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Market Reaction to Green Sukuk and Conventional Sukuk: An Event Study Approach

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Abstract

Amid the growing emphasis on sustainable finance, green sukuk has emerged as an innovative financial instrument that integrates Islamic principles with environmental objectives. This study aims to examine the reaction of the Indonesian capital market to the Government of Indonesia's announcements of green sukuk and conventional sukuk issuance. Using an event study approach, this research adopts a quantitative explanatory design to evaluate the informational content of these announcements and their impact on investor behavior. The Indonesia Composite Index (IHSG) is employed as a proxy for overall market performance. The observation period covers eleven trading days, consisting of five days before the announcement, the announcement day, and five days after. Expected returns are estimated using the mean-adjusted model, which are then used to calculate Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) to capture market reactions. Statistical tests, including the One-Sample t-test and Independent-Sample t-test, are conducted to assess the significance of market responses and to compare reactions between green and conventional sukuk. The findings indicate that sukuk issuance announcements do not generate statistically significant market reactions, as CAR values are not significantly different from zero. Furthermore, no significant difference is found between green sukuk and conventional sukuk, suggesting that investors have not yet fully incorporated sustainability considerations into their investment decisions. This study contributes to the literature on Islamic sustainable finance by providing empirical evidence from an emerging market context.

Keywords: Green Sukuk, Conventional Sukuk, Market Reaction, Event Study, Abnormal Return

1. Introduction

The rapid evolution of sustainable finance has precipitated a significant transformation within global financial markets in recent years. Investment decision-making frameworks have increasingly integrated environmental, social, and governance (ESG) criteria, reflecting a heightened awareness of climate risks and the critical importance of responsible investment practices [1], [2]. This paradigm shift has catalyzed the proliferation of sustainability-oriented financial instruments, notably green bonds and other environmentally focused securities. These instruments are posited to bolster long-term economic stability while concurrently addressing environmental challenges and fostering responsible financial ecosystems [3], [4]. Consequently, the integration of sustainability principles into market mechanisms has become a pivotal element of modern financial architectures, attracting substantial attention from both policymakers and investors

Within the Islamic finance paradigm, sukuk has emerged as a pivotal instrument for financing economic development in strict adherence to Sharia principles. Functioning as a versatile funding mechanism, sukuk is extensively utilized to support infrastructure development and public sector initiatives [5], [6]. The maturation of the Islamic finance sector has further spurred the advent of green sukuk, which harmonizes Islamic financial tenets with sustainability goals. Proceeds from green sukuk are earmarked specifically for environmentally beneficial projects, including renewable energy, sustainable transportation, energy efficiency, and climate change mitigation [2], [7]. Distinct from conventional sukuk, green sukuk integrates additional sustainability attributes, such as fund allocation transparency and environmental impact reporting, thereby bolstering instrument credibility among investors [1], [8].

Indonesia has secured a pivotal role within the international green sukuk landscape. The nation made history in 2018 by launching the first sovereign green sukuk, demonstrating its commitment to financing eco-friendly projects through Sharia-compliant financial mechanisms [9]. Following this milestone, the Indonesian government

has consistently incorporated green sukuk into its fiscal planning to support national sustainable development goals. Official government publications and sustainable finance guidelines emphasize the essential requirement for transparency and accountability in overseeing funds allocated to environmentally beneficial initiatives [14]–[18], [29]–[30].

Announcements of sovereign sukuk issuance constitute significant public information capable of shaping investor expectations and perceptions concerning government fiscal policy and economic outlooks [10], [11]. Under the Efficient Market Hypothesis, publicly available information is rapidly assimilated into market prices, suggesting that financial markets may respond to such disclosures through fluctuations in stock returns [12], [13].

Extant literature has extensively investigated market reactions to diverse financial disclosures through the lens of event study methodology. Empirical evidence indicates that disclosures concerning financial instruments, encompassing bond and sukuk issuances, frequently engender abnormal returns surrounding the announcement date, underscoring the informational relevance of such events to investors [14], [15]. Furthermore, scholarship on sustainable finance suggests that green bond issuances may elicit favorable market responses, as sustainability attributes are frequently perceived as signals of robust environmental commitment and enhanced governance standards [1], [16], [17]. Nevertheless, the prevailing body of literature predominantly concentrates on corporate green bonds or corporate sukuk, leaving a notable gap in research regarding sovereign green sukuk, particularly within emerging market contexts such as Indonesia [18], [19].

