Comparative Performance Analysis of Indonesia Retail Bonds to the Indonesia Retail Sukuk

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This research is a quantitative descriptive study which aims to compare the performance of Indonesian Retail Bonds and Retail Sukuk based on the Sharpe Index. This study uses historical data in the form of yields on Indonesian Retail Bonds (ORI) and Retail State Sukuk (SR) sourced from the Indonesia Bond Pricing Agency (IBPA). Performance assessment is calculated using the Sharpe method and analysed using descriptive analysis and Mann Whitney test analysis. The results showed that there is no significant difference between the performance of Indonesian Retail Bonds and Indonesian Retail Sukuk based on the Sharpe method.

Keywords: *Indonesia Retail Bonds, Indonesia Retail 'Sukuk', Risk, Risk-Free, Sharpe Index.*

Introduction

In order to develop the Government Securities market, the Government continues striving to diversify the investor base. The existence of a diverse investor base is expected to be able to issue Government Securities with more efficient costs and more controlled risks. In addition to corporate investors from financial services companies such as banks, pension services and insurance, the Government also continues to develop an investor base from individuals.

In response to people's needs, the Government since 2006 has issued investment instruments for individuals. The Indonesian Retail Bond (ORI) was first published by the Government on August 9, 2006. According to the Ministry of Finance, state bonds are debt instruments with a period of more than 12 months with coupons or without coupons in rupiah or foreign currency. Government bonds are one of the alternative state financings. The issuance of ORI

itself has a strategic role for the national economy, one of which is to cover funding that cannot be met by tax revenues. ORI is also an alternative investment for the community, especially retail investors. For the Government of the Republic of Indonesia, the issuance of Government Bonds (SUN), ORI, or retail 'sukuk' is an alternative source of financing to solve the problems of the state budget deficit.

Since it was first published in 2006 to a decade later in 2016, ORI has absorbed funds of Rp144.125 trillion, with total investors reaching 214,852 investors. The highest ORI issuance amount reached Rp27.439 trillion, namely the ORI012 series, the lowest amounting to Rp2.714 trillion from the issuance of the ORI005 series. From time to time, the growth rate of ORI continues to increase. On average, the increase of ORI's new investors on the primary market grew steadily in the range of 74% in the past decade or around 17,846 people in each series. Within a year ORI is only issued only one series but has been published as many as two series in a year, namely in 2007 and 2008.

The Ministry of Finance noted that the highest ORI sales value occurred at ORI012, which was published in 2015, which amounted to Rp27.43 trillion. When compared with the value of ORI sales in the first series of Rp3.28 trillion, the funds collected by the Government from ORI012 were recorded to grow 8-fold with an average annual growth of 30%. However, the growth trend actually fell to ORI013, which fell by 39.30 per cent compared to ORI012 sales. The investment products available in the Indonesian capital market are currently increasingly varied, and Islamic investment products have begun to explore the Indonesian capital market. Supported by the growing development of the Indonesian capital market and along with the awareness of the Indonesian Muslim community to invest in accordance with Islamic rules, the Retail Government Sukuk can be made the main choice of investment because this instrument has received a fatwa and sharia opinion from the MUI National Sharia Council in 2014. The issuing of Syaria Government Securities or as well-known as 'Sukuk' began in 2008 is a form of support and participation of the Government in developing the Indonesian Islamic finance industry (Otoritas Jasa Keuangan, 2017: 125).

Indonesian Retail 'Sukuk' was first published in 2009 and 9 series have been issued to date, namely SR001, SR002, SR003, SR004, SR005, SR006, SR007, SR008, SR009. The issuance of Retail 'Sukuk' is intended as a diversification instrument for financing the State Budget, expanding the investor base of Government Securities in the domestic market, providing alternative sharia-based retail investment instruments, and supporting the development of the Islamic financial market. In addition, the issuing of retail 'sukuk' has become one of the instruments that play an effective role in efforts to transform Indonesian society from a saving-oriented society into an investment-oriented society (djppr, 6-12-17).

Investing in financial instruments can provide higher returns than savings and time deposits. But of course, the higher the potential return on an investment instrument, the greater the risk. There is no risk-free investment, no matter how small it is. The level of investment risk varies between the forms of investment depending on the characteristics of the investment in question (Sitorus, 2015: 91).

When investors want to invest their capital in an investment instrument, they must know how the instrument is performing. Not only seen based on the level of return factor, but the risk factor must also be considered. Some measures of portfolio performance that have included risk factors are Sharpe index, Treynor index, and Jensen index (Tandelilin, 2010: 493). The three indexes emphasise different aspects. The Sharpe index makes the standard deviation a measure of risk; the standard deviation here is the total risk. The Treynor index emphasises systemic risk as measured with beta, while the Jensen index emphasises the difference between the actual rate of return obtained by the portfolio and the level of expected return if the portfolio is in the capital market line (Tandelilin, 2010: 500).

