Investigating the Asymmetric Effect of Sukuk Returns on Economic Growth - Evidence from Indonesia, a NARDL Perspective

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Investigating the Asymmetric Effect of Sukuk Returns on Economic Growth - Evidence from Indonesia, a NARDL Perspective

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Abstract

Purpose - This paper aims to examine the asymmetric association between Sukuk returns and economic growth in Indonesia.

Design/methodology/approach - The Non-linear autoregressive distributed lag (NARDL) model and Granger causality test are employed from the periods 2014:M1 to 2019:M4, using GDP Growth as a proxy of economic activities, Indonesia Sukuk return index as explanatory variables and inflation and interest rate as control variables.

Findings - The results posit a long run asymmetric relationship between Sukuk return and economic growth and that a positive shock on Sukuk returns results to an increase in GDP growth by 0.31% in the long run. Moreover, the results also imply that Sukuk returns and economic growth moves at different magnitude in Indonesia. However, a negative shock in the long run has no impact on economic growth. Finally, the granger causality analysis reported a unidirectional causal association flowing from Sukuk returns to economic growth, while interest and inflation rate has a neutral association with economic growth.

Research limitations/implications -The sample size used in this paper is relatively small due to data availability; therefore, contradicting results with other studies conducted with this regard may arise.

Practical Implications - An increase in economic growth directly impact on Sukuk returns thereby maximizing the wealth of households and holding corporations. The economy can also feel the negative effect if the reverse happens.

Originality/Value: This is one of the first time a research is conducted using non-linear auto-regressive distributed lag NARDL to assess the impact of Sukuk issuance on economic growth with special concentration in Indonesia.

Keywords: Sukuk Return, Economic Growth, NARDL, Indonesia

1. Introduction

Sukuk has developed into one of the most rapid growing financing tools compared to the conventional method of financing. But has this growth really affected the economy of the issuing countries particularly Indonesia.Indonesia is considered the largest economy in Southeast Asia consisting of approximately 265Million inhabitants based on the United Nations estimate (UNFPA, 2010). With about 90% Muslim inhabitants, Indonesia has a large Islamic economy which serves as a breading place for Islamic finance market. The country's GDP grows by 5.17% in the last quarter of 2018. Therefore, the focal point of this paper is to discover whether the returns from Sukuk issuance have really impacted economic growth by using GDP Growth as a proxy of economic activities. Study on the asymmetry effect of Sukuk returns on growth in economic activities is still a very limited area of research and relatively new in terms of academic literature. However, this study deals with all the facets of Sukuk returns in relation to economic growth leaving no stone unturned. Benbekhti *et al.* (2019) Islamic bonds are a very useful tool in financing government deficit.

Sukuk have being praised by many due to its importance to economic growth and the uplifting of the standard of living of citizens. Diaw and Mbow (2011) Sukuk returns provide numerous advantages and benefits regarding government spending on infrastructure. According to Fahrian and Seftarita (2016) Sukuk strengthens the connection between capital market and financial institution. Sukuk is said to be based on tangible assets, so as it can be used as a tool in improving the relationship between the real sector and financial sector. Benbekhti *et al.* (2019) Sukuk is regarded as one of the most prominent and standing Islamic financial engineering products, and under the international interest in Islamic finance connection between markets and financial institutions. In the same vain, Sukuk holders have a preference to have a predictable, realistic and stable cash flow for long-term periods. Fahrian and Seftarita (2016) described Sukuk as a new solution for people who need financing source and investment. Sukuk have been flourishing in providing funds to corporations and governments across the globe (Idriss, Echchabi, and Abd Aziz, 2018). Malaysia continued to dominate the Islamic bond market during 2017 in terms of both outstanding and in issuance were USD 35bn, it was followed by Saudi Arabia and Indonesia of USD 26bn and USD 9bn respectively. By the ending first quarter of March 31, 2019, RAM Ratings annouced. Indonesia to be in second place with a share of 17% (US$6.7bn) and Saudi Arabia 15.3% (US$6.1bn). The trend of Sukuk issuance is not expected to cease in the near future for any of these three markets. Sukuk is regarded as the second largest contributor to asset of Islamic finance industry, totaling to USD 426bn in outstanding value in 2017 all of the nineteen countries that witnessed Sukuk issuance. 63% of which was corporate issuance followed by sovereign issuance 31% and agency 65%. In January 2018, the Republic of Indonesia successfully issued Sukuk amounting to USD 3Million, in two folds of 5-year and 10-year maturity at the rate of 3.75% and 4.40% respectively. The 5-year fold is a breakthrough and a symbol in Islamic finance, as it was the first ever Sovereign 'Green' Sukuk issuance. Despite this issuance, the Republic of Indonesia further raised 5.15 trillion rupiah (USD 357.02 million) worth of Sukuk in early 2019 making it two Sukuk issuance in a span of one year. A legal establishment set up by the Government of Indonesia which was later named as Perusahaan Penerbit SBSN

