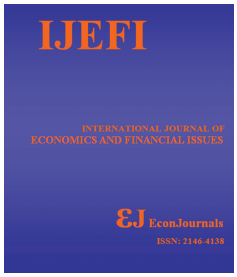

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How Sukuk and Conventional Bond Affect Economic Growth? Evidence from Indonesia

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ABSTRACT

This study is aimed to show how big the impact of sukuk and conventional bond toward Indonesia's economic growth in the period of 2011-2019 by using ARDL method to observe the impact on the short term and long term. The result of this study shows that on the short term, sukuk does not affect the economic growth and bonds affect the economic growth. As on the long term, sukuk affects the economic growth and bonds do not affect the economic growth. This shows that Indonesian people see sukuk better than conventional bonds in the future.

Keywords: Conventional Bond, Growth, Indonesia, Sukuk
JEL Classifications: G1, O4, O53

1. INTRODUCTION

One of the indicators of the success of a country's economic activities is national income which continues to increase from year to year. The increase of national income of a country every year shows a good economic growth in the country. The average of economic growth in Indonesia, in 2013-2019, is 5.11% with the highest economic growth rate in 2018 of 5.17% and the lowest in 2015 of 4.88%. Economic growth is characterized by the increase in goods and services in the economy. The increase of the production is closely related to lots of investments used in economic activities. The need for this investment can be met by the existence of a capital market that is offered to those who need funds and those who have excess funds. The investment options offered in the capital market are conventional bonds and Islamic bonds, or better known as sukuk.

The movement of sharia-based economic development has increased in many countries in the world, which was initially marked by the establishment of Islamic banking. Indonesia as a Muslim-majority country also develops the economy by applying sharia principles that began with the establishment of Bank Muamalah as the first Islamic banking in Indonesia, then currently there are 743 Islamic banks with 1,371 branch companies in all over Indonesia. Shari'a banking can give opportunities for Muslims and non-Muslims who want to invest in the bank that is in accordance with Islamic principles, where the main principle is to provide comfort and confidence in halal transactions.

The expansion of the Islamic financial economy in Indonesia then develops on the Islamic Capital Market with the issuance of Sharia Mutual Funds by PT. Danareksa Investment Management on July 3, 1997. The effects of the issuance of Islamic financial instruments can encourage development and economic growth, and contributing to the development of Islamic investors in Indonesia. In the process, there are many new products in sharia investment to face the increasing market demand for sharia banking and can affect the Islamic economy improvement, especially on Islamic bonds or sukuk (Iswara et al, 2019).

Sukuk is one of the investment instruments that has a very good prospect value for the future. Sukuk is marketable securities that is for long term based on sharia principles and issued by the holders of sharia bonds (sukuk), which was then the issuer must be paid to income holders of sharia bonds in the form of profit-sharing and paying the bond fund that is on due date (Beik, 2011).

According to the Financial Services Authority/Otoritas Jasa Keuangan (OJK), sukuk was first made by PT. Indosat, Tbk in September 2002 and developed with the presence of other sukuk. The presence of sukuk is the addition for the sharia capital market in Indonesia. In the current development, sukuk is more similar with other securities products in the form of capital investment with collateral of real assets (Irawan and Siregar, 2019). From OJK data, in 2003 there are 6 companies issuing sukuk with a total of sukuk emissions and outstanding sukuk of Rp. 740 billion and it increases to 375 companies in 2019 with a total of sukuk emission of Rp. 48,240 billion and *outstanding* sukuk of Rp.29,829 billion. With this number, Indonesia is one of the countries with the largest number of sukuk issuers in the world and continues to increase. This development is certainly a good value to attract investors to invest in the sukuk sector in Indonesia.

In the Indonesian banking industry, the capital market is divided into two, namely Islamic bonds and conventional bonds. Conventional bonds are an important part of the capital market and can be used as a capital source for company. However, the use of this funding source has not been maximized and even neglected in the banking sector. The bond capital market can provide capital in the long run for a company to increase input and output so that it can improve the economic' development and growth.

