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# A Comparative Study of Financial Performance between Sustainable and Conventional Investment

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Article Info	Abstract		
	Purpose: This study aims to examine the attractiveness of sustainable		
Keyword:	investments to investors and assess the potential disparity in returns		
Sustainable Investment, Financial Performance, Returns Disparity	between sustainable and conventional investment in Indonesia. It		
Tenominance, rectamb Dispundy	addresses the fundamental question of whether a statistically significant difference exists in the financial performance of these two		
JEL Classification Code: G10, G11, G12	investment types.		
Corresponding author: anita.handayani@ui.ac.id	Method: The study focused on evaluating the performance of gre- bonds, green equities, and green mutual funds, compared conventional one between 2018 and 2023. Specifically, it involved comparative analysis of the yields or return of both type of investme		
DOI: <u>10.24123/jeb.v4i2.5691</u>	using an independent sample t-test.		
	Result: The findings reveal that there is no statistically significant difference in the yield or return of sustainable and conventional investment instruments. While both categories demonstrate comparable profit potential, distinctions arise in terms of price volatility. This research contributes to the existing scientific literature on sustainable investing, providing valuable insights to investors in making well-informed decisions that encompass both environmental considerations and financial objectives.		

### INTRODUCTION

The global Covid-19 pandemic has not only triggered an economic crisis but has also emphasized the significance of environmental, social, and governance (ESG) considerations. This heightened awareness has led to an increased interest in sustainable responsible investment (SRI), emphasizing the importance of investing in environmentally, socially, and ethically responsible businesses. Sustainable investment aims to ensure the long-term economic viability and preservation of life on our planet.

The Global Sustainable Investment Review 2020 by the Global Sustainable Investment Alliance (GSIA) reveals a growing global and regional interest in sustainable investment. In 2020, global sustainable investment assets reached an impressive USD 35.3 trillion, representing a remarkable 15% increase compared to the previous two years (2018-2020) and a substantial 55% increase compared to the previous four years (2016-2020). This positive growth in sustainable investments is evident across almost all regions, including Indonesia, which falls under the Australasia region. Although Indonesia's

BURNAL OF ENTREPREMEN & BUSINESS growth rate may not match that of other regions like the United States, sustainable investment assets in Australasia recorded a significant 25% growth from 2018 to 2020.

In Indonesia specifically, the Schroders Global Investor Study 2022 (Schroders, 2022) highlights the growing awareness among Indonesian investors about the importance of investing in sustainable products. The study reveals that 54% of Indonesian respondents express interest in sustainable investment funds due to their broader environmental impact. Additionally, 58% of respondents find sustainable investment funds attractive because of their positive social impact. While profitability remains a primary concern for Indonesian investors, the study signifies a shifting mindset towards incorporating sustainability principles into investment decisions.

However, research on individual investor interest in sustainable investment in Indonesia remains relatively limited. Existing studies have primarily focused on green bond instruments, conducted by Siswantoro (2018), Adhiyogo et al. (2022), and Haddad (2022). While these studies provide valuable insights into the green bond market, there is a notable gap in understanding the broader landscape of sustainable investment in Indonesia, including other sustainable investment instruments such as green equities and green mutual funds. Therefore, it is crucial to conduct further research to analyze the performance and comparative returns of various sustainable investment instruments, including green equities, green bonds, and green mutual funds.

This research aims to fill this gap by investigating the performance of sustainable investment instruments and comparing them to conventional investment instruments. Specifically, the study will analyze the price movements and returns of green equities, green bonds, and green mutual funds. By examining the financial performance and attractiveness of these sustainable investment instruments, we can gain valuable insights into their potential benefits and address the following research questions:

- 1. Does the price movement of sustainable investment instruments demonstrate consistent annual increases?
- 2. Is the rate of return on sustainable investment instruments significantly different from conventional investment instruments?

By examining the price trends, we can assess their market dynamics, attractiveness to investors, and long-term value. Additionally, conducting a comparative analysis of their returns against conventional investment instruments will provide valuable insights into the financial performance and potential advantages of sustainable investing.

The primary objective of this study is to shed light on the financial performance and attractiveness of green equities, green bonds, and green mutual funds in relation to conventional investment instruments. Through an in-depth analysis of their price movements, this research aims to uncover valuable insights that will benefit investors, financial institutions, and policymakers. Moreover, the findings of this study will contribute to the existing literature on sustainable investment in Indonesia, addressing the current research gap on individual investor interest and expanding the understanding of sustainable finance in the country.

