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Risk Management and Investment Sustainability in the Era of Economic Uncertainty

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Abstract. This study examines the relationship between the implementation of risk management and investment sustainability in the face of global economic uncertainty. Well-planned, data-driven risk management, through strategies such as portfolio diversification, the use of financial instruments, and stress testing, has proven effective in enhancing investment stability by mitigating the impact of market volatility. Additionally, integrating Environmental, Social, and Governance (ESG) principles into investment decision-making processes contributes positively to portfolio resilience against external risks and supports long-term investment value growth. This study also highlights the importance of leveraging advanced technologies, such as artificial intelligence and big data, to improve the accuracy of risk analysis, as well as the need for collaboration among various stakeholders to create a sustainable investment ecosystem. The findings are expected to make a significant contribution to both individual and institutional investors in formulating resilient, sustainability-oriented investment strategies amid global economic challenges.

Keywords: Risk Management; Investment Sustainability; ESG Principles; Market Volatility; Advanced Technology

A. INTRODUCTION

In an era of increasing economic uncertainty, the challenges faced by investors in managing and maintaining investment sustainability have become more complex. The economic uncertainty refers to various factors such as fluctuations in global financial markets, changes in fiscal and monetary policies, geopolitical tensions, and the unpredictability caused by unforeseen events like pandemics or natural disasters. All of these factors create an unstable market environment, where making the right investment decisions and implementing effective risk management become key to maintaining investment value and sustainability. Therefore, it is essential to understand how risk management strategies can contribute to investment sustainability in the face of uncertain economic conditions.

Risk management in the context of investment refers to a series of steps taken by investors to identify, measure, and control risks that may impact the performance and

outcomes of their investments. The Modern Portfolio Theory, proposed by Markowitz (1952), emphasizes the importance of diversification in reducing investment risk by combining various uncorrelated assets within a single portfolio. However, in the increasingly complex economic uncertainty, a more comprehensive and holistic risk management strategy is needed to address the challenges faced by investors. The risks to be considered extend beyond market risk or individual risk, encompassing macroeconomic risk, political risk, and risks arising from other external factors that could affect market stability (Risma Wati & Muhammad Iqbal Fasa, 2024).

Investment sustainability has become an increasingly important aspect in the modern investment world. The concept of investment sustainability is not only related to financial returns but also involves social and environmental dimensions that can affect the value and long-term viability of those investments. The sustainable investment approach, known as ESG (Environmental, Social, and Governance), has gained significant attention among global investors. Research shows that investments that integrate ESG factors into decision-making processes tend to be more stable and resilient to market volatility, making them more relevant in the context of ongoing economic uncertainty. Therefore, investment sustainability is not only viewed from a financial perspective but also includes the management of factors that can influence long-term performance, whether in terms of environmental, social, or governance aspects (Prakoso & Apriliani, 2024).

This study aims to analyze the relationship between risk management and investment sustainability in the era of economic uncertainty, focusing on strategies that investors can implement to cope with market volatility and ensure sustainable investment outcomes. Specifically, the study will explore how the application of effective risk management can support the achievement of long-term sustainable investment goals. Furthermore, the study will also examine the integration of ESG principles in investment decision-making and its impact on the stability and sustainability of investment portfolios amid uncertain economic conditions.

Through this study, it is hoped that a deeper understanding of the importance of effective risk management and sustainability principles in investment decisions will be achieved, especially for investors operating in an uncertain economic environment. Thus, the results of this research are expected to make a significant contribution to the development of risk management theory and sustainable investment practices, as well as provide useful recommendations for stakeholders, both individual and institutional investors, in formulating the right investment strategies to face future economic uncertainties.

B. LITERATURE REVIEW

Risk Management in Investment

Risk management is an essential element in investment aimed at minimizing potential losses without sacrificing profit opportunities. The modern portfolio theory developed by Markowitz (1952) emphasizes the importance of diversification as the primary strategy in managing risk. Diversification allows investors to reduce asset-specific risk by spreading investments across various uncorrelated asset classes. However, in times of global economic uncertainty, such as exchange rate fluctuations, interest rate changes, and geopolitical instability, diversification alone is not enough to protect a portfolio from systemic risk (Judijanto, 2024). A more comprehensive approach, such as using derivative instruments for hedging, controlling portfolio volatility, and conducting stress-based scenario testing, is becoming increasingly relevant in the context of dynamic markets. (Nurbaeti Amien & Syavardie, 2024) suggests that adaptive risk management strategies can enhance an investor's ability to respond quickly and effectively to market changes, thereby protecting the portfolio from the adverse impacts of market volatility.