In developed countries, such as Indonesia, they are not ready to make bonds as their source of economic improvement. This condition can be seen from the public's awareness in using bonds that make conventional bonds as income comes to an end and infrastructure improvements that are not yet sufficient as in developing countries. Besides, Indonesia is also not ready to strengthen the financial sector, especially in the world capital markets and banking.

According to data from Bank Indonesia (BI), bonds in Indonesia have never been above USD 9 billion from 2011 to 2019. The total amount of these bonds cannot be used as a source to fund the infrastructure development. Infrastructure improvement is one of indicators for the development and economic growth (Calderon and Serven, 2006). If bonds cannot support infrastructure improvement, sukuk will be an alternative (Fahrian and Seftarita, 2016).

2. LITERATURE REVIEW

Nowadays, there are very many researchers studying conventional sukuk and bonds that can derive economic growth. The relationship between capital market development and economic growth has been discussed and empirically proven by Schumpeter (1911) wherein his study he tried to substitute all capital market development variables and economic growth.

Historically, studies on the relationship of capital market development and economic growth in the middle of the century were began by McKinnon (1973) and Shaw (1973), which showed that when the government made policies in limiting the financial system, it would hamper national financial development or circulation and would slow down the pace of economic growth. This theory is also supported by the study of Abu-Bader and Abdu-Qarn (2016) that focuses on the importance of economic growth influenced by financial market developments, especially its impact on capital accumulation and technological advancements, and the study conducted by Pradhan et al (2019) which shows there is a co-integration between the development of the bond market, the stock market, inflation, and interest rates that can affect economic growth.

Financial markets can also force companies to diversify portfolios, increase liquidity, and reduce risks, especially in financial trading to stimulate increased economic growth. This explanation is also in accordance with the study conducted by Demirguo-Kunt and Levine (1996), Stievano 2004), and Echchabi et al (2016) which state that diversifying portfolios and increasing liquidity can increase the company's stock price on the stock exchange that will affect the pace of the national economy to increase. Thus, there are 3 types of causal relationships between capital market developments and economic growth, namely *supply* - *leading*, *demand* - *following*, and two-way relationships.

Based on the financial flow, recently, sharia financial or sharia bonds have emerged and developed in Muslim-majority countries, such as Indonesia, so that in Indonesia there are two bonds, namely Islamic bonds and conventional bonds. The first sharia bonds were studied by Furqani and Mulyani (2009), Haron and Ibrahim (2012), and Benbekhti et al. (2019) in Malaysia who found that there was a causal or two-way relationship in the short and long term between Islamic finance and investment with economic development and growth. Besides, sukuk provides a very important role in economic financing, especially to pay more than half of the total state debt. The results of the study are also in accordance with the study conducted by Al-Parisi and Rusydiana (2016) and Fahrian and Seftarita (2016) in Indonesia which found that sukuk and bonds could help repay national debt and improve the economy.

Another study, Surani et al. (2018) who conducted the study in Indonesia and Malaysia showed a short-term and long-term causality relationship between sukuk and economic growth through exchange rates and inflation. The same results were also found in a study conducted by Al-Raeai et al (2018) who studied in the country - the gulf states that sukuk can increase or reduce economic growth through exchange rate and inflation. The study conducted by Alkhawaja (2019), Muharam et al. (2019), and Aman et al. (2019) found that sukuk can influence economic growth through investment and trade openness.

For conventional bonds, the first study after McKinnon (1973) and Shaw (1973) was carried out by Levine and Renelt (1992), King and Levine (1992), and Atje and Jovanovic (1993) that was conducted in almost 100 countries of the world. In 1997, research conducted by Levine (1997) found the importance

of financial systems toward economic growth and suggested a functional approach to the role of the financial system that only focuses on the relationship between growth and quality of the financial system functions (marketing managers, risk, trade, and allocating capital and mobilizing savings). Then the total of the bonds can be influenced by external factors such as state law and political institutions that can play a role in the development of the financial and economic sectors (Levine, 1998; Levine et al., 2000, and La Porta et al., 1998. Other studies such as Beck and Levine (2004), Hoffmann et al. (2005), and Fink et al. (2006) also state that conventional bonds can improve the national economy in a country. Thus conventional bonds have a positive influence on economic growth (Mahara, 2018; Hue and Tram, 2019).

