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The Effects Macroeconomic on Corporate Sukuk Ijarah Returns: Evidence from Indonesia

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Abstract

The study examines Inflation, BI Rate, Exchange Rate, and Gross Domestic Product (GDP) on Corporate Sukuk Ijarah Returns. The study uses a quantitative approach, and the data used is secondary data from 4 companies issuing sukuk ijarah, which are registered with the Financial Services Authority (OJK) and sourced from the websites of each company. This study uses data analysis techniques, namely the General Method of Moment (GMM). The findings of this study showed that inflation and the Exchange Rate do not affect Corporate Sukuk Ijarah Returns. However, the BI Rate and Gross Domestic Product (GDP) influence Corporate Sukuk Ijarah Returns. Increased economic activity in the real sector means a positive response to the market. It will encourage public demand for sukuk and may cause the price of sukuk to rise. When the price of sukuk increases, the company will set a high sukuk yield so investors can invest their funds. This study broadens our understanding of the impact of Inflation, BI Rate, Exchange Rate, and Gross Domestic Product (GDP) on Corporate Sukuk Ijarah Returns.

Keywords: *Sukuk, Returns, Macroeconomics, , Decent Work and Economic Growth.*

Introduction

Sukuk is one of the Sharia-compliant securities issued by the government. Because most sukuk were designed as fixed-income securities when they first appeared, they were dubbed "Islamic bonds." Conversely, Sukuk has grown in complexity through time (Nienhaus and Karatas, 2016). Despite the discussions, sukuk and conventional bonds differ in their validity and legal structure. Usury, gharar, maisir, and other illegal elements are all prohibited in sukuk (Saad, et al. 2019). However, from a legal standpoint, sukuk is a highly diverse product category since it contains a variety of contractual arrangements (akad) to produce revenue from the sukuk holder. Because of their rarity, sukuk has a distinct role in the Islamic stock market. Before a firm may issue a sukuk, it must have underlying assets. Because of this, Sukuk is fundamentally different from traditional bonds (Nienhaus and Karatas, 2016). Sukuk now plays a vital part in free trade, increasing its value as it affects the financial and real sectors. The demand for sukuk is currently at an all-time high. Sukuk is projected to become the international capital of Islamic finance, particularly in Muslim-majority countries (Mif Rohim and Shereeza, 2013). The sukuk market saw a considerable number of issuances in 2011 and 2012.

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According to the IIFM sukuk report (2016, in Razak, et al. 2019), the most significant growth in worldwide sukuk issuance occurred between 2010 and 2012. However, beginning in 2014, there was a slowing to a decrease in movement, which persisted throughout 2015.

Indonesia has a modest development rate if the worldwide sukuk trend is considered (Jarkarsih and Rusydiana, 2009). However, this country is cognizant of the need to reform the Islamic economic system and can do so. Organizations generally issue sukuk to develop their business, particularly significant companies from the Middle East and Southeast Asian countries like Malaysia. According to Standard & Poor's Reports (2008) sovereign sukuk still dominated the sukuk market in 2003, accounting for roughly 42%, with financial institution sukuk accounting for around 58%. Nevertheless, in 2007, corporate sukuk accounted for 71% of the worldwide sukuk market, with financial institutions accounting for 26% and government sukuk accounting for 3%. Despite being viewed as an up-and-coming and promising market, the development of Islamic bonds in Indonesia has been quite gradual (Jarkarsih and Rusydiana, 2009).

According to a study, partnership sukuk became an alternative that might be deemed an equity instrument. However, the company used it as debt finance rather than equity. Businesses also prefer Ijarah contracts since they guarantee them (Azmat, et al. 2014). If it has anything to do with Sharia, then someone who can supervise it so that it does not violate Sharia principles is required, namely the Sharia Board. Godlewski, et al. (2016) delve more into the detrimental impact of the sharia board's influence on the stock market reaction following the sukuk issue. When the sukuk is issued, it must be approved by a religious committee or sharia board, which checks that it complies with Islamic law. The Shariah board's participation in the reaction of shareholders is critical.

As a result, compared to conventional bonds, sukuk are subject to previously unseen shariah compliance concerns, exacerbating their differences. The findings of this study suggest that the sukuk and adverse market reactions, particularly in partnership sukuk, impact contingent debt arrangements and raise moral hazard. The market responds more positively to the issue of debt-type sukuk than partnership sukuk. As a result, having a selection model with a mix of debt and non-debt features can be detrimental to sukuk (Klein and Weill, 2016). Investors consider the propensity to choose the type of sukuk. Duqi and Al-Tamimi (2019) examined the elements influencing investors' sukuk investment decisions. As a result, investors' willingness is the most crucial element influencing sukuk investing, followed by religious factors, expected returns, and information availability. Apart from this research, there has yet to be further research discussing the effect of inflation, BI rate, exchange rate, and gross domestic product (GDP) on sukuk yields. The use of the GMM method in analyzing sukuk yields has also yet to be explored. So in this study, the author makes a study entitled The Effect of Inflation, Bi Rate, Exchange Rate and Gross Domestic Product (GDP) on Returns on Corporate Sukuk Ijarah in Indonesia for the 2015-2019 Period.

Literature Review

Sukuk

The sukuk is one of the financial vehicles available in the Islamic capital market. Sukuk is a certificate of value reflected following the closing of registration, proof of receipt of the certificate's worth, and use as planned, according to the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). Ownership of tangible assets, goods or services, or project capital is the same. Sukuk has a definition that is nearly identical to that of bonds. Still, sukuk are more of a fund participation unit that compels issuers to pay sukuk investors income through profit sharing and refund sukuk funds at maturity (Almara and Muharam, 2015). According to Afiani (2013), sukuk are proof of ownership of tangible assets that are the underlying assets rather than debt securities like bonds. Because its structure is based on actual assets, it can reduce the risk of a funding facility exceeding the value of the underlying sukuk transaction (Purnamawati, 2015). Sukuk are a superior alternative to debt since they include characteristics such as investment collaboration, risk sharing, and asset engagement (actual projects), all of which underpin sukuk issuance (Ismal and Musari, 2009).