The scarcity of empirical evidence concerning market reactions to sovereign green sukuk necessitates further investigation. Moreover, existing literature often fails to explicitly juxtapose sustainability-labeled sukuk with conventional sukuk within a unified analytical framework. Consequently, elucidating whether sustainability attributes embedded in green sukuk elicit distinct investor responses compared to conventional sukuk constitutes a critical issue for policymakers and market participants alike. Addressing this gap, the present study seeks to investigate market reactions to the issuance announcements of both green and conventional sukuk by the Government of Indonesia, employing an event study methodology. Market responses are quantified using Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) derived from the Indonesia Composite Index surrounding the announcement date. The anticipated findings aim to enrich the literature on Islamic sustainable finance and offer empirical insights into investor responses to sustainability-based sovereign financing instruments.

2. Research Methods

This research adopts a quantitative explanatory design to investigate market reactions to the issuance announcements of green and conventional sukuk by the Government of Indonesia. The quantitative paradigm is selected to facilitate the measurement of investor responses through numerical indicators extracted from capital market data. Specifically, the event study technique is utilized to assess the informational content of sukuk issuance announcements and their subsequent impact on investor behavior within the capital market. The event study approach is a prevalent tool in financial literature for evaluating market responses to specific occurrences, primarily by quantifying abnormal returns surrounding the event date [20], [21].

The primary proxy for market performance in this study is the Indonesia Composite Index (IHSG), which serves as an indicator of the broader Indonesian equity market and captures the aggregate investor response to public disclosures. The study population encompasses all announcements of green sukuk and conventional sukuk issued by the Government of Indonesia between 2019 and 2024. Within the event study framework, each sukuk issuance announcement is classified as an event, given that the disclosed information potentially impacts investor expectations concerning fiscal policy and economic outlooks. Sample selection employs a purposive sampling technique, adhering to specific criteria such as the availability of comprehensive market data and verified announcement dates sourced from official publications by the Directorate General of Financing and Risk Management, Ministry of Finance of Indonesia."

This study utilizes daily data of the Indonesia Composite Index (IHSG) sourced from the official publications of the Indonesia Stock Exchange (IDX). The IHSG data reflect the aggregate movement of stock prices listed on the exchange and serve as a standard proxy for market performance in Indonesia. Data were gathered from official IDX statistical reports and relevant market publications encompassing the study's observation period. These

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sources ensure the availability of robust and comprehensive market information necessary for computing stock market returns and assessing investor reactions to sukuk issuance announcements [23]–[28].

Market responses are evaluated through an event window covering eleven trading sessions, which includes five days before the announcement, the announcement day, and five days after (t−5 to t+5). This period is intended to capture immediate market reactions to the sukuk issuance disclosure. Additionally, an estimation window of 120 trading days prior to the event window (t−125 to t−6) is utilized to establish baseline market conditions. This window provides the basis for calculating expected returns, representing returns that would typically occur without the event [21], [22].

Expected returns in this research are calculated using the mean-adjusted model, assuming that the index's normal return equals the average return during the estimation period. Actual returns are derived from daily changes in the IHSG value. Abnormal return is defined as the difference between actual and expected returns, representing the market's response to new information about the sukuk announcement. Moreover, cumulative abnormal return (CAR) is determined by summing abnormal returns across the event window to measure the total market response during the observation period [20], [21].

Statistical analysis is conducted to evaluate the significance of market reactions to sukuk announcements. The normality of CAR data is first tested using the Shapiro–Wilk test. Then, a One-Sample t-test is used to determine whether the cumulative abnormal return differs significantly from zero, indicating market reactions. Additionally, an Independent-Sample t-test is performed to check for significant differences in market responses between green sukuk and conventional sukuk announcements. All statistical procedures are executed using the Statistical Package for the Social Sciences (SPSS) to ensure the reliability and objectivity of the empirical analysis.

