



Value at Risk of Sukuk Ijarah and Mudharabah in Indonesia

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Abstract

Objective – Sukuk is one of financial instrument that is compliant with Islamic Sharia law. Sukuk is popularly being used as a funding mechanism by the governments and corporations throughout the Muslim world and other countries. The aim of this study is to investigate risk structure of sukuk ijarah and mudharabah in Indonesia.

Design/methodology – This study using Value at Risk (VaR) framework with an independent model analysis of t-test samples. VaR is a method of assessing the risk that uses standard statistical techniques routinely used in other technical fields. Formally, VaR is the maximum loss over a target horizon such that there is a low, pre-specified probability that the actual loss will be larger. Samples of this study were 21 companies that issued sukuk ijarah and mudharabah listed on the Indonesia Stock Exchange.

Results – The results indicate that sukuk ijarah have a lower level of risk than sukuk mudharabah. By identifying the sukuk risk, it should enable stakeholders to address related funding issues.

Keywords Islamic Finance, Sukuk, Ijarah, Mudharabah, Value At Risk.

1. Introduction

A company has excess funds in the form of cash due to gains or achieving goals. There are several ways to utilize the excess funds at the same time to gain benefit. One of them is investments in bonds or sukuk. As the time runs, there will be a modification of bonds in investment markets. Sukuk is one of the modifications that occur in the investment market. It is a halal investment which avoids usury, gharar, and maysir. According to Sharia Board of Indonesian Ulama Council fatwa No.32/DSN-MUI/IX/2002, sukuk can be interpreted as an Islamic long-term securities which issued by the issuer to the holders and it requires the issuer to pay income to the holders in the form of profit sharing, margin/fee, as well as repayment of the bonds at maturity. The differences between Sukuk bonds and conventional bonds are the concept of reward and profit sharing instead of interest, the existence of underlying transaction in the form of certain assets, and the Islamic-based contract/agreement.

According to AAOFII (Accounting and Auditing Organization for Islamic Financial Institution), there are many types of sukuk known internationally but only four of them are regularly used by the public, namely mudharabah, ijarah, musharaka, and istishna. Mudharabah is one form of cooperation, of which one party provides capital (rabb al-maal) and other parties provide expertise (mudharib). The profit of the cooperation is divided based on the proportion that has been previously approved. Losses incurred will be borne solely by the capital provider. Ijarah is a sukuk in which one party, alone or through a representative, sell or lease an asset to another party based on the rent price and the lease period without transfer of asset ownership. Musharaka is a cooperation between two or more parties to combine capital to build new projects, develop the existing project or fund operations. Gains and losses incurred are shared according to the capital participation. Istishna is a contract in the

form of the purchase agreement between the parties for project financing. The process, duration, and prices are determined by the agreement.

State-owned sukuk records a very rapid movement. Until the period of March 3, 2014, 43 sukuk were issued with a total of Rp139.97 trillion. Since the first sukuk issued in 2002 until now, there is 64 cumulative issuance of corporate sukuk with total emissions of Rp11.9 trillion. Based on the data obtained from IDX (Indonesian Stock Exchange), sukuk issued in Indonesia is currently only using two kinds of contract namely mudharabah and ijarah. According to Fatah (2011), sukuk during the period of 2002-2004 was dominated by mudharabah for Rp740 billion (88%) and the remaining Ijarah amounted to Rp100 billion. The 2004-2007 period was dominated by ijarah amounting to Rp2.194 trillion (92%) and the rest was mudharabah amounting to Rp200 billion (8%).

After the SBSN Law of the year, 2008 was legalized, the government issued sukuk amounting to Rp15 trillion. This issuance was done as a part of financing the budget deficit on the state budget in 2008. The amount of sukuk in accordance with the underlying assets owned by the government was Rp 15 trillion. The government used the collateral in the form of state-owned assets such as land and buildings. Based on the Islamic capital market statistics per December 31, 2013, Sukuk ijarah is most preferred. This is due to more simple structure than the sukuk mudharabah. The use of underlying assets as a condition of issuing sukuk mudharabah becomes a limiting factor for the issuer because it requires the valuation of assets.

