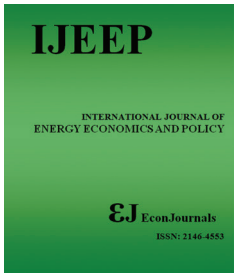

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# Green Bonds, Investor Attention and Stock Market Reaction: Evidence from ASEAN Countries

**Andini Nurul Aini[1], Citra Sukmadilaga[1*], Erlane K. Ghani[2]**

[1]Faculty of Economics and Business, Universitas Padjadjaran, Indonesia, [2]Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Malaysia. *Email: citra.sukmadilaga@unpad.ac.id

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**ABSTRACT**

Green bonds offer investors the opportunity to align their investments with their values and contribute to positive social and environmental impacts. These bonds are a promising tool for channelling investment towards projects that are environmentally friendly and promote the transition to a low-carbon and sustainable economy. Arguably, they play an important role in the fight against climate change and the achievement of sustainable development goals. However, there are not many studies that have examined the impact of green bond issuance on stock market reactions. This study aims to examine the effect of green bond issuance on investor attention and the stock market using route analysis and the SEM-PLS method, either directly or through the inclusion of investor attention as an intervening variable. This study performed content analysis on the annual reports of publicly listed companies in five ASEAN countries over a period of 5 years. This study demonstrates that investors' interest in green bonds increases proportionally to their issuance. However, green bond issuance does not significantly influence stock market reactions. In addition, the issuance of green bonds has had no discernible effect on the stock market's response as measured by investor attention. The findings in this study provide some insights on how green bond issuance can influence stock market reactions through investor attention. Investors can use these insights to make future investment decisions, particularly in ASEAN companies.

**Keywords:** Green Bonds, Low Carbon Economy, Investor Attention, Stock Market Return, ASEAN Countries
**JEL Classifications:** G31. G32, P18G

## 1. INTRODUCTION

Green bonds have been used to support sustainable development and tackle climate change (Nassiry, 2018) and have gained momentum in the ASEAN region (Kapoor et al., 2020). The first green bonds in ASEAN were issued by AP Renewables, a company from the Philippines, in March 2016, amounting to USD 225 million (Lazurko and Venema, 2017). The growth of green bonds and sustainability bonds in ASEAN is driven by a combination of factors, including growing awareness of the need for sustainable development, government support for sustainable finance initiatives, and growing investor demand for sustainable investment options. However, according to the majority of investors from developed countries such as Malaysia, Singapore, and Thailand, the lack of green bond supply is an obstacle to investing in green bonds in the ASEAN region (Kapoor et al., 2021). This shows that investor attention to green bond investment opportunities is quite large. However, since there are no clear benefits to issuing green bonds, the majority of underwriters agree that their clients are less likely to do so. This may be due to a lack of knowledge and awareness regarding the identification of eligible projects that meet international standards (Asian Development Bank, 2022).

Studies in various countries that have issued many green bonds explained the various benefits that can be obtained, one of which is a positive response from the stock market, especially stock prices that increased after the issuance of green bonds (Tang

and Zhang, 2020). In addition to rising stock prices, there is an increase in institutional ownership and stock liquidity (Tang and Zhang, 2020). Post-issuance, the company received higher environmental ratings and lower $CO_2$ emissions and experienced increased ownership by long-term and green investors (Flammer, 2021). In China, Wang et al. (2020) found that there was a return on positive announcements on the issuance of green bonds. They found that this positive stock reaction came with a premium for corporate green bonds that were priced higher than conventional bonds. They also found that this effect was stronger for corporate issuers with less concentrated holdings and those held by long-term institutional investors. Other studies have also reported that most stock markets react positively to the issuance of green bonds (Kuchin et al., 2019; Glavas, 2020; Suhendra et al., 2022; Ul-Haq et al., 2023).

The reaction of the capital market is determined by how investors react. The reaction is closely related to how attentive investors are to the information provided. As investors pay more interest to these companies or governments, there is an increased demand for their shares, which can lead to an increase in stock prices. Conversely, a lack of interest or investor attention in green bonds and environmental initiatives can result in decreased demand for bonds and potentially lower the share prices of companies or governments that issue them. However, the impact of green bond issuance on stock market reaction through investor attention has not been examined in ASEAN countries. This study aims to examine the influence of green bonds on stock market reactions, using investor attention as an intervening variable. The findings of this study can provide further insights for investors on how green bonds can influence stock market reactions. The next section, Section 2, presents the literature review; Section 3 explains the research design; the results are discussed in Section 4; and Section 5 concludes the study.

## 2. LITERATURE REVIEW

Stock market reaction refers to the financial market's response to various events, news, or announcements related to a particular company or the wider market (Wooldridge and Snow, 1990). The capital market reaction is a response that arises as a result of the issuance of investment instruments or information around them that can influence the capital market (Amir and Indriani, 2020). In academic research, stock market reactions are often studied in the context of events, which are analysed to see how stock prices respond to certain events or news releases. This is consistent with the signalling theory that explains related signalling that the firm undertakes to communicate an image of intent, behaviour, and organisational performance towards stakeholders. As for the company's push for sending signals, it is to reduce information asymmetry between companies and stakeholders. Asymmetry Information can occur due to two kinds of conditions, the first of which is where there is a large enough difference in information to have an effect on management and stock prices. While the second condition, where the information differences that occur are small and have no effect on management or stock prices (Rahardja and Manurung, 2002).

As a result of this information asymmetry, management, investors, and other outside parties have less information about the company. That matter caused the parties to offer the company's share price low to protect themselves (Muslim and Setiawan, 2021). Fluctuating stock prices arise as a result of this action. Therefore, companies need to reduce information asymmetry in order to increase their value. Give signals to parties. External control is one way that can be done to minimise the occurrence of asymmetry (Linandarini, 2010). The signals that can be given by the company can be in the form of information or promotion that illustrates that the company's performance is superior compared to other companies in the capital market to reduce asymmetry in information. The efficient market hypothesis shows that the stock market reaction is driven by the arrival of new information. When new information becomes available to investors, the information is quickly incorporated into stock prices, which causes an immediate change in the market value of the affected asset (Machmuddah et al., 2020; Ebrahim, 2023; Tran and Huynh, 2022). These price changes reflect the market's assessment of the impact of the information on the underlying company or market. One of the stock markets is green bonding.