Ultimately, this research endeavor will provide evidence-based knowledge to stakeholders interested in sustainable investing, facilitating informed decision-making and fostering the growth of sustainable finance in Indonesia. By bridging the existing research gap and enhancing the understanding of the financial performance and attractiveness of sustainable investment instruments, this study aims to make a valuable contribution to the field and promote the advancement of sustainable investment practices in Indonesia.

### Sustainable Investment

Sustainable investment, often used interchangeably with ESG investment, is an investment approach that takes into account environmental, social, and governance (ESG) factors. While sustainable investing involves incorporating ESG factors to mitigate risks, it also aims to capture ESG opportunities (Bank Indonesia, 2021).

ESG-based investment has rapidly evolved worldwide, with many countries incorporating ESG factors into their investments. In Indonesia, particularly in the banking sector, the implementation of ESG investment started in 2009, with the inclusion of ESG criteria in financial reports. However, not all banks in Indonesia have implemented ESG investment to this day.

Thomson Reuters/Refinitiv has introduced a method for calculating ESG scores, both per individual factor and in aggregate/combination, to measure the level of ESG information disclosure by a company. Environmental data used in assessing the environmental aspect include emissions, water, waste, energy, and operational policies related to environmental impact. Social data is used to assess social relationships, particularly with employees, products, and impacts on communities. Governance data is derived from information related to board structure and function, corporate political involvement, and executive compensation.

Currently, global institutions are working towards standardizing the terminology used in ESG investment. However, the investment spectrum ranges from financial-only (value-driven) to impact-only (values-driven). As awareness of non-financial risks and opportunities closely tied to asset performance and the broader society increases, sustainable investment plays a crucial role.

### Sustainable Investment Instruments in Indonesia

Sustainable investment instruments in Indonesia include green bonds, blue bonds, social bonds, green equities, and green mutual funds. These instruments promote environmental and social development while providing financial returns, reflecting Indonesia's commitment to sustainable development goals.

According to the Inter-American Development Bank in Ketterer et al. (2019), green bonds are long-term fixed-income debt instruments. Green bonds focus on sectors such as renewable energy, transportation, waste management, and infrastructure. Indonesia has been at the forefront of green bond issuance, with the introduction of green sukuk, making it the first sovereign green sukuk issuer in the world.

Blue bonds, another sustainable investment instrument, are debt instruments used to finance marine-based projects. Indonesia is also planning to undertake the issuance of blue bonds in 2023. This initiative is part of a strategic collaboration between the government and the United Nations Development Program (UNDP), guaranteeing government support for sustainable marine resource management.

Social bonds provide funding for projects with positive social outcomes. Indonesia issued social bonds to address the socio-economic impacts of Covid-19, supporting initiatives in food security, affordable housing, education, healthcare, and infrastructure.

In addition to these bond instruments, green equities and green mutual funds are also significant components of sustainable investment in Indonesia. Green equities are stocks issued by companies adhering to sustainable principles. The Sustainable and Responsible Investment (SRI)-Kehati Equities Index in Indonesia guides investment choices in green equities. Green mutual funds direct their investment portfolios towards equities of companies that prioritize ESG principles. Investors can utilize the SRI-Kehati mutual fund index when choosing green mutual funds.

While sustainable investment offers numerous advantages over conventional investment in terms of non-financial objectives, it is important to note that profit remains the primary concern for investors. Siswantoro (2018) highlighted that investors may prioritize profit motives over climate change issues. Hence, it becomes crucial to evaluate the potential for high returns of sustainable investment compared to conventional, as this factor significantly influences investment decisions (Haddad & Rokhim, 2022).

#### **RESEARCH METHODS**

In this study, we employ a time series dataset that includes daily observations of sustainable investment instruments (bonds and equities) in Indonesia, as well as monthly observations of green mutual funds. Alongside these sustainable investment instruments, we also include data on conventional investment instruments. The dataset covers the period from 2018 to February 2023 and is sourced from Reuters Refinitiv Terminal. We choose Reuters Refinitiv Terminal as our data source due to its reputation as a comprehensive and reliable provider of financial data. With its extensive coverage of global and regional financial markets, including Indonesia, Reuters Refinitiv Terminal provides relevant data specifically related to sustainable investment instruments in the country.