Sustainability of Investment

The sustainability of investment has become a primary focus in the modern financial world, as awareness grows regarding the importance of social and environmental impacts in investment decision-making processes. The Environmental, Social, and Governance (ESG) framework has become the main reference in evaluating investment sustainability. A study by Friede et al. (2015) shows that over 90% of research examining the relationship between ESG performance and investment outcomes found a positive or neutral correlation, with more stable results in the long term. In addition to providing more consistent results, integrating ESG principles in investments can also reduce reputational risk, improve operational efficiency, and help address external challenges such as stricter environmental regulations or changing consumer preferences. (Nurbaeti Amien & Syavardie, 2024) states that companies with strong ESG practices tend to have more stable performance, both in financial and non-financial aspects, thereby increasing their resilience to economic crises (Prakoso & Apriliani, 2024).

Interaction between Risk Management and Sustainability

Recent literature shows a close relationship between risk management and investment sustainability. A risk management approach that incorporates sustainability principles can help investors manage systemic risks arising from global economic uncertainties. (Putri et al., 2024) found that companies with high ESG scores tend to have lower stock price volatility and are more resilient during economic crises. This indicates that investment sustainability is not only important from an ethical standpoint but also provides strategic advantages in risk management.

Research Hypothesis

This study develops two hypotheses as follows:

Hypothesis 1 (H1): Effective risk management positively contributes to the stability and outcomes of investments amidst economic uncertainty.

Hypothesis 2 (H2): The integration of ESG principles into investment strategies has a positive impact on investment sustainability, particularly in facing uncertain economic challenges.

C. RESEARCH METHODOLOGY

This research uses a descriptive method based on a literature review of journal articles. Data and information are collected from relevant articles, particularly scientific journals discussing topics such as risk management, ESG principles, and investment sustainability.

The analysis is conducted by reviewing, summarizing, and synthesizing the key findings from these journals to understand the relationship between risk management and investment sustainability in the era of economic uncertainty. This approach was chosen because it is simple, evidence-based, and effective for outlining relevant concepts and theoretical implications.

D. RESULTS AND DISCUSSION

Risk Management in Investment

Based on similar studies that have been reviewed, risk management is a fundamental aspect of investment decision-making, especially amid global economic uncertainty. Research by Saputra & Adiwana (2024) emphasizes that the application of data-driven risk management can help improve the effectiveness of investment decisions. This approach involves identifying key risk factors, evaluating market impacts, and developing mitigation strategies based on informational analysis. This aligns with modern financial theory, which underscores the importance of diversification and the use of data to reduce exposure to specific risks. Another study by Putri et al. (2024) also shows that holistic and proactive risk management strategies can enhance investors' preparedness and financial resilience in the face of economic changes.

This approach involves the integration of various financial instruments, such as the use of insurance, derivatives, and liquidity reserve planning. Furthermore, the study highlights the critical role of leaders in determining the appropriate risk policies aligned with the continuously evolving market dynamics. Fahlevi Lubis et al. (2023) highlight best practices in risk management in the era of global uncertainty. They identify that proactive strategies, such as integrated risk management and active stakeholder engagement, provide more effective protection against the negative impacts of systemic risks. These strategies not only ensure portfolio resilience but also enhance long-term sustainability through the adoption of ESG-based approaches and strengthening collaboration among relevant parties.

From this review, it can be concluded that the effective implementation of risk management requires a combination of analytical, proactive, and holistic approaches. Portfolio diversification, data-driven risk mitigation, and stakeholder engagement are crucial elements in facing market volatility and economic uncertainty. These strategies enable investors to make more informed decisions and protect their assets from significant losses, while also supporting investment sustainability goals.