Green bonds are a special type of bond issued by companies, financial institutions, or governments to fund environmentally friendly projects. The concept of green bonds emerged in response to growing concerns about climate change and the need for financial instruments to support the transition to a more sustainable future (Chen and Zhao, 2021). Green bonds are the type of bond instrument for which the yield or equivalent amount is used to fund or repay the loan, either partially or in whole, for Green Projects or environmentally friendly projects that meet requirements and are aligned with the four core components of the Green Bond Principles (GBP) (ICMA, 2021). Green bonds are structured in the same way as traditional bonds, but with a key difference: Proceeds from bond issuance are allocated to funding environmentally friendly projects such as renewable energy, energy efficiency, clean transport, sustainable land use, and climate change adaptation. Green bonds raise funds for new and existing projects and provide more sustainable environmental and economic benefits. Project Green can include renewable energy, sustainable use of resources, conservation, clean transport, and adaptation to climate change (PwC, 2015). Green bond certification is usually done by a third-party organisation that is independent to ensure transparency and credibility of environmental benefits (Fatica et al., 2021).

The green bond market has grown rapidly in recent years, with an increasing number of companies, financial institutions, and governments issuing green bonds (Fatica et al., 2021). The global green bond market hit a record $269.5 billion in 2020, representing a 9.9% increase over the previous year (Climate Bonds Initiative, 2021). In addition, the market for sustainability bonds, which also finance social and sustainability initiatives in addition to environmental initiatives, is also growing rapidly. The increased demand for green bonds can be attributed to several factors, including increasing awareness of climate change risks and needs for sustainable development, as well as the recognition

of green bonds as a solution with the potential to mobilise capital towards green investment. Green bonds can be measured in several different ways, depending on the specific research question and available data (Cheong and Choi, 2020). Among the measurements are:

1. Green bond issuance volume: This refers to the total amount of green bonds issued by certain publishers or in certain markets. This size can be used to track trends in green bonds issuance over time and in various regions (Cortellini and Panetta, 2021).
2. Market share of green bonds: This refers to the proportion of total issuance bonds in certain markets that consist of green bonds. This size can be used to understand relative green bonds growth and adoption in the bond market as a whole (Ando et al., 2022).
3. Amount issued in green bonds: This refers to the amount issued at the time the bonds were offered. This measure can be used to understand how much funding the publisher usually offers and what amount of funding is bought by investors (Zhang et al., 2021).
4. Green bond yield: This refers to the yield or interest rate offered on green bonds compared to conventional bonds. This measure can be used to understand investor requests for green bonds and the perceived risk associated with the investment (Teti et al., 2022).

The issuance of green bonds can impact stock market reactions in several ways. First, the issuance of green bonds can signal to the market that the issuing company or entity is committed to environmental and social sustainability, which can increase investor attention and positive sentiment towards the company's stock (Ahmed et al., 2023). This is especially true for investors who prioritise sustainability issues in their investment decisions. Second, the issuance of green bonds can help raise awareness of environmental and social issues among investors and the broader market. This can lead to increased demand for sustainable investment opportunities, which in turn can drive up the price of shares deemed environmentally and socially responsible. Third, the issuance of green bonds can help reduce the cost of capital for the issuing company or entity. This is because green bonds often have prices that are competitive with traditional bonds but can attract more investors interested in sustainable investments. This can lead to increased demand for bonds and potentially lower borrowing costs for issuers, which can have a positive impact on a company's financial performance and stock price (Buzinske and Stankevicience, 2023).

In sum, green bond issuance can have a positive impact on stock market reaction (Tang and Zhang, 2020; Wang et al., 2020; Flammer, 2021; Blenman et al., 2022; Pamungkas et al., 2023) through its potential to attract increased investor attention, raise awareness of sustainability issues, and reduce borrowing costs for the issuing company or entity. However, the exact impact on stock prices may depend on a variety of factors, including market conditions, company performance, and broader economic trends. Therefore, the following hypothesis is developed:

$H_1$: Green bond issuance significantly influences the stock market reaction of publicly listed companies in the ASEAN countries.

The stock market reaction can be influenced by many factors, which may include environmental and social benefit perception and the development of policies and regulations more broadly related to climate change and sustainability (Lee and Suh, 2022). Another factor is investor attention. Investor attention refers to the level of interest and focus one has in certain assets or markets that influence the trading behaviour of investors and their decision-making processes (Jingjian et al., 2023). Draught investor attention is closely related to the efficient market hypothesis, which assumes that all relevant information is reflected in market prices. Investor attention can be measured through various indicators, such as volume trading, price movements, and media coverage. One of the most widely used indicators to measure investor attention is the Google Search Volume Index (SVI), which tracks the frequency of searches related to a particular asset or market in the Google search engine (Ayaz et al., 2021). Other indicators include sentiment on social media, news coverage, and analyst recommendations.

Investor attention has a significant impact on market dynamics and can have both positive and negative effects. Investor attention levels high can lead to increased trading activity, more liquidity, and higher volatility, while interest levels low can lead to lower trading activity and greater liquidity (Ballinari et al., 2022). In addition, changes in investor attention can also affect market efficiency and lead to mispricings. When investor attention is low, as reflected in lukewarm trading volume, acquirer share prices may not come down to their true value (DePamphilis, 2022). The relationship between investor attention and market performance is very complex and depends on various factors, such as the type of asset or market, the degree of asymmetry in information, and investor trading behaviour. However, empirical studies show that there is a positive correlation between investor attention and market performance, in particular in the short term. In interest theory, it is shown that interest creates buying pressure from uninformed retail investors, stressing that individual investors are dominant buyers of interest-grabbing stocks in the short term (Düz Tan and Taş, 2019).

Investor attention can have a significant impact on stock market reactions (Pieiro-Chousa et al., 2021). When investors pay attention to a particular stock, sector, or market, it can lead to increased trading activity, higher trading volumes, and greater price volatility. This can be especially true in the short term, as investors react to news, rumours, and other market developments. Investor attention can also influence stock prices through its impact on investor sentiment. Positive investor sentiment can help boost stock prices, while negative sentiment can lead to price declines. It can be affected by a variety of factors, including company performance, market conditions, and broader economic trends. In addition, investor attention can play a role in shaping market expectations and driving future stock price movements (Pham and Huynh, 2020). When investors follow a particular stock or sector closely, they may be more likely to incorporate new information and adjust their expectations. This can lead to changes in stock prices, both in the short and long term. Investor attention can have a significant impact on stock market reaction, affecting trading activity, price volatility, and market sentiment (Pham and Cepni,

2022). As such, it is an important consideration for investors and market analysts. Therefore, the following hypothesis is developed:

$H_2$: Investor attention significantly influences the stock market reaction of the publicly listed companies in the ASEAN countries.