We obtained the data for green bonds by utilizing the Green/Sustainable Bond filter feature offered in Reuters Refinitiv Terminal. The selection of green equities and green mutual funds was based on the SRI-Kehati index, which was chosen because of its ability to encompass financial, social, and ethical returns simultaneously, as highlighted by Gunawan et al. (2021). This selection process ensures that the included green investment instruments adhere to sustainability principles and provide a comprehensive representation of the sustainable investment landscape in Indonesia.

This study is an adaptation of previous research by Haddad & Rokhim (2022), which demonstrates that Indonesian green bonds have an increased performance every year and green bond yields have no significant difference from conventional bond yields, where green bonds have slightly higher yields. Our study complements this previous research by expanding the range of investment instruments examined. In addition to analyzing green bonds, we also compare green equities and green mutual funds with their conventional counterparts.

The inclusion of green equities and green mutual funds in our analysis is motivated by the recognition that existing studies on sustainable investment instruments have predominantly focused on green bonds or Islamic bonds (Adhiyogo et al., 2022; Haddad, H.H. & Rokhim, 2022; Kanamura, 2020; Siswantoro, 2018; Tang & Zhang, 2020; and Yeow & Ng, 2021). However, there are also green equities and green mutual funds available as investment options that can contribute to environmental sustainability. This is in addition to the consideration that OJK reported in 2020 there were 14 ESG mutual fund products, a significant increase compared to 2015 when there was only 1 mutual fund product (Achsan & Sumiyana, 2022). By examining these additional instruments, we aim to provide a more comprehensive understanding of sustainable investment choices available to investors and their potential impact on the environment.

Before comparing the yield of sustainable investment and conventional investment, we would like to see the performance of green bonds, green equities, and green mutual funds compare to the conventional, which can be seen in the figure below.



Figure 1. Indonesian Sustainable and Conventional Investment Instruments Performance Source: Author (2023)

In the Figure 1, it can be seen that sustainable bond prices were initially lower than conventional bond prices in 2018 but steadily increased until 2021. However, in 2022, both sustainable and conventional bond prices fell, although they slightly increased in 2023. This can be attributed to the

significant increase in the benchmark interest rate, the BI 7-day repo rate in 2022. The rate rose from 3.5% to 5.5% by the end of the year (Bank Indonesia, 2023). The higher interest rate environment negatively affected bond prices, leading to a decrease in their value. This trend continued in 2023, with the benchmark interest rate remaining at 5.75% and the bond prices stabilizing at lower levels. The changes in the interest rate environment, influencing the pricing dynamics of both sustainable and conventional bonds. However, sustainable bond prices showed greater fluctuations compared to conventional bonds.

Sustainable equities, represented by the SRI Kehati index, experienced a decline in prices from 2019 to 2022, reflecting market challenges and uncertainties. However, in 2022, there was a slight recovery in prices, suggesting improved market conditions. On the other hand, conventional equities demonstrated a generally upward trajectory throughout the years, with some fluctuations. The prices of conventional equities showed positive growth, except for a minor dip observed in 2020 due to the onset of the COVID-19 pandemic, which directly impacted the equity market. In 2023, both sustainable and conventional equities experienced a slight decrease in prices, indicating a phase of stability or a market correction.

The Net Asset Value (NAV) of sustainable and conventional mutual funds showed a similar trend influenced by the COVID-19 pandemic and changes in interest rates. In 2020, both mutual funds experienced a decline in NAV due to the pandemic's impact on financial markets. However, there was a recovery in 2021 as economies adapted to the new normal. In 2022, increasing interest rates affected the performance of both mutual funds, contributing to fluctuations in their NAV. Despite these challenges, the NAV of both SRI Kehati and conventional mutual funds slightly increased in 2023, reflecting ongoing market recovery and stability. Overall, sustainable mutual funds had higher NAV but greater market volatility, potentially due to their focus on sustainability factors and the evolving investor sentiment towards such investments.

In conclusion, during the analyzed period, green bonds showed fluctuating prices compared to conventional bonds. Green equities experienced greater price fluctuations. Green mutual funds maintained higher NAV and relatively stable performance, while conventional funds exhibited higher volatility.

