| e-ISSN: 2948-460X | https://ibaf.usim.edu.my

SUKUK: UNVEILING THE STRUCTURAL UNDERPINNINGS, YIELD SPREAD DYNAMICS, AND COMPARATIVE ANALYSIS WITH CONVENTIONAL BONDS IN THE INDONESIAN FINANCIAL LANDSCAPE

Risna Triandhari[12], Natasya Nisaul Alfani[2], Raden Parianom[3]

[1] Department of Economics, Faculty of Economics and Business, Universitas Indonesia
[2] Center for Islamic Economics and Business, Universitas Indonesia
[3] Faculty of Economics and Business, Universitas Pembangunan Nasional Veteran Jakarta

Abstract: *This study delves into whether factors influencing credit spreads differ between sukuk and bonds within the vibrant Indonesian secondary market. The research leverages unbalanced panel data encompassing 2017-2023, meticulously obtained from Thomson Reuters Eikon and CEIC. To extract meaningful insights, a Fixed-Effect Model analysis is employed, a robust technique for handling this type of data. The study further conducts a partial analysis to recognize the potential heterogeneity within the sukuk market. This analysis explores explicitly whether the factors driving yield spread exhibit variations between sukuk structured under the ijarah and mudharabah principles. The study's core finding challenges the notion that investors perceive sukuk as a perfect substitute for conventional bonds in terms of the risk-return profile. This is evidenced by the high degree of similarity in the factors that influence the credit spreads of both instruments. However, a fascinating discovery emerges from the partial analysis. It reveals that mudharabah sukuk stands out as a distinct product within the Indonesian secondary debt market compared to its ijarah counterpart. This finding warrants further investigation into the specific characteristics of mudarabah sukuk that contribute to its distinctiveness.*

Keywords: Sukuk, Conventional Bonds, Sukuk Ijarah, Sukuk Mudarabah, Yield Spread

1. Introduction

Islamic Shariah-based financial assets have attracted public attention in recent years. This development is driven by the increasing needs of the Islamic community for alternative Sharia-based financial products, both in terms of financing and investment, based on the religiosity factor of retail investors, institutional investors, and the general banking service user community (Duqi & Al-Tamimi, 2019).

Sukuk, a famous Islamic financial product in the last decade, is a Sharia-compliant financial certificate, often called a Sharia-compliant bond (Herzi, 2016). The AAOIFI describes sukuk as certificates that indicate ownership of physical assets, beneficial rights, or services, as opposed to conventional bonds, which are debt securities(Godlewski et al., 2011). In Indonesia, corporate sukuk is proliferating with a CAGR of 22% in value outstanding and 37% in number

outstanding in 2017-2021. This growth is driven by similarities with conventional bonds in terms of time-to-maturity, coupon rate, and pricing method, attracting the interest of rating agencies and investors (Wilson, 2008). Hassan et al. (2018) demonstrate that the worldwide conventional bond and sukuk markets integrated, implying an increase in co-movement. A previous study on the link between sukuk and traditional bonds needs to pay more attention to the variables affecting choices regarding investments and how they affect the performance of these two instruments.

The credit scoring technique used to measure credit risk impacts the development of Sukuk as an alternative to traditional bonds. Sudaryanti et al. (2014) discovered that parameters influencing the credit ratings of sukuk and bonds are highly comparable, including issuer size, profitability, leverage ratio, and years-to-maturity. During the issue, securities brokers and financiers create the sukuk documentation using credit risk information from credit rating agencies, much like conventional bonds. Given the absence of information on the distinctions between conventional bonds and sukuk in primary and secondary markets, it is still being determined if these asset classes are separate or if sukuk is just the Islamic equivalent of conventional bonds. Thus, a secondary market study is needed to determine if there are pricing differences between these asset classes from an investor perspective in Indonesia.

The inherent tendency of corporate sukuk in Indonesia has shifted dramatically since its debut on the Jakarta Stock Exchange in 2002. In the recent decade, sukuk Ijarah has gained popularity. Mudarabah sukuk commanded the market from 2002 to 2004, accounting for 88% of the total (Fatah, 2011). However, between 2004 and 2017, sukuk Ijarah issuance surged to 92% of the entire market value of corporate sukuk (Utami et al., 2019). Following a period of decline, sukuk Mudarabah rebounded, accounting for 27% of the entire market value of Indonesian investment-grade corporate Sukuk. This shift in trend was motivated by greater profitability and the establishment of the Sharia Supervisory Board (SSB), which enabled underwriters to take on more significant hazards with Mudarabah sukuk (Utami et al., 2019).

There is ongoing debate among academics about how the structure of a sukuk affects its performance in primary and secondary markets. In the Malaysian capital market, the sukuk structure significantly influences credit ratings in the primary market (Borhan & Ahmad, 2018). Sari et al. (2020) observed comparable outcomes for the Indonesian market. However, they contrasted with Lestari & Mahfud (2021) and Fitrianingsih (2017), likely due to differences in sample selection. These studies concentrate on the effect of sukuk structure on credit ratings in the primary market. However, they do not consider the implications for pricing in the primary and secondary markets. More studies are required to understand how the sukuk structure influences yield spreads in the secondary market.