Indonesia III with its main task of issuing shariah compliant securities in international markets and in foreign currencies. In 2002 Indonesia witness its first Sukuk issuance by Indosat, due to the success of this issuance lead to many companies to start issuing and investing in Sukuk.

In 2018, global Sukuk market witnessed a suck increase in the total issuance of Sukuk after a massive decline in 2015. Global Sukuk issuance showed a steady growth of 13.2 percent from preceding years totaling USD112.4 billion. By the end of first quarter 2019, we have seen a posivitive amount of USD46 billion almost close to the overall Sukuk issuance in 2015 (USD66.1 billion). However, the net Sukuk issuer outlook remained comparable to previous drift, with Malaysia continued to be the majordominant for Sukuk issuance for the past years, in controlled of a market share of 46.4 percent in total issuances, followed by Indonesia and the Emirates (UAE), amounting to 17% and 15.3%, respectively. On May, 2018, S&P Global Ratings affirmed its 'BBB-' long-term and 'A-3' short-term sovereign credit ratings on Indonesia. The outlook on the long-term rating is stable. Indonesian policymaking has been effective in promoting sustainable public finances and balanced economic growth in recent years (RatingsDirect, 2018). Indonesia Sukuk issuance can also be link to her relentless effort in trying to combat climate change by issuing its first green Sukuk and investing the returns to green projects such as Renewable energy and waste management consequence on the Indonesian Economy. Despite the positive impact of Islamic finance and Sukuk in particular; current research has insisted that Islamic finance as it is currently practice, does not necessary promote economic growth in a significant way.

However, there is still gap in the understanding of Sukuk proceeds in relation to economic growth within Islamic countries about the feasibility and efficiency of the extend of Islamic bond, therefore this study trys to give evidence in favor of this subject relying mostly in the case of Indonesia by evaluating the efficiency and the linkage of Sukuk in relation to economic growth.The paper contributes to the known existing literature in many ways. It contributes to the unexplored area of research onthe potential asymentric effect on Sukuk issuaance on the Indonesia economic growth.Moreover, prior research used ARDL, GMM etc. However, we tried to tackle the association amid Sukuk issuance and its impact to economic growth by means of NARDL. However, NARDL model utilizes both positive and negative partial sum decompositions, allowing for the detection of an asymmetric effect both in the long- and the short-run (Karim, Karim, & Shukri, 2017). It is no doubt the study provides a solid understanding of Sukuk issuance in relation to econonomic growth.

The rest of the paper is organized as follows: section two presents the literature review, theory and hypothesis development, followed by methodology and empirical model, while the fourth section provides the empirical results. Finally, the last section presents conclusions and implications of the study.

2. Literature Review and Hypothesis Development

The importance of research in the area of Islamic finance especially Sukuk cannot be over emphasize, it is still a very new area compared to other areas and a lot is

expected to be explored soon. Therefore, the literature review comprises a selection of research papers and articles on studies covering related topics in Sukuk and Islamic finance serving as basis for the in-depth literature review. After completion of the initial review, it assists in formulating the research objectives in detail.

2.1 Relationships between Sukuk and Economic Growth

Islamic finance has become an interesting area of research in recent years and researchers have spent a lot of time in trying to understand the Islamic finance stream. A critical review of the empirical and theoretical literature on Sukuk development and its role in economic development is still limited and untapped (Zulkhibri, 2015). Abduh and Azmi Omar (2012) examines the short and long run relationships amid the development of Islamic banking and economic growth of Indonesia investigated using Autoregressive Distributed Lag (ARDL) model, and their results showed the two-way relationship between Islamic banking and economic growth. Mostly, Islamic finance is considered by investors as an alternative in the event of financial crisis (Mustafa et al., 2015). Sukuk plays a vital role in mobilizing resources and covering the budget deficit, and financing projects, especially for infrastructure development (Benbekhti et al., 2019).