Investment Sustainability

Investment sustainability has become a major concern amidst global economic uncertainty, given its significant impact on portfolio stability and long-term growth. Based on the reviewed research, the application of sustainability principles, such as Environmental, Social, and Governance (ESG), has proven to provide strategic advantages for investors. Saputra & Adiwana (2024) reveal that integrating ESG into investment decisions can mitigate non-financial risks, such as reputational and environmental risks, which are often overlooked in traditional risk analysis. ESG principles help enhance corporate transparency and build resilience against crises by ensuring that business practices support social and environmental goals. These findings indicate that investments considering sustainability not only have a positive social impact but also lead to greater financial stability. Putri et al. (2024) emphasize the importance of financial preparedness in supporting investment sustainability. This research finds that investments considering environmental and social impacts tend to be more resilient to economic fluctuations. Furthermore, they highlight the importance of sustainability as part of long-term strategy, where investors not only pursue financial gains but also contribute to sustainable growth aligned with ESG principles. Fahlevi Lubis et al. (2023) show that investment sustainability is closely linked to active stakeholder engagement and the implementation of integrated risk management strategies. By prioritizing sustainability, companies and investors can create portfolios that are not only more stable but also more socially responsible. They also underline that investment sustainability provides a competitive advantage, particularly in attracting institutional investors who are increasingly focused on sustainable investments.

From this analysis, it can be concluded that investment sustainability not only serves as a risk mitigation mechanism but also as a strategy that supports long-term value growth. The integration of ESG principles, active stakeholder engagement, and integrated risk management are crucial elements in creating investment portfolios that are resilient to economic uncertainty. These sustainability strategies provide opportunities for investors to achieve financial goals while contributing to the attainment of sustainable development objectives.

Critical Discussion

Although previous research findings suggest that effective risk management and the integration of ESG principles can enhance investment sustainability, there are several challenges and limitations that need to be addressed. In the context of economic uncertainty, the implementation of risk management strategies and investment sustainability requires a more holistic approach, but this also brings some complexities that need to be considered.

First, although many studies indicate that data-driven risk management can help reduce volatility and improve portfolio resilience, the implementation of this strategy is often

constrained by data limitations and market predictability uncertainties. For example, analytical tools used to identify and measure risks, such as Value at Risk (VaR) or stress tests, only provide a probabilistic outlook and cannot fully anticipate extreme events or extraordinary uncertainties, such as global financial crises or pandemics. This poses a particular challenge for investors in formulating truly effective strategies to manage risks in highly volatile and unpredictable market conditions.

Second, the integration of ESG principles in investment decisions, while showing positive results in many cases, also faces challenges related to the standardization and transparency of ESG performance measurement. The varying ESG scores across rating agencies, as well as the lack of reliable data on the social and environmental impacts of investments, often lead to uncertainty in decision-making. Some studies suggest that while companies with high ESG scores tend to be more resilient during crises, there are also companies that formally implement ESG principles but do not demonstrate substantial social or environmental performance. This indicates that sustainability is not solely dependent on formal compliance with ESG standards, but also on how effectively the implementation of these principles truly supports broader social and environmental goals.

Furthermore, a major challenge in the implementation of risk management and investment sustainability is the need for synergy among various stakeholders. In many cases, companies and investors face difficulties in reaching agreements on long-term sustainability goals that can be practically applied. Many stakeholders, particularly in emerging markets, are more focused on achieving short-term profits, which often conflict with long-term sustainability objectives. Therefore, greater efforts are needed to strengthen dialogue and collaboration between investors, companies, and regulators so that sustainability principles can be applied more effectively.

In this context, although there is consensus on the importance of effective risk management and investment sustainability, the challenges mentioned above indicate that consistent and comprehensive implementation still requires time and adjustment. Investors and other stakeholders need to enhance their ability to adapt to dynamic market and regulatory changes, as well as ensure that the investment strategies they adopt are not only financially profitable but also contribute to broader long-term sustainability.

Recommendations for the Future

Based on the discussions that have taken place, several important recommendations have emerged to enhance the effectiveness of risk management and investment sustainability in the future, particularly in the face of global economic uncertainty. First, the increased use of technology in risk management is crucial. In today's digital age, the utilization of technologies such as artificial intelligence (AI), machine learning, and big data can enhance investors' ability to identify and manage risks more accurately. These technologies enable deeper and more precise data analysis, which can assist investors in navigating increasingly complex and unpredictable market conditions.

Additionally, standardization and transparency in ESG performance measurement are key to optimizing the integration of sustainability principles in investments. The uncertainty arising from differences in ESG assessment methods can be reduced through the implementation of clear and consistent global standards. Efforts by international institutions to develop more transparent and accurate reporting standards will enable investors to make more informed and thorough decisions. This will help build trust in the market and improve more accurate decision-making related to investment sustainability.