Sukuk is a halal investment opportunity that follows sharia standards. Furthermore, sukuk offers high returns with low risk, so it is one of the most popular investment tools among Muslim investors. Sukuk can also be a creative financing option (Kholis, 2010). Sukuk was frequently employed by Muslim communities in the Middle Ages in the form of securities that represent financing obligations arising from commerce and other economic operations, according to Hulwati (2017). Several countries, such as Malaysia, Bahrain, Qatar, Pakistan, and Germany, have issued sukuk instruments to become financing instruments for the private sector and the government.

Various sukuk structures are known internationally and have received endorsements from The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI, 2003). They are also by the fatwa of the National Sharia Council on Sharia Bonds. The types of sukuk structures include:

Sukuk Ijarah, namely sukuk issued based on an agreement or ijarah agreement where one party acts alone or through a representative, sells or leases the beneficial rights over an asset to another party based on the agreed price and period, without being followed by the transfer of ownership of the asset itself.

Mudharabah Sukuk, namely sukuk issued based on a Mudharabah agreement or contract where one party provides capital (rab al-maal) and the other party provides labor and expertise (mudharib), the profits from the cooperation will be divided based on a pre-agreed comparison.

Corporate Sukuk

A corporate sukuk is a sharia investment letter issued by a company or issuer as evidence of equalizing investor capital to the company for a particular asset or project. Corporate sukuk are issued to seek funding from the public. At the same time, the purpose of buying sukuk is to invest. Corporate sukuk is an instrument that complies with sharia principles in the capital market. There are several DSN-MUI Fatwas related to sukuk, including fatwa No: 32/DSN-MUI/IX/2002 on Sharia Bonds, fatwa No: 41/DSN-MUI/III/2004 on Sharia Ijarah Bonds, and fatwa No: 59 /DSN-MUI/V/2007 concerning Convertible Mudharabah Sharia Bonds. Corporate sukuk with ijarah contracts require the lessor to provide assets that are used or can be taken advantage of to the lessor to receive rental wages (Kautsar, 2012:269). Sharia Leasing is one type of sukuk ijarah, which involves the provision of assets in the form of finished equipment and machinery with ownership (Ijarah Muntahia Bitttamleek). The revenues from orders provide the government with equipment and machinery. Rental sukuk are issued at the value of the equipment. Such services are provided in exchange for the holder's annual remuneration, divided among them according to the relative quota. The qualitative growth of sukuk to issue Sukuk as a method of saving and investing for enterprises in various industries and the government has been substantial in the last few years. The government's tendency to use Sukuk to cover official financial demands has been replicated by numerous countries, including Pakistan, Bahrain, Egypt, Qatar, and Malaysia (Shawaqfeh, 2019).

Ijarah Sukuk

The AAOIFI defines numerous investment classes. Islamic contracts include Ijarah, Salam, Istisnah, Murabahah, Musyarakah, Muzaraah, Musaqah, and Muqarasah

(AAOIFI, 2010). The most prevalent structure is a sukuk al-Ijarah. Sukuk al-Ijarah are identical-denominated securities that reflect long-term tangible assets linked to the Ijarah contract (Kahf, 1997). A sukuk seller is a company that needs money and wants to finance it by transferring cash-generating assets to a Special Purpose Vehicle (SPV). After that, the SPV raises funds and issues certificates to investors in exchange for the assets. Certificates are a way for investors to show that they possess money-generating assets, and SPV acts as a trustee for them (Iqbal and Mirakhor, 2011). The item is also leased back to the original owner. The SPV gets rental payments for the assets from the lessor firm during the lease term and distributes them to investors. The corporation ceases paying rent at the end of the lease term, and the investor becomes the owner. The SPV then sells the assets to the lessee firm and uses the proceeds to repay the investors who bought the sukuk. The assets will be returned to the company that leases or sells the sukuk. Sukuk Ijarah is on the verge of signing a buy and selling agreement (bai). In both circumstances, an asset is transferred from one party to another for a fee. The distinction is in ownership; in a sale and buy agreement, the ownership deed is transferred, whereas in Ijarah, just the right of use is transferred (Obaidullah, 2005).

Sukuk Ijarah was chosen as a case study to demonstrate the possibility of convergence of thought and principle. The fundamental rationale for choosing Ijarah Sukuk is that it is a debt instrument that is more appealing to investors than other loan instruments, particularly equity instruments, where the pattern of profit participation also involves sharing losses outside of investment. Sukuk Ijarah can also be utilized in various situations, including securitization. Asset-backed Sukuk and asset-based Sukuk can be paired with instruments like Istisnah, resulting in significant benefits for investors and issuers regarding meeting commitments and risk mitigation. The same luxury of having various options regarding Sukuk Ijarah is the reason for the contract's cancellation. This sort of Sukuk, for example, is void if the Ijarah and Istisnah contracts are merged in a Sukuk, and the Ijarah lease payments begin before the asset becomes operational.

Furthermore, the main risk involved with an Ijarah Sukuk derives from the underlying Ijarah contract. Since the Quran approves this Ijarah contract, hardly any school of thought opposes its use and investment. Transaction and credit risk are essentially non-existent compared to equity-based instruments, giving even risk-averse investors an incentive to consider such investments. Because one should always seek the advice of his Islamic financial advisor before investing in issued securities, Sharia risk is not higher than that of other instruments (Rafay et al. 2016).