# Independent Sample T-Test

The independent sample t-test was employed in this study to examine the disparity between the average yields of sustainable and conventional investment instruments, as they were unrelated to each other. By comparing the difference between the two mean values with the standard error of the difference, this test method allowed the researchers to address a research objective concerning the presence of a significant variance in yields between the sustainable and conventional investment instruments. The utilization of the t-test facilitated the exploration of potential distinctions in the performance of these two investment instrument types.

### Effect Size – Cohen's D

After conducting the Independent Sample T-Test, the next step is to analyze whether the differences observed are large or small. One way to address this is by calculating an effect size measure. In the case of t-tests, Cohen's d is commonly employed (Basu & Srivastaw, 2021). By calculating the standardized difference between the means and considering the pooled standard deviation, Cohen's d allows researchers to interpret the strength and importance of the observed effect. A larger Cohen's d value indicates a greater effect size, implying a more substantial difference between the groups being compared. This information enhances the interpretation of the T-Test results, providing valuable insights into the practical implications of the findings.

## Hypotheses

To guide decision-making in the independent sample t-test, the researcher has formulated the following hypothesis as a fundamental basis.

H0: Yields/return of sustainable investment and conventional investment are not significantly different

$$\mu$$
 Sust\_I =  $\mu$  Conv\_I (1)

H1: Yields/return of sustainable investment and conventional investment are significantly different  $\mu$  Sust\_I  $\neq \mu$  Conv\_I (2)

### **RESULTS & DISCUSSION**

Before conducting a hypothesis test, the variables used in this study underwent a normality test to ensure that the data used is normally distributed. The variables included in the normality test are the yield/return of sustainable instruments and conventional instruments.

Table1. Normality Test					
Instrument		Shapiro-Wilk			
		Statistic	df	Sig.	
Bonds yield	Green	0.933	27	0.083	
	Conventional	0.932	28	0.068	
Equities return	Green	0.972	35	0.495	
	Conventional	0.942	35	0.064	
Funds return	Green	0.931	25	0.090	
	Conventional	0.921	25	0.053	

Source: SPSS, Processed by Author (2023)

The normality test was conducted using the Shapiro-Wilk statistical test. The results are shown in Table 1, where the Shapiro-Wilk test's p-value for all samples is > 0.05. From these results, it can be concluded that the data follows a normal distribution.

Table 2.   Descriptive Analysis					
Instrument		Ν	Mean	Std. Deviation	Std. Error Mean
Bonds yield	Green	27	4.048	2.305	0.444
	Conventional	28	4.273	1.787	0.338
Equities return	Green	35	1.000	0.001	0.000
	Conventional	35	1.001	0.002	0.000
Funds return	Green	25	1.002	0.008	0.002
	Conventional	25	1.003	0.011	0.002

Source: SPSS, Processed by Author (2023)

From Table 2, it can be seen that the bonds yield and equities return, as well as the conventional funds, are slightly higher compared to the sustainable group. In addition, the standard deviation for

conventional funds returns is higher than that of sustainable ones, indicating that conventional mutual funds have a larger variation.

			Table 3.			
The	Result of l	Independ	ent Sample T-	Test and Col	nen's D	
	Levene's Test	t-test for Equality of Means				Cohen's D
Instrument	Sig.	Sig. (2- tailed)	Mean Difference	95% Confidence Interval of the Difference		
				Lower	Upper	-
Bonds yield						
Equal var assumed	0.15	0.69	-0.23	-10.34	0.89	0.11
Equal var not assumed		0.69	-0.23	-10.35	0.89	
Equities return						
Equal var assumed	0.08	0.13	0.00	0.00	0.00	0.36
Equal var not assumed		0.13	0.00	0.00	0.00	
Funds return						
Equal var assumed	0.33	0.68	0.00	-0.01	0.00	0.12
Equal var not assumed		0.68	0.00	-0.01	0.00	

Source: SPSS, Processed by Author (2023)

In order to determine the significance of the difference between the mean yields/return of the sustainable and conventional investments, a t-test was conducted. Referring to Table 3, there are several values that need to be considered.