Based on the background described above, the problem that can be assessed in this study is whether there are significant differences in performance between Indonesian Retail Bonds and Indonesian Retail 'Sukuk' based on the Sharpe Index?

Theoretical Basis

The word "investment" (investasi in Indonesian) is adopted from the English language, which means planting. According to Halim (2005: 4), investment is the placement of a number of funds at present in with the hope of gaining profits in the future. Investment, according to Islam, is different from conventional investment which is practised by many parties. In Islam, investment requires investors and recipients of capital to apply the principle of profit sharing and loss sharing. Means there is no party that is harmed in this investment system. Investment is an activity to develop wealth in all ways involving activities and risks carried out in the context of worship to gain the pleasure of Allah SWT.

A capital market is a place that provides a longer-term source of expenditure, which is invested in capital goods to create and expand essential production equipment, which in turn will create a job opportunity and increase healthy economic activities (Manan, 2009: 24).

There are two terms that are related to income characteristics, namely, bond yields (bond interest) and bond interest (bond interest rates). There is a difference between the interest in the amount and the result, namely, the interest in the amount that will be received by the investor in a fixed amount and received until the due date. While returns are a measure that investors will receive, which depends on the required rate of return.

There are several measures of yield that can be used for investments, among others (Tandelilin, 2010: 257)

a. *Nominal Yield*

Nominal yield bond or as more commonly known as coupon rate is annual coupon interest paid to bondholders. The coupon rate is expressed as a percentage of the nominal value.

$$Nominal\ yield) = \frac{Nominal\ Interest\ Income}{Nominal\ Value}$$

b. *Current Yield*

Current yield bond is the annual coupon interest divided by the bond market price. Nominal yields are based on nominal values which are always fixed amounts, while current yields are based on market values that can change.

$$Current\ yield = \frac{Annual\ Coupon\ Interest}{Bond\ Market\ Price}$$

c. *Yield to maturity*

Yield to maturity (YTM) can be interpreted as the level of compound returns that investors will receive if they buy bonds at the current market price and hold the bonds to maturity.

$$P = \sum_{t=1}^{2n} \frac{\frac{Ci}{2}}{\left(1 + \frac{YTM}{2}\right)t} + \frac{Pp}{\left(1 + \frac{YTM}{2}\right)2n}$$

P = current bond prices (t=0)
n= the number of years up to the maturity of the bonds
C_i = coupon payments for bonds every year
YTM = *yield to maturity*
P_P = par value of the bond

d. *Yield to Call (YTC)*

Yield to Call is the yield obtained on bonds that can be bought back (callable). Callable bonds mean that the issuer can repay or buy back the bonds it has issued from the hands of the investor holding the bonds, before maturity.

$$P = \sum_{t=1}^{2c} \frac{Ci/2}{(1 + YTC/2)^t} + \frac{Pc}{(1 + \frac{YTC}{2})^{2c}}$$

P = current bond prices (t=0)

YTC = *yield to call*
C_i = coupon payments for bonds every year
C= period up to when the bonds are repaid (*first call date*)
P_c = bonds call price

Portfolio performance evaluation is an inseparable part of investment decision making, both investments made alone and through investment managers (Zubir, 2011: 249). There are various methods of calculating investment performance that can be used by investors as a reference, among others (Halim, 2014: 52-53)

1. Sharpe Index
In this method, portfolio performance is measured by comparing the portfolio risk premium (the difference in the average level of portfolio profit with the average risk-free interest rate) to portfolio risk expressed by standard deviation (total risk). Systematically the Sharpe index is formulated as follows:

$$S_{pi} = \frac{RPi - Rf}{SDpi}$$

Explanation
S_{pi} = Sharpe portfolio index
R_{pi} = Average portfolio yield i
R_f = Average risk-free investment interest
SD_{pi} = Standard deviation from portfolio yields *i*
$R_{pi} - R_f$ = Portfolio risk premium *i*

2. Treynor Index
With this method, portfolio performance is measured by comparing portfolio risk premiums (the difference in average portfolio profit rates with risk-free average interest) with portfolio risk expressed in beta (market risk or systematic risk). Mathematically Treynor index is formulated as the following:

$$TP_i = \frac{RPi - Rf}{\beta pi}$$

Explanation

T_{pi} = Treynor portfolio index *i*
R_p = Average portfolio yield *i*
R_f = Average risk-free investment interest
β_{pi} = beta portfolio *i* (market risk or systematic risk)

$\mathrm{R}pi - \mathrm{R}f$ = risk portfolio premium i

3. Jensen Index
This method is based on the concept of security market line (SML), which is a line that connects market portfolios with risk-free investment opportunities.

$$\alpha i = R\mathrm{iA} - [Rf + (\bar{R}m - Rf)\beta i]$$

Explanation:
αi = differential return or unique return
R_{iA} = stocks or portfolio expected return
R_f = risk-free interest rate
$\bar{R}_m$ = expected return market portfolio
βi = beta stocks or portfolio

Every investment always has a risk, the higher the return it gives, the higher the risk that must be faced by investors. Therefore, in addition to calculating the rate of return, investors also need to consider risk as the basis for making investment decisions. According to Tandelilin (2010: 102-103), the risk is a possible difference between actual returns received and expected returns.