Sukuk Development

Islamic finance has grown in various areas during the last decade, including Islamic banks, Islamic financial instruments like sukuk, Islamic equities, and Islamic mutual funds (Hassan et al., 2018; Mimouni et al., 2019). Over the last five years, the sukuk market has seen tremendous expansion. Non-Muslim issuers from Europe, Asia, and Africa are also drawn to the sukuk market. Following the global financial crisis, the sukuk market arose as a new phenomenon in the global financial system. This is a different means of obtaining capital to suit a company's financial demands and encourage long-term economic growth (Hassan et al., 2018). The sovereign sukuk issue kicked off the global sukuk boom, but corporate sukuk took over in the years after. Corporate sukuk is generally issued to fund business expansion, particularly by multinational corporations from the Middle East and Southeast Asia (Malaysia) (Jarkarsih and Rusydiana, 2009). Malaysia is the world's largest sukuk issuer by volume, accounting for 50.4 percent of emissions in 2015, followed by Indonesia, which ranked second with a 13.2 percent increase in emissions. With share issuances of 11.8 percent, 8.9 percent, and 4.3 percent in 2015, Saudi Arabia, GCC countries, A.A., and Bahrain make up the top five (Mimouni et al. 2019). The private sector is driving the development of sukuk in Indonesia. Indosat issued a 175 billion mudharabah sukuk in 2002, which started the process.

Furthermore, corporate sukuk issuance in Indonesia exclusively uses Mudharabah and Ijarah contracts, depending on the contract. For the first time, a mudharabah contract was used to issue sukuk, which is believed to be the most Sharia-compliant contract. Ijarah contracts were first utilized in 2004 and have remained the most popular since then. This concerns the ijarah structure, which can provide fixed returns. This follows the trend in traditional bonds, where fixed interest rates are preferred over fluctuating rates (Jarkarsih and Rusydiana. 2009).

Sukuk Yield

Yield is one of the most important factors considered by investors. Some things that are taken into consideration by investors are the price of sukuk, whether it is attractive to invest in, the background of the company to be invested in, and also the returns that investors will obtain. Returns will be necessary for investors because they are related to the profits they will get if they invest their funds in the sukuk (Ogie and Laila, 2020). The main objective of investing is to obtain optimal results from these investment activities. The result of investing in sukuk and bonds is commonly referred to as yield. Sukuk yields are very different from bond yields. These differences include several things; the most visible difference is the basis of income received by investors and the risk of income. Yield to Maturity (YTM) calculates the returns obtained by investors if the coupon and principal value of bonds are kept until maturity.

The yield to maturity calculation formula uses an equation developed using the equation approximation method as follows

$$\text{YTM approximation} = \frac{C+\frac{F-P}{n}}{\frac{F+P}{2}} \text{ x } 100\%$$

Information:

YTM : Yield to Maturity

C : Coupon

n : Remaining due time

F : Face Value (nominal value)

Q : Purchase price

Yield to Maturity is a method of calculating income obtained by investors if the coupon and principal value of the bonds are kept until maturity (Rahardjo, 2009:50). The calculation of sukuk can be calculated by measuring the last yield of sukuk, namely the annual yield of observations whose data can be obtained from the Indonesia Bond Pricing Agency (IPBA). The profits obtained in ijarah sukuk are usually determined at the beginning when buying sukuk, so investors will get a fixed level of profit until the sukuk period ends (Ogie and Laila, 2020).

Inflation

Inflation is a condition where the prices of goods and services, in general, have a tendency to rise continuously (Suseno and Astiyah, 2009). Inflation is a tendency to increase the prices of goods and services continuously. In inflation, there must be an element of price increase, and then the price increase is the price in general. Only a general increase in prices can be called inflation. Rida and Yafiz (2014) mention that Islamic economists say inflation can have a terrible impact on the economy because it disrupts the function of money, weakens the spirit of saving because its real value decreases and tends to consume and invest in non-productive things. The inflation category in Indonesia is divided into four: mild inflation below 10, moderate inflation in the 10-30% range, heavy inflation in the 30-100% range, and hyperinflation above 100%.

B.I. Rate

Investors often use the interest rate as a measure of the desired rate of return and as a comparison in determining the investment decision to be chosen. The benchmark interest rate in determining the amount of bond yields refers to the development of interest rates issued by Bank Indonesia (B.I.) (Sari and Abundanti, 2015)—the B.I. Rate is an interest rate policy that reflects the monetary policy set by Bank Indonesia and announced to the public (B.I., 2017)—the B.I. The rate is determined at the Board of Governors' Meeting every month, announced by the Board of Governors of Bank Indonesia, and implemented in monetary operations carried out by B.I. through managing liquidity in the money market to achieve the operational targets of monetary policy.

Exchange Rates

The exchange rate is the price of one currency against another currency or the value of one currency against another. Quoting Lipsey and Harbury (1992), the exchange rate means the rate at which two different currencies are traded with each other. In contrast, Salvatore (1998) defines the exchange rate as the price of foreign currency in units of the domestic currency (Otaviya and Rani, 2020). The increase in the exchange rate of the domestic currency is called the appreciation of the foreign currency. The decrease in the exchange rate of the domestic currency is called the depreciation of the foreign currency. At the same time, the exchange rate is the price of a country's currency measured or expressed in another currency. The exchange rate is the exchange between two different currencies; it will compare the value or price between the two currencies. The rupiah exchange rate compares the currency value of one country and another.

