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The Effect of Liquidity M3 and Exchange Rate on Sukuk Market Size in Malaysia in Short-Term and Long-Term

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Abstract: The increase in the size of the sukuk market has become large with time and takes its place among the important topics that need to be studied and developed. This study focuses on the impact of some financial factors on the size of the sukuk market in Malaysia, as it is a leader in the Islamic financial industry, especially the sukuk sector. This study attempts to reveal the relationship between the factors of exchange rate and liquidity M3 as independent variables, and the size of the sukuk market as a dependent variable. This study uses the model of Autoregressive Distributed Lag (ARDL) as well as the test of cointegration to know the relationship between the variables of the study in both short-term and long-term. By examining monthly time series data starting from 04/2011 till 12/2020. The findings appear that the variables of the study have a cointegration relationship in the long run. In the short run, the exchange rate affects the size of the sukuk market significantly negatively, while liquidity M3 influences the sukuk market size positively insignificant. In the long run, the exchange rate has a positive significant effect on the sukuk market size, while the impact of liquidity M3 on the market size of Sukuk is non-significant.

Keywords: *Sukuk Market Size, Liquidity M3, Exchange Rate, Short-Term, and Long-Term*

1. Introduction and Background

The Sukuk market maintains its positive growth as well as a good reputation that continues to rise. This is evident by looking at the increase in the total number of sukuk issuances globally in both the short term and long term during the current period. At the end of 2021, the international sukuk issuance closed at around $49.427 billion. The volume of international short-term sukuk issuances in 2021 amounted to $14.120 billion, which means that issuances of longer-term sukuk reached $35.307 billion (IIFM, 2022). Moreover, regarding the local sukuk markets, sukuk issuances during the year 2021 amounted to USD 138.693 billion. Malaysia maintained the largest share in terms of volume and value, as well as it remains the largest local issuer of sukuk with 44.01 percent with US$61.045 billion (IIFM, 2022).

Hence, Sukuk as an important financial instrument continues to maintain its importance as a primary driver for the growth of the Islamic financial industry as a whole. This is due to the previous investors and issuers as well as the new participants in the Sukuk issuance. The Sukuk has maintained its gradual path across all Sukuk issuance areas and has not been affected by the COVID-19 pandemic according to Sukuk issuances up to 2022. One of the positive improvements in the sukuk market is the issuance of sukuk related to Environmental, Social and Governance (ESG), which has exceeded $20 billion by mid-2022 (IIFM, 2022).

Malaysia is the leading country in the Islamic industry particularly in sukuk issuance (Al-Fakih et al., 2022). On a cumulative basis from 2001 to 2021, Malaysia continued to maintain its number one sukuk position with combined domestic and international issuances of around $877 billion (IIFM, 2022). Malaysia, given the strength of its capital market, continues to maintain its leadership over its peers in other countries that issue sukuk. However, the increase in issuance from Indonesia, Saudi Arabia, Turkey, Bahrain, UAE and others has led to a decrease in Malaysia's share in the global sukuk market in recent years.

Recently, the sukuk market in Malaysia has been facing many challenges despite being a leader and pioneer in the industry of world Islamic finance. One of these challenges is the limited investor base. For the further growth of the Malaysian market size, it is crucial to attract new sorts of investors, such as insurance companies, pension funds, and managers of funds and assets, as well as keep the foreign investors. Moreover, the effect of the exchange rate on foreign investors. This means if the country's currency decreases against other currencies, any foreign investor will go to invest in the other countries because of decrease in the currency means a decrease in the value of the sukuk and the underlying assets. Moreover, exchange rate instability will reflect

the uncertainty in the country.

Given the substantial attention that the sukuk instruments obtained from the systems of Islamic financial markets, there is too little scholarly literature on the factors that influence the sukuk market size enhancement (Boukhatem, 2022). The present study will try to reveal the relationship between (liquidity M3 with exchange rate) and sukuk market size in both short and long runs in Malaysia. The next section will list the literature review.

2. Literature Review

Sukuk: Some of the definitions of sukuk provided by organizations and earlier studies will be reviewed in this study. Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) defined sukuk as an equal value certificate for non-divided shares of services, usufructs, and tangible assets, or, as owners of special investing or certain projects activities Syaichoni & Suminto, 2021). According to Fauziah et al. (2021), Sukuk is a bond which compatible with Sharia'ah. In this study the author will present the size of the Sukuk market in Malaysia. Therefore, the sukuk market size stands for the volume of sukuk issuance for a period. Consequently, the sukuk market size in the current study shows the volume of sukuk issuances in Malaysia from the fourth month of 2011 to the end of 2020.

Exchange Rate: Due to increased globalization, investors are now searching for investment possibilities around the world. As a result, the expansion of the bond market is significantly influenced by the foreign rate of exchange (Al-Fakih et al., 2022). The rate of exchange is the cost of one currency to another. In addition, the general definition of the exchange rate is a reflection of the strength of a domestic currency when it is compared to the strength of a currency for another country (the country of the investor). However, exchange risk refers to the possibility of receiving less of a local currency while investing in bonds that make payments through another currency (Taghizadeh-Hesary et al.,2021; Rauf & Lebbe, 2018).