3. Results and Discussions

The primary objective of this research is to evaluate market responses to public disclosures regarding the issuance of Global Green Sukuk and Global Sukuk by the Government of Indonesia, covering the timeframe from 2019 to 2024. To determine if these announcements transmit information that alters investor conduct within the capital market, an event study framework is applied. To gauge these responses, Abnormal Return (AR) and Cumulative Abnormal Return (CAR) derived from the Indonesia Composite Index (IHSG) are utilized, specifically within an event window that includes five days before the disclosure (t−5) through five days after (t+5).

The dataset consists of six distinct sukuk issuance events, namely three Global Green Sukuk and three standard Global Sukuk offerings announced by the Indonesian Government. The specific date of the announcement is identified as the event date (t_0), marking the precise point when issuance-related information becomes available to all market participants.

Table 1. Global Sukuk Announcement Events (2019–2024)

No	Year	Sukuk Type	Announcement Date
1	2019	Global Sukuk (Conventional)	18 June 2019
2	2020	Global Green Sukuk	23 June 2020
3	2021	Global Sukuk (Conventional)	22 June 2021
4	2022	Global Green Sukuk	24 May 2022
5	2023	Global Green Sukuk	30 May 2023
6	2024	Global Sukuk (Conventional)	29 May 2024

Abnormal Return Analysis

Abnormal return is calculated by measuring the discrepancy between actual returns and expected returns, where the latter are estimated using the mean-adjusted model. In this research, expected returns are derived from the mean return observed throughout the 120-trading-day estimation period that precedes the event window, resulting in an expected return figure of 0.0008.

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The abnormal return values observed during the event window exhibit volatility both preceding and following the sukuk announcement date. These variations signify divergences in investor responses to the information disclosed by the government pertaining to sukuk issuance.

Table 2. Abnormal Return during Event Window

Event	t-5	t-4	t-3	t-2	t-1	t0	t+1	t+2	t+3	t+4	t+5
Sukuk 2019	-0.0055	-0.0013	-0.0044	-0.0104	0.0100	0.0123	-0.0014	-0.0040	-0.0051	0.0043	-0.0001
Green Sukuk 2020	-0.0005	-0.0133	0.0027	-0.0055	-0.0089	0.0167	-0.0145	0.0007	-0.0013	-0.0001	-0.0001
Sukuk 2021	-0.0025	-0.0025	-0.0109	-0.0026	0.0145	-0.0096	-0.0045	0.0009	-0.0146	0.0008	0.0008
Green Sukuk 2022	0.0216	0.0036	0.0131	-0.0120	0.0099	-0.0052	0.0199	0.0008	0.0150	-0.0008	-0.0008
Green Sukuk 2023	0.0006	-0.0070	-0.0034	-0.0017	-0.0075	-0.0013	0.0022	0.0009	-0.0054	-0.0030	-0.0030
Sukuk 2024	-0.0058	0.0020	-0.0049	0.0100	-0.0164	-0.0157	-0.0098	0.0086	0.0082	-0.0222	-0.0222

The abnormal return findings reveal that market reactions exhibit volatility throughout the event window period. Certain sukuk issuance events demonstrate positive abnormal returns surrounding the announcement date, whereas others display negative abnormal returns. These variations suggest that market responses to sukuk issuance announcements are heterogeneous and may be contingent upon broader market conditions and investor sentiment during each respective period.

As a specific illustration, the 2022 Global Green Sukuk issuance displayed notably high positive abnormal returns on multiple days within the event window, particularly at t−5 and t+2. Such a trend implies a positive market reaction to the information made public regarding the green sukuk offering. Moreover, the abnormal returns recorded in the periods surrounding the announcement date could imply that investors interpreted the issuance as a positive indicator of the government's financing strategy and dedication to sustainable development goals.

Conversely, other events demonstrated negative abnormal returns around the announcement date, such as the 2024 Global Sukuk issuance and the 2023 Global Green Sukuk issuance. These negative abnormal returns indicate that market participants did not consistently interpret sukuk issuance announcements as positive information. Instead, market reactions may have been influenced by concurrent macroeconomic conditions or market factors occurring during the same period.

Cumulative Abnormal Return (CAR)

To evaluate the aggregate market response throughout the event window, Cumulative Abnormal Return (CAR) is determined by aggregating abnormal returns across the period from t−5 to t+5.