Gross Domestic Product (GDP)

Growth Domestic Product (GDP) is an indicator that determines the economic condition of a country in a certain period, either at current prices or at constant prices (BPS). GDP is calculated for a country in a certain period through the market value of all its goods and services. GDP growth shows the difference between GDP this year and the previous year. The increase in GDP indicates that the country's economic conditions are also good or increasing with the scope of consumption activities, investment, government spending, and net exports. Mankiw et al. (2007) stated that there are two types of GDP: Real GDP and Nominal GDP. Real GDP is the change in output in the economy produced by a country at the same or constant price. Meanwhile, nominal GDP is the change in output in the economy produced by a country at nominal prices. Alharbi (2017) says that a decrease in the production of goods and services in the community can increase the inability to return financing so that the income received by banks is reduced.

Company Characteristics

Company characteristics are a description of a company in general, as well as in particular. The characteristics of the company can be reflected in the company's activities, company products, and the financial position of the company. Every company has different characteristics, which makes a company have an image in the eyes of company stakeholders. In this study, company characteristics are proxied by ROA and DER. Return on Assets is a financial ratio that shows a company's success in generating profits from its assets. The higher the ROA, the better the company's performance in generating profits. At the same time, DER is a financial ratio that shows a company's capital composition—formulated by the total debt to equity owned by the company. In addition, DER also shows the company's ability to pay off its debts using its equity. The less DER, the better.

Relationship Between Variables

The Relationship Between Inflation And Yields On Corporate Sukuk Ijarah

Changes in the highly volatile inflation rate impact investment in securities because an increase in inflation means that investing in securities such as stocks and bonds is considered very risky (Purwanti and Purwidianti, 2017). The inflation rate will affect the market interest rate and affect the price and yield of bonds so that investors will ask for more excellent compensation due to a decrease in the actual value of cash flows obtained from bonds. Therefore, bond prices will decrease in conditions where inflation is estimated to rise, but yields will increase (Sari and Abundanti, 2015; Listiawati and Paramita, 2018). However, it differs from ijarah sukuk in that sukuk is primarily used to safeguard funds against inflation rather than as a means of profit. Meanwhile, it is envisaged that inflation would be stifled for sukuk issuing enterprises because the amount of currency circulating in the society will be lowered due to sukuk deposits. Sukuk purchasers will gain since their funds will be shielded from inflation, and the inflation rate will be lower than before. As a result, the link between inflation and the rental rate is positive; as inflation grows, the currency's value in society rises, as does the rent paid by issuers. Investors can utilize this as a signal to invest in companies with promising prospects (Azizah and Yohani, 2020).

H1: Inflation has a significant effect on yields on corporate sukuk ijarah

The Relationship Between B.I. Rate And Yields On Corporate Sukuk Ijarah

An increase in interest rates will cause bond prices to fall and vice versa. Bond prices will change in a different direction from the movement of interest rates (Adhitia and Manurung, 2009). An increase in interest rates is related to bond yields because it will cause the price of still outstanding bonds to fall, while a decrease in interest rates will cause bond prices to rise. Interest rates have a positive and significant effect on bond yields. The higher the interest rate, the higher the return signaled by investors from an investment. So, with higher interest rates, bond-issuing companies will offer significant returns to attract investors to invest their funds in bonds (Purwanti and Purwidianti, 2017; Listiawati and Paramita, 2018). If interest rates increase, investing in deposits will be more profitable, so bond prices in the market will decrease, resulting in an increase in yield to maturity. So, if the interest rate increases, the level of profit signaled by investors or the yield to maturity of bonds will also increase.

H2: Interest rates have a significant effect on yields of corporate sukuk ijarah

The Relationship Between Exchange Rate And Yields On Corporate Sukuk Ijarah

Surya and Nasher (2011) explain that one of the factors that affect yield is the U.S. dollar, as the strongest and relatively stable international currency, which is often used as a reference for corporate transactions in various countries. Many companies use U.S. dollars as a transaction tool, and investors tend to compare the returns they receive against U.S. dollars. High and uncertain exchange rates will increase risk and hinder the investment activities of issuers that issue sukuk, especially for issuers that use imported products so this condition is very burdensome for issuers in paying compensation to corporate sukuk holders. The results of research by Arshad et al (2017) show that a weak exchange rate has different impacts in the short and long term. In the short term, the exchange rate does not have a direct relationship with the yield of Malaysian sovereign sukuk. However, in the long term, the results show a significant relationship between the exchange rate and the yield on sukuk. So there is a unidirectional causality relationship between the exchange rate and specific yields of Malaysian state sukuk.

H3: The exchange rate has a significant effect on the yield of corporate sukuk ijarah

The Relationship Between GDP And Yields On Corporate Sukuk Ijarah

Gross Domestic Product (GDP) is one of the macroeconomic indicators that determine the economic development of a country in a certain period (Abdillah, 2018) and is also part of the country's risk that has the potential to reduce investor income (Widoatmodjo, 2009; 147-151). GDP growth is considered as a control for cyclical output effects, where favorable macroeconomic conditions are expected to affect profitability positively. However, when GDP growth slows, such as during a recession, credit quality deteriorates, defaults increase, and rates of return decline (Flamini et al., 2009). Economic growth in a country is good, one of which is seen in the investment sector. The high level of investment also results from high market demand. Real GDP and Islamic investment tend to move together over time, as do real GDP and the financial development index (Zarrouk et al. 2017). So, investment has a positive relationship with GDP; if investment increases, GDP will increase. An increase in GDP will signal companies or investors to invest. Several studies have stated that GDP has a significant effect on sukuk returns (Said and Grassa, 2013; Echekoba et al., 2018; Lawal et al., 2018; Panigrahi et al., 2019; Qureshi et al., 2019).