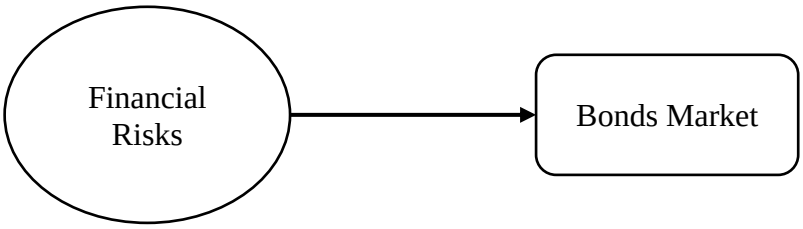
Some previous studies examine the relationship between sukuk market size and exchange rate risk, whose findings will be discussed in the discussion of this study, such as Juaris et al. (2018) studied the impact of monetary indicators on Governmental sukuk (SBSN) using series data started from 2010–2016 in Indonesia. In another study, Ahmad & Radzi (2011) studied the relationship between sukuk issuance and three variables, which are exchange rate, GDP and market liquidity in the market during 1990-2009 in Malaysia. The study also examined the trends of conventional bonds and sukuk issuance during financial crises, especially the financial crisis of 1997–1998 in Asia and the subprime crisis in 2007. Furthermore, Ahmad (2016) examined the relationship between the exchange rates of currency and sukuk issuance using aggregate data from 2008 to 2014 in Malaysia. Moreover, Syamni & Sulaiman (2010) examined the impact of the exchange rate on Sukuk. The present study will apply the exchange rate in Malaysia during the period of the study.

Liquidity M3: Money supply is divided into many types (Dritsaki & Dritsaki, 2022). M3 is the broadest sense of money supply that involves the other types of M1 and M2 as well as funds in the market, long-run deposits, and some other deposits. Moreover, M3 represents the stock value which contains the individual's savings and non-liquid stock (Agarwal et al., 2018; Dritsaki & Dritsaki, 2022). Therefore, Money supply M3 as a type of liquidity factor can impact the size of the Sukuk market.

Many studies have focused on the relationship between liquidity and Sukuk issuance. Ahmad & Radzi (2011) used yearly data from 20 observations from 1990 to 2009 to test the impact of liquidity (reserves without gold) on the sukuk market size. Another study by Sudarsono & Saputri (2018) used the Autoregressive Distributed Lag (ARDL) method to examine the effect of liquidity as the ratio of finance to deposit on sukuk Mudharabah in both the short run and long run using monthly time series data during the period from January 2011 until October 2017 in Indonesia. In addition, Doktoralina & Nisha (2020) examined the impact of liquidity and other factors on the sukuk mudharabah deposit. The data was from 8 Islamic banks with Bank Indonesia from 2013-2017. In terms of money supply, Al-Fakih et al., 2023 investigated the relationship between money supply M2 and sukuk market size in Malaysia using data from 2011–2020. Therefore, the current study will contribute to the existing literature by examining the relationship between liquidity M3 and sukuk market size.

Theoretical Framework: To investigate the effect of financial risk on sukuk growth evidence is required as theory and previous studies to prove that the financial risks are associated with sukuk investment. Financially, all investments are impacted by different factors of economic. In the context of Sukuk, Fabozzi and Dattatreya (2005) demonstrate that several environmental factors affect the sukuk performance. As a part of these investments, the markets of bonds are influenced. Fabozzi's theory (2007) mentioned that the risks linked with investing as bonds included namely sovereign risk, event risk, inflation risk, volatility risk, exchange risk, liquidity risk, credit risk, reinvestment risk, yield risk, prepayment risk and interest rate risks. Therefore, Fabozzi's theory is a suitable theory to be applied in the current study because the theory proves that financial risks relate to the bonds market. According to the Fabozzi theory, the market factors may determine sukuk growth by liquidity risk, exchange rate, inflation rate, and interest rate.

Figure 1: Fabozzi's theory's diagram



3. Research Methodology

The Source's Types of Study Data: In terms of the literature the present study used data from journals, books, theses and others. This study has two independent variables which are liquidity M3 (LM3) and exchange rate (EXCH), while the dependent variable is the size of the sukuk market (SMS). The data of the present study was obtained for ten years as monthly data for 117 observations between 04/2011 and 12/2020 From the Thomson Reuters database. Therefore, the present study is highly relying on the secondary data of the variables.

The Analysis Method of the Study: In the current study will use the E-views 12 as analysis software to process the method of this study which will use the Cointegration test as well as Autoregressive Distributed Lag (ARDL) to reveal the effect of LM3 and EXCH on SMS in short and long terms. Therefore, this study will apply the multiple linear regression method.

Test of Econometric Criteria: According to the multiple linear regression model, many assumptions have to be fully supported due to the resulting estimator fulfilling the Best Linear Unbiased Estimator (BLUE) criteria. The assumptions tests include common tests called classic assumption tests such as a Stationarity Test, an autocorrelation test, a multicollinearity test, and a heteroscedasticity test.