ORI (Indonesian Retail Bond) is intended as an investment instrument or savings for the general public, and the mechanism for coupon payments is carried out every month and directly into the owner's bank account, so the mechanism is the same as the bank's interest payment (Sitorus, 2015: 122).

Investors wishing to use one of the sharia securities, namely Retail Sharia Securities (SBSN) or Retail State 'Sukuk' as one of the investment portfolios because this particular securities specifically targets retail or individual investors. According to Hidayat (2011: 121), Retail State Sharia Securities (Retail Sukuk) are state securities issued based on sharia principles as proof of the participation in State Sharia Securities Assets, which are sold to individuals or individuals with a predetermined minimum volume.

The fatwa of the National Sharia Council (Dewan Syariah Negara) No: 32 / DSN-MUI / XI / 2002 describes sharia bonds as long-term security based on sharia principles issued by issuers to holders of Islamic bonds that require issuers to pay income to bondholders sharia in the form of profit-sharing/margin/fee, as well as paying back bond funds at the time of maturity. Whereas Huda and Nasution (2007: 88) define sukuk or Islamic bonds as a form of funding (financing) and at the same time investment allows several forms of structure that can be offered to avoid *riba*/usury.

Research Method

The approach used in this study is a quantitative method approach. The analysis technique used is comparative statistics, namely statistical techniques that compare Indonesian Retail Sukuk and Indonesian Retail Bonds based on risk and yield to maturity. Indonesian Retail Bonds and Indonesian Retail Sukuk performance measurements use the Sharpe Index.

Data Type and Sources

This study uses historical data in the form of yields on Indonesian Retail Bonds (ORI) and Retail State Sukuk (SR) sourced from the Indonesia Bond Pricing Agency (IBPA).

Sample

Sample is part of elements of the chosen population (Sanusi, 2011:87). According to Anshori and Iswati (2009: 94), a sample is a part of the total and characteristics owned by population. Sample in this study is retail bonds and retail sukuk issued in the year 2013-2015.

Hypothesis

H₀: There is no significant difference in performance between the Indonesian Retail and 'Sukuk' Retail Bonds based on the Sharpe index.

H₁: There is a significant difference in performance between the Indonesian Retail and 'Sukuk' Retail Bonds based on the Sharpe index.

Results and Discussion

Research Results

Normality tests are generally carried out before hypothesis testing. The data normality test used in this study is the Kolmogorov Smirnov normality test using two independent samples and a significance level of 5% (0.05).

Table 1: Normality Test Results

Performance	Sig. Limit	Sig. Value	Description
ORI	0.05	0.200	Normal
SRI	0.05	0.002	Not Distributed Normally

Based on Table 1, it can be seen that ORI data is normally distributed and SRI is not normally distributed. This can be seen from the significance level at ORI of 0.200, which is greater than 0.05. SRI data, on the other hand, has a significance value of 0.002, which is smaller than 0.05. Therefore, different tests are used in testing hypotheses with the use of the *Mann Whitney* test.

Table 2: Mann Whitney Test Results For ORI and SRI Sharpe Index

	Sharpe Index
Mann-Whitney U	4685.000
Wilcoxon W	9245.000
Z	-.628
Asymp. Sig. (2-tailed)	.530

Source: SPSS results, computed

Testing the hypothesis by using *Man Whitney* test is to determine whether there is a significant difference in performance based on the Sharpe Index on Indonesian Retail Bonds and Indonesian Retail 'Sukuk' in 2013-2015. Testing the hypothesis with Mann Whitney test uses a significance level of 5% or 0.05. If the calculation results of *Mann Whitney* test 95% show that the significance value is more than the significance level, which is 0.05, then H0 is accepted (1 = 2). If H0 is accepted, it can be concluded that there is no significant difference in the performance of retail bonds and retail 'sukuk' based on the Sharpe Index.

