and Abu Dhabi securities market using variance ratio and run tests. The variance ratio tests reject the random walk hypothesis in all sectors; while the run tests suggest that the Abu Dhabi securities market operates in a weak-form efficient sector. Another study in ten emerging markets and five developed equity markets find that all tested markets display weak-form efficiency behavior, except for Taiwan and Australia (Worthington & Higgs, 2006).

Examining efficiency in the stock markets of India, Sri Lanka, Pakistan, and Bangladesh, one study employed a unit root test and concluded the presence of weak-form efficiency in these markets (Cooray & Wickremasinghe, 2007). The study is supported by another research conducted in Indian stock and foreign exchange (Mishra & Paul, 2008). An investigation of the Bombay Stock Exchange (BSE) Index companies for three years indicates that the market displays weak-form efficiency in the third year (Verma & Rao, 2007). The weak form efficiency of 40 listed companies of BSE from 1990 to 2000 was also established in another study in support of the random walk theory (Asiri, 2008).

The GARCH-M model and Kalman filter method employed in studying the Gulf Cooperation Council (GCC) markets illustrate different degrees of time-varying efficiency. There is also evidence of structural breaks in all GCC markets. For these markets, the Arab Spring financial shocks and subprime crises have altered the pathway of market efficiency (Charfeddine & Khediri, 2016).

Bhuiyan et al. (2017) investigate whether *sukuk* investment can minimize risk through global diversification. For that purpose, they examine the volatilities and correlations of bond indices of six emerging countries including South Korea, Singapore, China, India, Indonesia, and Malaysia from 2010 to 2015. They conclude that the *sukuk* market offers effective portfolio diversification opportunities for fixed income investors of the countries involved. Global *sukuk* investors can benefit from portfolio diversification. However, portfolio diversification is not feasible domestically.

There are challenges ahead facing Islamic banking and the *sukuk* market globally. The World Bank cited two possible reasons. The first reason is the low banking penetration rate and the second is costly financial services. Others believe that the growing population and lack of a proper financial system for the industry are the blue ocean for the industry. There is also a fast-growing Muslim population and the Islamic economies also represented about 9.5 percent of the global Gross Domestic Product (GDP) in 2014. Statistically, banking penetration, defined as the percentage of adults with an account at a formal financial institution, remained low within the Organisation of Islamic Cooperation (OIC) member countries and the Muslim population as a whole. The ability to tap the non-banking segment of the Muslim population and to raise their awareness on how *sukuk* financing can affect their future is therefore of utmost importance. The present study addresses this gap in the literature, where rigorous empirical investigations on *sukuk* market behavior are limited.

METHODOLOGY

Data and Variables

The daily market returns on Malaysia Sukuk Ex-MYR Index (EX-MYR), Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM), and Malaysia Foreign Currency Sukuk Index (MFC Sukuk) were calculated from 2012 until 2015. Each index is briefly explained next and summarised in Table 1.

Table 1: List of Sukuk Indices

	Sukuk Indices	Launched Date	Sample
1.	Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM)	2nd Feb 2012	998
2.	Bloomberg Malaysian Sukuk Ex-MYR Index (EX-MYR)	11th Jan 2010	1,518
3.	Malaysian Foreign Currency Sukuk Index (MFCSUKUK)	11th Jan 2010	1,518

Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM)
This index monitors the performance of the most liquid corporate Malaysian *sukuk*. The index is calculated daily based on the rates and prices contributed by other member banks including the Association of Islamic Banking Institutions Malaysia (AIBIM) and Bursa Malaysia. This index represents ringgit-denominated *sukuk* (Bloomberg, 2015).

Bloomberg Malaysian Sukuk Ex-MYR Index (EXMYR)
The Bloomberg Malaysian Sukuk Ex-MYR Index (EXMYR) monitors non-Ringgit denominated *sukuk* issued in Malaysia (Bloomberg, 2015). The index was launched on January 11, 2010 and represented the country's fixed income markets. In general, only *sukuk* with a maturity of greater than 12 months are eligible. The quality of this index is marked by higher than BBB- from S&P and Fitch, and Baa2 from Moody's. All Malaysian government-owned agencies (Danga Capital, Khazanah Nasional Berhad) are exempted. The currencies included in this index are USD, EUR, JPY, GBP, SGB, KRW, IDR, HKD, THB, and CNY.