Khoutem (2014) studies the close relationships between Sukuk markets and Islamic banks and their role in the economic development process. The Author focused more on the importance of Sukuk to economic development. The findings state that marketable Islamic bond (Sukuk) provides more readily available funds to finance the economic development and in-turn helping in the problem-solving process of unemployment and poverty. Sukuk issuance can be used as a driver to archive government's aims for sustainable projects in order to help enhance sustainable development and sustainable growth (Altaleb and Yusri 2016), (Dewi et al., 2018).

A latest research by Idriss, Echchabi and Abd Aziz (2018) described the positive relationship between Sukuk financing and growth in the economy, by using three different variables; Gross Capital Formation, Gross Domestic Product and trade variable. They tested the variables by using Toda and Yamamoto Granger Non-Causality test, the results from the text showed that, Sukuk financing had a significant influence on economic growth for Islamic countries. Findings from this study has risen eyebrows in Islamic finance literature, Malaysia International Financial Center (MIFC) regarded Sukuk as "the financial product" for deeper and broader Islamic capital markets. Sukuk can also act as an alternative debt instrument to conventional bond method (Ahmed, Hassan, and Rayfield, 2018). Sukuk market might play a vital function in economic development and support the gross domestic product (GDP) of a country (Al-raeai, Zainol, and Khilmy 2018). Sukuk is further linked to economic growth in its ability to help finance key government potential projects in the area of infrastructure and agriculture (Arsalan and Dar 2007). The Islamic law in terms of Sukuk has integrated moral virtue to financial markets in Islamic banking and finance sector (Solarin 2019).

In a similar study done by Smaoui and Nechi, (2017), investigated the link between Sukuk market development and its impact of on economic growth using a system GMM estimator. They concluded that, Sukuk markets development plays an important role in cementing long-run economic growth. Parisi, Aam and Rusydiana, (2017) Sukuk can also be used as an alternative source of financing realistic economic development projects. This can be seen by the government of Indonesia taking a large junk of the proceeds from Sukuk and investing it back to the economy taking the Ijarah as an example, this notion is supported by Asian Bond Monitor report ADB (2014), Sukuk based on the Ijarah is much more similar to conventional bonds in the sense that it offers certainty of returns. In the case of Ijarah the rental amount is fixed.

Bacha, Lahsasna and Diaw (2014) focused on the empirical relationship between Sukuk and its effect to Public Sector Funding and debt management linking the Gross Domestic Product and Sukuk proceeds. The Authors further examines how Sukuk is used to finance expense base public sector projects whose return are linked to the Gross Domestic Product (GDP) and the development of the issuing countries. With the increase in public projects in Indonesia, there is a high rise in the issuance of Sukuk and using its proceeds to finance some of the projects. Thomsom Reuters (2017) ranked Indonesia as 4th in total Sukuk outstanding. In order to further authenticate these findings between the links of Sukuk proceeds on economic growth, Thomson Reuters (2017) issued a report on Indonesia Islamic Finance growth and suggested that, Sukuk issuance works well for the transportation sector.

A latest study by Suriani *et al.* (2019) took a diverse techniques in demanding to comprehend and connect the dots between proceeds from Sukuk issuance and its consequences on economic growth and sustainability in Indonesia by using a cointegration approach to analyse the relationship and the connection between Sukuk and economic growth in the short and long term. The Authors findings revealed a balance and positive influence on economic growth and composite stock price index through channel of asset prices, In light of these results, Sukmana and Ibrahim (2017) argues that Islamic banks are likely to bring differences to financial and economic stability and to monetary transmission mechanisms. According to Hemrit and Benlagha (2020), financial development is crucial and central to economic growth.

2.2 Hypothesis Development

The findings from the literature review helps in developing the research intentions and formulating a sound and justifiable hypothesis that can be tested. The literature review is continuously used throughout the study to help in addressing some problems discovered during the research by constantly referring to the relevant literature. The on-going literature serves as guidance in formulating an appropriate research design. We formulated a testable hypothesis.