The issuance of green bonds can affect investor attention in several ways. First, the issuance of green bonds can signal to investors that the issuing company or entity is committed to sustainability and has concern for the environment (Flammer, 2021). This can increase interest from investors who prioritise sustainability issues in their investment decisions as well as from the broader investment community. Second, the issuance of green bonds can increase the visibility of sustainability issues in financial markets (Chen and Zhao, 2021). This can help raise awareness of environmental and social concerns and encourage companies and other entities to issue green bonds or prioritise sustainability in their operations. Third, the green bond issuance process can involve significant engagement with investors and other stakeholders, including through the development of green bond frameworks and reporting requirements. This engagement can help build relationships with investors who prioritise sustainability and can increase interest from those investors in the future. The issuance of green bonds can help attract and retain investor attention that prioritises sustainability issues and can contribute to broader efforts to raise awareness and engagement around environmental and social issues in financial markets (Ahmed et al., 2023). Therefore, the following hypothesis Therefore, the following hypothesis is developed:

$H_3$: Green bond issuance significantly influences investor attention on the publicly listed companies in the ASEAN countries.

The issuance of green bonds can affect stock market reactions through its impact on investor attention. When a company issues green bonds, it sends a signal to the market that it is committed to sustainability practises and environmental responsibility (Khurram et al., 2023). This can attract the interest of investors who prioritise sustainability in their investment decisions, as they may see the company as a more attractive investment opportunity. Increased investor attention can lead to increased demand for a company's stock, which can push up the stock price. This is because investors who are more focused on sustainability issues may be willing to pay a premium for stocks that are considered environmentally responsible. In addition, the issuance of green bonds can raise awareness of sustainability issues among investors and the broader market. This can lead to increased demand for sustainable investment opportunities, which in turn can drive up the price of shares deemed environmentally and socially responsible (Kapoor et al., 2020). Hence, the issuance of green bonds can affect stock market reaction through its impact on investor attention (Tang and Zhang, 2020), as increased interest can lead to increased demand for company shares, increased awareness of sustainability issues, and potentially reduced borrowing costs for issuing companies. Therefore, the following hypothesis is developed:

H4: Green bonds issuance significantly influences stock market reaction in the publicly listed companies in the ASEAN countries through investor attention.

# 3. RESEARCH DESIGN

## 3.1. Sample Selection

The publicly listed companies that issue green bonds and are listed in five ASEAN Countries are chosen as the sample for this study. The five ASEAN countries are the Indonesia Stock Exchange, The Philippine Stock Exchange, the Singapore Exchange, The Stock Exchange of Thailand, and Bursa Malaysia. Table 1 shows the sample selection from this study. The above data is obtained from the company's official website, The ASEAN Capital Markets Forum (ACMF), Refinitiv Eikon, the Indonesia Stock Exchange, The Philippine Stock Exchange, the Singapore Exchange, The Stock Exchange of Thailand, Bursa Malaysia, CapitalIQ, Yahoo Finance, Market Watch, and Google Trends.

## 3.2. Research Instrument and Data Collection

This study used content analysis to analyse the annual reports of the public listed companies in five ASEAN countries. The public listed companies that have completed data during the 5-year period from 2018 to 2022 are selected. Specifically, this study utilised the 2018-2022 annual report data of 45 publicly listed companies. The content analysis was performed to extract relevant information from the annual reports. In total, this study collected data from 210 public listed companies across five ASEAN countries. The data was analysed using PLS-SEM.

## 3.3. Research Variables and Operational Definition

Based on previous studies, stock market reaction measurement was carried out by conducting the event study method (for example: Tang and Zhang, 2020; Wang et al., 2020, Flammer, 2021; Xiao and Aumeboonsuke, 2022; Odat and Bsoul, 2022). An event study is an analytical method used to measure the impact of certain events on the price of stocks or other assets over a short period of time. This method has been widely used to determine the impact of company announcements and market events on a company's market value (Sorescu et al., 2017). The event study conducted is to look at Cumulative Abnormal returns (CAR). By looking at abnormal returns, it can be concluded that when there is an announcement that contains information, it will provide abnormal returns to the market, and vice versa, if there is no information, it will not provide abnormal returns to the market (Hartono, 2017). Cumulative abnormal returns can be calculated in the following way (Suganda, 2018):

1. Determine actual return-The actual return is the return that occurs at the t-th time, which is the difference from the current

**Table 1: Sample selection**

| Sample criteria | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Green bonds issuance by companies in ASEAN countries | 9 | 15 | 20 | 25 | 52 |
| Companies not listed on any stock market in ASEAN countries during 2018-2022 | (7) | (9) | (14) | (15) | (34) |
| Companies whose green bonds data, financial statements, and stock prices are incomplete | (0) | (0) | (0) | (0) | (0) |
| Total sample availability per year | 2 | 6 | 6 | 10 | 18 |

price to the previous price. The actual return can be calculated by the following formula:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

Information:
$P_{it}$: Price i-th securities in the period of the t-th event
$P_{it-1}$: Price i-th securities in the period of the t-th event

2. Determining market returns-Market return using a market-adjusted model assumes that the best prediction for estimating a security's return is the return of the market index at that time. Market return can be calculated using the following formula:

$$R_{mt} = \frac{IND_{it} - IND_{it-1}}{IND_{it-1}}$$

Information:
$R_{mt}$: Actual return markets that occur in the period of the t-th event
$IND_{it}$: Composite sukuk price index that occurs in the period of the t-th event
$IND_{it-1}$: Composite sukuk price index that occurs in the period of the event to t-1

3. Determine abnormal returns - An abnormal return is the difference between the actual return and the expected return. Abnormal returns can be calculated by the formula:

$$AR_{it}=R_{it}–E[R_{it}]$$

Information:
$AR_{it}$: *Abnormal return* i-th securities in the period of the t-th event
$R_{it}$: *Return* Actual that occurred on the i-th security in the event period t-th
$E[R_{it}]$: *Return* i-th Security Expectation

4. Determining Cumulative Abnormal Return (CAR) - CAR can be calculated by summing the abnormal return on the previous day of the event period with the following formula:

$$CAR_{it} = \sum AR_{it}$$

Information:
$CAR_{it}$: Accumulation *abnormal return* Sukuk Company i in the Period Company

In this study, the event *study window* uses the announcement date as the *event day* (day 0). In addition, given that the form of the Efficient Market Hypothesis in ASEAN is *semi-strong*, it takes into account the possibility that some information may have become public before the announcement by entering the previous five trading days and taking into account the possibility of uncertain responses by entering 10 days after the announcement due to the need for time to receive information in the market [−5, 10] (Flammer, 2021). Meanwhile, the dependent variable is the issuance of green bonds. In measuring the issuance of green bonds, previous studies have used the number of issuances to see the effect on the dependent variable (Ibrahim and Minai, 2009). On the other hand, investor attention was measured by the amount of activity on social networks such as Twitter (Pieiro-Chousa et al., 2021) or by the Google Search Volume Index (Pham and Huynh, 2020; Pham and Cepni, 2022). The Google Search Volume Index is derived from how much of the word company issuing green bonds is searched on Google at the time of the announcement of the issuance of green bonds (Akarsu and Suer, 2021). In addition, investor attention was measured using the Google Search Volume Index using data taken from Google Trends using the same event study window as the dependent variable, namely [−5, 10].