Table 3. Cumulative Abnormal Return (CAR)

No	Year	Sukuk Type	CAR
1	2019	Global Sukuk	-0.0056
2	2020	Global Green Sukuk	-0.0251
3	2021	Global Sukuk	-0.0310
4	2022	Global Green Sukuk	0.0632
5	2023	Global Green Sukuk	-0.0288
6	2024	Global Sukuk	-0.0459

Cumulative abnormal return (CAR) is employed to quantify the aggregate market reaction across the event window period. The CAR values summarized in Table 2 reveal that market responses to sukuk issuance announcements exhibit heterogeneity across different events. Among the observed instances, the 2022 Global Green Sukuk issuance yielded the highest positive CAR value of 0.0632, signifying a favorable market response to the announcement during that period.

Conversely, several other sukuk issuance events exhibited negative CAR values, including the 2024 Global Sukuk issuance and the 2020 and 2023 Global Green Sukuk issuances. Negative CAR values signify that the cumulative

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return during the event window fell below the expected return. This implies that investors may not have perceived the sukuk issuance announcements as positive signals during those periods

The variation in CAR values suggests that market reactions to sukuk announcements are contingent upon the broader economic environment and investor expectations prevailing at the time of the event. Variables including global financial conditions, domestic macroeconomic developments, and market volatility may shape how investors interpret information pertaining to government financing instruments

Statistical Test Results

Statistical inference procedures are applied to assess the statistical significance of the observed market responses, utilizing both One-Sample and Independent-Sample t-tests.

Table 4. One Sample t-Test Result

Variable	Mean CAR	t-statistic	Sig. (2-tailed)
CAR	-0.0122	-0.942	0.389

A One-Sample t-test is utilized to evaluate whether the cumulative abnormal return demonstrates a significant deviation from zero. The analysis reveals that the mean CAR value stands at −0.0122, accompanied by a p-value of 0.389. Given that this p-value surpasses the conventional significance level of 0.05, the evidence points to the CAR value being statistically insignificant.

This finding implies that sukuk issuance announcements do not yield statistically significant abnormal returns in the Indonesian stock market. Put differently, information pertaining to sukuk issuance may not convey novel information that substantially impacts investor behavior in the market

From the perspective of market efficiency theory, these findings may imply that the Indonesian capital market operates under semi-strong form efficiency. In such market environments, information accessible to the public is quickly integrated into asset prices, which implies that investors are unable to consistently generate abnormal returns relying exclusively on publicly disclosed announcements.

Table 5. Independent Sample t-Test Result

Sukuk Type	N	Mean CAR	t	Sig. (2-tailed)
Green Sukuk	3	0.0031		
Conventional Sukuk	3	-0.0275	-0.812	0.462

An Independent-Sample t-test is utilized to evaluate whether a statistically significant disparity exists in market responses between green sukuk and conventional sukuk disclosures. The analysis shows that the average CAR for green sukuk amounts to 0.0031, while the average CAR for conventional sukuk stands at −0.0275. Although the mean CAR value for green sukuk surpasses that of conventional sukuk, the statistical examination yields a p-value of 0.462, which exceeds the significance threshold of 0.05. This indicates that the variation in market reactions between green sukuk and conventional sukuk announcements is statistically insignificant

These results suggest that investors in the Indonesian stock market may not yet differentiate distinctly between sustainability-labeled sukuk and conventional sukuk instruments. The sustainability characteristics embedded in green sukuk may not yet function as a primary factor influencing investor investment decisions in the stock market, particularly in the short-term reaction captured within the event window.

The empirical outcomes of this research indicate that announcements regarding sukuk issuance fail to elicit substantial market reactions within the Indonesian equity market. Statistical analysis confirms that the Cumulative Abnormal Return (CAR) observed throughout the event window fails to differ significantly from zero, suggesting that these announcements do not produce notable abnormal returns. Such outcomes suggest that market

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participants display minimal sensitivity to the information disclosed in sovereign sukuk announcements during the study period. As a result, neither green nor conventional sukuk issuances seem to cause a marked shift in investor conduct within the Indonesian capital market.

According to the Efficient Market Hypothesis (EMH), the current results imply that the Indonesian capital market operates under semi-strong form efficiency. Within such market environments, data available to the public is swiftly incorporated into security prices, which suggests that market participants cannot reliably secure abnormal profits based exclusively on public disclosures. Thus, the public release of sukuk issuance details may not introduce fresh information, as market actors likely foresaw the government's funding strategy ahead of the official declaration.