H1: Asymmetric association amid Sukuk returns and growth in economic activities (GGDP)

Causality association amid Islamic stock market development and economic growth has being tested by a recent research. Muharam, Anwar and Robiyanto (2019) emphasizes on the link connecting Sukuk and economic growth by using Malaysia and Indonesia as study sample, their results indicated that, there is a bidirectional causality association, two-way association in both short-term and long-term, between Islamic stock market development and economic growth development in the republic of Indonesia. However, the results states the positive association between stock market development and Sukuk market development in Indonesia (Muharam et al., 2019). These findings were upheld by earlier research done by Baur and Lucey (2009), Fathurahman and Fitriati (2013) and (Hossain, Uddin, and Kabir, 2018). In the Islamic financial sector, Sukuk is considered as one of the most important tools of financing (Mosaid and Rachid Boutti, 2014).

2.1 Diffusion of Innovation (DOI) Theory

The study makes use of the diffusion of innovation (DOI) theory to give a detail explanation of the level of adoption of Islamic banking in Indonesia. The diffusion of innovation theory model was first brought to the world stage by Rogers in the year 1962, with the main concept evolving over later editions (Rogers, 1983). The diffusion of innovative theory posit that innovation diffusion is a general process not tied by the type of invention and innovation, by who the adopters are or by place or culture. Rogers (1983) defined diffusion as the process by which an innovation is communicated via various channels over time and among the members of a particular social system.

As explained above, Rogers (1983) argued that agents of change are needed for an innovation to be adopted, that uncertainty reduces the speed of innovation adoption, and that the adopters of innovation should be aware of its benefits and dangers. Rogers (1983) further suggested that diffusion of innovation theory entails certain attributes, such as relative advantage, perceived complexity, and perceived compatibility which are vital for the adoption of an innovation. For companies in Indonesia to understand and share information regarding Islamic banking products such as Sukuk, conferences and seminars need to be organized by interested bodies, such as the Bank Indonesia (BI), religious and political leaders and the marketing departments of Islamic banks and public relations offices (Bananuka et al., 2020). The citizenry needs to be aware of the gains and losses of adopting and investing in Sukuk, by so doing it will give Indonesia a better chance because of its large Muslim population.

3. Methodology

3.1 Method

This study employs quantitative research technique; hence it intends to explain existing theories that explained the correlations among variables using quantitative

elements in research. We used this kind of research considering the main goal and objective of the study and to obtain most recent information from credible and reliable sources so as to come up with rational, reliable and sound conclusions and recommendations for the study.

3.2 Data

The paper examined the asymmetric effect of sukuk return on economic growth of Indonesia using a monthly data of sukuk return index (SUKR), short term interest rate, inflation rate and economic growth spanning from 2014:1 -2019:4. The sukuk return index is measured by Indonesia Sukuk Index Composite Return, short term interest rate (interbank rate), inflation (consumer price index) and economic growth (GDP per Capita). The Sukuk return Index is obtain from Penilai Harga Efek Indonesia (PHEI), while GDP, interest and inflation are retrieved from Federal Reserve Economic Data (FRED). Economic growth is the dependent variable; Sukuk return as the independent variables while interest rate and inflation rate are the controlled variables. The variables are expressed in natural logarithm, this can be writing as follows:

$$LGDP = f(LSUKR, I, INF) \tag{1}$$

$$LGDP = \beta_0 + \beta_1 LSUKR + \beta_2 I + \beta_3 INF + \varepsilon_t \tag{2}$$