The control variables are company size, leverage, profitability, tangibility, and company value. Data for the control variable were taken in the year green bonds were issued. The control variable was assumed not to change significantly within the same year. The size of the company was measured by the natural logarithm of the company's total assets each year (Maaloul et al., 2021; Raimo et al., 2021). Total asset data was obtained from the financial statements of each company during 2018-2022. Leverage was measured by the ratio of total debt to total assets (Tang and Zhang, 2020; Wang et al., 2020; Munisamy et al., 2022; Nguyen et al., 2023). Data on total debt and total assets was obtained from the financial statements of each company during 2018-2022. Profitability was measured by the Return on Assets (ROA) ratio obtained from total net income divided by the company's total assets (Flammer, 2021).

Data on total net profit and total assets are obtained from the financial statements of each company during 2018-2022. Tangibility is measured by dividing total fixed assets by total assets (Tang and Zhang, 2020). Data on total fixed assets and total assets were obtained from the financial statements of each company during 2018-2022. Value companies are measured using Tobin's Q ratio (Flammer, 2021). The ideal value of Tobin's Q is 1, which means that the market has managed to assess the company quite well. The calculation of Tobin's Q is obtained by dividing the market value of Equity and the book value of Total debt of companies by the book value of company assets. The market value of equity was obtained by multiplying the share price at the end of the year by the number of shares outstanding.

### 3.4. Research Model

The following are the models of the two structural equations used in this study:

$$SMR = \rho_{GSVIGBI} GBI_{i,t} + \rho_{SMRGBI} GBI_{i,t} + \rho_{SMRGSVI} GSVI_{i,t} + \rho_{SMRSIZE} SIZE_{i,t} + \rho_{SMRLEV} LEV_{i,t} + \rho_{SMRROA} ROA_{i,t} + \rho_{SMRTANG} TANG_{i,t} + \rho_{SMRTOB} TOB_{i,t} + \varepsilon$$

Where:
$\rho$: Path Coefficient
SMR: Stock market reaction as measured by the average cumulative abnormal return
GSVI: Investor attention as measured by the Google Search Volume Index (GSVI)
GBI: Green bond issuance as measured by the nominal number of issuances
SIZE: Company size as measured by the natural logarithm of total assets
LEV: The leverage measured by the ratio of total debt to total equity

**Table 2: Descriptive statistics**

| Country | Green bonds issuance | | | | Investor attention | | | | Stock market reaction | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Minimum | Maximum | Mean | SD | Minimum | Maximum | Mean | SD | Minimum | Maximum | Mean | SD |
| Indonesia | 300 | 500 | 373.717 | 109.875 | 71.5 | 77.77 | 74.8167 | 3.15075 | −0.03 | 0.08 | 0.0086 | 0.06334 |
| Malaysia | 21.39 | 680 | 266.629 | 219.182 | 29.35 | 82.54 | 58.5555 | 20.70075 | −0.09 | 0.13 | −0.0013 | 0.06655 |
| Filipina | 60 | 946.49 | 307.629 | 280.249 | 16.09 | 71.17 | 49.1995 | 25.01809 | −0.14 | 0.03 | −0.0138 | 0.05945 |
| Singapura | 58.65 | 1500 | 548.953 | 646.016 | 24.27 | 79.4 | 57.2132 | 25.23446 | −0.07 | 0.01 | −0.0182 | 0.03455 |
| Thailand | 21.66 | 361.01 | 133.95 | 102.365 | 15.76 | 76.09 | 37.7722 | 19.79063 | −0.12 | 0.13 | 0.0192 | 0.05845 |

SD: Standard deviation

ROA: Profitability as measured by Return on Assets
PLIERS: The tangibility measured by the ratio of total fixed assets to total assets
TOB: Firm value measured by Tobin's Q
$\varepsilon$: Residual factor

## 4. RESULTS AND DISCUSSION

### 4.1. Descriptive Statistics

Table 2 presents the descriptive statistics of the variables in this study: green bond issuance, investor attention, and Stock Market Reaction. It can be seen that the issuance of green bonds in public companies is highest in Thailand, with 19 companies issuing green bonds during 2018-2022, followed by the Philippines and Malaysia, with as many as 8 companies. The Philippines is among the first countries in ASEAN to issue green bonds since 2016 (Frandon-Martinez and Filkova, 2019). In general, Indonesia has a higher issuance value of 64% compared to Thailand, 29% compared to Malaysia, and 18% compared to the Philippines. However, the value of green bonds issuance in Indonesia is still lower than Singapore by 47%. Although nominal issuance in Indonesia is quite high, the number of green bonds issued by public companies is still relatively small compared to other countries. The majority of green bond issuance in Indonesia is carried out by the Government of Indonesia and State-Owned Enterprises (Asian Development Bank, 2022). In addition, Green sukuks have only begun to be issued in Indonesia in 2018 by the Government of Indonesia. Green bonds with the highest nominal value are issued by United Overseas Bank (UOB), a Singapore company engaged in the banking industry.

The issuance of green bonds with the second-largest nominal value came from a banking company from the Philippines, namely BDO Unibank, Inc., on January 28, 2022, with a nominal value of USD 946 million. In addition, the issuance of green bonds with the third largest nominal value came from a banking company from Malaysia, namely CIMB Group Holdings Berhad, on October 9, 2019, with a nominal value of USD R680 million. Thus, the issuance of green bonds in ASEAN is still dominated by banking industry companies.