H4: GDP has a significant effect on yields of corporate sukuk ijarah

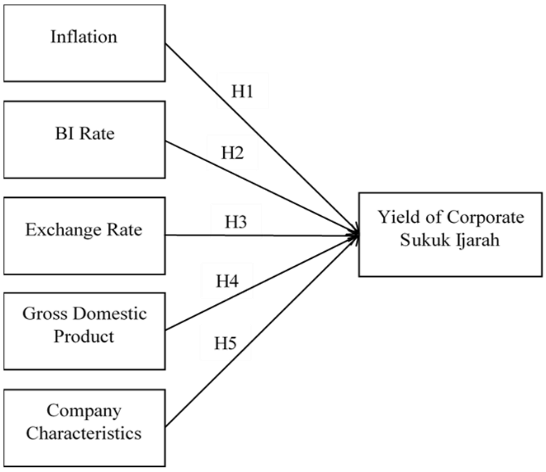
The Relationship Between Company Characteristics And Yields On Corporate Sukuk Ijarah

Return on Assets (ROA) is a ratio that measures the company's ability to generate profits from investment activities. The higher the ratio, the better the asset productivity in obtaining net profits. This will further increase the company's attractiveness to investors. A positive ROA indicates that the total assets used for the company's operations can provide profits for the company. Meanwhile, if the ROA is negative, it shows that the total assets used are experiencing a loss. So, it can be concluded that ROA has a positive and significant effect on profitability (Yanikkaya, et al. 2018; Azad, et al. 2019; Li and Islam, 2019; Saba, et al. 2021). Then, the Debt to Equity Ratio (DER) is a financial ratio that compares the amount of debt with equity, and the goal is that the company's operations are in a proportional amount. During a tough economy or high-interest rates, companies with high DER can experience financial problems. This can reduce the company's profitability and can be used as a signal by investors not to invest in companies experiencing this situation. According to Hery (2015:198), the higher the DER, the smaller the owner's capital that can be used as debt collateral. The smaller the amount of capital the company owns, the greater the impact on the company's burden on creditors. The debt burden borne by the company can reduce the profit earned by the company. Research results Coricelli, et al. (2013); Mahmoudi (2014) and Khan and Khokhar (2015) mention that DER hurts profitability. However, several previous studies have stated that DER affects corporate sukuk yields (Wahyuni, 2012; Nurhasanah, 2012; Wikardi and Natalia, 2017).

H5a: ROA has a significant effect on yields on corporate sukuk ijarah

H5b: DER has a significant effect on yields on corporate sukuk ijarah

Analysis Model



Research Methodology

Data

This study uses a quantitative approach, which tests a theory by testing research variables using numbers and analyzing data with statistical procedures according to the research conducted. The type of data used in this research is secondary data. Secondary data in this study is in the form of financial statements obtained from 4 companies issuing sukuk ijarah, which are registered with the Financial Services Authority (OJK) and sourced from the websites of each company. The value of ijarah in this study was obtained from the Bond Book (Indonesia Bond Market Directory), the Indonesia Bond Pricing Agency (IPBA), and the inflation rate and interest rates from the official website of the Central Statistics Agency. This study uses panel data, combining time series and cross-sections (Rosadi, 2012: 271). The population of this study is companies that issued sukuk in Indonesia for the 2014-2019 period.

Meanwhile, the sample in this study was four ijarah corporate sukuk issuing companies, with 18 ijarah sukuk registered with the Financial Services Authority for the 2014-2019 period. The sampling technique was purposive sampling. Purposive sampling is a technique with specific considerations used so that research has limitations on its observations. The criteria used in this research sample are as follows:

1. Ijarah corporate sukuk registered and actively traded on the Indonesia Stock Exchange and the Financial Services Authority for 2015-2019.

2. Ijarah corporate sukuk that does not have defaults.

3. Corporate sukuk issuing companies with complete financial statements during the study period (2015-2019).

Table 1. Definition Of Variables

No.	Variables	Description	Definition
1	Inflation	Inflation	Rising prices of goods and services in general and continuously
2	BI Rate	BI Rate	The benchmark interest rate reflects the stance of monetary policy set by Bank
3	Exchange Rate	Exchange Rate	The price of a currency when it is exchanged for another currency
4	Gross Domestic Product	GDP	The total value of the production of goods and services in a country for one year. GDP
5	Yield	YTM	The annual rate of profit that investors will earn until maturity
6	Company Characteristics	ROA	Profitability ratios that describe the company's financial performance in
7	Leverage Ratio	DER	Leverage ratio which describes the composition of a company's equity

Method

This study uses data analysis techniques, namely the General Method of Moment (GMM), which is one method in parameter estimation; this estimate is more likely to be estimated in more detail in research that has parameter uncertainty problems, such as when the dependent variable has unknown parameters and must estimate (Meddahi 2002). Hansen introduced the GMM method as a parameter estimate that minimizes the quadratic form of the weighted sample moment condition. According to Hansen (1982), this model implies a family of orthogonal conditions attached to the theoretical constraints of the economy that we wish to apply or test. For example, the assumption that certain equations determine projections or that certain variables have been determined gives rise to an orthogonality condition in which the expected cross product of the unobservable disturbance and the function of the observable variable equates to zero. Heuristically, identification requires at least as much orthogonality condition as there are coordinates in the parameter vector to estimate. The unobservable disturbance under the pathogenicity condition can be replaced by an equivalent expression involving the actual parameter vector and the observed variable. Using the moment method, a sample estimate of the expected cross-product can be calculated for each element in the acceptable parameter space. The GMM estimator of the actual parameter vector is obtained by finding the element of the parameter space that sets the linear combination of the sample cross products as close to zero as possible. The advantages of the GMM method include:

i. GMM does not require the conditions of a distribution, such as the assumption of normality.

ii. GMM can handle heteroscedasticity problems.

iii. Ease in determining the appropriate instrument variables for endogeneity.