For bonds yield, Levene's test was conducted to assess the assumption of equal variances between the groups. The test resulted in a non-significant p-value (p=0.15), indicating that the assumption of equal variances is reasonable. The t-test for equality of means also yielded a non-significant p-value (p=0.69), suggesting that there is no significant difference in the mean yield between sustainable and conventional bonds. The effect size was negligible (Cohen's D=0.11).

Similarly, for equities return, the assumption of equal variances was assessed using Levene's test, resulting in a non-significant p-value (p=0.08). The t-test for equality of means also yielded a non-significant p-value (p=0.13), indicating no significant difference in the mean return between sustainable and conventional equities. The effect size, measured using Cohen's D, was 0.36, indicating a small effect.

For funds return, the assumption of equal variances was again evaluated using Levene's test, resulting in a non-significant p-value (p=0.33). The t-test for equality of means yielded a non-significant p-value (p=0.68), suggesting no significant difference in the mean return between sustainable and conventional funds. The effect size was small (Cohen's D=0.12).

In summary, based on the analysis, there is no significant difference in the yield/return between sustainable and conventional investment instruments, including bonds, equities, and mutual funds. The effect sizes observed in the analysis are generally small value. It suggests that the difference in yield/return between the two types of investments is likely not practically significant. In this case, sustainable and conventional investments may have similar performance or only have a small difference in generating yield/return.

Therefore, following the decision-making basis in the independent sample t-test, H0 is not rejected, and H1 is rejected. Consequently, it can be concluded that there is no significant difference in yield/return between sustainable and conventional investment instruments.



### Figure 2. Comparison of Yield/Return between Sustainable and Conventional Investment Source: Author (2023)

In the Figure 2, it is observable that in 2020, at the onset of the COVID-19 pandemic, both sustainable and conventional bond yields experienced a significant decrease compared to the previous year. This can be attributed to the economic uncertainties and market volatility caused by the pandemic. However, in subsequent years, the yields gradually recovered, with sustainable bond yields consistently higher than conventional bond yields throughout the entire period. Factors such as investor risk aversion and the changes in monetary policy such the significant increase in the benchmark interest rate in 2022, further influenced the bond yields.

On the other hand, sustainable equity returns remained relatively stable, with minor fluctuations around the baseline of 1. Conversely, conventional equity returns displayed slight fluctuations but generally showed positive growth, except for a dip in 2021. This could be due to the impact of the COVID-19 pandemic on specific sectors and the overall market sentiment during that period. This is in line with a study conducted by Ernst & Young in March 2020 revealed that the SRI KEHATI Index displayed a more robust recovery in 2020 compared to the IHSG (Hidayah, 2021).

In terms of mutual fund returns, sustainable funds experienced mixed performance. In 2019 and 2020, both sustainable and conventional mutual fund returns declined, primarily influenced by the pandemic-induced market downturn. However, in 2021, sustainable mutual fund returns stabilized and showed a slight increase, while conventional mutual fund returns continued to exhibit volatility. In 2022, the significant increase in the benchmark interest rate, the BI 7-day repo rate, further impacted the performance of both types of funds. Moreover, the returns of sustainable mutual funds appear to be superior compared to conventional mutual funds post-pandemic. This is in line with reports from Morgan Stanley stating that sustainable financing has generated higher returns during the Covid-19 pandemic. For instance, the average return of sustainable mutual funds was 19.04%, while the average return of traditional mutual funds was 14.77% (Achsan & Sumiyana, 2022).

In summary, during the analyzed period, sustainable investments demonstrated mixed performance across different asset classes. Sustainable bond yields were generally higher than conventional bond yields in the last period of observation, indicating potential investor preference for environmentally and socially responsible investments. Sustainable equity returns remained stable but slightly underperformed compared to conventional equity returns. Sustainable mutual funds showed resilience and experienced a recovery in 2021, while conventional mutual funds exhibited greater volatility. The performance of these investments was influenced by the initial impact of the COVID-19 pandemic in 2020 and the subsequent significant increase in the benchmark interest rate in 2022.