In the given context, this study aims to address two main questions: what factors impact the yield difference between sukuk and conventional bonds, and what influences sukuk with asset-backed and asset-based characteristics. The objectives of this study are to examine how credit risk factors affect the yield spread between sukuk and conventional bonds in Indonesia and to analyze how the structure of sukuk impacts yield spread in the Indonesian secondary market. This study aims to contribute to Islamic Financial Economics, particularly in Indonesia, by addressing gaps in current studies focusing on the primary market of capital markets and providing a comparative analysis of asset-backed and asset-based sukuk in the secondary market. It is expected to set the stage for future research in this area.

2. Literature Review

2.1 Previous Studies

Saeed et al. (2021) investigated the response of yield spreads for conventional bonds and sukuk to changes in factors commonly used to evaluate yield spreads. They used the yield spread of each debt instrument as the dependent variable. This yield spread is calculated by subtracting the instrument's yield to maturity (YTM) from the YTM of a risk-free rate, represented by Malaysian Government Securities (MGSY) with maturities of 3, 5, 7, and 10 years. The independent variables used may be divided into three categories: (1) firm-specific features, (2) bond characteristics, and (3) variables related to macroeconomics. Bond and sukuk data are obtained from the Bloomberg Professional Database, issuer balance sheet data from the Bursa Malaysia website, and macroeconomic data from Refinitiv Datastream and the International Monetary Fund (IMF). The results of this study are inversely proportional to the author's initial expectations or hypotheses.

This study produces intriguing findings. The positive relationship between Return on Assets (ROA) and conventional bond yield spreads aligns with Balasubramanian and Cyree (2011) due to the risk-return trade-off of this asset class. However, sukuk does not exhibit the same relationship, suggesting a different risk-yield dynamic. The Equity Volatility variable supports Collin-Dufresne et al. (2001), where increased company value volatility raises default probability and credit spreads. Interestingly, the association between years-to-maturity and credit spread defies economic theory. However, the idea that enterprises with large debt have more time to minimize total risk, resulting in lower credit spreads, rationalizes it. Additionally, the slope variable's ambiguous relationship, unlike Duffie and Singleton (1999), is explained by Yap and Gannon (2007) through liquidity shortage transmission.

3. Research Method

3.1 Conceptual Framework

Grounded in theoretical analysis and prior empirical investigations, this study compares the yield spreads of sukuk and conventional bonds in Indonesia, employing three categories of independent variables: firm-specific attributes, bond characteristics, and macroeconomic indicators. The independent variables are delineated as follows:

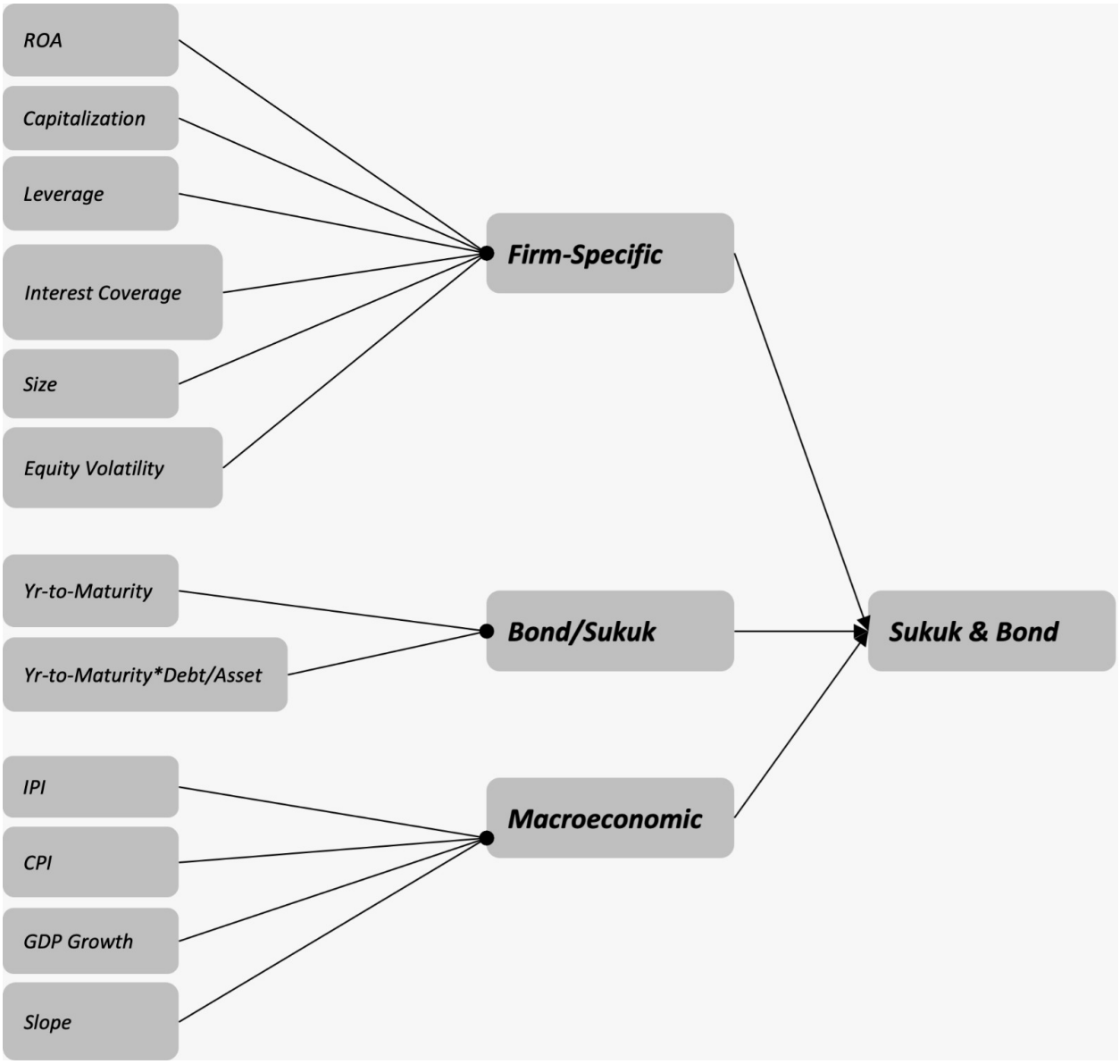

Chart 1. Conceptual Framework
Source: Processed by the author

3.2 Data

The bonds and sukuk analyzed in this study were issued and traded within Indonesia's secondary bond market from 2017 to 2023. The criteria for selecting the bond and sukuk samples are as follows:

1. Only include bonds and sukuk issued in the Indonesian debt market and expressed in Indonesian Rupiah.
2. Only include bonds and sukuk with fixed-coupon and zero-coupon structures.
3. Only include bonds and sukuk issued by publicly listed companies.
4. Exclude bonds and sukuk with features of (1) callable or redeemable, (2) convertible, (3) putable, and (4) having sinking fund provisions.

5. Exclude bonds and sukuk categorized as guaranteed and subordinated.
6. Exclude bonds and sukuk that have years-to-maturity of less than one year
7. Exclude bonds and sukuk issued for less than one year 7.

By limiting bond and sukuk data to instruments issued in the Indonesian debt market and denominated in the Indonesian Rupiah, the level of data availability in Thomson Reuters Eikon will be very high. The second and third sample restrictions aim to isolate plain-vanilla securities for research purposes, as these types of bonds and sukuk have the highest liquidity and trading volume compared to step-up and exotic securities (Marquit, 2022).

3.3 Operational Variable

The following are the operational variables used in this study:

Variabel	Definiton	Units	Source
Bond Spread	YTM Conventional Bonds YTM Benchmark with Same Year-to-Maturity	Percent	Thomson Reuters Eikon
Sukuk Spread	YTM Sukuk YTM Benchmark with Same Year-to-Maturity	Percent	Thomson Reuters Eikon
Return on Assets	EBIT/Total Assets	Percent	Thomson Reuters Eikon
Capitalization Ratio	Long-Term Debt/(Long-Term Debt + Shareholder's Equity)	Percent	Thomson Reuters Eikon
Leverage Ratio	Total Debt/Total Assets	Percent	Thomson Reuters Eikon
Interest Coverage Ratio	EBIT/Interest Expense	Percent	Thomson Reuters Eikon
Size	Total Assets	Billion Rupiah	Thomson Reuters Eikon
Equity Volatiltiy	Standard Deviation of Day-to-Day Logarithmic Price Changes (Annualised to the last 360 trading days)		Thomson Reuters Eikon
Years-to-Maturity	Years-to-Maturity of Securities	Log	Thomson Reuters Eikon
Interaction	Years-to-Maturity . Leverage Ratio		author processed
Industrial Production Index	Quarterly Change of IPI Indonesia	Percent	CEIC Data
Inflation	Indonesia Quarterly Inflation	Percent	CEIC Data
GDP Growth	Quarterly Change in Indonesia's GDP	Percent	CEIC Data
Slope	Difference between 10Y & 3Y Indonesia Treasury Rate	Percent	CEIC Data

Table 2. Operational Variables
Source: Processed by the author

3.4 Research Model

The dataset utilized in this study facilitates the examination of both time-series data and cross-sectional variation among the determinants of yield dispersion. Employing the Pooled Ordinary Least Squares (OLS) technique could result in biased outcomes if firm and time-fixed effects are present in the data. Consequently, a panel data regression framework will be adopted. The regression framework employed in this study is delineated as follows:

Model 1:

$$ln(Sukuk\ Spread_{ift}) = \beta_0 + \beta_1 Firm_{it} + \beta_2 Sukuk_{it} + \beta_3 Macro_t + \beta_4 Sector_{it} + A_f + B_t + \mu_{ift} \quad (3)$$

Model 2:

$$ln(Bond\ Spread_{ift}) = \beta_0 + \beta_1 Firm_{it} + \beta_2 Bond_{it} + \beta_3 Macro_t + \beta_4 Sector_{it} + A_f + B_t + \mu_{ift} \quad (4)$$

$ln(Sukuk\ Spread_{ift})$ and $ln(Bond\ Spread_{ift})$ are the natural logarithm of the difference between the yield at issuance of $Sukuk_i$ or $Bond_i$ of issuer *f* at issuance date *t* and the *yield* of Indonesian government bonds with similar *maturity*. $Firm_{it}$ are variables related to the characteristics of the issuer, such as *Return on Equity*; *Capitalization Ratio*; *Leverage Ratio*; *Interest Coverage Ratio*; *Firm's Size*; and *Equity Volatility*. $Sukuk_{it}/Bond_{it}$ are variables related to sukuk and bond characteristics, such as *Years-to-Maturity* and *Years-to-Maturity*Leverage Ratio* (interaction variable). $Macro_t$ are variables related to Indonesia's macroeconomic conditions, such as *Industrial Interaction Index*; *Consumer Price Index*; *GDP Growth*; and *Slope*. $Sector_{it}$ is a *dummy variable* for the sector of the issuer, $\boldsymbol{A_f}$ is a *dummy variable* for *firm-fixed effects*, and $\boldsymbol{B_t}$ is a *dummy variable* for *time-fixed effects*. μ_{ift} is the *error term*.

Prior to the analysis of results, several diagnostic tests, including the Breusch-Pagan Lagrange Multiplier Test and the Hausman Test, will be performed to ascertain the most suitable model for this study. The potential model choices include the Pooled Ordinary Least Squares Model, the Random Effects Model, and the Fixed Effects Model.

3.5 Research Hyphothesis

3.5.1 Firm-Level Characteristics

According to Merton's (1964) yield spread calculation approach, two factors influence the yield spread: the issuer's business volatility, the ratio between the present cash flows to investors, and the company's value. These two characteristics correlate positively with the yield spread of a fixed-income asset. Meanwhile, Flannery et al. (2012) discovered that the yield spread of a fixed-income asset is impacted by the issuer's predicted future debt level, which is calculated by adding the issuer's existing debt and equity.

H1: Debt level variables (leverage ratio, capitalization ratio, and interest coverage ratio), profitability (return on assets), and issuer business conditions (size and equity volatility) have a significant effect on yield spread.

3.5.2 Bond-Specific Characteristics

The time-to-maturity variable of a fixed-income asset suggests that the issuer's maturity structure can explain a large percentage of the asset class's yield spread (Valenzuela, 2015). The link between time-to-maturity and yield spread is not fixed, and it is determined by the features of each asset class, such as the discrepancies in the findings of research done by Heer and Robinson (1961), Van Horne (1979), Yawitz et al. (1979), and Bierman and Hass (1975). The economic theory behind this variable is that default risk will grow when fixed-income asset and company value volatility increase and time-to-maturity decreases (Peter & Grandes, 2005). Therefore, as a result, when the time-to-maturity increases, the issuer will have more options to boost income and lower debt levels, as represented by interaction factors (Saeed et al., 2021).

H2: Time-to-maturity and interaction variables have a significant effect on yield spread.

3.5.3 Macroeconomic Factors

Macroeconomic variables can encourage the yield spread of a bond. Fama and French (1989) discovered that yield spreads follow the same pattern as the business cycle, narrowing as the economy grows and widening when economic circumstances decline. Tang and Yan (2006) find similar evidence that a country's macroeconomic conditions impact yield spread via market volatility and the risk profile investors are willing to accept in the secondary market. David (2007) discovered that macroeconomic shocks produce separate risk premiums, resulting in non-equivalent fluctuations in average projected default losses and credit spreads.

H3: Macroeconomic variables (Industrial et al., Inflation, GDP Growth, Slope) have a significant effect on yield spread.