Stationarity Test: The realization of time series used to know inference on the process of underlying stochastic. A stationary test is the first step of doing the regression of time series to avoid a spurious regression and know whether the data of all dependent and independent variables are stationary at the level, first difference or second difference. Unit root tests have been the most popular over the years. In the present research, the Augmented Dickey-Fuller (ADF) test will be used for unit root estimation.

The Augmented Dickey-Fuller (ADF) Test for the Unit Root: The value of the Augmented Dickey-Fuller test (ADF) is less than the critical value that appears in the time series of the study variables and is non-stationary. on the contrary, when the value of ADF is bigger than the critical value the time series of the study variables are stationary.

Lag Length test: The test of lag length is required to know the suitable lag applied in the current study. The optimal lag length for every variable can be shown by an asterisk (*) on Schwarz Information Criteria (SC) which is the most popular used criterion and can use Akaike Information Criteria (AIC) and others.

Cointegration Test: The use of a cointegration test will determine the long-term relationship between dependent and independent variables. The present study will apply that through conducting Bound Test Cointegration.

Autocorrelation Test: Autocorrelation relates to many types of data, but it is more related to time series data. Autocorrelation means a disturbance in regression function within a correlation form among disturbance factors. Based on the nature of time series data, it shows that data are strongly affected by previous times data. A model decides there is autocorrelation if the errors from various times are correlated. The autocorrelation in this case will lead to an ineffective model, although the model is still inconsistent and unbiased. The autocorrelation test is needed for detecting autocorrelation symptoms using the Godfrey Serial Correlation Lagrange Multiplier and Breusch tests with hypotheses.

Heteroscedasticity Test: The linear regression model must have the same variance. The heteroscedasticity problem happens when it cannot meet the assumptions. The test of heteroscedasticity aims to examine whether, in the regression models, there is a variance of residual unevenness for known independent variables or not. The heteroscedasticity test result is the possibility of drawing an incorrect conclusion from the F-test because the significance level test is within a medium strength.

The Applying Model in this Study: The current study uses the Autoregressive Distributed Lag (ARDL) method. This method was introduced by Pesaran et al in 1997 and described as a dynamic regression model that gathers two models. The distributed lag model includes current and past values of variables and the autoregressive model includes dependent variable lagged values among explanatory variables. ARDL model can distinguish between short and long-term responses in the dependent variable into one unit of independent variables change. (Boukhatem, 2022; Juaris et al., 2018).

This study applies ARDL due to that it may distinguish between short and long-term responses of SMS to every unit of LM3 and EXCH changing. As a result, the applying model in this study can be constructed as follows:

$$\Delta SMS_t = \beta_0 + \beta_1 \Delta SMS_{t-i} + \beta_2 \Delta LM3_{t-i} + \beta_3 \Delta EXCH_{t-i} + \theta_1 SMS_{t-i+} \theta_2 LM3_{t-i} + \theta_3 EXCH_{t-i} + \varepsilon_t \text{ ----------(Equation 1)}$$

whereas:

SMS_t: Malaysian sukuk market size is at the same level.
SMS_{t-i}: Malaysian sukuk market size lag.
$LM3_{t-i}$: Malaysian liquidity M3 lag.
$EXCH_{t-i}$: Malaysian exchange rate lag.
ε_t stands for error terms which reflect some variables that aren't part of the current study model.
β_1, β_2 & β_3: stand for short-term coefficients of study variables.
θ_1 θ_2 θ_3: stand for long-term coefficients of study variables.
β_0: stands for the Constant.
k: stands for Lag length.
i: stands for Lag order.

4. Results

Data Graphs of Variables: To begin analyzing data using an econometric technique, the researcher must first look at the data. The following graphs show the data for research variables over the course of the present investigation. The first graph depicts the Malaysian sukuk market size between 4/2011 and 12/2020 and the direction with time. the second graph depicts data of EXCH within the identical time. Whereas the third graph depicts data from Malaysian LM3.