From the analysis conducted, there are several notable observations. Firstly, there is price fluctuation in green bonds that aligns with conventional bond prices during the given time period. This could be attributed to common factors such as market volatility and changes in investment policies and regulations, particularly due to the impact of the COVID-19 pandemic over the past three years. However, it should be noted that despite the fluctuations, green bond prices remained relatively stable at the end of the period and tended to grow higher than conventional bonds. In terms of yield,

green bonds initially had a higher yield than conventional bonds but consistently decreased until 2021 and remained below the yield of conventional bonds in 2022 and 2023. This could be due to changes in demand and supply in the green bond market, as well as changes in investment policies and regulations, particularly influenced by the COVID-19 pandemic, where investors tend to avoid long-term instruments while green bonds would perform well in the long run.

Secondly, SRI Kehati equity prices experienced greater fluctuations compared to conventional equity prices during the given time period, particularly in 2020, which saw a significant decline due to the impact of the COVID-19 pandemic. Equities were an investment instrument that experienced a significant decrease during the pandemic. However, SRI Kehati equity returns consistently increased each year and eventually approached the returns of conventional equities. This indicates that investing in SRI Kehati equities can provide competitive results in the long run, despite having greater price fluctuations compared to conventional equities.

Thirdly, the net asset value (NAV) of sustainable fund was higher than that of conventional funds at the beginning of the period and remained relatively stable at the end of the period. Sustainable fund returns were stable and experienced an increase in 2022, while conventional fund returns were more fluctuating. This suggests that sustainable fund can be a good long-term investment choice, as they provide stability and competitive profit potential.

Lastly, based on the results of the Levene's Test and independent sample t-test, it can be concluded that there is no significant difference between the yield/return of sustainable and conventional investment instruments. This indicates that in terms of investment returns, sustainable and conventional investment instruments have comparable profit potential, although there may be differences in price fluctuations or volatility. However, this condition may differ when data measurements are conducted over a longer period, considering that sustainable investments have a longer time horizon.

The comparable return potential between sustainable and conventional investment instruments, as indicated by the statistical tests, suggests that both types of investments offer similar returns. However, it is crucial to consider the differences in price fluctuations or volatility, as sustainable investments are often considered to have a longer-term horizon. These findings have implications for investors seeking sustainable investment options and highlight the need for further research into the long-term performance of sustainable investments.

Overall, the processed data provides an overview of the performance of sustainable and conventional investment instruments during the studied time period. However, it should be noted that these results do not guarantee the same performance in the future, as there are many factors that can influence market performance and investment instruments.

### **CONCLUSION**

The research findings reveal that sustainable investments exhibited mixed performance across different asset classes during the analyzed period. Sustainable bonds displayed price fluctuations but remained relatively stable and tended to outperform conventional bonds in the long run, indicating their growing popularity among investors. However, sustainable bond yields consistently decreased until 2021, staying below conventional bond yields. It is important to note that SRI Kehati equities experienced a decline since 2020, largely due to the adverse effects of the COVID-19 pandemic. In contrast, conventional investments showed price fluctuations that followed the patterns observed in sustainable instruments. Notably, the prices of sustainable instruments, including equities and mutual funds, generally remained higher than those of conventional instruments, with the exception of bonds. Interestingly, despite the differences in price volatility, the research highlights that there is no significant difference in the yield or return between sustainable and conventional investment instruments. This suggests that both types of investments possess comparable profit potential.

The research findings offer practical implications for investors, companies, regulators, and governments. Investors should carefully analyze and diversify their portfolios considering the mixed performance of sustainable investments across different asset classes. Companies can develop sustainable investment products aligned with investor preferences to attract a broader range of investors and contribute to long-term business sustainability. Regulators can shape supportive policies and regulations to foster market development, transparency, and investor confidence in sustainable investments. Governments can use the findings to inform policies and provide incentives that encourage sustainable investments, fostering the transition to a more sustainable economy. Overall, a balanced approach considering the comparable profit potential of sustainable and conventional investments is crucial in integrating sustainability into investment strategies.

It is crucial to acknowledge the limitations of this study, particularly the limited sample size of sustainable investment instruments, specifically sustainable bonds, which mainly consisted of government bonds and a single state-owned enterprise. Consequently, the generalizability of the findings may be limited, and further research with a more diverse and extensive sample is necessary to strengthen the conclusions.

Nonetheless, the research offers valuable insights for investors in evaluating the performance of sustainable investments, provides guidance for companies in developing sustainable investment products, and can aid regulators and governments in fostering an ecosystem that promotes sustainable investments with positive environmental impacts while simultaneously delivering favorable investment returns for investors.

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