Where, LGDP is the log of GDP per Capita, LSUKR is the log of Sukuk return, I is interest rate and INF is of inflation rate. The study used a non-linear autoregressive distributed lag NARDL model to test for a probable asymmetric impact of Sukuk return on economic growth. This technique is an asymmetric expansion of the ARDL method propounded by Pesaran and Shin (1999) and (Pesaran, Shin, and Smith, 2001). The motive for selecting the NARDL over the ARDL is that the Nonlinear Autoregressive Distributed Lag (NARDL) model developed by (Shin, Yu, and Greenwood-Nimmo 2014), provides a cointegration test under the assumption that all the variables are integrated on the same order with the exception of I(2). Furthermore, it allows the testing unknown cointegration prevent the omission of invisible variables to the normal ARDL. Therefore, the NARDL enable us to differentiate the presence of linear, nonlinear and no cointegration (shahzad *et al.*, 2017). Furthermore, these tests can also be conducted using a nonlinear threshold Vector Error Correction Model (VECM) or a smooth transition model. However, the convergence problem due to the proliferation of the number of parameters that these models suffer from is a limitation to these models. This problem is not present in NARDL, unlike other error correction models that require the integration order of the considered time series to be same. In NARDL model this restriction is relaxed, thereby allowing for a combination of different integration orders. Furthermore, this method chooses appropriate lag order for the variables, thereby solving the issue of multicollinearity. Most importantly, the NARDL is more suitable for small sample size as compared to the ARDL and nonlinear threshold model. Therefore, we used it to examine the long run asymmetry, and the positive and

negative effects. The unrestricted error-correction analysis in the linear ARDL is structured as:

$$\Delta y_t = \delta_0 + \sigma y_{t-1} + \vartheta x_{t-1} \sum_{i=1}^{p-1} \mu_i + \Delta y_{t-1} + \sum_{i=0}^{q-1} \beta_i x_{t-i} + \varepsilon_t \qquad (3)$$

Where "y_t is the dependent variable X_t is a k x 1 vector of regressors, the parameters of σ and ϑ symbolize the long-run and the parameters of μ_i and β_i stand for the short-run coefficients, respectively, while the ε_t is the error expression"(Shin et al., 2014).

The decomposition of the vectors of explanatory variables into positive and negative values is expressed as:

$$X_t = X_0 + X_t^+ + X_t^- \qquad (4)$$

Thenon-linear autoregressive distributed lag NARDL model for long-run cointegrating regression of non-linear asymmetric can be structured as:

$$Y_t = \lambda^+ + X_t^+ + \lambda^- X_t^- + \varepsilon_t \qquad (5)$$

The presence of a long-run asymmetric relationship among the variables was tested as y_t, X_t^+ and X_t^- by (Pesaran et al. 2001). Hence, FPSS denotes the common null assumption for absent of cointegration among the variables beside the unconventional hypothesis of cointegration, which is structured as:

$$H_0: \sigma = \vartheta^+ = \vartheta^- = 0 \qquad (6)$$

$$H_1: \sigma \neq \vartheta^+ \neq \vartheta^- \neq 0 \qquad (7)$$

Furthermore, Wald test is utilized to analysis the null assumption of short and long-run symmetry association amid the dependent and control variables. The long-run symmetric is expressed as:

$$H_0: \vartheta = \vartheta^+ = \vartheta^- \qquad (8)$$

Short-run symmetric equation is expressed as:

$$H_0: \sum_{i=0}^{q-1} \beta^+ = \sum_{i=0}^{q-1} \beta^- \qquad (9)$$

The Procedures involved in the estimation of non-linear autoregressive distributed lag NARDL is to first estimate standard OLS and decompose the variables into positive and negative. Second, employ the bounds test to establish the existence of long run cointegration between the variables. Finally estimate Wald test to analysis long-and short-run symmetry.

The Granger causality is employed to establish the causal association amid GDP growth and independent variables (Sukuk return) the equation is express as follows:

$$(LGDP) = a_i + \sum_{i=1}^{m} \beta 1 (LGDP)t\text{-}1 + \sum_{j=1}^{n} \beta 2Tj(LSUKR)t\text{-}j + \sum_{j=1}^{n} \beta 3Tj(I)t\text{-}j + \sum_{j=1}^{n} \beta 4Tj(INF)t\text{-}j + \mu t \quad (10)$$

The NARDL is presented as follows:

$$\Delta LGDP_t = \beta_0 + \beta_1 LGDP_{t\text{-}1} + \beta_2 LSUKR^- + \beta_3 LSUKR^+ + \beta_4\, I + \beta_5 INF\ \varepsilon t \quad (11)$$

4. Results and Discussion

4.1 Descriptive Analysis
Most of the time raw data appears to be meaningless to end users unless it is translated using analytical tools making it easy to explore, explain, present, describe and examine relationships and trends from the data gathered.
Table I revealed that LGDP, LSUKR, I and INF have an average monthly growth of 1.6%, 5.5% and -0.54% and -1.0% respectively.