Figure 2: Sukuk Market Size Graph

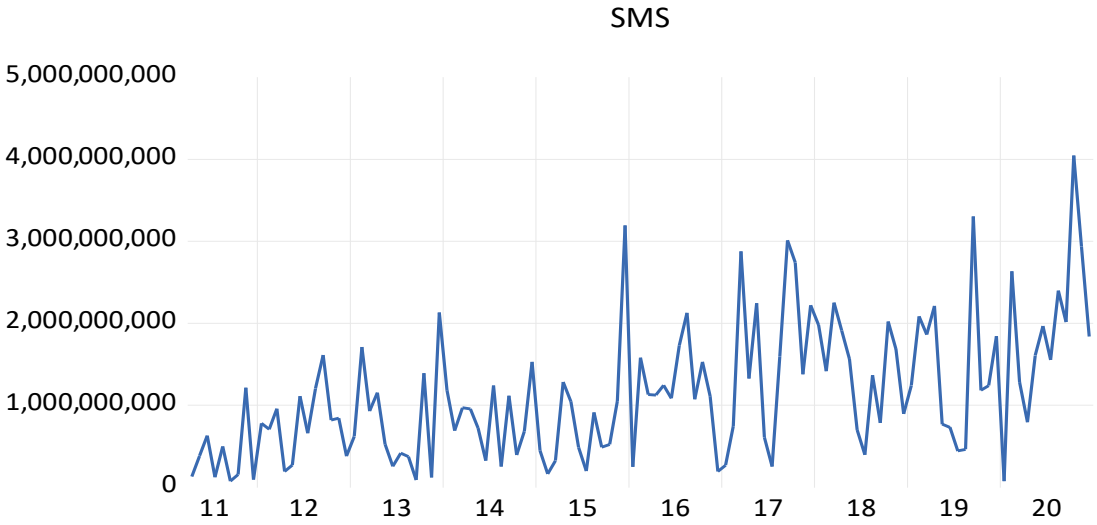


Figure 3: Exchange Rate Graph

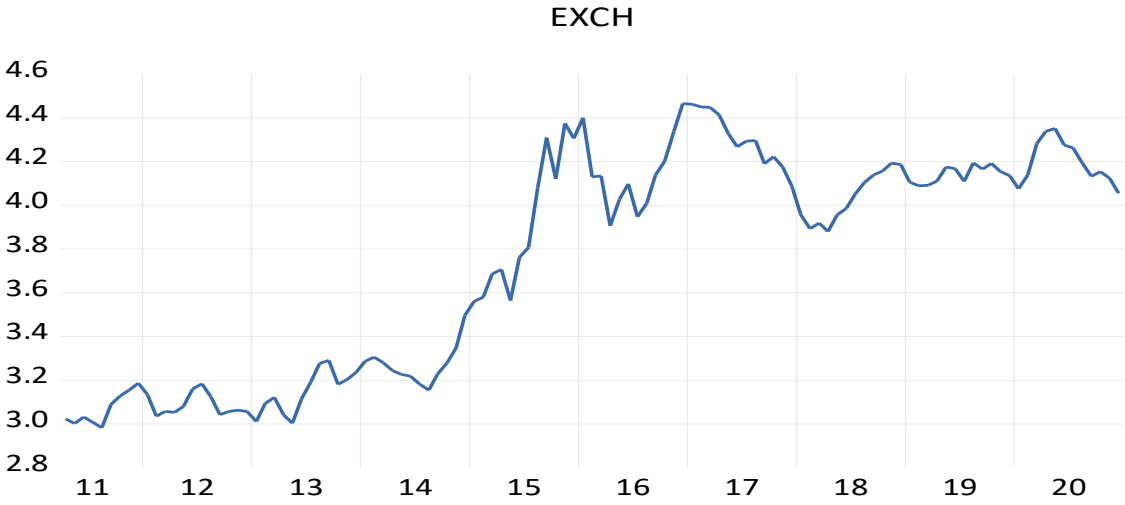
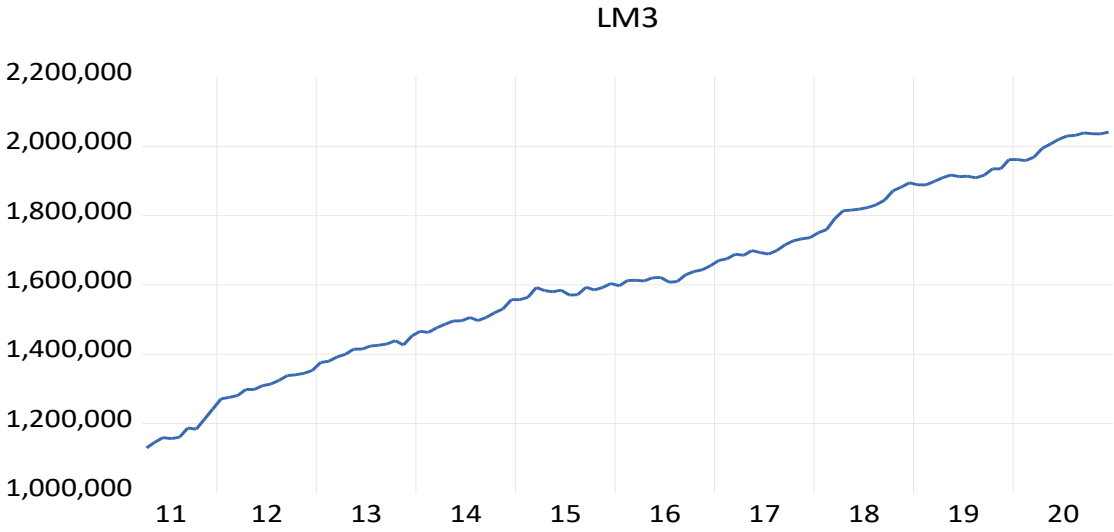


Figure 4: Liquidity M3 Graph



Test of Stationarity Result: The next stage is to determine whether variable data are stationary at level I (0), first difference I (1), or second difference I (2) after the stage of the graphs. By applying the test of Augmented Dickey-Fuller (ADF) the result will be as follows:

Table 1: Stationary Test Results

		At Level		
		SMS	LM3	EXCH
With Constant	t-Statistic	-7.6204	-1.3191	-1.3710
	Prob.	***0.0000***	***0.6190***	***0.5942***
		***	n0	n0
With Constant & Trend	t-Statistic	-9.7089	-2.7190	-1.3655
	Prob.	***0.0000***	***0.2311***	***0.8659***
		***	n0	n0
Without Constant & Trend	t-Statistic	-0.1171	8.0043	0.9295
	Prob.	***0.6412***	***1.0000***	***0.9053***
		n0	n0	n0
		At First Difference		
		d(SMS)	d(LM3)	d(EXCH)
With Constant	t-Statistic	-9.8289	-10.7117	-10.5606
	Prob.	***0.0000***	***0.0000***	***0.0000***
		***	***	***
With Constant & Trend	t-Statistic	-9.7976	-10.7405	-10.5800
	Prob.	***0.0000***	***0.0000***	***0.0000***
		***	***	***
Without Constant & Trend	t-Statistic	-9.8126	-2.9653	-10.4872
	Prob.	***0.0000***	***0.0033***	***0.0000***
		***	***	***

The result of ADF showed that the three variables are stationary at I (0) and I (1). Therefore, can apply the method of ARDL Because no variable is stationary at I (2). As a result, the sukuk market size is stationary at this level. Whereas the stationarity of exchange rate and liquidity M3 are at I (1).

The Finding of Optimal Lag Length: To reveal the optimal lag length of the study can look at the result as follows:

Table 2: The Optimal Lag Length Finding

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3893.836	NA	2.27e+27	71.50157	71.57565	71.53161
1	-3412.258	927.8101*	3.89e+23*	62.83043*	63.12672*	62.95058*
2	-3404.355	14.79100	3.97e+23	62.85055	63.36907	63.06083
3	-3397.278	12.85489	4.11e+23	62.88584	63.62658	63.18624
4	-3389.305	14.04534	4.20e+23	62.90468	63.86763	63.29519
5	-3384.550	8.113450	4.55e+23	62.98257	64.16775	63.46321
6	-3380.927	5.982739	5.05e+23	63.08123	64.48864	63.65199
7	-3375.695	8.351710	5.44e+23	63.15038	64.78000	63.81125
8	-3369.937	8.875805	5.82e+23	63.20985	65.06169	63.96084

Based on the above table the optimal lag length obtained by E-Views 12 software, all criteria indicate that the length of optimal lag is lag (1) in the present study.

ARDL Estimation Finding: To reveal the relationship between the independent variables LM3 and EXCH

towards the dependent variable SMS the present study will apply the model of ARDL. The finding based on Akaike Information Criterion (4,4,3) will show as follows:

Table 3: ARDL Estimation Finding

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
SMS(-1)	0.079990	0.093774	0.853009	0.3957
SMS(-2)	-0.122732	0.095196	-1.289251	0.2003
SMS(-3)	-0.030946	0.096315	-0.321303	0.7487
SMS(-4)	-0.195828	0.094714	-2.067579	0.0413
LM3	18541.92	6279.316	2.952857	0.0039
LM3(-1)	-25827.93	9032.438	-2.859464	0.0052
LM3(-2)	15904.43	9216.851	1.725582	0.0875
LM3(-3)	-21853.36	9382.928	-2.329055	0.0219
LM3(-4)	14704.94	6570.445	2.238044	0.0275
EXCH	-1.96E+09	7.70E+08	-2.548127	0.0124
EXCH(-1)	7.49E+08	1.07E+09	0.697700	0.4870
EXCH(-2)	-9.90E+08	1.08E+09	-0.915707	0.3620
EXCH(-3)	2.48E+09	8.07E+08	3.073798	0.0027
C	-1.92E+09	5.76E+08	-3.335124	0.0012

R-squared	0.948936	Mean dependent var	1.17E+09
Adjusted R-squared	0.886574	S.D. dependent var	8.15E+08
S.E. of regression	6.43E+08	Akaike info criterion	43.51745
Sum squared resid	4.10E+19	Schwarz criterion	43.85535
Log-likelihood	-2444.736	Hannan-Quinn critter.	43.65456
F-statistic	6.204027	Durbin-Watson stat	2.051346
Prob(F-statistic)	0.000000		

The most important results in the above table are the results of R-squared, F-statistic, and Durbin Watson. Thus, the R=squared value is 94.89% which means that the independent variables such as LM3 and EXCH illustrate a large percentage of Sukuk market size SMS total changing in this study. Whereas F-statistic result is 6.204027 with a probability value of 0.000000 which means that the current study model is perfect for the selected variables. In addition, the result of Durbin Watson is 2.051346 which proves that the series of this study's variables do not correlate because this value exists between 2 critical values 1.38 and 2.62.

The Finding of Autocorrelation Test: The test of autocorrelation can discover if the present study variables' series include a correlation of the data or not. Therefore, the result of this test will be as follows:

Table 4: Finding of Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.319730	Prob. F(2,97)	0.7271
Obs*R-squared	0.740060	Prob. Chi-Square(2)	0.6907

As the finding in the above table, both probability values of Obs*R-squared and F-statistic are bigger than 0.05. As a result, the author cannot reject the null hypothesis which indicates that the study has no serial autocorrelation.