Table 3: Indonesian Retail Bond and Indonesian Retail 'Sukuk' Descriptive Statistics for the 2013-2015 Period

Descriptive Statistics	ORI	SRI
Minimum	-1.503	-1.917
Maximum	0.261	0.502
Mean	-0.449	-0.421
Standard Deviation	0.357	0.351

Source: SPSS results, computed

Based on Table 3, it can be seen that the descriptive analysis of the performance of Indonesian Retail Bonds and Indonesian Retail Sukuk consists of minimum (lowest value), maximum (highest value), mean (average), and standard deviation. Table 3 shows the types of investment in Indonesian Retail Bonds in the period of 2013 - 2015; the minimum value for ORI was -1.503 while the maximum value was 0.261. The average value obtained for ORI is -0.444 with a standard deviation of 0.357. Whereas the minimum value of Indonesian Retail Sukuk is -1.917, and the maximum value is 0.502. The average value obtained by the Indonesian Retail Sukuk for the 2013 - 2015 period was -0.421, and the standard deviation obtained was 0.351.

Discussions

There is no significant difference in terms of performance between the Indonesian Retail Bonds and Indonesian Retail 'Sukuk' because the characteristics of ORI and SRI do not have much difference. Likewise, the risks that investors get when investing in ORI and SRI are not much different. Retail Sukuk Equations with Indonesian Retail Bonds are Retail State Sukuk and ORI, which are Government Securities intended for retail investors. Then, Retail Sukuk and ORI are also proof of community investment to the Government. In addition, both Retail and ORI Sukuk, interest/compensation and repayment/repurchase payments are guaranteed by the Government.

In choosing an investment portfolio, investors certainly want to invest in a safe instrument so that investment can be withdrawn whenever the investors want. In addition, investors also want their investments to avoid the risk of failure of payment or in the world of investing called "default" (Hariyanto, 2017: 89). In general, there is no single investment instrument that is entirely free of risk. Indonesian Retail 'Sukuk' is not likely to experience the risk of default, because it is issued by the Government and the payment of investment principal and returns is guaranteed in the State Budget Act (Undang-Undang Anggaran Pendapatan dan Belanja Negara Indonesia), so that the Government must have guarantees for payment of the compensation and nominal value of Indonesian Retail 'Sukuk' until itsmaturity phase.

Hariyanto (2017: 118) explains that the risks that might occur when investing in instruments on financial markets, including retail sukuk, includes; default risk, market risk, and liquidity risk. Market risk is the potential loss for investors (capital loss) because the investors sell retail sukuk before maturity in rising interest rates conditions. This condition can be avoided by holding Indonesian Retail 'Sukuk' up to its maturity. Meanwhile, liquidity risk is the potential loss if before the maturity of retail sukuk holders who need funds have difficulty in selling retail sukuk at fair prices. As explained above, retail sukuk has no default risk.

If retail 'sukuk' is being compared to ORI, there are perhaps numerous similarities and differences. Equally, both types of government bonds guaranteed an equal investment value of at least IDR 5 million (Equivalent to around $347). It is just that, the retail 'sukuk' is the sharia type of investment, while the ORI is more conventional. The interest rate is also narrowly linked, for example, the ORI005 coupon is 11.45% per year, and retail sukuk is 12% per year. The time period (tenor) also has a five-year ORI difference, while the sukuk only sells for three years.

The risk faced by investors when investing in ORI is not that much different to Retail State 'Sukuk'. According to Frensidy (2013: 71), the risks associated with bonds are liquidity risk, maturity risk, and default risk. This liquidity risk arises from the possibility of illiquidity of a

bond or difficulty of selling a bond on the secondary market. Maturity risk is related to the maturity of the bonds. In general, the longer the time period or tenor of a bond, the greater the level of uncertainty so that the greater the risk of maturity. Similar to Retail State Sukuk, ORI has no risk of default, because the return payment is guaranteed by the Government.

Conclusions and Suggestions

Conclusions

Based on the results and discussions previously stated, the conclusion in this study is as follows. There is no significant difference in performance between the Indonesian Retail Bonds and Indonesian Retail 'Sukuk' based on the Sharpe Index.

Suggestions

Suggestions expressed in this study are:
1. For investors, after knowing the results of this study, they can choose to invest in Indonesian Retail Bonds or Indonesian Retail Sukuk. However, as Muslim investors, it is better to invest in Indonesian Retail 'Sukuk' because of its compliance with the sharia principles.
2. For the Government, this is a signal to increase the issuing of retail sukuk to help finance the deficit on the state budget and reduce the Government's dependence on debt to foreign parties.
3. For further research, it is possible for the use of other government bonds as investment instruments, for example, government bonds that have a longer-term maturity such as the FR series (Fixed Rate) which will make the development of price possible, YTM and standard deviation will have more variation. Apart from that, it can also be done by forming a portfolio between bonds and stocks so that calculations can be made to obtain an optimal portfolio and a performance comparison of a portfolio with each other.

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