4. Findings And Discussion

4.1 Descriptive Analysis

	Obligasi Konvensional					Sukuk				
	Obs	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Bondspread	1418	2,64	1,45	-4,17	7,12	262	2,03	1,14	-0,76	5,34
IPI	1418	0,4	9,28	-21,02	15,39	262	0,34	9,65	-21,02	15,39
Inflation	1418	2,67	0,83	1,33	4,37	262	2,3	0,78	1,33	4,37
GDP	1418	1,56	3,12	-5,93	5,61	262	1,49	3,32	-5,93	5,61
Slope	1418	0,22	0,41	-0,24	1,16	262	0,43	0,42	-0,24	1,16
ROA	1418	1,19	2,05	-26	20,7	262	0,92	1,62	-3,4	8,1
Capratio	1418	44,46	22,84	0,4	88,2	262	44,58	16,55	6,46	75,2
Leverage	1418	46,77	22,84	0	283,1	262	45,87	14,55	0,96	71,69
Intcoverage	1418	195,17	322,28	-2940	5460	262	136,05	122,26	-250	1320
Logyrmaturity	1239	0,87	0,71	0	3,33	256	1,2	0,65	0	2,3
Loginteraction	1235	4,51	1,01	0,13	7,03	256	4,87	1,12	-0,04	6,26
Logsize	1358	10,07	1,26	6,89	14,33	252	10,37	1,16	8,07	12,65
Logeqvol	1415	-3,77	0,38	-4,97	-2,77	262	-3,59	0,39	-4,52	-3,11

Table 3. Descriptive Analysis Results of Bond (Left) & Sukuk (Right) Datasets
Source: Processed by the author

This analysis employed bond and sukuk datasets traded on the Indonesian stock exchange between 2017 and 2021, with a quarterly data cadence. The bond dataset includes 121 plain-vanilla bonds issued by 34 distinct corporations. Meanwhile, the sukuk dataset only includes 22 plain-

vanilla sukuk, with 16 Ijarah sukuk and six Mudarabah sukuk issued by seven firms. The disparity in the number of observations between the two datasets may be attributable to the small amount of sukuk outstanding on the secondary market and the large number of sample criteria used to account for variations in the structure and rating of these two asset classes.

The descriptive statistical differences between the bond and sukuk datasets are minimal. Bondspread, the dependent variable, has an average value of 2.64% and a range of -4.17% to 7.12%. The sukuk spread, a dependent variable of Sukuk, has an average of 2.03% with a range of -0.76% to 5.34%. This descriptive analysis reveals an intriguing finding: the leverage ratio in the bond and sukuk datasets averages 46.77% and 45.87% for each asset type. This percentage is exceptionally high in countries with weak capital markets, whereas corporations in mature capital markets have an average leverage ratio of 40% to 60% (Arellano, 2008).

	Ijarah					Mudarabah				
	Obs	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Yield Spread	192	2,28	1,22	-0,76	5,34	70	1,36	0,47	0,21	2,34
IPI	192	0,33	9,58	-21,02	15,39	70	0,37	9,89	-21,02	15,39
Inflation	192	2,35	0,8	1,33	4,37	70	2,18	0,72	1,33	3,39
GDP	192	1,48	3,3	-5,93	5,61	70	1,53	3,4	-5,93	5,61
Slope	192	0,41	0,43	-0,24	1,16	70	0,5	0,41	-0,24	1,16
ROA	192	0,79	1,81	-3,4	8,1	70	1,26	0,81	0,1	2,7
Capratio	192	42,26	11,76	12,5	56,9	70	50,96	24,43	6,46	75,2
Leverage	192	46,37	4,18	27,9	56,85	70	44,49	27,38	0,96	71,69
Intcoverage	192	124,32	128,31	-250	1320	70	168,23	97,48	0	360
Logyrmaturity	186	1,26	0,7	0	2,3	70	1,06	0,49	0	1,61
Loginteraction	186	5,09	0,71	3,57	6,26	70	4,27	1,66	-0,04	5,88
Logsize	182	10,25	1,04	8,7	11,19	70	10,68	1,38	8,07	12,65
Logeqvol	192	-3,41	0,24	-3,93	-3,11	70	-4,08	0,28	-4,52	-3,59
Intcoverage	192	124,32	128,31	-250	1320	70	168,23	97,48	0	360
Logyrmaturity	186	1,26	0,7	0	2,3	70	1,06	0,49	0	1,61
Loginteraction	186	5,09	0,71	3,57	6,26	70	4,27	1,66	-0,04	5,88
Logsize	182	10,25	1,04	8,7	11,19	70	10,68	1,38	8,07	12,65
Logeqvol	192	-3,41	0,24	-3,93	-3,11	70	-4,08	0,28	-4,52	-3,59

Table 4. Descriptive Analysis Results of Ijarah (Left) & Mudarabah (Right) Datasets
Source: Processed by the author

For partial regression analysis, the sukuk database is separated into two categories based on the structure utilized: Ijarah and Mudarabah. A notable finding in this descriptive study is the significant deviation of the yield spread variable in Ijarah compared to Mudarabah. In the Ijarah dataset, this variable has an average of 2.28%, a minimum of -0.76%, and a high of 5.34%. In the Mudarabah dataset, the average value is just 1.36%, with a low of 0.21% and a maximum of 2.34%. The higher range of Ijarah compared to the range of the Mudarabah dataset is represented in the standard deviation of these two datasets, which are 1.22% and 0.47%, respectively. This difference is due to the difference in the amount of data available between these two sukuk structures; where in Ijarah, there are 16 sukuk, while in Mudarabah, there are only six sukuk, which results in an unequal number of observations of these two structures.