Every investor who invest funds in the capital market both in sukuk ijarah and mudharabah certainly hopes and desires to make a profit or return. However, an expected return cannot be separated from the risk of the investment. One of the risks is the market risk. Market risks come from price movements or volatility of market prices. Return and risk have a positive relationship. The greater the risk of an investment, the greater the returns.

Conversely, when the risk of an investment is small, then the return also will be small. Diversification can be done to reduce the risk because each instrument has different risk and return. The rate of return earned by investors in each kind of sukuk is different. Hence, in capital markets, there are important factors that should be used by investors as a material consideration in purchasing sukuk as an investment instrument. That is called as Yield. Fabozzi (2000) suggested there is some measure of yield that can be used by investors, namely Current Yield and YTM (yield to maturity). Tandellin (2001) stated that YTM is the most frequent tool. YTM is a measuring tool used by investors to make considerations in purchasing sukuk.

Pramono and Setiawan (2008: 8) showed the comparison of both sukuk ijarah and mudharabah that we can see in Table 1

	Ijarah	Mudharabah
Akad (Transaction)	Ijara (lease)	Mudharaba (profit sharing)
Transaction type	Certain contract	Uncertainty contract
Character	Investment	Investment
Bid price	100%	100%
Bond principal at maturity	100%	100%
Coupon	Rewards/Fee	Revenue/Profit Sharing
Return	Predetermined	Indicative based on Revenue /Income
National Sharia Board fatwa	No.41/DSN-MUI/III/2004	No.33/DSN-MUI/IX/2002
Investor type	Sharia / conventional	Sharia / conventional

Source: Datuk (2014)

Based on Table 1 it can be concluded that yield and risk of sukuk were different. In terms of its coupon, the YTM of mudharabah is obtained based on revenue or profit sharing, while the sukuk ijarah is based on rewards. In terms of the return, sukuk mudharabah is determined based on the income generated, while the

Table 1
Comparison of sukuk mudharaba and ijarah

return of sukuk ijarah is predetermined. So the risk obtained by sukuk ijarah is lower than mudharabah sukuk.

The previous research by Puspitadewi about a comparative analysis of YTM and market risk between bond portfolios and sukuk, the scope of the research as well as the portfolio used in the study were very small, and the research time duration was very short. Since the variables used were very good, yet the objects were still general, I am interested in conducting this research using the same variable but different objects, with a measure of risk using VAR (Value at Risk). VAR is an attempt to quantify the magnitude of the maximum potential losses that may occur at a particular asset position with a certain probability over a certain period. Based on the background, the problems of this research is there any difference between the market risk of corporate sukuk ijarah and mudharabah based on VaR.

2. Literature Review

2.1 *The concept of Sukuk*

Sukuk is an Arabic word which is the plural for the words *ak* that means financial certificate. Sukuk in the context of Islamic capital market refers to a process of securitizing and is known as Islamic bond. In sharia standard No.17 about the investment of sukuk, AAOIFI defined it as follows: "Sukuk is certificates of equal value representing undivided share in the ownership of tangible assets, usufruct, and services or (in the ownership of) the assets of particular projects or special investment activity. However, this is true after receipt of the value of sukuk, the closing of the subscription and the employment of funds received for the purpose for which the sukuk were issued." According to the Sharia Board of the Indonesian Ulema Council fatwa No.32/DSN-MUI/IX/2002, sukuk can be interpreted as Islamic long-term securities issued by the issuer to the holders, which require the issuer to pay income to the holders of Islamic bonds in the form of profit sharing, margin/fee, as well as to pay back the fund at maturity.