The lack of statistically significant abnormal returns may also reflect the routine character of sovereign sukuk issuance by the Indonesian government. In recent years, the government has consistently issued sukuk as part of its fiscal financing strategy. Because sukuk issuance has become a predictable fiscal instrument, investors may view such announcements as anticipated events rather than new information. Consequently, the market may have already priced in expectations regarding sukuk issuance into stock prices prior to the official announcement.

Additionally, although green sukuk theoretically embodies supplementary sustainability characteristics that signal governmental commitment to environmentally responsible financing, empirical evidence demonstrates that these attributes do not substantially influence investor reactions in the stock market. The statistical comparison of green sukuk and conventional sukuk also indicates that the disparity in market reactions between the two instruments is statistically insignificant. This finding suggests that investors do not yet distinguish distinctly between sustainability-labeled sukuk and conventional sukuk when making investment decisions in the stock market

A further possible explanation suggests that investors within the Indonesian capital market could place higher priority on broader economic indicators, including economic stability, interest rates, inflation levels, and general market conditions, when evaluating investment prospects. In this scenario, the sustainability label linked to green sukuk might not yet be viewed as a crucial element in determining market value. Therefore, the introduction of green sukuk may not instantly result in positive investor confidence in the equity market, especially regarding the immediate reaction measured within the event window.

In conclusion, the findings of this study offer insights into how sustainability-based financial instruments are perceived in the Indonesian capital market. Although green sukuk represents an innovative financing instrument that integrates Islamic finance principles with environmental sustainability objectives, the market response observed in this study suggests that sustainability attributes may not yet play a decisive role in shaping investor reactions. This highlights the necessity for enhanced market awareness, improved transparency in sustainability reporting, and broader investor comprehension of the economic value associated with sustainable financial instruments in order to strengthen the role of green sukuk in financial markets

4. Conclusion

This research focuses on evaluating how the Indonesian capital market responds to public disclosures concerning the issuance of Global Green Sukuk and Global Sukuk by the Government of Indonesia, utilizing an event study framework. To gauge these responses, Abnormal Return (AR) and Cumulative Abnormal Return (CAR) derived from the Indonesia Composite Index are measured, specifically within an event window that includes five days before the disclosure through five days after. Empirical outcomes from this study suggest that announcements regarding sukuk issuance fail to trigger statistically significant market reactions throughout the observation period. Statistical analysis confirms that the cumulative abnormal return does not differ significantly from zero, implying that the information contained in these announcements is insufficient to substantially alter investor conduct within the Indonesian equity market. Furthermore, the analysis reveals heterogeneity in market responses across different issuance events, with fluctuations ranging from positive to negative abnormal returns. However, these variations remain within normal market volatility and do not constitute statistically significant abnormal returns. This implies that the information disclosed through sukuk issuance may not provide novel insights capable of altering investor expectations or investment decisions in the short term. Additionally, comparative analysis between green sukuk and conventional sukuk announcements demonstrates no statistically significant difference in market reactions. Despite a marginally higher average CAR for green sukuk, the disparity is insignificant, indicating that investors in the Indonesian stock market may not yet distinctly differentiate between sustainability-labeled and conventional

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sukuk instruments. In theoretical terms, these results lend empirical support to the semi-strong form of the Efficient Market Hypothesis (EMH). Under these market conditions, information accessible to the public is swiftly incorporated into market prices, thereby hindering investors from consistently generating abnormal returns through public announcements alone. Additionally, the predictable pattern of sovereign sukuk issuance by the Indonesian state might explain the lack of significant market responses, given that investors probably anticipate these financing moves before the formal release. Ultimately, this research adds value to the existing scholarship on Islamic sustainable finance by delivering empirical insights regarding market reactions to sovereign sukuk issuance within an emerging economy landscape. The evidence points to the conclusion that sustainability labels on sovereign financing tools have not yet become a critical driver influencing investor choices in the Indonesian equity market. Subsequent inquiries should extend this examination by including more financial metrics, longer observation windows, or macroeconomic factors to gain a thorough comprehension of investor reactions to eco-friendly financial products.

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