The Finding of Heteroskedasticity Test: To know this study variables' variance homogeneity, the heteroskedasticity test applies and the finding shows as follows:

Table 5: Finding of Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.181970	Prob. F(13,99)	0.3037
Obs*R-squared	15.18214	Prob. Chi-Square(13)	0.2961
Scaled explained SS	19.98842	Prob. Chi-Square(13)	0.0955

Based on the table above, all values of Obs*R-squared, F-statistic, and Scaled explained SS are bigger than 0.05. Consequently, the author cannot reject the null hypothesis. Therefore, the present study has no heteroskedasticity.

The Finding of Cointegration Test: The author applied this test to discover the relationship between LM3 and EXCH towards SMS in the long run. Therefore, the result of this test will be presented as follows:

Table 6: Long Run Finding of Cointegration Test

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LM3	-1157.927	370.9090	3.121863	0.2524
EXCH	2.17E+08	1.80E+08	1.207632	0.0581
C	1.51E+09	4.05E+08	-3.733145	0.0003

EC = SMS - (- 1157.9270*LM3 - 217270110.6005*EXCH + 1512664841.8973)

Belong to the table the coefficients of the independent variables and the constant has been revealed. The coefficient of LM3 is – 1157.9270 with a P value of 0.2524. Therefore, the LM3's impact on SMS in the long-term is non-significant negative at 25.24%. Whereas the coefficient of EXCH is 217270110.6005 with a P value of 0.0581. As a result, the EXCH's effect on SMS long-term is significant at 10% and positive. Furthermore, the coefficient of constant (C) is 1512664841.8973 with a P value of 0.0003.

The Finding of Short-Run Relationship: The finding of LM3 and EXCH's effect on SMS within the short term can be revealed through the Model of Error Correction of ARDL. The findings will be shown as follows:

Table 7: **Finding of Short-Run Relationship**

ECM Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LM3)	18541.92	5786.083	3.204573	0.0018
D(EXCH)	-1.96E+09	7.37E+08	0.000000	0.0000
CointEq(-1)*	-0.869516	0.178408	-7.115784	0.0000
R-squared	0. 942859	Mean dependent var		15192068
Adjusted R-squared	0.925657	S.D. dependent var		9.56E+08
S.E. of regression	6.34E+08	Akaike info criterion		43.46435
Sum squared resid	4.10E+19	Schwarz criterion		43.72985
Log-likelihood	-2444.736	Hannan-Quinn criteria.		43.57208
Durbin-Watson stat	2.051346			

Cointegrating Equation:
D(SMS) = -0.869516267998*(SMS(-1) - (1157.92704002*LM3(-1) + 217270110.60051665*EXCH(-1) + 1512664841.89732003))

The table shows the finding of a relationship between the variables of the study in the short term. The D(LM3)' coefficient is 18541.9235757 with P. value at 0.0018. Consequently, LM3's impact on SMS is positive and significant at less than 0.01 in the short term. Moreover, D(EXCH), - 1962381758.56 with P. value at 0.0000.

Therefore, EXCH's effect on SMS in the short term is so significant and negative in Malaysia based on the present study. In addition, CiontEq (-1)' coefficient is -0.869516267998 with a P value of 0.0000. As a result, the relationship between independent and dependent variables in this study is so perfect based on the significant probability value. Furthermore, the signal of the error term is negative, and this signal refers to the errors of short-term convergence to adjust to the equilibrium in the long term at a speed of 86.95%.

The Finding of Bounds Test: From this test can know whether there is a cointegration relationship over the long-term between independent and dependent variables in this study or not. The findings of the test will be as follows:

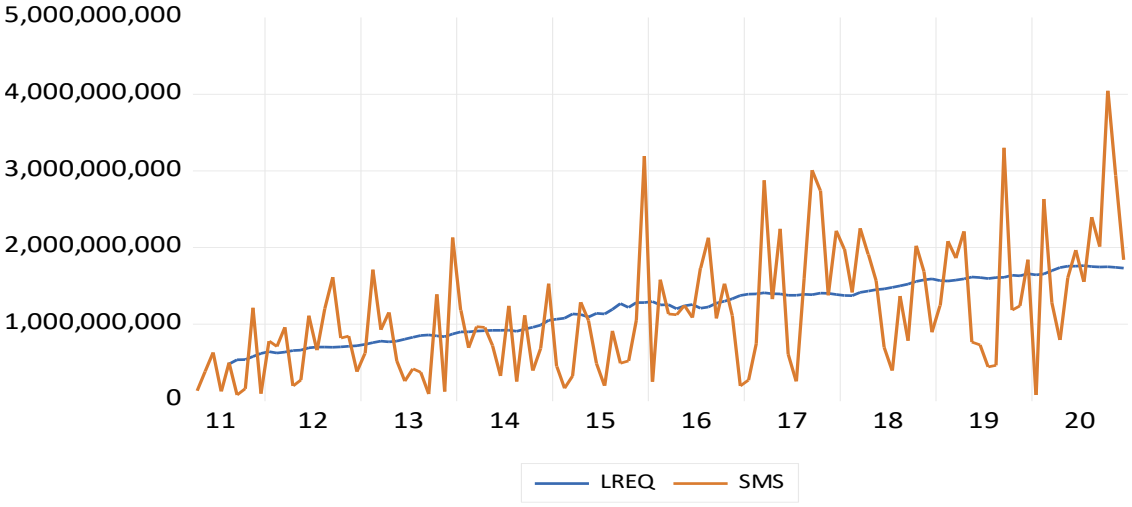
Table 8: Cointegration (bounds test) results