4.2 Hypothesis Analysis

4.2.1 Determinants of Credit Spread on Sukuk and Bonds (Full Sample)

	Bond Spread	Sukuk Spread
ipi	000665***	0.00979***
	(439)	(3.40)
inflation	-0.180***	-0.807***
	(-3.70)	(6.91)
gdp	00249***	0.0767***
	(3.63)	(9.23)
slope	-0.645***	-2.214***
	(-4.28)	(-13.73)
roa	-0.0317	-0.0158
	(-2.30)	(-1.30)
capratio	-0.00725***	
	(-2.93)	
leverage	-0.00143	
	(-0.83)	
intcoverage	0.00000132	0.00158***
	-0.02	(2.00)
maturity	0.0735	0.373
	(0.55)	(1.31)
interaction	-0.200*	-0.571
	(-1.82)	(-2.34)
logsize	-0.374	-0.281***
	(-5.74)	(-4.31)
logvol	0.665***	0.820***
	(4.46)	(3.08)
Leverage_L1		0.0796***
		(4.90)
capratio_L1		-0.0678
		(-12.09)
_cons	10.72***	12.12***
	(13.84)	(7.29)
N	1144	225

t statistics in parentheses

*p<0.1, **p<0.05, p<0.001

Table 5. Fixed-Effect Regression Analysis Results Bond (Left) & Sukuk (Right) Dataset
Source: Author's Process

According to the Fixed-Effect Model analysis, most of the firm-level characteristics factors impact the credit spread on sukuk and bonds, as predicted by the initial hypothesis. In contrast to Balasubramanian and Cyrene's (2011) results, return on assets (ROA) is harmful for both. On the other hand, it is only significant for bonds. A rise in ROA boosts productivity and debt repayment capabilities. The equity volatility variable is positive and significant for sukuk and bonds, showing that rising firm-specific risk widens credit spreads.

In contrast to Saeed et al.'s (2021) findings, the size variable exhibits a negative and significant association with both credit spreads. The capitalization ratio is negative and substantial for corporate debt variables in Sukuk and bonds, with a one-quarter delay in Sukuk. It suggests that enterprises in Indonesia profit more from debt-based financing because of the tax break. The interest coverage ratio for Sukuk is positive and considerable, whereas the bond leverage ratio is negative and small.

Bond-specific characteristics support the first premise. The interaction, years-to-maturity multiplied by leverage ratio, is harmful and substantial in sukuk and bonds, implying that a high leverage ratio benefits from a longer payback horizon. Years-to-maturity is beneficial, though it is minor for both. The macroeconomic factors needed to be more consistent with the basic premise. Contrary to the negative hypothesis, the industrial production index (IPI) and GDP growth have a positive and substantial association. Inflation is negative and substantial, as opposed to the positive hypothesis. As a result, only the slope agrees with the hypothesis, which is harmful and significant for sukuk and bonds, showing that the treasury slope grows to indicate economic expansion, causing the credit spread to fall.

4.2.2 The Determinant Credit Spread Asset-Backed Sukuk & Asset-Based Sukuk

	Mudarabah	Ijarah
IPI	0.0231*(1.73)	000105 (0.32)
Inflation	-0.551** (-2 25)	-0.641*** (-4.08)
GDP	0.00682 (0.31)	0.0858*** (5.99)
Slope	-0.930***(-3.36)	-1.755*** (-5.20)
ROA	0.4433*(1.65)	-0.0994*** (-7.36)
Capratio	0.0220 (0.88)	•0.0878*** (-8.78)
incoverage	0.000298* (1.73)	0.000565 (1.32)
maturity	0.320 (1.19)	-1.037 (-1-17)
interaction	-0.264 (-1-12)	0.938 (1.06)
size	-0.215 (-1-03)	-0.276 (-163)
eqvol	1.925*** (6.12)	1.843*** (4.16)
leverage lag2	-0.00479 (-0.24)	0.00714 (0.54)
cons	12.39*** (3.21)	13.44*** (2.74)
N	58	146

t statistics in parentheses
*p<0.1, **p<0.05, p<0.001

Table 6. Fixed-Effect Regression Analysis Results Mudarabah (Left) & Ijarah (Right) Dataset
Source: Author's Process

This partial study discovered that most independent variables on Sukuk Mudarabah and Ijarah travel in the same direction, although five notable discoveries exist. To begin, the ROA variable on Sukuk Mudarabah has a constructive association with credit blowout, whereas the relationship on Ijarah is negative; both are substantial. The association with Ijarah is consistent with the initial premise. Then, on Mudarabah, it is the reverse. This conclusion is similar to Balasubramanian and Cyree (2011), who say that the high ROA on Mudarabah is attributable to the issuer's assertive risk-taking. The capitalization ratio variable demonstrates differences: in Mudarabah, the connection is positive and inconsequential, and in Ijarah, it is harmful and substantial. The initial hypothesis was a positive relationship.