Table 2 also shows that, in general, Indonesia has the highest investor attention regarding the issuance of green bonds compared to Thailand, Malaysia, Singapore, and the Philippines. But in general, the average investor attention in the five countries has a positive response, where Thailand has 38% interest, Malaysia has 59%, Singapore has 57%, Indonesia has 75%, and the Philippines has 49%. This proves that there is high interest from investors in the issuance of green bonds in the five countries. Table 2 also shows that, in general, all five countries have a negative CAR at the time of issuance of green bonds except Indonesia and Thailand, which means that the average issuance of green bonds does not give a positive reaction to the share price of their companies. Meanwhile, in Indonesia and Thailand in general, the issuance of green bonds had a positive reaction to the Company's share price of 0.9% and 2%, respectively. There are three companies with the highest CAR. The first is Sime Darby Property Berhad from Malaysia, which has a CAR of 13% and is engaged in the property industry. The second company with the highest CAR is B. Grimm Power Public Company Limited, with a CAR of 13%. B. Grimm Power Public Company Limited is a Thai company engaged in the energy industry. The company has committed to providing environmentally friendly and sustainable energy. In addition, the company that has the third highest CAR is PT Bank Rakyat Indonesia Tbk, which is a banking company from Indonesia that has a CAR of 8%.

**Table 3: Convergent validity and reliability results**

| Variable | Indicator | LF | C | AVE | α | CR |
|---|---|---|---|---|---|---|
| Green bonds issuance | GBI | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Investor attention | GSVI | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Stock market reaction | SMR | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

LF: Loading factor, CR: Composite reliability, AVE: Average variance extracted, GBI: Green bonds issuance, GSVI: Investor attention, SMR: Stock market reaction

### 4.2. Measurement Model

Table 3 presents the convergent and reliability results. The results of the Loading Factor (LF) show a number of 1.00 (>0.7) and an Average Variance Extracted (AVE) of 1.00 (>0.5) for all indicators of each latent variable, which means that the indicators are highly correlated. Then the results of Cronbach's Alpha (α) and Composite Reliability (CR) show a reading of 1.00 (>0.7) for all indicators of each latent variable, which means high reliability.

This study then proceeded to test discriminant validity. Table 4 presents the results. It can be seen that the cross-loading result in its construct on all latent variables 1 is greater than the cross-loading result on other latent variables, which are all <1. This shows that the discrimination is valid.

In addition to the cross-loading analysis, the Heterotrait-Monotrait (HTMT) correlation ration was also calculated. Table 5 presents the results of HTMT; it shows numbers below 0.9 for all latent variables that indicate the validity of the discrimination.

Subsequently, the analysis of the coefficient of determination was conducted, aiming to assess the extent to which variances

**Table 4: Discriminant validity-cross loading results**

| Variable | GBI | GSVI | LEV | ROA | SIZE | SMR | TANG | TOB |
|---|---|---|---|---|---|---|---|---|
| GBI | 1.000 | | | | | | | |
| GSVI | 0.429 | 1.000 | | | | | | |
| LEV | 0.619 | 0.638 | 1.000 | | | | | |
| ROA | −0.402 | −0.308 | −0.476 | 1.000 | | | | |
| SIZE | 0.565 | 0.669 | 0.628 | −0.330 | 1.000 | | | |
| SMR | 0.040 | 0.106 | 0.098 | −0.416 | 0.086 | 1.000 | | |
| TANG | −0.439 | −0.382 | −0.444 | 0.279 | −0.418 | −0.055 | 1.000 | |
| TOB | −0.246 | −0.264 | −0.301 | 0.554 | −0.296 | 0.029 | 0.245 | 1.000 |

GBI: Green bonds issuance, GSVI: Investor attention, LEV: Leverage, ROA: Profitability, SIZE: Firm size, SMR: Stock market reaction, TANG: Tangibility, TOB: Firm value

**Table 5: HTMT results**

| Variable | GBI | GSVI | LEV | ROA | SIZE | SMR | TANG | TOB |
|---|---|---|---|---|---|---|---|---|
| GBI | | | | | | | | |
| GSVI | 0.429 | | | | | | | |
| LEV | 0.619 | 0.638 | | | | | | |
| ROA | 0.402 | 0.308 | 0.476 | | | | | |
| SIZE | 0.565 | 0.669 | 0.628 | 0.330 | | | | |
| SMR | 0.040 | 0.106 | 0.098 | 0.416 | 0.086 | | | |
| TANG | 0.439 | 0.382 | 0.444 | 0.279 | 0.418 | 0.055 | | |
| TOB | 0.246 | 0.264 | 0.301 | 0.554 | 0.296 | 0.029 | 0.245 | |

GBI: Green bonds issuance, GSVI: Investor attention, LEV: Leverage, ROA: Profitability, SIZE: Firm size, SMR: Stock market reaction, TANG: Tangibility, TOB: Firm value, HT: Heterotrait-Monotrait

in one variable can account for variances in a second variable when predicting the outcome of an even. Table 6 presents the R Square results. The results of the proportion of variance in the dependent variable predicted by the independent variable for investor attention are 0.184, which means it is still weak, and for Stock Market reaction, it is 0.299, which means it is weak.

The significance of an effect lies in its magnitude, indicating the importance of the association between variables or the distinction between groups. This showcases the practical relevance of a study's findings and their applicability in the real world. A considerable impact in a study suggests that the discovery holds significant practical implications. Table 7 presents the results of the f2 effect size for firm value, investor attention, leverage, and green bonds. Issuance, tangibility, and company size have a small effect below 0.15. This shows that the influence of the independent variable on its dependent variable is substantively still small. As for profitability, it has a large effect with a value above 0.15, which means that the influence of profitability on the dependent variable is quite large.

Table 8 presents the predictive relevance results that show investor attention and stock market reaction have Q2, which is >0, which means it has predictive relevance. Then Q2 of investor attention is 0.164, which is >0.02, which means it has moderate predictive relevance. Stock market reaction has a Q2 of 0.155, which is >0.02, which means it has moderate predictive relevance.

**Table 6: R-square results**

| Variable | R-square | R-square adjusted | Conclusion |
|---|---|---|---|
| Investor attention | 0.18 | 0.03 | Weak |
| Stock market reaction | 0.30 | 0.12 | Weak |

**Table 7: Effect size results**

| Variable | Investor attention | Stock market reaction | Effect size |
|---|---|---|---|
| Firm value | | 0.144 | Small |
| Investor attention | | 0.005 | Small |
| Leverage | | 0.010 | Small |
| Green bond issuance | 0.226 | 0.016 | Small |
| Profitability | | 0.400 | Large |
| Tangibility | | 0.000 | Small |
| Firm Size | | 0.003 | Small |

**Table 8: Predictive relevance results**

| | Q2 | Conclusion |
|---|---|---|
| Investor attention | 0.164 | Moderate |
| Stock market reaction | 0.155 | Moderate |

## 4.3. Hypothesis Testing

Table 9 presents the result of the hypothesis testing, which states that there is a positive and significant influence of green bond issuance on investor attention. The issuance of green bonds can signal to investors that the issuing company or entity is committed to sustainability and has concern for the environment (Flammer, 2021). This can increase interest from investors who prioritise sustainability issues in their investment decisions as well as from the broader investment community. Thus, there is a significant influence on the issuance of green bonds in terms of investor attention.