Malaysian Foreign Currency Sukuk Index (MFCSUKUK)
The Bloomberg Malaysian Foreign Currency Sukuk Index (MFCSUKUK) is a non-ringgit denominated index, or foreign currency *sukuk,* developed in conjunction with Bank Negara Malaysia. This index tracks the performance of global *sukuk* and the movements of foreign currency issues listed on Bursa Malaysia or the Labuan International Financial Exchange (Bloomberg, 2015). Table 1 shows the launching date of all indices and the number of daily observations used in the study.

Method
The present study employed the GARCH-in-Mean (GARCH-M) model to identify types of *sukuk* market efficiency based on the performance of three *sukuk* indices. The Generalised Autoregressive Conditionally Heteroscedasticity in Mean model (GARCH-M (1,1)) allows the variance of the error term to vary over time. This model is selected because it can detect the presence of risk premium in the markets. Besides, the GARCH family model is selected because the model is able to identify volatility cluster and volatility persistence hence the effect of volatility clustering can be discovered. The selection criterion is based on the results of AIC estimates. The GARCH-M (1,1) model is explained below.

$$r_t = \beta_0 + \beta_1 r_{t-1} + \delta h_t + e_t \quad (1)$$
$$e_t \sim N(0, h_t)$$
$$h_t = \alpha_0 + \alpha_1 h_{t-1} + \alpha_2 e_{t-1}^2 \quad (2)$$

The β_0 is the intercept and the β_1 is the slope. Both β_0 and β_1 represent an AR (1) model. The δ represents the risk premium parameter in the conditional model when there is a trade-off between returns and volatility. Returns volatility is measured by conditional variance h_t, which is described as a function of a squared value of past residuals (e_{t-1}^2), presenting the ARCH factor, and an autoregressive term (h_{t-1}) reflecting the GARCH character of the model. The sum of $\alpha_0 + \alpha_1$ represents the degree of volatility persistence in the model. The sum of $\alpha_0 + \alpha_1$ close to 1 suggests the presence of a volatility cluster and the need to consider the impact of volatility clustering (Eagle et al., 1990).

Volatility clustering is the situation where the market is volatile for a week or two and recedes gradually in the next several weeks (Bollerslev et al., 1992). The present study employs the selected *sukuk* indices to observe the level of persistence and volatility clustering behavior. An extremely high level of volatility will be identified if there is an overshooting case. Table 2 shows the classification of *sukuk* market efficiency, based on the summation of $\alpha + \beta$. The general rule applied here is if the sum is bigger than 1, the market is inefficient. If the sum of

α *and* β is less than 1, the market is either in a strong- form, semi-strong, or weak form efficiency.

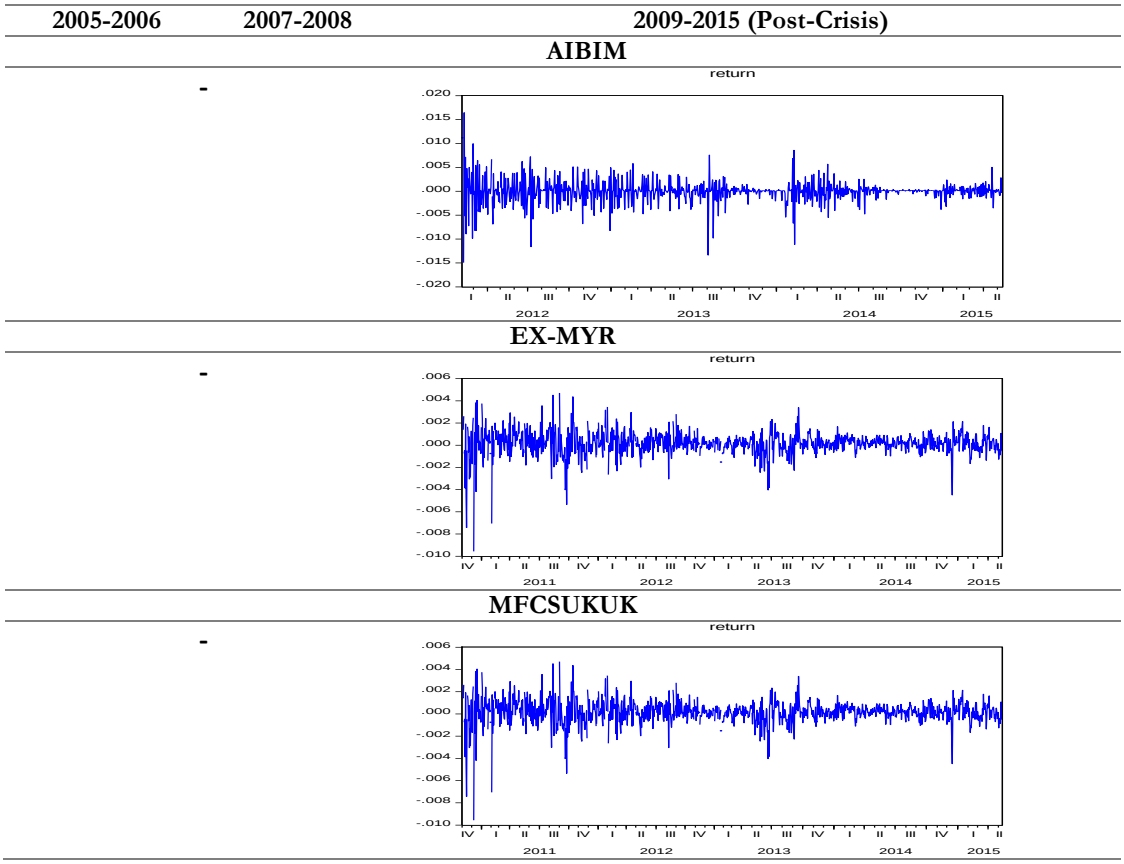
Table 2: Classification of Sukuk Market Efficiency