The negative connection for Ijarah is consistent with the tax shelter feature in Indonesia, which makes debt financing preferable to equity. In contrast, for Mudarabah, the positive link indicates that the quantity of corporate debt does not affect the credit spread because investors already own the underlying assets of this Sukuk. Another firm-level characteristic variable that differs is the leverage ratio, which is negative on Mudarabah and positive on Ijarah but not statistically significant. Differences in findings for bond-specific factors exist, although they are not significant. The years-to-maturity variable in Mudarabah has a positive constructive with credit blowout. However, it is adverse in Ijarah. Mudarabah's interaction variable has a negative association. However, Ijarah's is positive. In conclusion, there are differences in pricing methods in the secondary market between these asset classes. Mudarabah Sukuk is more similar to hybrid securities than debt securities, reinforcing the differences between these two asset classes.

5. Conclusion

This research investigates the factors influencing the yield spread of secondary market Sukuk vs conventional bonds in Indonesia. This analysis employed quarterly secondary data, which included firm-level characteristics, bond-specific features, and macroeconomic indicators. These data are

taken from Thomson Reuters Eikon for firm-level and bond-specific features and CEIC Data for macroeconomic indicators, covering 2017-2021. The Fixed-Effects Model is utilized in both complete and partial sample analyses, and it was chosen after completing model testing with the Hausman Test and the Breusch-Pagan Lagrange Multiplier Test.

Based on the results of this study's whole sample analysis, it is impossible to infer that bonds and Sukuk are two distinct things on the secondary market, at least in the eyes of secondary market investors. Generally, the factors determining the credit spreads of Sukuk and conventional bonds are comparable. This implies that secondary market investors must treat Sukuk as a different asset from conventional bonds in terms of risk and return. Therefore, the prices of these two asset classes are impacted by comparable variables. Sukuk products continue to help investors in the capital market by providing an alternative fixed-income investment vehicle that adheres to Islamic Sharia. Another benefit of Sukuk products in the Indonesian capital market is an increase in liquidity in the secondary market of fixed-income investment products that can reduce the cost of capital so that Indonesia's economic growth can increase rapidly with this asset class.

Another outcome of this study is partially examining Sukuk with Ijarah and Mudarabah structures. This study revealed that Mudarabah Sukuk is priced similarly to hybrid instruments in the Indonesian secondary capital market, which are fundamentally between fixed-income and equity assets. The elements that influence the price of Sukuk Ijarah remain the same as they do for conventional bonds. In this regard, sharia asset-backed Sukuk (Mudarabah) is more shari'a friendly than asset-based Sukuk (Ijarah). As a result, Mudarabah Sukuk can be a viable investment option for capital market investors in terms of conformity with Islamic Sharia and risk and return levels.

References

Abdullah, R. F. S., & Rahman, A. R. A. (2007). Factors influencing knowledge of Islamic banking services: the case of Malaysian bank managers. *Review of Islamic Economics*, *11*(2), 31

Arellano, C. (2008). Default Risk and Income Fluctuations in Emerging Economies. *The American Economic Review*, *98*(3), 690–712. https://doi.org/10.1257/aer.98.3.690

Balasubramnian, B., & Cyree, K. B. (2011). Market discipline of banks: Why are yield spreads on bank-issued subordinated notes and debentures not sensitive to bank risks? *Journal of Banking and Finance*, *35*(1), 21–35. https://doi.org/10.1016/j.jbankfin.2010.07.015

Bierman, H., & Hass, J. E. (1975). An Analytic Model of Bond Risk Differentials. *The Journal of Financial and Quantitative Analysis*, *10*(5), 757. https://doi.org/10.2307/2330269

Collin-Dufresne, P., Goldstein, R. H., & Martin, J. S. (2001). The Determinants of Credit Spread Changes. *Journal of Finance*, *56*(6), 2177–2207. https://doi.org/10.1111/0022-1082.00402

David, A. (2007). Inflation Uncertainty, Asset Valuations, and the Credit Spreads Puzzle. *Review of Financial Studies*, *21*(6), 2487–2534. https://doi.org/10.1093/rfs/hhm041

Duffie, D., & Singleton, K. J. (1999). Modeling Term Structures of Defaultable Bonds. *Review of Financial Studies*, *12*(4), 687–720. https://doi.org/10.1093/rfs/12.4.687

Elhaj, M. a. A. ., Muhamed, N. A., & Ramli, N. M. (2015). The Influence of Corporate Governance, Financial Ratios, and Sukuk Structure on Sukuk Rating. *Procedia. Economics and Finance*, *31*, 62–74. https://doi.org/10.1016/s2212-5671(15)01132-6

Fama, E. F., & French, K. R. (1989). Business conditions and expected returns on stocks and bonds. *Journal of Financial Economics*, *25*(1), 23–49. https://doi.org/10.1016/0304-405x(89)90095-0

Fatah, D. A. (2011). Perkembangan Obligasi Syari'ah (Sukuk) di Indonesia: Analisis Peluang dan Tantangan. *Innovatio*, *10*(2). http://www.e-journal.iainjambi.ac.id/index.php/Innovatio/article/download/549/513

Fitrianingsih, A. (2017). Pengaruh Corporate Governance, Struktur Sukuk Dan Cost Of Debt Terhadap Peringkat Sukuk (Studi Kasus pada Perusahaan Penerbit Sukuk di Daftar Efek Syariah Periode 2012-2015.