Table 9 also shows that there is an insignificant influence of investor attention on stock market reactions. This is not in line with research (Pineiro-Chousa et al., 2021; Pham and Huynh, 2020; Pham and Cepni, 2022), where investor attention can significantly influence stock prices through its impact on investor sentiment. In addition, it is considered to play a role in shaping market expectations and encouraging stock price movements in the future. However, such findings are not in line with Da et al. (2015) and Bijl et al. (2016), where the higher investor attention

**Table 9: Hypothesis testing**

| Variable | B | Sample mean (M) | SD | T statistics (\|O/SD\|) | P | Decision | Conclusion |
|---|---|---|---|---|---|---|---|
| GBI -> GSVI | 0.429 | 0.432 | 0.123 | 3.482 | 0.001 | Reject H3 | Significant |
| GSVI -> SMR | 0.087 | 0.046 | 0.254 | 0.342 | 0.732 | Accept H2 | Insignificant |
| GBI -> SMR | −0.147 | −0.152 | 0.177 | 0.832 | 0.405 | Accept H1 | Insignificant |
| GBI -> GSVI -> SMR | 0.037 | 0.023 | 0.123 | 0.304 | 0.761 | Accept H4 | Insignificant |

GBI: Green bond issuance, GSVI: Investor attention, SMR: Stock market reaction, SD: Standard deviation

measured by GSVI, the more negative stock returns. This can be caused by market uncertainty and the sample period 2018-2022, where COVID-19 still occurs in 2019-2021, with unfavourable market conditions. Such a finding is also in line with Nguyen et al. (2019) explanation that investors are more reactive to bad news than good news. According to Jawadi et al. (2020), investors in emerging markets such as Indonesia, Malaysia, the Philippines, and Thailand are less rational and less informed, so high interest can lead to lower stock returns due to overreaction to bad news.

Table 9 also shows that there is a negative and insignificant influence of green bonds issuance on stock market reaction. The results showed a probability value of 0.405 and a path coefficient of −0.147. With a probability value of more than 5%, it can be concluded that the issuance of green bonds does not have a significant influence on Stock Market Reaction. Thus, the H03 hypothesis of this study is accepted. Such findings are not in line with Tang and Zhang (2020) and Flammer (2021), where the issuance of green bonds gives a positive reaction to the market through rising stock prices because by issuing green bonds, companies signal that their companies are ready to commit to the green economy. However, such findings are consistent with Lebelle et al. (2020) and Xi and Jing (2022), where the issuance of green bonds does not have a positive influence on stock market reactions but produces a negative a cumulative abnormal return. There are several reasons for the negative reaction to the issuance of green bonds. First, investors are sceptical of signals that the company is truly environmentally friendly. Investors take the risk of the possibility of greenwashing, which is a strategy carried out by a company to provide an environmentally friendly image without actually carrying out activities that have an impact on environmental sustainability, so that at the time of decision-making, investors assess the potential risk of greenwashing from the company (Russo et al., 2021; Tran and Seddighi, 2021; Okumu et al., 2022). In addition, the lack of regulation related to green bonds in a country can also affect negative reactions from the market, meaning that investors assess the risk of a lack of regulation governing the sale of green bonds (MacAskill et al., 2021).

Table 9 also shows that there is an insignificant influence of green bond issuance on stock market reaction through investor attention. Such a finding is not in line with Tang and Zhang (2020), where the issuance of green bonds can significantly affect stock market reaction through its impact on investor attention and where increased interest in the issuance of green bonds by companies can lead to an increase in the company's shares. However, this research is in line with Da et al. (2019) and Lebelle et al. (2020), who found that the uncertainty of market conditions and investor distrust of the Company's environmentally friendly commitments also affect the impact of interest on stock prices. With the uncertainty of market conditions, investors are more reactive to bad news than good news, so the news of the issuance of green bonds does not affect the company's stock price.

## 5. CONCLUSION

This study examined the effect of green bond issuances on investor attention and stock market reaction. Subsequently, it also examined whether investor attention influences the stock market reaction of publicly listed companies in five selected ASEAN countries. Using stock price and financial data on 42 publicly listed companies in Thailand, the Philippines, Singapore, Malaysia, and Indonesia, this study shows that the issuance of green bonds has a positive and significant effect on Investor attention. This can be because the issuance of green bonds signals to investors that the issuing company or entity is committed to sustainability and has concern for the environment. This can increase interest from investors who prioritise sustainability issues in their investment decisions as well as from the broader investment community. However, this study shows that investor attention has no significant effect on stock market reactions. This can be due to uncertainty in the market as well as market conditions where investors react faster to bad news and overreact more than good news, which causes stock returns to be lower. This study also shows that the issuance of green bonds does not have a significant effect on stock market reactions. This can be due to investors' distrust of the company's commitment to the environment, the potential for greenwashing, as well as the lack of adequate regulation in the country concerned. In addition, the issuance of green bonds does not have a significant effect on stock market reaction through investor attention. This can be caused by uncertain conditions in the market as well as the potential for greenwashing carried out by the company.

This study provides new insights into the effect of and its impact on stock market reactions in developing countries, especially Thailand, the Philippines, Indonesia, Malaysia, and Singapore. This study shows that the issuance of green bonds has a positive influence on investor attention. Thus, companies in ASEAN countries may consider issuing more green bonds to signal their commitment to environmental issues. For investors, the findings of this study can provide new insights into how the issuance of green bonds affects stock market reaction through investor attention. Investors can use these insights as material for making investment decisions in the future, especially in companies in ASEAN. Investors interested in green financing may consider investing in the issuance of green bonds to support the green economy and environmental sustainability. Seeing that the positive issuance of green bonds has attracted investor attention, which means high investor attention to green bonds, regulators and policymakers

can create and strengthen policies related to green bonds to be able to support the smooth issuance of green bonds and provide confidence and protection for investors who want to invest in green bonds. Future studies can use other measurements for the issuance of green bonds, such as Bond Rating or Bond Yield. In addition, you can use other measurements of investor attention, such as the Bloomberg News Index, to focus more on measuring institutional investor attention. Third, it can expand the sample area to get more samples.