3. DATA AND METHODS

The model used in this study is the ARDL Model in which there is a regression model that can explain the relationship between dependent and independent variables by entering the value of the previous period (lag) of the independent variables to explain the relationship in the long term and short term of a study. The data was taken from Bank Indonesia SEKI for economic growth and bonds data, and the Financial Services Authority (OJK) from 2011 to 2019 for the sukuk data.

The ARDL model is very important in econometrics because it can change static economic theory into dynamic theory by using explicit period calculations and can distinguish responses of one percentage change in the short and long term in each variable value.

The ARDL model begins with a long-term relationship between the variables. Those variables are economic growth, sukuk, and conventional bonds without the logarithm of the estimation model:

$$Y_t = \beta_0 + \beta_1 sukuk + \beta_2 bond + \varepsilon_t \quad (1)$$

Equation 1 is multiple regression without using logarithms with hypotheses β1> 0, β2> 0, β3 <0, and β4 <0. Before running the ARDL model, stationary testing can be done by testing the unit root (unit root test). This test is aimed to test all variables whether the data is stationary or not based on Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) by looking at the comparison of t-statistics and critical value test at the level of 5%, both at level and first difference. In the ARDL analysis, all variables must be stationary at first difference and trend and intercept positions. This is because the ARDL test was also carried out by looking at the short-term effect of the independent variables toward the dependent variable using the error correction term (ECT). When all stationary variables are at the *first difference*, the model becomes *error correction* obtained from:

$$\Delta Yt = \beta 0 + \underbrace{\sum_{i=1}^{m} \beta iyt-1 + \sum_{i=1}^{m} \vartheta iyt-1}_{Short\ on} + \underbrace{\varphi 1yt-1 + \varphi 1xt-1 + \mu t}_{Long\ on} \quad (2)$$

Where:
βi, δi is the overall variable coefficient in the short run,
ϕ1, ϕ2 are overall variable coefficients in the long run,
μt is an error term.

If the equation is broken down based on the variables used in this study, the equation for the short term is

$$\Delta Gt = \beta 0 + \sum_{i=1}^{m} \beta i \Delta Gt-1 + \sum_{i=1}^{m} 2i \Delta sukukt-1 + \sum_{i=1}^{m} \beta 3i \Delta bondt-1 + \Upsilon \varepsilon t-1 + \mu t \quad (3)$$

Where Δ is the change of the dependent variable, ϒ is the parameter coefficient, the μt-1 symbol of Cointeg (−1). Equation 3 is the relationship between variables in the short run derived from Equation 1 by using the Engel-Granger method if the stationery requirements are met.

Next is the equation for determining the lag or model of ARDL, so the best ARDL model in this study uses the equation:

$$\Delta Gt = \beta 0 + \sum_{i=1}^{m} \beta li \Delta G_{t-1} + \sum_{i=1}^{m} \beta 2i \Delta sukuk_{t-1} + \sum_{i=1}^{m} \beta_{3i} \Delta bond_{t-1} + b_4 G_{t-1} + b_5 sukuk_{t-1} + b_6 bond_{t-1} + \mu t \quad (4)$$

4. RESULTS AND DISCUSSION

4.1. Root Test Unit

Before estimating, the first step that must be done is to look at the time series data whether they are stationary or not by using Augmented Dickey-Fuller (ADF) and Philip Perron (PP) through the unit root test of all variables. The root unit test results can be seen in Table 1.

From the Table 1 it can be seen that only all stationary variables at the first difference are at the α level of 5%, where the ADF and PP are smaller than the critical value of 5%. Table 1 also explains that this study has met the requirements of the ARDL model.

4.2. Test for Long-Run Relationship between Variables

After all stationary variables are at the first difference, it can be determined in what lag the ARDL model will be run. This determination is done to get good results to know the effect of the independent variable and the dependent variable. Besides, the purpose of determining the length of the lag is to stabilize and normalize the model and determine if this study can be carried out in the long run. The following shows the best lag in this study.

Based on Table 2, it shows that the best long lag is in lag 3.Thus, the ARDL regression is only 3 lags in maximum. If it is more than 3, it will lead to biased results and cannot be done in the long run.