Flannery, M. J., Nikolova, S. S., & Öztekin, Z. (2012). Leverage Expectations and Bond Credit Spreads. *Journal of Financial and Quantitative Analysis*, *47*(4), 689–714. https://doi.org/10.1017/s002210901200030

Godlewski, C. J., Turk Ariss, R., & Weill, L. (2011). Do Markets Perceive Sukuk and Conventional Bonds as Different Financing Instruments? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1833344

Hassan, M. K., Paltrinieri, A., Dreassi, A., Miani, S., & Sclip, A. (2018). The determinants of co-movement dynamics between sukuk and conventional bonds. *The Quarterly Review of Economics and Finance*, *68*, 73–84. https://doi.org/10.1016/j.qref.2017.09.003

Heer, C., & Robinson, R. I. (1961). Postwar Market for State and Local Government Securities. *Southern Economic Journal*, *27*(3), 256. https://doi.org/10.2307/1055104

Herzi, A. A. (2016). A Comparative Study of Asset Based and Asset Backed Sukuk from the Shariah Compliance Perspective. *The Journal of Muamalat and Islamic Finance Research*, 25–34.

Lestari, B. I., & Mahfud, M. K. (2021). Analisis Pengaruh Kinerja Keuangan, Ukuran Perusahaan Dan Struktur Sukuk Terhadap Peringkat Sukuk. *Jurnal Studi Manajemen Organisasi*, *16*(2), 32-44.

Marquit, M. (2022, October 17). *Plain Vanilla Bonds: Why They May Be Best* (C. Rhinehart & M. Reeves, Eds.). Investopedia. https://www.investopedia.com/articles/financial-advisors/112415/plain-vanilla-bonds-why-they-may-be-best.asp

Merton, R. C. (1974). On the Pricing of Corporate Debt: The Risk Structure of Interest Rates. *The Journal of Finance*, *29*(2), 449. https://doi.org/10.2307/2978814

Peter, M., & Grandes, M. (2005). How important is sovereign risk in determining corporate default premia?: the case of South Africa.

Saeed, M., Elnahass, M., Izzeldin, M., & Tsionas, M. (2021). Yield spread determinants of sukuk and conventional bonds. *Economic Modelling*, *105*, 105664.https://doi.org/10.1016/j.econmod.2021.105664

Sari, Y. A. P., Afifudin, A., & Mawardi, M. C. (2020). Pengaruh Struktur Sukuk, Umur Sukuk, dan Status Jaminan Sukuk terhadap Peringkat Sukuk Pada Perusahaan Yang Terdaftar Di Daftar Efek Syariah Tahun 2016-2018. *e_Jurnal Ilmiah Riset Akuntansi*, *9*(05).

Sudaryanti, N., Mahfud, A. A., & Wulandari, R. (2014). Analisis determinan peringkat sukuk dan peringkat obligasi di Indonesia. *Tazkia Islamic Finance and Business Review*, *6*(2).

Tang, D. Y., & Yan, H. (2006). Macroeconomic Conditions, Firm Characteristics, and Credit Spreads. *Journal of Financial Services Research*, *29*(3), 177–210. https://doi.org/10.1007/s10693-006-7625-y

Utami, D. E., Trinugroho, I., & Sergi, B. S. (2019). What Determines Sukuk Issuance Type in Indonesia? *International Symposia in Economic Theory and Econometrics*. https://doi.org/10.1108/s1571-038620190000026010

Valenzuela, P. (2015). Rollover Risk and Credit Spreads: Evidence from International Corporate Bonds *. *European Finance Review*, *20*(2), 631–661. https://doi.org/10.1093/rof/rfv022

Van Horne, J. C. (1979). Behavior of default-risk premiums for corporate bonds and commercial paper. *Journal of Business Research*, *7*(4), 301–313. https://doi.org/10.1016/0148-2963(79)90009-2

Yap, C. K., & Gannon, G. (2007). Factors Affecting the Credit Spreads Behaviour of USD Malaysian Bonds. *Social Science Research Network*. https://doi.org/10.2139/ssrn.1009535

Yawitz, J. B., Maloney, K. J., & Ederington, L. H. (1985). Taxes, Default Risk, and Yield Spreads. *The Journal of Finance*, *40*(4), 1127–1140. https://doi.org/10.1111/j.1540-6261.1985.tb02367.x