Table I. Descriptive statistics.

	LGDP	LSUKR	I	INF
Mean	1.6237	5.5371	-0.5423	-1.009
Median	1.6292	5.5293	-0.7241	-0.8557
Std. Deviation	0.0243	0.0639	1.2894	0.9258
Skewness	-0.6986	0.7475	-0.5684	-1.3969
Kurtosis	2.7906	2.3232	3.7666	7.4696
Minimum	1.5686	5.4652	-4.6052	-4.6052
Maximum	1.6487	5.6746	1.2208	0.9902
Sum	1.6487	5.6746	1.2208	0.9002
No. of observation	64	64	64	64
Missing	0	0	0	0

"Note: LGDP=GDP Growth, LSUKR=Sukuk Return, LI=interest rate and LINF=inflation rate"

4.2 Regression Analysis

4.2.1 Pearson Correlation Matrix
The results from table II showed that sukuk return and interest rate have a positive implication on economic growth; however, inflation is negatively associated with GGDP. The results further propose no multi-colinearity between the independent variables hence multi-colinearity exists when the strength between the independent variables is at least 80%.

Table II. Pearson correlation matrix.

Variables	LGDP	LSUKR	I	INF
GGDP	1.0000			
InSUKR	0.0693	1.0000		
I	0.3945	0.2938		
INF	-0.3279	0.1347	0.0676	1.0000

4.2.2 The Unit Root Results

Table III showed the unit root test result; this analysis is carried out to establish the order at which the variables are integrated, t is I (0) and I (1). The unit root operates under the assumption there is unit root at level however stationary at first difference. The study used the breitung unit root because it allows us to discover unit root in a certain time series data (Perron, 1989). The results from the table indicate that LGDP is stationary at level while LSUKR, I and INF are stationary at first difference. We can conclude that the use of NARDL is justified thus the variables are not stationary at I (2).

Table III. Break-point unit root test results

Variables		level	First difference	
	Statistics	P value	Statistics	P value
Breitung t-stat	1.78531	0.9629	-4.44070	0.0000

4.2.3 The Bond Test of Cointegration

The results from the bound test suggested that there exist a long-run cointegration among the variables, thus the F-statistic is greater the critical value.

Table IV. Bond test of cointegration.

Dependent Variable	F-statistics (Fpss)	Bond critical value**		Outcome
		I(0)	I(1)	
LGDP=f(LSUKR,I,INF)	12.385*	2.03	3.95	Cointegration

* "Point out the null assumption of the absence of cointegration at 5%. ** The bounds critical values of unrestricted intercept and no trend are derived from (Pesaran et al. 2001)"