4.3. Autocorrelation, Heteroscedasticity, and Normality

Just like multiple regression that checks the classical assumption test, the ARDL model also has a classical assumption test but the difference lies in multicollinearity where there is no

Table 1: Unit root test

Variable	ADF				PP			
	Level		First difference		Level		First difference	
	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.
Gr	−3.0888	0.1246	−5.9660	0.0001	−3.0609	0.1312	−6.5127	0.0000
Sukuk	−2.3922	0.3770	−6.7670	0.0000	−2.2261	0.4612	−9.9385	0.0000
Bond	−3.2591	0.0904	−5.0388	0.0014	−2.4742	0.3380	−4.9059	0.0019

Source: Eviews 10

Table 2: Lag length criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	50.43327	NA	1.13E-15	−2.87474	−2.73870	−2.82897
1	125,3051	131.5929	2.10E-07	−6.86698	−6,322279*	−6.68388
2	140.0375	23,21466	1.51E-07	−7,21439	−6.26207	−6.89397
3	153.3567	18,56612*	1.21E-07*	−7,47616*	−6.11570	−7,01841*

Source: Eviews 10

ARDL regression and it is replaced with the normality test. The normality test is done to check the model distribution in this study. The following presents the results of autocorrelation, heteroscedasticity, and normality in this study.

Table 3 shows that all dependent variables have a relationship with the dependent variable, all variables are homoscedasticity, and all variables are normally distributed in this study. It means that this study, conducted with ARDL analysis, did not have autocorrelation and heteroscedasticity and was normally distributed.

4.4. Model Stability

After the model is proven to have a relationship, homoscedasticity, and normal distribution, the next step is to test the stability of the model chosen in this study. In the ARDL model, it can be done using two methods and those are looking at the CUSUM test and looking the CUSUM of Squares test where there is a boundary line to prove that the other lines inside are on track. As shown in Figures 1 and 2.

Based on Figures 1 and 2, they show that the blue line is between two red lines, it means that all the variables and models used in this study are stable. This condition is very good for a research to see the short term and long term effects.

4.5. Bounds Test

After all the previous conditions are fulfilled, the last condition to be done is a bounds test to see the strength of the influence of each independent variable toward the dependent variable in the long run. The first bounds test was introduced by Pesaren et al. (2001) that was based on a comparison between the statistical bounds test and the bounds test table issued by Pesaren et al. (2001). If the statistical bounds test is smaller than the table bounds, the model cannot be run and does not have long-term effects. However, if the statistical bounds test is greater than the bounds test table, the model can be run and all variables can affect the dependent variable in the long run.

Table 4 shows that the F-stat in the bounds test is 6.396961 and the F-stat bounds in the Pesaren table is 2.63 at the lower limit or stationary at the level, and 5 at the upper limit or stationary at

Table 3. Autocorrelation, heteroscedasticity, normality

Test	Null hypothesis	Stat. test	Prob.
Serial correlation	No correlation	0.1353	0.9346
Heteroskedasticity	Homokedasticity	16.9026	0.1108
Jarque-Bera	There is Normal Distribution	4.4986	0.1054

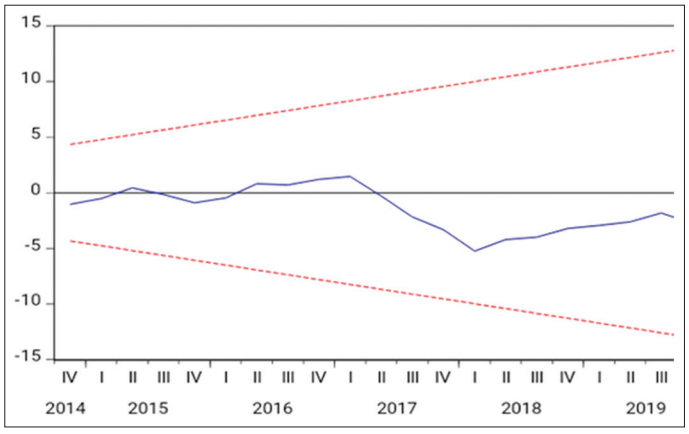
Source: Eviews 10

Table 4: Bounds test

F-bounds test		Null hypothesis: No level relations hip		
T-statistic test	Value	Significant (%)	I (0)	I (1)
F-statistics	6.396961	10	2.63	3.35
k	2	5	3.1	2.87
		2.50	3.55	4.38
		1	4.13	5

Source: Eviews 10

Figure 1: Cusum test



Source: Evies 10

the first difference. With the F-stat value greater than the F-stat in the Pesaran table, both at the level and at the first difference, the long-term regression can be performed and is by the requirements of the ARDL model.