Sukuk has different characteristics compared to conventional bonds because the structure is based on tangible assets. It can minimize the possibility of the fund to exceed the value of the underlying sukuk transaction. Sukuk holders own the portion of the revenue generated from the assets in addition to the rights to the sale of assets. Claims on sukuk are not based on cash flow but on asset ownership. According to AAOIFI via the Ministry of Finance (2010), there are many types of sukuk which are known internationally. Sukuk can be divided into two which are sukuk based on debt (Sukuk al-Murabahah, al-Istisna' dan Salam) and based on equity (Sukuk al-Mudharabah, al-Musyarakah dan al-Ijarah). Nevertheless, there are other kinds of sukuk practiced in the activity of financing although it is less popular which are sukuk al-Wakalah, Bay bithaman Ajil, al-Muzaraah, al-Musaqa and many more.

2.2 *Sukuk Ijarah*

The concept of ijarah can be used to mobilize funds for the development of long-term infrastructure projects. Ijarah is an engagement lease which entitles *muaajir* (the lease) to receive wages from *mustajir* (tenants) on the benefits. This means that the lessor would entitle the other parties to use the leased object. However, the tenant must give rewards in accordance with the agreement. (Dewi et al. 2006:158).

In ijarah contract, there is a transfer of benefits, temporary, without any transfer of ownership. The rate of rents in ijarah must be clearly defined for the first rental period. The next periods, the rent can be updated, whether to keep, increase, or decrease based on a benchmark or a variable such as rate of inflation, price index published periodically, or a defined percentage. Mainstream sharia experts allow the use of a benchmark with reference to interest rate, though for them it is not an ideal practice (Usmani, 2000: 168-171).

Sukuk ijarah is issued based on the Ijarah contract in which one party through a representative rents an asset to another party based on the price and the agreed period

without being followed by the transfer of ownership. Sukuk ijarah is securities that represent ownership of assets whose existence is clearly attached to a hire purchase contract. For investors, sukuk ijarah more beneficial because under no circumstances will receive the benefit (return) in the form of rent paid by the issuers of sukuk (Purnawati: 2013)

2.3 Mudharabah

Sukuk mudharabah is a partnership contract between the owners of capital (shahibul maal) to the managers (mudharib). Mudharabahh investment transactions are based on trust. Trust is the most important element in mudharabah, that is the belief of shahibul maal to mudharib, where the owner of the funds provides the money of 100% to mudharib. Mudharib as service providers only manage property fully and independently, and also only bear the loss or risk in the form of time, mind, and efforts for administering such project or business, as well as the loss of an opportunity to obtain some of the profits in accordance with the agreements.

Sukuk Mudharabah is investment Sukuk used to enhance public partnership in capital-intensive projects, for example, the development of airport, dams and power generations facilities. For that purpose, the SPV will issue Mudaraba Sukuk for raising funds required to develop that project. SPV manage the development of the project on behave of Sukuk holders. Any income or fee generated at liquidation or sale is paid to Sukuk holders as per agreed share (Al Zubi and Maghyereh, 2006, p. 235-248).

2.4 Market risk

Market risk is the risk due to changes in market prices, such as exchange rate changes or changes in the value of assets that can be traded or leased. The objective of market risk management is to minimize the possible negative effects as a result of changing market conditions on assets and capital. Market risk consists of foreign exchange risk, commodity risk, and equity risk. Exchange rate risk is the risk due to changes in the value of TB (Trading Book) and BB (Banking Book) caused by changes in foreign currency exchange rates and gold prices. Commodity risk is the risk that occurs as a result of changes in the price of financial instruments from the position of TB and BB which are caused by changes in commodity prices. Equity risk is the risk due to changes in the price of financial instruments of TB caused by changes in stock prices.