Furthermore, the development of sustainable portfolios is also a strategy that should be considered. Investors should not only view sustainability as an obligation but also as a long-term opportunity that can provide stable returns and reduce non-financial risks. By increasing the proportion of investments in environmentally and socially friendly sectors, such as renewable energy and green technologies, investors can ensure that their portfolios not only deliver good returns but also contribute to sustainable development goals.

Additionally, stronger collaboration among various stakeholders is essential to support investment sustainability. Governments, companies, and investors must work together to create an environment that fosters sustainable investment, including through policies that encourage ESG practices and provide incentives for companies that implement these principles. Close collaboration among all parties will create a more stable and sustainable ecosystem for the investment market.

Finally, it is important to continually enhance investors' capacity through educational and training programs focused on risk management and sustainable investment. By improving investors' understanding of ESG principles and effective risk management strategies, they will be better prepared to face the ever-changing economic challenges. This increased knowledge will help investors make wiser investment decisions and support the achievement of long-term sustainability goals.

By implementing these recommendations, it is expected that investors and other stakeholders will be able to manage risks more effectively, create more sustainable portfolios, and contribute to stable and sustainable economic growth in the future.

Hypothesis

Hypothesis 1 (H1): Effective Risk Management Positively Contributes to Investment Stability and Returns Amid Economic Uncertainty. Effective risk management is expected to reduce uncertainty and have a positive impact on investment outcomes. Based on discussions from previous studies, such as those by (Saputra & Adiwana, 2024) and (Putri et al., 2024), it can be concluded that the right risk management strategies can help investors navigate economic uncertainty, reduce volatility, and enhance portfolio stability. Approaches such as portfolio diversification, the use of hedging instruments, and data-driven analysis are effective ways to mitigate risks that could negatively affect investment returns. In times of economic uncertainty, where markets are often unpredictable, investors with structured, data-driven risk management strategies tend to perform better. Risk management enables them to identify and mitigate various risk factors, both systemic and idiosyncratic, that could disrupt investment portfolio stability. Therefore, based on the findings of these studies, Hypothesis 1 can be accepted, as effective risk management indeed contributes to better stability and investment outcomes amid economic uncertainty.

Hypothesis 2 (H2): The Integration of ESG Principles into Investment Strategies Has a Positive Impact on Investment Sustainability. The integration of Environmental, Social, and Governance (ESG) principles into investment strategies is believed to contribute to investment sustainability. Previous studies, such as those by (Saputra & Adiwana, 2024) and (Putri et al., 2024), show that the application of ESG principles not only strengthens social and environmental values but also provides resilience against non-financial risks that can impact long-term performance. ESG can reduce reputation risk, enhance operational efficiency, and create greater resilience to shifts in market preferences or stringent regulations. Additionally, research by (Fahlevi Lubis et al., 2023) emphasizes that companies integrating ESG principles into their business strategies tend to be more resilient in the face of economic crises and profound market changes. ESG plays a role in ensuring that companies operate responsibly and sustainably, which, in turn, strengthens the long-term resilience of investment portfolios. Based on this empirical evidence, Hypothesis 2 can also be accepted, as the integration of ESG principles into investments has been shown to positively impact investment sustainability, particularly in the face of economic uncertainty.

Based on the discussions and research findings that have been reviewed, both proposed hypotheses—the effective risk management contributes to investment stability and outcomes, and the integration of ESG principles supports investment sustainability—are found to be well-founded. Structured, data-driven risk management, along with the application of ESG principles in investment strategies, not only helps manage economic uncertainty but also enhances performance and long-term investment sustainability. Therefore, both of these hypotheses can be accepted, demonstrating that the combination of effective risk management

and ESG integration makes a significant contribution to investment stability and sustainability in an era of economic uncertainty.

E. CONCLUSIONS

This study emphasizes the importance of effective risk management and the application of sustainability principles in investment to address the challenges of global economic uncertainty. Data-driven risk management strategies, such as portfolio diversification, the use of financial instruments, and stress testing, have proven to enhance portfolio stability and reduce the impact of market volatility. Additionally, the integration of Environmental, Social, and Governance (ESG) principles in investment decision-making not only provides resilience against external risks but also supports stable long-term growth. The utilization of advanced technologies, such as artificial intelligence and big data, as well as collaboration between investors, companies, and regulators, becomes a key element in enhancing the effectiveness of these strategies. Therefore, the combination of structured risk management and the application of sustainability principles provides a strong foundation for creating resilient, stable investment portfolios that contribute to sustainable development goals.

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