4.6. Short Term Results

After all the requirements in the ARDL are fulfilled, a short-term regression can be performed according to the criteria of the ARDL

model. Regression in the short term uses equation 3 that uses the previous-period error correction term model. The following shows the results of short-term estimation in this study.

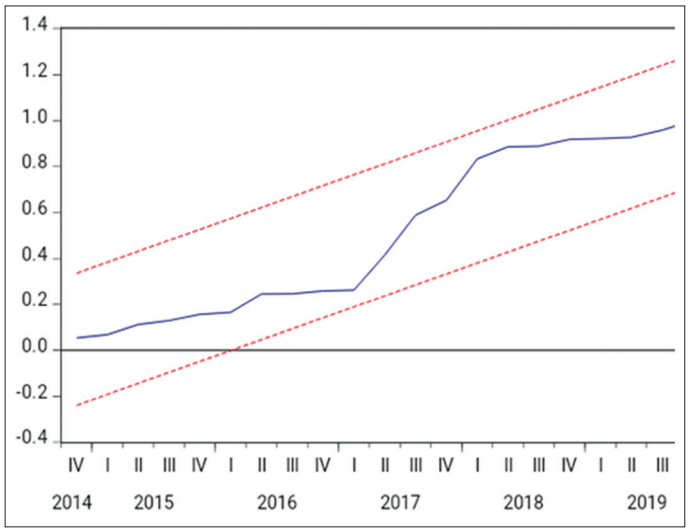
Table 5 shows that ECT (−1) is negative and significant. This means that all variables in the study are related in the long run. Table 5 also shows that bonds affect economic growth in Indonesia in the short term while sukuk does not affect economic growth in Indonesia in the short term.

4.7. Long Term Results

After knowing ECT (−1) has a negative and significant relationship, modeling, in the long run, is similar with double regression and it uses equation 1. Long-term regression can show if the independent variables are following the existing situation in affecting the dependent variable. The following are long-term estimation results.

Table 6 shows that sukuk has a positive effect on economic growth while bonds do not affect economic growth in Indonesia. Moreover, the R-squared of 0.9339 means that 93.39% of all independent variables in this study affects economic growth in Indonesia. Table 6 also shows an F-stat of 29.6587, it means that all the variables are bound simultaneously so that it is possible to be studied both on a short-term and long-term basis.

Figure 2: Cusum of square



Source: Evies 10

Table 5: Short run results

Variable	Coefficient	Std. Error	t-Stat	Prob.
sukuk	0.047972	0.043252	1.109143	0.2765
bond	0.176167	0.060026	2.934859	0.0065
ECT (−1)	−0.458827	0.086349	−5,31365	0.0000

Source: Eviews 10

Table 6: Long run results

Variable	Coefficient	std. Error	t-Stat.	Prob.
c	13.8614	0.9263	14,9646	0.0000
sukuk	0.1718	0.0256	6.7093	0.0000
bond	-0,1048	0.1042	−1,0051	0.3232
R-squared		0.9339	AIC	-4.0705
Adj R-squared		0.9024	SC	−3.5667
F-stat		29.6587	DW stat	2.0399

Source: Eviews 10

5. DISCUSSION

Tables 4 and 5 show that in the short term, sukuk does not affect growth but long term sukuk affects economic growth in Indonesia. These results are in accordance with the study conducted by Goaied and Sassi (2010), Abduh and Chowdhury (2012), and Benbekhti et al (2019). Sukuk does not affect economic growth caused by investors' decisions to invest in sukuk (Azouzi and Echchabi, 2013). When investors take their investments and/or new investors invest short-term sukuk, they will not be productive because sukuk, especially project-based sukuk, takes a very long time to be productive towards increasing economic growth (Yuksel et al 2017; Benbekhti et al., 2019). According to Benbekhti (2019), the transfer was a form of government expenditure to finance economically-feasible projects but it was not enough to force investors in important projects by reducing budget deficits. In other words, through sharia bonds (sukuk), they will be transferred to agriculture, industry and commercial sectors. This certainly will burden the government when a public expenditure increases without using a substitution financing tool (Fahrian and Seftarita, 2016).