## REFERENCES


Ahmed, R., Yusuf, F, Ishaque, M. (2023), Green bonds as a bridge to the UN sustainable development goals on environment: A climate change empirical investigation. International Journal of Finance and Economics, 1-24.

Akarsu, S., Suer, O. (2021), How investor attention affects stock return? Some international evidence. Borsa Istanbul Review, 22(2), 616-626.

Amir, M.A., Indriani, A. (2020), Analisis pengaruh nilai sukuk, leverage, likuiditas, dan ukuran Perusahaan terhadap reaksi pasar: Studi Kasus Pada Perusahaan Konvensional non-bank yang menerbitkan Sukuk di Indonesia Periode 2014-2019), Diponegoro Journal of Management, 9(4), 1-13.

Ando, S., Fu, C., Roch, F., Wiriadinata, U. (2022), Sovereign Climate Debt Instruments: An Overview of the Green and Catastrophe Bond Markets. Washington, DC: IMF Staff Climate Note 2022/004.

Asian Development Bank. (2022), Green Bond Market Survey for Indonesia: Insights on the Perspectives of Institutional Investors and Underwriters. Philippines: Asian Development Bank.

Ayaz, B., Ullah, H., Khan, M.K., Kakakhel, S.J. (2021), The effect of google search volume index on the stock market excess returns. Evidence from listed firms in Pakistan stock exchange. Review of Education, Administration and Law, 4(1), 23-35.

Ballinari, D., Audrino, F., Sigrist, F. (2022), When does attention matter? The effect of investor attention on stock market volatility around news releases. International Review of Financial Analysis, 82, 102185.

Bijl, L., Kringhaug, G., Molnar, P., Sandvik, E. (2016), Google searches and stock returns. International Review of Financial Analysis, 45, 150-156.

Blenman, L., Pham, H.T., Dao, T.V., Le, B. (2022), Working capital management and stock performance: Evidence from an emerging market. International Journal of Applied Economics, Finance and Accounting, 14(2), 137-151.

Buzinske, J., Stankeviciene, J. (2023), Analysis of success factors, benefits, and challenges of issuing green bonds in Lithuania. Economies, 11(5), 143.

Chen, Y, Zhao, Z.J. (2021), The rise of green bonds for sustainable finance: Global standards and issues with the expanding Chinese market. Current Opinion in Environmental Sustainability, 52, 54-57.

Cheong, C, Choi, J. (2020), Green bonds: A survey. Journal of Derivatives and Quantitative Studies, 28(4), 175-189.

Climate Bonds Initiative. (2021), Sustainable Debt Global State of the Market 2021. Available from: https://www.climatebonds.net/resources/reports/sustainable-debt-global-state-market-2021

Cortellini, G., Panetta, I.C. (2021), Green bond: A systematic literature review for future research agendas. Journal of Risk and Financial Management, 14(12), 589.

Da, Z., Engelberg, J., Gao, P. (2015), The sum of all FEARS investor sentiment and asset prices. Review of Financial Studies, 28, 1-32.

DePamphilis, D.M. (2022), An introduction to mergers, acquisitions, and other restructuring activities. In: Mergers, Acquisitions, and Other Restructuring Activities, AN Integrated Approach to Process, Tools, Cases and Solutions. Netherlands: Elsevier. p3-35.

Düz Tan, S., Taş, O. (2019), Investor attention and stock returns: Evidence from Borsa Istanbul. Borsa Istanbul Review, 19(2), 106-116.

Ebrahim, R. (2023), Does stock liquidity determine dividend policy? New evidence from an emerging market. Asian Economic and Financial Review, 13(9), 610-620.

Fatica, S., Panzica, R., Rancan, M. (2021), The pricing of green bonds: Are financial institutions special? Journal of Financial Stability, 54, 100873

Flammer, C. (2021), Corporate green bonds. Journal of Financial Economics, 142(2), 499-516.

Frandon-Martinez, C., Filkova, M. (2019), ASEAN Green Finance State of the Market-Climate Bonds Initiative. Climate Bonds Initiative. Available from: https://www.climatebonds.net/files/reports/asean_sotm_18_final_03_web.pdf

Glavas, D. (2020), Green regulation and stock price reaction to green bond issuance. Finance, 41(1), 7-51.

Hartono, J. (2017), Teori Portofolio dan Analisis Investasi. Edisi Kesebelas. Yogyakarta: BPFE.

Ibrahim, Y., Minai, M.S. (2009), Islamic bonds and the wealth effects: Evidence from Malaysia. Investment Management and Financial Innovations, 6(1), 54-61.

ICMA. (2021), Sustainability Bonds Guidelines: June 2021. London: ICMA.

Jawadi, N., Jawadi, F., Cheffou, A.I. (2020), Computing the time-varying effects of investor attention in islamic stock returns. Comput. Econ, 56(1), 131-143.

Jingjian, S., Xiangyun, G., Jinsheng, Z., Anjian, W., Xiaotian, S., Yiran, Z., Hongyu, W. (2023), The impact of oil price shocks on energy stocks from the perspective of investor attention. Energy, 278(1), 127987.

Kapoor, A., Teo, E., Azhgaliyeva, D., Liu, Y. (2020), The Viability of Green Bonds as a Financing Mechanism for Green Buildings in ASEAN, ADBI Working Paper Series, No. 1186. Tokyo: Asian Development Bank Institute (ADBI).

Kapoor, A., Teo, E., Azhgaliyeva, D., Liu, Y. (2021), The viability of green bonds as a financing mechanism for energy-efficient green buildings in ASEAN: Lessons from Malaysia and Singapore. In: Energy Efficient Financing and Market-Based Instruments. p263-286.

Khurram, M.U., Xie, W., Mirza, S.S., Tong, H. (2023), Green bonds issuance, innovation performance and corporate value: Empirical evidence from China. Heliyon, 9(4), e14875.

Kuchin, I., Baranovsky, G., Dranev, Y., Chulok, A. (2019), Does Green Bonds Placement Create Value for Firms? Basic Research Program Working Papers. Moscow, Russia: National Research University Higher School of Economics.

Lazurko, A., Venema, H.D. (2017), Financing high performance climate adaptation in agriculture: Climate bonds for multi-functional water harvesting infrastructure on the Canadian prairies. Sustainability, 9(7), 1237.