F-Bounds Test		**Null Hypothesis: No levels of relationship**		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	7.28628	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5
			Finite Sample:	
Actual Sample Size	113		n=80	
		10%	2.713	3.453
		5%	3.235	4.053
		1%	4.358	5.393

Based on the finding of the bounds test in the table, the real sample size in this test is 113. Whereas K stands for independent variables (IV) number in this study which are 2 variables LM3 as well as EXCH. The most significant figure in this test is the F-statistic result which is 7.28628. As a result, when comparing the bounds result with the critical values between I (0) and I (1). Thus, 7.28628 is bigger than the largest critical value (5). This means that the variables in this study have a high relationship in the long term.

Visualizing Fit of SMS and Long-Term Equation: Here will visualize the sukuk market size as well as the equation in the long term by ECT not including the sukuk market size. As a result, the line in the long term is represented through ECT after subtracting SMS. Consequently, this visualization is presented following:

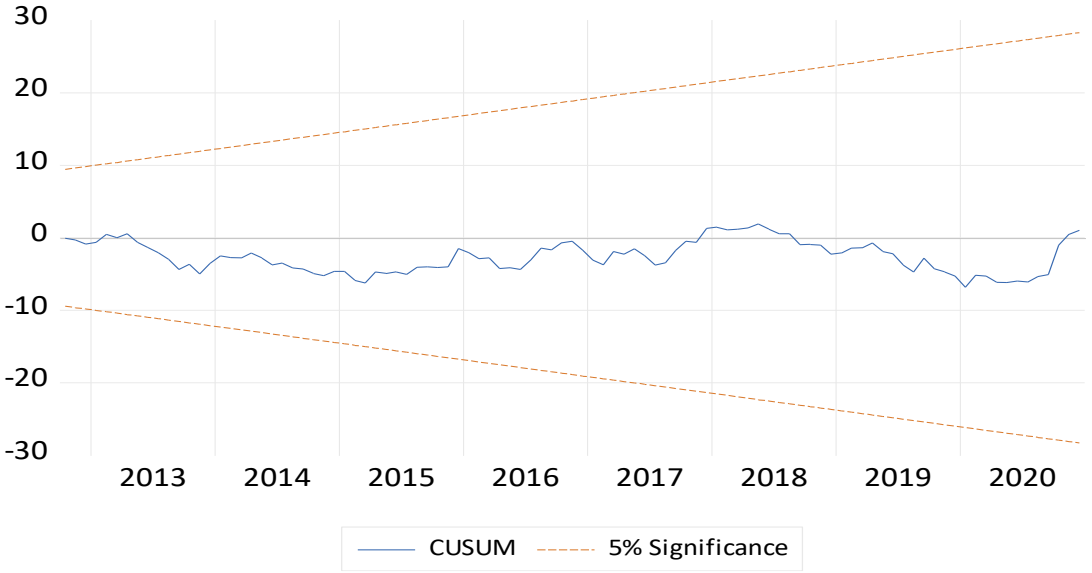
Figure 5: The Visualizing Fit of SMS and Long Run Equation



The figure presents the cointegration relation in the long-term between the SMS and the long-term equation of this study without SMS. Therefore, both of them go together in one direction. As in the figure, SMS is within blue color but the equation in the long-term of the variables without SMS is within brown color. To clarify that, the regression of this study was used to investigate the adjustment rate.

The Finding Stability Test: For checking the stability of the model this study will use the test of Cumulative Sum (CUSUM). Thus, the findings of this test are as follows:

Figure 6: The Finding of CUSUM's Test



This figure clarifies the findings of the CUSUM test. As a result, the model of the study's stability is at 0.05. This means that the present study model consistent with time. As can be seen in the figure, recursive depicted residual values lie within the specified reliable range that is between 2 red critical lines. Therefore, this clarifies that factors in the current study have a long-term relation as well as the values stability of Parameters.