One of the characteristics of the GMM estimator is asymptotic normality, which means that the GMM estimator for the sample size will converge to normal. In other words, the larger the sample, the distribution of the sample will approach the normal distribution. So, to test the significance of the parameters, we can use the statistical t ratio (Verbeek, 2008).

Result And Discussion

GMM Estimation

This study aimed to analyze the factors that influence Yield to Maturity (YTM)—research data in continuous data consists of one response variable and six predictor variables. The method used is panel data regression analysis using the Generalized Method of Moment (GMM). The results of the initial GMM estimation are presented in the following figure:

Table 2. GMM Estimation Stage 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION_X1	-0.007657	0.086048	-0.088991	0.9293
BIRATE_X2	0.165289	0.080880	2.043646	0.0442
EXCH RATE_X3	-8.60E-06	0.000198	-0.043531	0.9654
DER_X4	-0.066019	0.048476	-1.361889	0.1769
ROA_X5	0.007518	0.039992	0.187992	0.8513
GDP_X6	0.056259	0.010521	5.347055	0.0000
C	-7.555399	3.077144	-2.455328	0.0162
R-squared	0.421235	Mean dependent var		0.865425
Adjusted R-squared	0.379396	S.D. dependent var		0.543840
S.E. of regression	0.428429	Sum squared resid		15.23475
Durbin-Watson stat	0.447912	J-statistic		4.77E-19
Instrument rank	7			

Based on the results of the partial effect test in table 2., it can be seen that the BI rate and IBS variables have a significant effect on YTM because the p-value of each variable is less than the 5% significance level. Meanwhile, the inflation variable, DER exchange rate, and ROA do not affect YTM. Therefore, it is necessary to re-estimate by removing the variables that do not affect YTM. Here are the results of the re-estimation. The following are the results of estimating the BI rate and IPI against YTM.

Table 3. GMM Estimation Stage 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BIRATE_X2	0.125800	0.058959	2.133701	0.0357
GDP_X6	0.051448	0.007355	6.994859	0.0000
C	-6.919968	1.259440	-5.494481	0.0000
R-squared	0.406165	Mean dependent var		0.865425
Adjusted R-squared	0.392514	S.D. dependent var		0.543840
S.E. of regression	0.423877	Sum squared resid		15.63142
Durbin-Watson stat	0.443734	J-statistic		6.80E-19
Instrument rank	3			

Based on the table 3., the estimated YTM model is as follows:

$$\hat{y} = -6.919968 + 0.125800x_{3it} + 0.051448x_{4it}$$

YTM modeling using GMM resulted in an R-square (R2) of 40.62%. This means that the predictor variable can explain the variance of the response variable by 40.62%, while the remaining 59.38% is explained by other variables outside the model. Then the Normality Test is carried out to determine whether the data is normally distributed or not. Here are the results of the Normality Test:

Normality Test

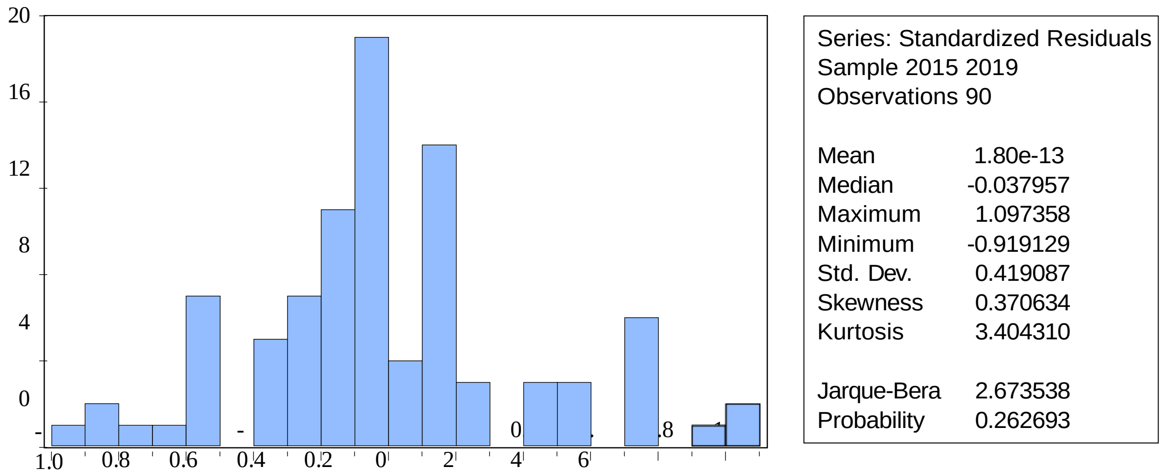


Figure 1. Normality Test.

Based on figure 1., the p-value is 0.262693. This value is smaller than the significance level of 5% so it can be concluded that the data is normally distributed. In the use of

GMM modeling, it is necessary to test assumptions. In this study, the assumption of multicollinearity and heteroscedasticity test is used.

Multicollinearity Test

Table 4. Multicollinearity Test

	BIRATE_X3	IPI_X7
BIRATE_X3	1	-0.65
GDP_X7	-0.65	1

Based on the table 4., the correlation value between the BI rate and IPI is 0.65. This value is smaller than 0.8 so it can be concluded that there is no multicollinearity between independent variables.

Heteroscedasticity Test

Heteroscedasticity assumption testing compares the model with weighted and unweighted models selected based on the OLS method. Based on the analysis results, the Random Effect Model (REM) is the best model. In the REM model, no heteroscedasticity test is needed because REM has used Generalized Least Square (GLS), which is one of the healing techniques in regression.