	ARCH term (α) + GARCH term (β)	Types of Sukuk Market Efficiency
1.	$\alpha + \beta < 0.5$	Strong-form efficiency
2.	$0.5 \leq \alpha + \beta < 0.75$	Semi-strong form efficiency
3.	$0.75 \geq \alpha + \beta < 1$	Weak-form efficiency
4.	$\alpha + \beta > 1$	Inefficient market

Source: Ojo & Azeez (2012) and Sheefeni (2015).

RESULTS

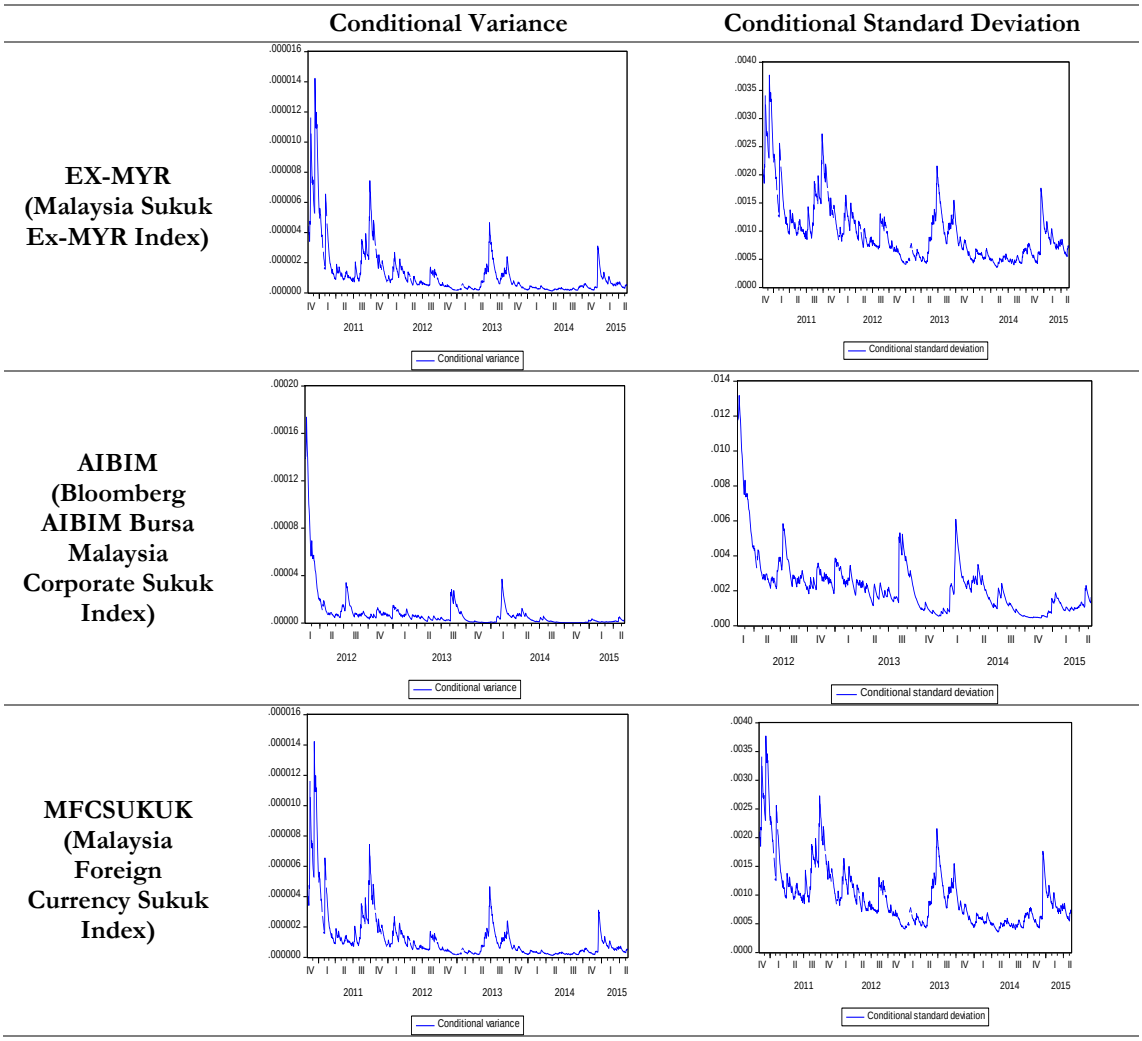
All the preliminary analysis on the three indices are performed to establish their stationary properties (unit root test) and the structural break tests as well as the descriptive analysis (the results are not shown here but are available upon request.) Figure 2 shows the graph of the GARCH-M (1,1) model of the three Malaysian *sukuk* indices. These indices were launched after the 2008 global financial crisis (GFC).