Figure 2 hand 3 report the CUSUM (cumulative sum) and CUSUMSQ (cumulative

sum squared) plot the results suggest that the model is stable hence the blue lines fall within the boundaries of 1% significant level. Furthermore, the diagnostic results in table show that there is no autocorrelation and hetroskedasticity in model.
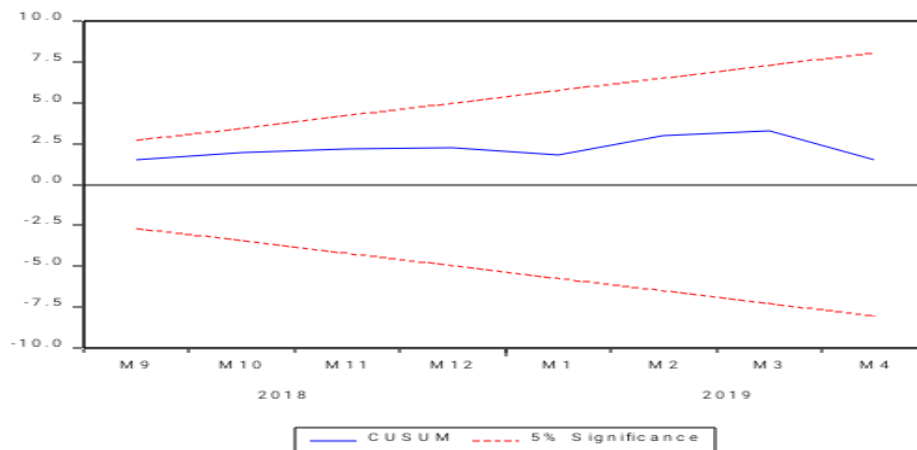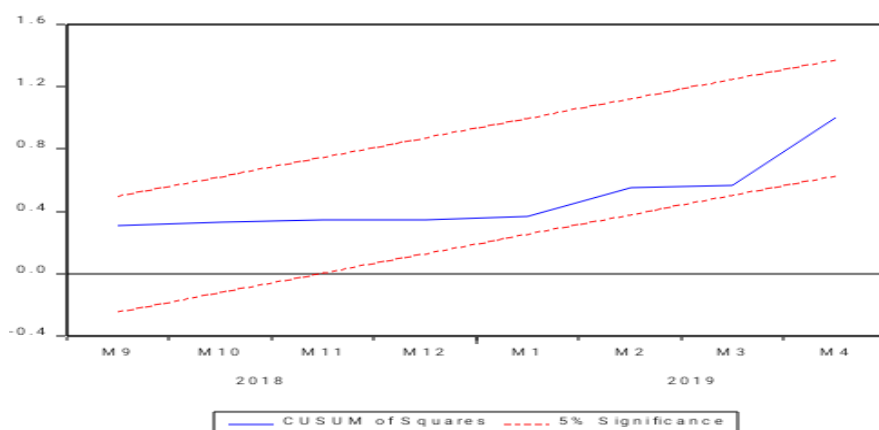

Figure 1. CUMSUM plot

Figure 2. CUSMSQ plot.

4.2.4   Wald Test

Table V represents the Wald test under the null hypothesis of long-run symmetry and an alternative hypothesis of asymmetric relationship between LSUKR and LGDP. The outcome proposes the existence of a long-run asymmetric association between economic growth and Sukuk return, thus we reject the null proposition of long-run symmetry. Therefore, outcome of the Wald analysis supported our hypothesis of an asymmetric association.

Table V. Wald test.

Variables	Long-run Asymmetric
LSUKR	5.8635

(0.0465)

Note: ***'**' * "indicates the level of significance at 1% 5% and 10% respectively of rejecting the null hypothesis of symmetric relationship. The parentheses represent the p values".

4.2.5 Long-run asymmetric effect - NARDL estimation results.

Table VI. Long-run asymmetric effect - NARDL estimation results.

	Variables	LGDP
Long-run:		-----
	LSUKR_P	0.3065**
		(0.4300)
	LSUKR_N	-0.5577
		(0.1056)
	I	0.5893*
		(0.0508)
	INF	-0.3054
		(0.0759)
	C	**0.3543**
	Diagnostics	**—**
	Adj.R^2	**0.7874**
	X^2LM	**0.2552**
	X^2H	**0.3426**

"Note: ***'**' * indicates the level of significance at 1% 5% and 10%. **R^2** symbolizes the R^2 in the estimation. **X^2LM and X^2H** signifies the Breusch-Godfrey serial correlation LM tests and hetroskedasticity".

The results revealed that a positive shock on sukuk returns will increase economic growth by 0.43%.in the long run. Surprisingly, the analysis revealed that a negative shock on sukuk returns has no impact on economic growth. Furthermore, interest rate has a positive significant impact on economic growth, meaning that 1% increase in interest rate will increase economic growth by 0.58%. However, inflation negatively affect economic growth.

4.2.6   Granger Causality Test

Table VII. Granger causality test.

H0: absence of causality	F-statistic	p-value
LSUKR➡LGDP	8.28493	0.0001
	1.32419	0.2767
LGDP≠I	0.85031	0.4835
	2.18315	0.1234
LGDP≠INF	2.14120	0.1443
	0.43436	0.7320

Table VII shows the granger causality test, the outcome propose a unidirectional causal relationship running from Sukuk returns to economic growth, hence the p value reject the null proposition of no causal association at 7% significance; while, interest rate and inflation has a neutral causal relationship with economic growth.