Interpretation of Analysis Results using GMM

Table 5. Result, Analysis and Interpretation

Result	Analysis	Interpretation
Inflation	No significant effect on YTM	-
BI Rate	Significantly affect YTM	An increase in the BI rate of 1 percent will be followed by an increase in YTM of 0.1258
Exchange Rate	No significant effect on YTM	-
GDP	Significantly affect YTM	An increase in GDP of 1 percent will be followed by an increase in YTM of 0.051448
ROA	No significant effect on YTM	-
DER	No significant effect on YTM	-

The Effect of Inflation on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on Table 5., the modeling using GMM, the first hypothesis proposed in this study, was rejected. It is known that the inflation variable has no significant adverse effect on YT, meaning that changes in inflation will affect the yield of corporate sukuk ijarah. When inflation rises, the yield on corporate sukuk ijarah will decrease, and vice versa. Inflation is a macro factor that can affect the overall state of the economy; when inflation is controlled, it will positively impact all sectors, including companies. Meanwhile, if inflation increases, it can be indicated that the country's economic condition is not good. The results of this study are in line with Suciningtias (2019), Oktavian et al. (2015), and Salatalohy and Wibowo (2019), where inflation does not affect the yield of Indonesian Hajj fund sukuk because the sukuk are 100% guaranteed by the government. With guarantees from other parties, sukuk becomes a safe investment instrument for investors. However, in contrast to Monjazeb and Ramazanpour (2013), it is stated that the inflation variable has a positive and significant effect on the growth of corporate sukuk. An increase in inflation causes people to choose to maintain the value of their money by purchasing corporate sukuk rather than holding money whose real value will continue to decline as inflation increases. Changes in the highly volatile inflation rate will impact on investment in securities. Due to rising inflation, investment in securities such as bonds is increasingly risky. As a result of market conditions that are experiencing price increases, with the high risk caused by the inflation rate, investors expect higher yields on their investments; in other words, the inflation rate affects the size of bond yields desired by investors. In this study, it was found that inflation did not affect the YTM of Corporate Sukuk Ijarah; it could be because the contract used was ijarah or lease, where the required yield at the beginning was fixed so that the company had an obligation to pay rent for the assets and principal (Utami et al. 2019). Thus, even in the worst conditions, the company must still provide the required yield at the beginning of the contract.

The Effect of the BI Rate on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on the results of the GMM modeling, use BI Rate data to see its effect on YTM. The BI Rate is known to affect the YTM of corporate sukuk ijarah significantly, so the second hypothesis proposed in this study is accepted. Every 1 percent increase in the BI Rate will increase the yield on corporate sukuk ijarah by 0.125800. The results obtained are different from Hooker (2004), Chiarella and Gao (2004), and Kandir (2008), who found that the interest rate hurt the returns of all portfolios studied. At the same time, Sari and Abundanti (2015) support this study's results. The BI Rate issued by Bank Indonesia is a reference used by all economic sectors in Indonesia, including investment activities. A monetary contraction that encourages an increase in interest rates can increase the company's cost of capital. This trend of increasing interest rates is happening in Indonesia and has become a global trend. The United States, through the Fed, has raised interest rates to 2.75%. In addition, China, which has been conservative in setting interest rates, has raised interest rates in the last nine years to reduce the heating up of its economy. Based on this, through monetary policy, the government raised the SBI Interest Rate; the interest rate experienced an upward trend in connection with the threat of inflation engulfing the world (Seputro, 2012). An increase in interest rates makes the yield on deposits and bonds more attractive, so many capital market investors shift their stock portfolios (Mouchakkaa, 2014). The downward trend in interest rates may be manageable for investors with fixed incomes to get attractive returns (Caron and Marco, 2014). However, the expectation theory states that investors will expect high returns in the future if there is an increase in interest rates (Bodie et al. 2006).

The Effect of Exchange Rates on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on the results of the GMM modeling using exchange rate data to see its effect on YTM, the third hypothesis proposed in this study was rejected. The exchange rate does not significantly affect the YTM of corporate sukuk ijarah. Sukuk is classified as a low-risk security, and its price movement also does not fluctuate sharply. Corporate Sukuk with ijarah contracts are sukuk with fixed returns in rental fees or umrah rentals, in which case the yield has been determined at the outset. Therefore, exchange rate movements do not affect YTM. The results of this study align with Pericoli and Taboga (2012), who found that changes in exchange rates have a negligible and insignificant impact on the slope of the results. According to Jahjah et al. (2012), exchange rate policy directly influences bond spreads, where each overvalued currency tends to issue more bonds than others. In research, Othman et al. (2015) explained that if the currency of a country appreciates against the US dollar, it will cause a decrease in demand for export products because they are more expensive than other exporting countries. This will lead to capital outflows, which will reduce investment and impact the decline in corporate sukuk growth in Indonesia. Investors allocate their wealth among alternative assets, including domestic money and domestic and foreign securities. The exchange rate's role is to balance supply and demand for existing assets. Therefore, any changes in the needs and fulfillment of assets will change the exchange rate balance (Kewal, 2012). Chee and Fah (2013) tested eight macroeconomic factors on the yield spread of British government bonds. It is concluded that interest rates hurt British government bonds with a term of 5 years. The increase in interest rates causes investors to avoid wanting to borrow and impacts increasing corporate bond coupons. In addition, increasing bond returns has the effect of increasing the value of the yield spread.