Therefore, sukuk is better than conventional finance as a traditional instrument (Mitsaliyandito and Arundina, 2018). Sukuk is more stable than conventional bonds for global and regional uncertainty factors (Naifar et al., 2017; Alkhawaja, 2019). Traditional tools (sukuk) can provide temporary solutions to the budget deficit problem of but can also increase inflation and give more burdens to the public because of interest rates. So, sukuk instruments are the most appropriate to fund the budget deficit (Amaliah and Aspiranti, 2017; Al Parisi and Rusydiana, 2017). Otherwise, when sukuk decreases, it will decrease the government's budget balance because Indonesia is very dependent on sukuk to fund public expenditure and to fund budget deficits. Market development will encourage financial inclusion (Smoui and Nechi, 2017; EchChabi et al., 2016).

For Indonesia, sukuk is a banking product that is very useful for private and foreign investors because the initial purpose of sukuk issuance is to fund projects in the state budget, especially in the sectors of agriculture, energy, transportation, telecommunications, manufacturing, and residence. This financing can be in the form of State Sharia Securities (SBSN) that has been considered in the annual state budget.

The next variable is bonds that in tables 4 and 5 are also inversely related to sukuk, which in the short term bonds affect economic growth, while in the long term, bonds do not affect economic growth in Indonesia. These results are in accordance with the study conducted by Muharam et al. (2018) Pradhan et al. (2019), Hue and Tram (2019) where there are inversely proportional effects on the short and long term. Seeing the results, the Indonesian government has a very serious problem in marketing and issuing bonds.

There are 4 problems faced by the government, the first problem is the undeveloped bond market conditions. This is due to the absence of a benchmark in the yield curve or clarity in the long run, the limited supply for a good quality bonds, the limited demand for bonds, and inadequate infrastructure, though currently the government is in the process of developing infrastructures. Second, the lack of bond liquidity that is low compared to those in the stock market. The low volume of bond transactions shows that bonds in Indonesia are still lack of liquidity.

Third, the absorption of the local market in the Indonesian stock exchange is still lack and there are many foreign investors who hold back and even run out from Indonesia due to bad bureaucracy. Fourth, there are long-term economic and political uncertainties because bonds in Indonesia are usually valid more than 5 years. With this long due date, investors will consider the higher inflation risk and political climate conditions in handling large cases (such as the current Covid-19 virus cases and problems that cannot be overcome in several provinces, one of which is Jakarta.). Investors will also see how strong the central bank will hold interest rates low because if interest rates increase, investors will lose capital and/or profits.

6. CONCLUSION

Many studies have been conducted to see the effect and the relationship between financial development and economic growth. In terms of the role of studying Islamic finance in economic growth, this research has found that at least two directions, those are, in the short term, sukuk does not affect economic growth and long-term sukuk affects economic growth. In this case, domestic payments or funding provided by Islamic banking has contributed to economic growth. Therefore, Syariah banking has proven to be effective to facilitate the transmission of household finances from deficit to surplus. This condition indicates that the development of Islamic banking can stimulate economic growth and, at the same time, encourage the increase of Islamic banking in Indonesia.

From the results of this study showing that in the long run sukuk increases economic growth, the government must keep promoting Islamic banking because it has proven profitable for the economy. However it has some conditions that the foundation of Islamic banking must be strong, synergize, and the percentage of Islamic banking assets must be greater 3 % of total conventional banking.

As for bonds, this research found evidence that the bond market does indeed encourage economic growth, but only in the short term. In the long run, the bond market decreases economic growth, because if one of indicators of financial development is changed, the bond market will be unsteady and be left by investors. Thus, the government must provide a particular and efficient capital allocation that is in line with the development of a guaranteed bond market. Moreover, a healthy financial markets can stimulate, develop, and facilitate the fundraising in the economy to support economic activities.

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