4.3 Discussion
The findings suggest that a positive shock in Sukuk returns results to an increase in GDP growth in the long run; this means that a positive increase in LSUKR will increase LGDP by 0.31%. However, a negative shock in the long run has no impact on economic growth. Furthermore, interest rate has a positive significant relationship with economic growth, but inflation rate has an insignificant relationship with economic growth. Therefore, up and down of the economic activities and changes of inflation do not influence the demand for Sukuk. this findings is supported by the findings of (Karim et al., 2017) and (Fahrian and Seftarita, 2016). According to Osaseri and Osamwonyi (2019), insignificant impact of Sukuk returns to GDP is caused by the large usage of Sukuk returns prior to 2014 compared to after 2014, earmarked for unproductive subsidies rather than for productive capital expenditure. For the meantime, most of the proceeds generated by Sukuk are continuously allocated for capital expenditure.

The positive influence that Sukuk returns gives on GDP proves the diffusion of innovation theory and theory of bond demand. This means that an increase in public purchasing power or GDP in general also increases the number of outstanding Sukuk. Despite the liquidity of Sukuk been relatively low, Osaseri and Osamwonyi (2019), found that the market share of Sukuk is controlled by investors who tend to be passive and hold until the end of the maturity in order invest. It shows that Sukuk has their own market share, and its segment is growing quite fast. Other possible reason for the underlying result is a relatively high return of Sukuk. And because it is an Islamic product, it is quite promising and relatively has no risk. Therefore, it is logical to say that Sukuk returns has a strong positive influence on GDP growth shock in Indonesia.

The granger causality analysis reported a unidirectional causal association flowing from Sukuk returns to economic growth, while interest and inflation rate has a neutral association with economic growth, meaning Sukuk returns influences economic growth. This might be as a result of many financial securities available in the Indonesia financial market leaving investors with many options like; bonds (Dewi et al., 2018). Sukuk has a huge potential in Indonesia especially when it is offered for retail (Ginanjar, 2015). Greater demand for Sukuk as an alternative investment is increasing by the day. However, the lack of transparent and efficient markets and bankable structural frameworks to work within, can be an obstacle in the continue issuance of Sukuk in the years to come (Jobst, 2007). The Growth of global Sukuk issuance will also rely on the way the established structures are, interpreted, understood and accepted (Andreas et al., 2008), (Izhar and Dikmener, 2018). Unlike

conventional bonds, Sukuk is more focused on the economic development use. Sukuk as an Islamic bond has a bigger proportion than the conventional bond in Indonesia financial market. Furthermore, interest rate has a positive significant relationship with economic growth, but inflation rate has an insignificant relationship with economic growth.

5. Conclusion and Practical Implications

The ration behind this paper is to examine the asymmetric association amid Sukuk returns and economic growth in Indonesia, to achieve the motive of the study a NARDL framework from the period 2014:M1 to 2019:M4 is employed. The results posit a long run asymmetric relationship between Sukuk return and economic growth and that a positive shock on Sukuk returns results to an increase in GDP growth by 0.31% in the long run. Moreover, the results also imply that Sukuk returns and economic growth moves at different magnitude in Indonesia. The results further suggest that, interest rate has a positive significant relationship with economic growth, but inflation rate has an insignificant relationship with economic growth.

These findings have several implications for both government, society, and investors. Looking at the Granger causality test, Sukuk return has a unidirectional causation on economic growth, as a result an increase in Sukuk returns directly impact on economic growth thereby maximizing the wealth of households and holding corporations. The economy can also feel the effect if the reverse happens, decline in economic development can cause a decline in Sukuk growth causing a negative impact on Sukuk holder's wealth and economic possession. This situation can be regarded as unidirectional association flowing from economic growth to Sukuk returns. On the other hand, the results from NARDL suggested that, a decline in Sukuk returns would have a great negative impact on economic growth; therefore the government of Indonesia should be cautious and take precautions in order to avoid the negative consequences of a decline in Sukuk returns. Indonesia should try and upon up more to the rest of the world and penetrate the global market by amending its strict laws on investment. As an alternative, the government can also rely heavily on retail Sukuk issuance rather than depending on foreign investors to always fill the gap, this strategy can help the locals boost up there economic standing.

The outcome of the study is expected to be useful to all stakeholders, in terms of investing, formulating and implementing better constructive policies to further enhance the performance of Sukuk in the economy. The study also has the potentials to add to academic literature in the already existing literature on Islamic finance. It is of benefit to students, and researchers who have interest in research in the Islamic finance stream.

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