The Influence of GDP on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on the results of the GMM analysis, it is known that the IPI variable has a significant effect on YTM. So, the fourth hypothesis proposed in this study is accepted. An increase in GDP by 1 percent will increase YTM by 0.051448. GDP shows actual economic activity on a macro basis, so when economic activity increases, it will directly affect the company's finances. The company's main objective is to maximize profits and/or minimize costs and will minimize risks associated with operational and financial decisions. Gaining a larger market share with a strong industry presence is also an essential goal for some companies (Saba et al., 2021). Increased economic activity in the real sector means a positive response to the market. This will encourage public demand for sukuk and may cause the price of sukuk to rise. When the price of sukuk rises, the company will set a high sukuk yield so investors can invest their funds. The financial sector plays a promotional role if it can channel financial resources to industries with good growth opportunities. When the financial sector is more developed, more financial resources can be allocated to productive real investments, and more physical capital is formed, which will stimulate economic growth (Zarrouk et al. 2017). GDP growth is considered a control for cyclical output effects where favorable macroeconomic conditions are expected to influence profitability positively (Tarek Al-Kayed et al. 2014). In addition, there is a positive influence on consumer purchasing power, which can increase demand for the company's products. With the increase in company sales, the company's opportunity to earn profits will also increase (Tandelilin 2001:212). The increase in GDP is a positive signal to invest. A high GDP indicates that existing investments have a relatively small risk level, while bonds with a lower risk provide a small yield.

The Effect of DER on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on the results of the GMM modeling using DER data to see its effect on YTM, the fifth hypothesis (a) proposed in this study was rejected. DER does not significantly affect the YTM of corporate sukuk ijarah. This research aligns with Latif and Bambang (2017) and Nariman (2016). The DER ratio, which reflects a company's leverage, does not affect the yield to maturity of the sukuk; this is because the increase in the company's debt does not affect the yield of the sukuk. It is known that sukuk is an investment product with a low level of risk. Hence, investors tend to consider the sukuk rating and pay less attention to a company's financial position, especially the debt position. The company's internal factors do not affect the corporate sukuk ijarah YTM. The trade-off model argues that profitable firms are less likely to experience bankruptcy risk because of their increased ability to meet debt service obligations. Thus, they will demand more debt to maximize their tax protection at a more attractive cost of debt (Psillaki and Daskalakis, 2009; Kayo and Kimura, 2011; Guermazi, 2020). The trade-off theory also predicts that the risk of lending to firms with more tangible assets is expected to be low, given the higher liquidation value of these assets in the event of financial distress or bankruptcy. Therefore, firms with a higher percentage of fixed assets are expected to borrow more than firms with smaller fixed assets (Hovakimian and Li, 2011; Guermazi, 2020). However, Brigham and Houston (2010: 189) state that companies with very high returns on investment use relatively few debts. The high rate of return allows the company to do most of its funding through internally generated funds. Pecking order theory predicts that highly profitable firms will be able to generate more funds through retained earnings and subsequently have less leverage. Compared to debt and equity, retained earnings have no adverse choice problems, and hence, they are the cheapest source of finance (Vasiliou et al., 2009; Kayo and Kimura, 2011; Guermazi, 2020).

The Effect of ROA on the Yield to Maturity of Corporate Sukuk Ijarah (GMM)

Based on the results of the GMM modeling using ROA data to see its effect on YTM, the fifth hypothesis (b) proposed in this study was rejected. ROA does not significantly affect the YTM of corporate sukuk ijarah. These results agree with (Rouf, 2015; Bandyopadhyay and Barua, 2016; El-Khatib, 2017; Gomez, et al. 2014; Güner, 2016; Kyissima, et al. 2019; Utami and Yana, 2019; Laila, et al. 2020). However, the results contradict (Alipour et al. 2015; Chadha and Sharma, 2015), which document the positive impact of profitability on leverage. ROA is a profitability ratio that describes the portion of net income compared to assets owned by a company. Besides, the ROA ratio reflects the company's efforts to achieve profit. However, suppose ROA is not suitable to be associated with the rate of return of sukuk. In that case, this is because sukuk are long-term investments whose returns are made after calculating profits. In addition, the yield of sukuk ijarah is not based on profitability because sukuk ijarah is a loan, and the ROA ratio is more influential on stock returns than the sukuk yield. The trade-off theory assumes that firms with high earnings volatility try to accumulate cash over the years to avoid future investment problems (Myers, 1977; Guermazi, 2020). As DeAngelo and Masulis (1980) point out, the problem of adverse debt selection is more severe for firms with highly volatile earnings. In order to avoid this problem, companies with surplus finances must stop debt or invest in cash or securities. When maintaining debt capacity, companies become dependent on future financing needs or will find it challenging to avoid issuing equity at higher costs (Myers, 1984; Guermazi, 2020). Higher earnings volatility increases the likelihood of financial risk, and these companies will face difficulties in debt financing. According to Jensen (1986), the pecking order theory also shows a negative relationship between leverage and earnings volatility.

Data analysis is the most crucial part of the research. Data analysis summarizes collected data. It involves the interpretation of data gathered using analytical and logical reasoning to determine patterns, relationships, or trends. The discussion explains and interprets results or findings by comparing them with the findings in prior studies.

Conclusion

This study examines Inflation, Bi Rate, Exchange Rate, and Gross Domestic Product (GDP) of Corporate Sukuk Ijarah Returns. The results of the research based on the GMM analysis explain that the Bi Rate and GDP significantly impact the rewards of Corporate Sukuk Ijarah in Indonesia. Meanwhile, inflation and exchange rates do not impact the return on Corporate Sukuk Ijarah. This is because investors' compensation is fixed based on the initial agreement. So that when there is an increase or decrease in inflation and exchange rates, it will not change or impact the rewards for the Corporate Sukuk Ijarah. Sukuk issuers and investors must pay attention to all the factors that can affect the rate of return on Sukuk due to fluctuating economic conditions. Further research could enhance the literature by looking at cross-country comparisons, particularly to countries with dual financial systems, such as Indonesia and Malaysia, to gain a comprehensive understanding of the internal and external impacts on Corporate Sukuk Ijarah rewards. The limitations of this study were that it required the addition of the number of companies studied and the research period.

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