The Bank of Indonesia Regulations or PBI No.11/25/PBI/2009 and No.13/23/PBI/2011 state that the risk in the conventional market is different with the shariah one, where the conventional system is based on interest, while sharia system is based on sharing system. In conventional the main activity is trading. Trading is the buying and selling of financial instruments on behalf of the bank for the purpose of short-term gain from the expected changes in market prices to determine the value of a financial instrument. These trading instruments include cash instruments and futures instruments. Cash instruments are foreign exchange spot transactions, forward foreign exchange, bonds, etc. While the futures instrument is interested in swaps, currency swaps, options, etc.

Investors should develop a strategy to market risk, including the level of market risk that can be accepted into contractual agreements with providers of funds, the type of risk-taking activities, and target markets to maximize returns. Investors must establish market risk management processes and information systems which are healthy and comprehensive consisting of The conceptual framework to encourage the identification of the underlying market risk, guidelines for the management of risk-taking activities on different portfolios in limited investment and market risk limits, framework for the right pricing, valuation, and revenue recognition, the strong

Management information systems (MIS) for the counting, monitoring, and reporting of market risk exposure and risk management performance.

Historical method is a method that uses past data to calculate the VAR (Value at Risk). The historical method has advantages and disadvantages. The advantage is that it does not assume certain distribution and it is simple. The disadvantage is the assumption that past data can be used to predict the future. In other words, these methods have the assumption that the data patterns of the past are the same as the data pattern in the future.

2.5 Framework

This study aims to compare the coupon rate and market risk of corporate sukuk ijarah and mudharabah. The yield levels are analyzed using a coupon. Compound rate of return is accepted if the investor buys the bonds at current market prices and holds at maturity which is calculated using the yield to maturity (Tandellin, 2001).

Bonds can be issued by governments, corporations, banking institutions and non-banking financial institutions. Because of forwarding sales or forward purchases of goods through salam is allowed, there may be forward commodity markets, which would differ from conventional markets (Job, 2009: 319). Sukuk differs in its nature to the common stock of a combined company. The certificate is similar to the values that represent stocks which do not separate the ownership of assets of a specific project or activity, the right of assets and services (AAOIFI, 2004:298-300). The yield and market risk are things that must be watched by any investors because the return on bonds depends on the income derived from underlying assets or projects, so as to minimize risks (Ayub, 2009).

Transactions in ijarah contract have several advantages compared with other types of contract, including:

- 1) Compared with other types of contract, Ijara contract is more flexible in terms of the transaction object. In murabahah contract, the transaction object must be goods while at the Ijara contract, the transaction object may be services such as health services, education and others that do not contradict sharia.
- 2) Compared with investment, Ijara contract contains a lower business risk, like the income, is relatively fixed (Yahya et al., 2013: 252).

The historical method has advantages and disadvantages. The advantage is that it does not assume certain distribution and it is simple. The disadvantage is the assumption that past data can be used to predict the future. In other words, these methods have the assumption that the data patterns of the past are the same as the data pattern in the future. If the pattern occurred fairly stable, then the data in the past can be used to predict the future (Hanafi, 2009:151).