Discussion

In this part of the study discussion, the author will converse about the study findings and list the studies conducted in the past in the same area. As already referred to the independent variables are LM3 and EXCH, while the dependent variable is represented by SMS. Some studies attempted to reveal the effect of liquidity on SMS. However, the present study selects LM3 as one type of liquidity for attempting to know the impact of LM3 on SMS. As a result, the key contribution of this study is to discover this relationship. Relying on some studies in the former period those conducted to reveal the impact of liquidity on the sukuk market size. Doktoralina and Nisha (2020) examined the relationship between the type of liquidity but not LM3 and SMS. The result showed a positive relationship in Indonesia only in the short term. Sudarsono and Saputri (2018) investigated the relationship between financial ratio to the deposit on SMS in both short and long terms. The finding of short-term revealed a significant positive impact, whereas the finding of long-term did not significant negative effect. Another study made by Ahmad and Radzi (2011) attempted to know the relationship between reserves (except gold) and sukuk market size. The finding found that the relationship is positive and significant in the short term. However, the result in this study for the effect of LM3 on SMS is shown in two tables (table 6 & table 7) in both terms long and short. From Table 6 the LM3 has no significant impact on SMS in the long-term with negative signal. This result shows that LM3 does not affect the SMS in the long term. As a result, this result matches with the study result of Sudarsono and Saputri (2018) for the effect of liquidity on SMS but with different types of liquidity. The reason for this result may be that most of LM3 just invested in long-term investments which reflects the non-significant of the relationship. For Table 7 the LM3 has a high significance positive impact on SMS in the short-term. This means that when LM3 is high in the short term the size of the sukuk market increases and vice versa. Therefore, this finding matches the study result of Sudarasono and Saputri (2018) in

the short run for the effect of liquidity on SMS with different types of liquidity. The reason for this relationship is that the investors in Malaysia prefer the investment of LM3 in Islamic securities in the short term. Consequently, when their LM3 is high they push up the size of the Sukuk market.

In terms of the second independent variable which is EXCH, there are some studies conducted in the past to reveal the relation between ECXH and SMS. The study by Syamni & Sulaiman (2010) was conducted in Malaysia to know the effect of EXCH on SMS. The Syamni & Sulaiman finding showed that EXCH does not affect SMS. Another study by Ahmad (2016) in Malaysia. Ahmad's (2016) result found that EXCH does affect SMS positively significantly. In addition, Ahmad and Radzi (2011) investigated the relationship between EXCH and SMS in Malaysia. Ahmad and Radzi's (2011) results showed that EXCH has a significant impact on SMS in Malaysia. One of the previous studies that focused on the impact of EXCH on SMS in Indonesia was conducted to find the relationship in both long and short terms which done through Juaris et al. (2018) and their result revealed that EXCH has a non-significant negative impact of SMS in the short run. Moreover, EXCH has a positive significant impact on SMS in the long term in Indonesia. On the other hand, the findings of the current study are shown in both tables (table 6 & table 7) around the impact of EXCH on SMS in Malaysia in both the long and short terms. The finding in the long-term of Table 6 presents that EXCH has a positive impact on SMS with significance at more than 0.05. Therefore, the EXCH's impact is significant on SMS at 0.10. This finding matches with Juaris' study at ten percent significance. This finding shows that when the rate of exchange is high the size of the sukuk market increases and vice versa. The reason for this finding is that most of the investors in the Malaysian sukuk market are local and they are not influenced by the changing of EXCH in the long term. On the contrary, the finding in the short-term of Table 7 shows that EXCH has a negative significant impact on SMS in Malaysia. This finding shows that when the rate of exchange is high the size of the sukuk market decreases in the short-term and vice versa. The reason for this finding is that foreign investors prefer to invest in the short-term when the rate of exchange is low and do not invest when the EXCH is high. Therefore, they can affect the size of the Sukuk market. This finding matches with Juaris' finding in the short-term with a significance of less than 0.01 but Juaris' result is non-significant.

5. Managerial Implications and Recommendations

Malaysia is widely regarded as one of the world's leading countries in Islamic finance with a strong agenda for investments in the Islamic financial market. However, Malaysia didn't get there overnight. This required many actors including the country's capital market regulators, government agencies, and the private sector. These parties have greatly helped in the development of the Sukuk market in Malaysia, and the current study can be applied to enhance its position in the Islamic financial market as well as export the successful experience to the rest of the Islamic countries particularly those who need to rebuild their country after the devastation of war. The researcher believes that after identifying the relationship between the financial risks and Sukuk growth the policymakers, financial institutions, organizations and government join hands to reduce these risks and make the optimal decisions to enhance the issuance and the growth of the Sukuk market.

Conclusion

Depending on the findings in this study, some conclusions be obtained from analyzing the SMS data in Malaysia between 4/2011 and 12/2020. The size of the sukuk market in Malaysia still growing time by time. The methodology in this study demonstrates a high cointegration relation in the long term between SMS as dependent variable and independent variables (EXCH & LM3) and figure (4) shows the moving path of all variables throughout the study data. In conclusion in this study's findings, LM3 influences SMS significantly positively in the short term, while EXCH affects SMS negatively significantly. The finding long-term showed that LM3 had a negative impact but was non-significant on SMS in Malaysia during the data period, while EXCH had a positive significant effect on SMS in the long-term in Malaysia for the same data period of this study.

Moreover, this study contributes to the current literature by studying the effect of the liquidity type M3 on the size of the sukuk market in Malaysia by using the econometric approach to reveal this effect in both the long and short terms. Therefore, can apply this study to other areas that have a perfect market for Sukuk. Malaysia has the largest portion of the global sukuk market, and it is a director in the industry of Islamic finance (Al-Fakih et al., 2022). Moreover, the authors suggest that any other author can apply this model in other countries to add knowledge to the area gap.

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