Lebelle, M., Jarjir, S.L., Sassi, S. (2020), Corporate green bond issuances: An international evidence. Journal of Risk and Financial Management, 13(2), 25.

Lee, M.T., Suh, I. (2022), Understanding the effects of environment, social, and governance conduct on financial performance: Arguments for a process and integrated modelling approach. Sustainable Technology and Entrepreurship, 1(1), 100004.

Linandarini, E. (2010), Kemampuan Rasio Keuangan Dalam Meprediksi Peringkat Obligasi Perusahaan di Indonesia, Dissertation, Fakultas Ekonomi. Semarang: Universitas Diponegoro.

Maaloul, A., Zéghal, D., Ben Amar, W., Mansour, S. (2021), The effect of environmental, social, and governance (ESG) performance and disclosure on cost of debt: The mediating effect of corporate

reputation. Corporate Reputation Review, 26(1), 1-18.
MacAskill, S., Roca, E., Liu, B., Stewart, R.A., Sahin, O. (2021), Is there a green premium in the green bond market? Systematic literature review revealing premium determinants. Journal of Cleaner Production, 280, 124491.
Machmuddah, Z., Utomo, S.D., Suhartono, E., Ali, S., Ghulam, W.A. (2021), Stock market reaction to COVID-19: Evidence in customer goods sector with the implication for open innovation. Journal of Open Innovation, 6(4), 99.
Munisamy, A., Sahid, S., Hussin, M. (2022), Exploratory factor and reliability analysis of financial literacy instrument to assess low-income groups in Malaysia. Journal of Social Economics Research, 9(1), 39-51.
Muslim, A.I., Setiawan, D. (2021), Information asymmetry, ownership structure and cost of equity capital: The formation for open innovation. Journal of Open Innovation, 7(1), 48.
Nassiry, D. (2018), Green bond experience in the Nordic countries, ADBI Working Paper, No. 816. Tokyo: Asian Development Bank Institute (ADBI).
Nguyen, C.P., Schinckus, C., Hong Nguyen, T.V. (2019), Google search and stock returns in emerging markets. Borsa Istanbul Review, 19, 288-296.
Nguyen, D.T., Hoang, T.G., Phi, N.T.M., Truong, T.H.H. (2023), Do ESG ratings mediate the relationship between board gender diversity and firm financial performance? Evidence from the U.S. Market. The Economics and Finance Letters, 10(2), 163-171.
Odat, M., Bsoul, R. (2022), The role of intellectual capital in firms' performance and market value: Evidence from Jordan. International Journal of Management and Sustainability, 11(4), 258-272.
Okumu, A.B., Olweny, T., Muturi, W. (2022), Nexus between firm ownership, board composition and initial public offering stocks performance at the nairobi securities exchange in Kenya. Journal of Accounting, Business and Finance Research, 14(2), 30-44.
Pamungkas, W.S., Supriyono, E., Rahayu, M.K.P. (2023), The persistent effect of equity market timing on capital structure during right issue. International Journal of Applied Economics, Finance and Accounting, 15(2), 53-60.
Pham, L., Cepni, O. (2022), Extreme directional spillovers between investor attention and green bond markets. International Review of Economics and Finance, 80, 186-210.
Pham, L., Huynh, T.L.D. (2020), How does investor attention influence the green bond market. Finance Research Letter, 35, 101533.
Piñeiro-Chousa, J., López-Cabarcos, M.Á., Caby, J., Šević, A. (2021), The influence of investor sentiment on the green bond market. Technological Forecasting and Social Change, 162, 120351.
Rahardja, P., Manurung, M. (2002), Teori Ekonomi Micro: Suatu Pengantar. Jakarta: Badiklat Kemhan.
Raimo, N., Caragnano, A., Zito, M., Vitolla, F., Mariani, M. (2021), Extending the benefits of disclosure: The effect on the cost of debt financing. Corporate Social Responsibility and Environmental Management, 28(4), 1412-1421.
Russo, A., Mariani, M., Caragnano, A. (2020), Exploring the determinants of green bond issuance: Going beyond the long□lasting debate on performance consequences. Business Strategy and the Environment, 30(1), 38-59.
Sorescu, A., Warren, N.L., Ertekin, L. (2017). Event study methodology in the marketing literature: An overview. Journal of the Academy of Marketing Science, 45(2), 186-207.
Suganda, T.R. (2018), Event Study: Teori dan Pembahasan Reaksi Pasar Modal Indonesia. Malang: Seribu Bintang.
Suhendra, I., Anwar, C.J., Istikomah, N., Purwanda, E., Kholishoh, L.N. (2022), The short-run and long-run effects of central bank rate on exchange rate volatility in Indonesia. International Journal of Innovative Research and Scientific Studies, 5(4), 343-353.
Tang, D.Y., Zhang, Y. (2020), Do shareholders benefit from green bonds? Journal of Corporate Finance, 61, 101427.
Teti, E., Baraglia, I., Dallocchio, M., Mariani, G. (2022), The green bonds: Empirical evidence and implications for sustainability. Journal of Cleaner Production, 366, 132784.
Tran, Q.T., Huynh, T.N. (2022), Anomalies in Asia pacific stock markets: A re-examination of the turn-of-the-year effect. Asian Journal of Economic Modelling, 10(3), 146-159.
Tran, V.N.H., Seddighi, H.R. (2021), Ho chi minh stock exchange market: Operations and efficiency. Asian Journal of Economics and Empirical Research, 8(1), 27-38.
Ul-Haq, J., Arif, M., Hye, Q.M.A., Visas, H., Cheema, A.R. (2023), Unleashing the potential: Exploring the relationship between trade liberalization and female labor force participation in Pakistan. Nurture, 17(2), 60-68.
Wang, J., Chen, X., Li, X., Yu, J., Zhong, R. (2020), The market reaction to green bond issuance: Evidence from China. Pacific-Basin Finance Journal, 60, 101294.
Wooldridge, J.R., Snow, C.S. (1990), Stock market reaction to strategic investment decisions. Strategic Management Journal, 11(5), 353-363.
Xi, B., Jing, H. (2022), Research on the impact of green bond issuance on the stock price of listed companies. Kybernetes, 51(4), 1478-1497.
Xiao, L., Aumeboonsuke, V. (2022), Co-integration among COVID-19, investor sentiment, and the stock market. Humanities and Social Sciences Letters, 10(4), 492-510.
Zhang, R., Li, Y., Liu, Y. (2021), Green bond issuance and corporate cost of capital. Pacific-Basin Finance Journal, 69, 101626.