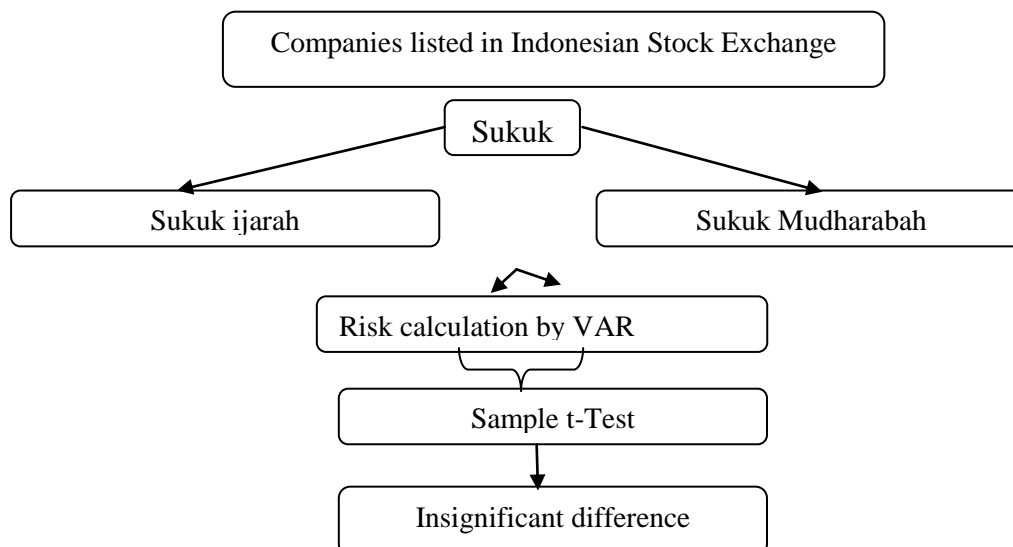


Figure 1 Scheme of theoretical framework

3. Research Method

3.1 Data Sample of the Study

This research is a comparative research which is a research that uses T-test analysis tool, has a minimal intervention level, does not set the research condition, has sukuk ijarah and mudharabah as its analysis units, and its time horizon is longitudinal (period of 2010-2014). This study uses quantitative secondary data derived from the financial statements, the annual ratio (financial highlights), and cash flow statement and income statement. In this study, the data used quantitative secondary data obtained from the Stock Exchange, KSEI, the FSA and the Bond agency.

The sampling model in this study is nonprobability sampling that the chosen design is judgment sampling. Judgment sampling is based on certain considerations, including selecting a subject which is in the most favorable place or in the best position to provide necessary information (Sekaran, 2006: 137). The number of observations is 21 observations from the 13 companies, 13 ijarah, and 8 mudharabah. Sugiyono (2009: 263) stated that, if the object of research it has a number of samples (n) which are different (homogeneous variance), then the number of samples can vary by using the pooled variance formula.

3.2 Variable Operationalization

This study analyzes one calculation of yield and one VAR (Value at Risk). The yield calculation is Yield to Maturity ratio and the VAR uses the historical method (Back Simulation).

VAR historical method (Back Simulation)

The historical method uses past data to calculate VAR, in which the historical method has an advantage and a weakness. The advantage is that it is simple and does not assume certain distribution. The weakness is that it assumes that past data can be used to predict the future. In other words, this method believes that data patterns of the past are the same as the data pattern of the future.

The formula used in the calculation of historical data is:

$$VarT = V \cdot 1,65 \cdot \sigma t$$

Where:

V = the market value of the asset at time T

σt = standard deviation of the portfolio

T = period of time during the standard deviation of returns counted

3.3 Data Analysis Methods

The t-test is used to determine whether two unrelated objects have different average values. It is performed by comparing the difference between the average value with a standard error of the two research objects (Ghozali, 2009: 6).

4. Result

4.1 Data Research Description

This study aims to compare the performance which is measured by using two types of Market Risk in sukuk ijarah and sukuk mudharabah. Data used in this research is secondary data (the data of sukuk ijarah and sukuk mudharabah are selected based on the criteria during the period 2010-2014). Table 2 shows the first analysis to find a picture or a description of the variables.

Based on Table 2 we can see the value of the minimum, maximum, average, and standard deviation for each variable in 2010- 2014 with the research object of 13 samples. The minimum value of the market risk of sukuk Ijarah is 2661.15 and the maximum value is 7392.08. The average value of 4353.7472 with a standard deviation of 1551.43714 means that there are variations in market risk of sukuk Ijarah. The number 4353.7472 shows a big number because the standard deviation of the market risk of sukuk Ijarah is smaller than 4353.7472 which is 1551.43714. This indicates that the level of risk that will be received by investors when buying sukuk Ijarah at the current market price and hold it until maturity is 4353.7472 on average.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Market Risk	13	2661,15	7392,08	4353,7472	1551,43714
Valid N (listwise)	13				