Note: The three indices were launched in 2009.

Figure 2: Returns of Malaysian Sukuk Indices, 2009-2015

Figure 3 shows the Malaysian *sukuk* indices that were launched after the 2008 global crisis. All three indices display almost similar patterns of conditional variance and conditional standard deviation trends over time.



*Note: Association of Islamic Banking Institutions Malaysia (*AIBIM*)

Figure 3: GARCH-M(1,1) Model of Malaysian Sukuk Indices

Table 3 shows the results of the GARCH-M (1,1) model for the three *sukuk* indices under study. The Malaysian *sukuk* indices that were launched after the crisis record that the EX-MYR ($\alpha+\beta = 0.9993$) and MFCSUKUK ($\alpha+\beta = 0.9993$) show weak form efficiency ($0.75 \geq \alpha+\beta<1$), except AIBIM ($\alpha+\beta = 1.0201$). Furthermore, none of the indices displayed a significant risk premium (λ) result. A positive λ suggests that investors are compensated for assuming the greater risk and indicates a positive relationship between risk and returns. Malaysia, as the biggest *sukuk* market in the world, shows the market is weak-form efficient after the launching date as well as during the post-2008 crisis period. The Malaysian *sukuk* indices only cover *sukuk* issues in Malaysia.

Table 3: Summary of results for GARCH-M (1,1) Model, 2009 – 2015

GARCH-M(1,1) Model							
Parameter	$\emptyset$ (Constant)	λ (Risk premium)	ω (Constant)	α (ARCH effect)	β (GARCH effect)	$\alpha + \beta$	Types of Sukuk Market Efficiency
EX-MYR	0.0001 (2.1678) ***	0.0775 (1.0002)	-0.0000 (2.9532) ***	0.0976 (12.1619) ***	0.9017 (177.6498) ***	0.9993	Weak-form
MFCSUKUK	0.0001 (2.1678) ***	0.0775 (1.0002)	-0.0000 (2.9532) ***	0.0976 (12.1619) ***	0.9017 (177.6498) ***	0.9993	Weak-form
AIBIM	-0.0000 (0.4728)	-0.0239 (-0.3807)	-0.0000 (6.9683) ***	0.1363 (7.8265) ***	0.8839 (90.1693) ***	1.0202	Inefficient market

Note: ***, **, and * respectively represents significant at the 1%, 5% and 10%

*α and β are significant for EX-MYR and MFCSUKUK. The selection of GARCH (1,1) is based on AIC lag-length criteria. For robustness test, the GARCH (1,1) model is compared against TGARCH, EGARCH and other lag length selection. Since the objective is measuring efficiency, α, β and λ , the current model is selected.

The inefficient market suggests that investors might not have enough information about the securities in that market to make informed decisions. Markets in emerging economies may be inefficient because securities laws may not require issuing companies to disclose relevant information. Besides, market analysis on the trading activities might not be available. For example, stocks or *sukuk* performances in new companies of new industries are not analysed. Furthermore, the buy and hold strategy of *sukuk* holders, illiquid market, inadequate supply, and the inactive secondary market might also contribute to the inefficient market structure (Rahim & Ahmad, 2016).