Source: Data processed (2015)

Table 2
Descriptive Statistics of Market Risk of Sukuk Ijarah

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Market Risk	8	4227,10	8454,20	6039,4720	1320,43182
Valid N (listwise)	8				

Source: Data processed (2015)

Table 3
Descriptive Statistics Market Risk of Sukuk mudharabah

Based on Table 3 we can see the value of the minimum value of the market risk of sukuk mudharabah is 4227.10 and the maximum value is 8454.20. The average value of 6039.4720 with a standard deviation of 1320.43182 means that there are variations in market risk of sukuk mudharabah. The number of 6039.4720 shows a big number because the standard deviations of the market risk of sukuk mudharabah are smaller than 6039.4720 which is 1320.43182. This indicates that the level of risk that will be received by investors when buying sukuk Ijarah at the current market price and hold it until maturity is 6039.4720 on average.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Market Risk	Equal variances assumed	,353	,559	2,551	19	,020	1685,7248	660,80770	302,638	3068,81
	Equal variances not assumed			2,655	16,851	,017	1685,7248	634,89612	345,309	3026,14

Source: Data processed (2015)

Table 4
Independent Sample T-Test to Market Risk

Table 4 shows the calculated F value of Levene test amounted to 0,353 with a probability of 0.767. Because the probability is greater than 0.05, it can be concluded that both variances of Ijarah and Mudharaba are the same. Thus, the t-test analysis should apply equal variances assumed. Based on SPSS output, it shows that the value of t on equal variances assumed is -2,551 with the significance probability of 0.028 is smaller than 0.05. So it can be concluded that the Yield to Maturity of Ijarah and Mudharabah differ significantly.

4.2 Comparative Analysis of Market Risk of Sukuk Ijarah and Sukuk Mudharabah

The results indicate significant differences between ijarah and mudarabah, which Ijarah sukuk have a lower level of risk than mudarabah sukuk. Unfortunately, our predictions that sukuk ijarah and sukuk mudharabah should have a similar level

of risk were incorrect. As revealed above-average VaR of sukuk ijarah is almost higher than average VaR of sukuk mudharabah.

Yahya (2013: 252) argued that ijara contract has a lower business risk than investments. The income of ijara is relatively fixed. It is statistically proved that there is a significant difference on the market risk between Sukuk Ijarah with sukuk mudharabah with the significance value of $0.020 < 0.05$, with the risk level of 4353.7472 for ijarah and 6039.4720 for mudharabah. The results support the research Puspitadewi (2010) who studied the market risk on a portfolio of sukuk bonds. Although this study uses different objects, the statistical results show that there is a significant difference between Sukuk ijarah with mudharabah sukuk.

In previous studies, the object used as a comparison is the portfolio of bonds and sukuk, not between one sukuk and another sukuk. The reasons to use one more variable in this study is that to know the market value changes that occur in mudharabah sukuk because mudharabah sukuk are issued earlier than Sukuk ijarah which are recently published. So market risk may occur because of the difference. This study shows that sukuk Ijarah can minimize the potential negative impact due to changes in market conditions on assets and capital investment by having a lower investment risk than sukuk mudharabah.

5. Conclusion

This research has compared the performance of market risk sukuk ijarah and mudharabah using a series of indices in the Indonesia sukuk market. Indeed, we use the indices of the series Sukuk INDEX reflecting the performance of Sukuk and bonds market in Indonesia for the period from 2010 to 2014. We first addressed that the development of sukuk issuance in Indonesia is not in line with the development of sukuk trading. There are several factors that caused it, they are: the limited issuance of sukuk corporate in Indonesia, the investor has a lack of understanding about the corporate sukuk trading in the secondary market. Secondly, There are differences in sukuk Ijarah and Mudharabah schemes. The scheme adapted to the condition of each issuer. The results also show that Risk of Ijarah sukuk has a lower level than mudharabah sukuk.

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