Higher volatility signifies higher variations of return, thus higher risk. If an investor is a risk-taker in the *sukuk* market, an increase in risk will lead to an increase in return, therefore demand for *sukuk* will increase. While analyzing the results of the study, only *sukuk* indices with significant α, β and λ coefficients are considered. A positive and significant risk premium indicates a positive relationship between risk and returns. In other words, the higher the risk, the higher the returns. The practices of risk-taking, profit-sharing, and loss-sharing are some of the important tenets in Islamic finance to ensure equitable distribution (Herzi, 2016).

Another way to examine market efficiency is to observe the behavior of prices today, at time *t* and tomorrow, at time *t*+1, when there is unanticipated news. This means that if the price increase yesterday, the prices could either rise or fall today. For the investors, this means that it is difficult, if not impossible, to use the information on past prices to predict future prices. Hence, past information cannot be used to predict future prices. In this type of market, an investor should identify the gainers and the losers and detect miss-priced assets to improve the overall performance of his or her portfolio (Imafidon & Arowoshegbe, 2015). Emerging *sukuk* markets are most likely to operate in inefficient markets due to small market share, new industries, and thin secondary market.

Based on the present study, the AIBIM Index operates in an inefficient market while the EX-MYR and MFCSUKUK indices operate in a weak-form efficient market post-2008 financial crisis period. In an inefficient environment, investors and speculators are much more likely to be involved in high returns-high risk ventures, which will create speculative bubbles. The speculators and traders tend to believe that they can predict the movement in prices accurately. However, speculators tend to lose more often than gain. Being overly confident in the ability to predict the market is known as 'irrational exuberance.' This is a belief that an investment decision

is going to be profitable even though there is no evidence to support the conjecture. This belief, or irrational exuberance, is another indicator of an inefficient market situation (Thomsett, 2011).

CONCLUSION

The present work examines *sukuk* market efficiency based on the efficient market hypothesis and random walk theory for three Malaysian *sukuk* indices. The volatility-based market efficiency analyses indicate that Bloomberg Malaysian Sukuk Ex-MYR Index (EXMYR) and Malaysian Foreign Currency Sukuk Index (MFCSukuk) display weak-form efficient market behaviour. Meanwhile, Bloomberg AIBIM Bursa Malaysia Corporate Sukuk Index (AIBIM) falls under the inefficient category. The findings suggest that Malaysia, despite being the leader in the global *sukuk* market, falls into the weak-form efficient category for the period under study. This might because the economy was still recovering from the impact of the global financial crisis.

The *sukuk* markets from different countries might exhibit different types of market efficiency. This is because the investment of the funds is affected by the economic, political, and regulations governing the countries involved. For example, the slow growth due to the 2007/2008 global financial crisis may reduce the net asset value of the investments undertaken by the fund in the countries involved. By examining *sukuk* market behaviour, it is hoped that policymakers may utilize *sukuk* as key financial tools to drive the domestic financial sector and demonstrates its bearings on equitable growth. Future research might want to investigate the behaviour of *sukuk* market indices relative to the bond market performance in Malaysia.

The *sukuk* market has a strong presence in Malaysia and has a positive impact on the economy. However, when the market operates inefficiently, the key players need to take corrective actions to prevent market failure. On the other hand, when the market is efficient, the price discovery process syncs perfectly with relevant macroeconomic indicators to further strengthen economic fundamentals. There is empirical evidence in some regions supporting a bi-directional causality in the finance-growth nexus. The results of this study have important implications for investors, managers, businesses, fund managers, and policymakers. It is suggested that the central bank, Bank Negara Malaysia, utilizes IoT (Internet of Things) and digital technology to develop techniques to disseminate information to industry players. Investors and issuers might be able to quickly match demand and supply, thus provide market liquidity leading to an active secondary market. Besides, regional investors can achieve a diversified portfolio through investment in *sukuk* markets, to carry a much smaller risk than a domestic portfolio. For international businesses, the findings are important for cross-border issuances and exchange rate risks since *sukuk* are mostly issued in the United States dollar. Cross-border issuances are dominated by the Malaysian ringgit. There is also a possibility that shocks hitting the economy might have a significant impact on the time path evolution of market efficiency. Since *sukuk* market performance is the trendsetter of Islamic finance, early warning signals from *sukuk* market to the real economic sector will help contain herding behavior. Strong economic fundamentals and *sukuk* market stability increase investors' confidence, leading to higher demand for *sukuk,* and sustain growth performance.

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