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Chair of *Capital Markets*

How ESG Funds Stack Up Against Traditional Funds: A Performance Showdown

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Summary

Introduction

ESG (Environmental, Social, and Governance) investing is a strategy that evaluates investments based on environmental stewardship, social responsibility, and governance practices, aiming to identify financially sound companies that positively impact or mitigate risks in these areas. This approach goes beyond traditional financial analysis, seeking more resilient investments poised for long-term success. In that scenario, Tendercapital with its sustainable funds emerge as a key player, focusing on companies and projects offering both financial returns and positive contributions to environmental sustainability, social responsibility, and governance ethics.

The investment team at Tendercapital aims to identify sustainability factors likely to impact financial viability and operations positively, employing diverse skills from investment banking to data science, addressing the complexity of sustainability challenges. Tendercapital's main approach incorporates the United Nations' Six Principles for Responsible Investments, utilizing Screening and Exclusion and ESG factor Integration. These approaches are applied differently across the investment strategies, considering the focus of each strategy, as well as the geographic and sector composition of the respective investment universe, with reference to the difference between equity and fixed income portfolios as specified in the relevant section below.

Unlike traditional ethical and socially responsible investing (SRI), which mainly excluded stocks or industries on moral or ethical grounds, ESG investing proactively selects companies leading in sustainability and responsibility. This evolution reflects a broader recognition of sustainable business practices' importance in long-term prosperity and resilience, with companies increasingly committing to sustainability goals like reducing carbon emissions and ensuring fair labor practices.

The shift to mainstream ESG investing, expected to be enhanced by technological advances in data analytics, along with a growing focus on climate change and social justice, suggests a future of innovative financial products and strategies that value sustainability and ethics alongside financial returns.

A pivotal question for investors is whether ESG investing leads to better or worse financial performance compared to traditional funds. Numerous studies have aimed to address this, with many finding that ESG funds can match or even surpass the performance of their traditional counterparts. This is attributed to several factors, including better risk management and more sustainable business practices among ESG-focused companies. ESG criteria offer investors a framework to identify non-financial risks that could have significant financial implications, such as climate change risks, social unrest, or governance failures. By considering these factors, ESG funds may avoid companies vulnerable to such risks, potentially leading to more stable and resilient investment portfolios.

The emergence and growth of ESG investing means a significant transformation in the characteristics and preferences of investors, with a notable emphasis among younger generations. The latter, have shown a marked preference for investment opportunities that are congruent with their ethical values, demonstrating an increased awareness and consideration for the broader societal impacts of their investment choices. This shift in investor behavior is driving an augmented demand for ESG-aligned financial products, thereby compelling fund managers and investment strategists to integrate ESG considerations into their decision-making processes. As a result, the financial sector is experiencing a pivotal adjustment, as the incorporation of ESG factors becomes essential to meet the evolving demands of this new wave of investors. This trend not only mirrors a broader move towards sustainability and responsible governance within society but also highlights the significant influence of younger investors on shaping investment strategies and directing the flow of capital in global markets, in alignment with ethical and sustainable principles.

One of the significant challenges facing sustainable investing is the risk of greenwashing, where companies mislead consumers and investors by presenting themselves as more environmentally friendly or socially responsible than they are. This deceptive marketing strategy is used to capitalize on the growing demand for environmentally sustainable and ethically oriented products and services, without making substantial changes to business practices or product offerings. This makes it crucial for investors to conduct thorough due diligence and rely on reputable ESG ratings and analyses. Government policies and regulations play a significant role in reducing greenwashing but also encourage companies and funds to adopt more sustainable practices.
In regions like the European Union, regulatory frameworks such as the Sustainable Finance Disclosure Regulation (SFDR) and the EU Taxonomy for Sustainable Activities setting clear standards for what constitutes sustainable investment.

The convergence of ESG and traditional investing could eventually lead to a scenario where ESG considerations are embedded in all investment decisions, blurring the lines between ESG-specific and traditional funds. This integration suggests a future where financial performance and sustainability are not seen as mutually exclusive but as mutually reinforcing, leading to a more sustainable and equitable global economy.

As ESG investing continues to evolve, it will likely face ongoing challenges related to data quality, regulatory compliance, and the integration of ESG factors.
My goal is to discover and share meaningful knowledge that enhances investment strategies, ensuring they are not just financially sound but also ethically grounded

and ecologically sustainable. This involves a deep dive into practices that balance profitability with the imperative to address social equity and environmental preservation.

This thesis delves into a comprehensive examination of the financial performance of ESG funds, juxtaposing them against traditional investment funds to discern the influence of ESG criteria on both risk and return metrics. The investigation unfolds in meticulously designed phases, each contributing to a holistic and nuanced exploration of the subject matter.

Initially, the study embarks on an exhaustive literature review to anchor its analysis in empirical evidence, systematically comparing the performance of ESG funds, including those managed by Tendercapital Ltd, with their traditional counterparts. This foundational step sets the stage for a deeper understanding of the ESG investment landscape.

Following the literature review, the thesis outlines its analytical framework, detailing the criteria for fund selection, the performance indicators utilized, and the statistical methods employed to ensure a rigorous comparison of fund performances. This methodological scaffolding is essential for the integrity and credibility of the subsequent analysis

The core of the thesis is the empirical analysis phase, where a thorough examination of the selected dataset is conducted. This phase scrutinizes fund performance over short and long durations, providing insights into the temporal dynamics of ESG investment outcomes. Furthermore, the resilience and reliability of the findings are critically assessed, ensuring that the conclusions drawn are robust and defensible.
The discussion section then interprets these results within the broader context of existing research, drawing parallels, and highlighting divergences. This analysis is pivotal, as it situates the study's findings within the wider academic and practical discourse on ESG investing, offering valuable perspectives for investors and fund managers alike.

Concluding, the thesis synthesizes its principal discoveries and insights, reflecting on the study's limitations and proposing avenues for future inquiry. This concluding chapter not only encapsulates the study's contributions but also underscores the ongoing relevance of ESG criteria in shaping investment strategies and outcomes.
In essence, this thesis aims to provide a thorough and discerning analysis of ESG funds' financial performance, offering a substantive contribution to the field of sustainable investing through a methodically structured and critically engaged investigation.

1 Theoretical Foundations: A Preliminary Presentation of ESG Funds

Chapter one introduces ESG (Environmental, Social, and Governance) investment funds within the investment fund landscape. It outlines the fundamentals of investment funds, traces the origins and principles of ESG investments, and discusses the growth, drivers, and challenges of ESG funds. This chapter sets the foundation for understanding the significance of ESG criteria in modern investment strategies and the evolving dynamics of sustainable investing.

1.1 Investment Funds: Definition and Types

Investment funds are pooled investments that collect money from various investors to purchase securities. These funds are managed by professional fund managers who allocate the fund's investments and attempt to produce capital gains or income for the fund's investors. The portfolio of an investment fund can include stocks, bonds, commodities, real estate, or other securities, depending on the fund's objective. Investment funds offer individual investors access to a diversified portfolio of assets, which might be difficult to achieve on their own due to capital requirements or expertise.
Types of investment funds include mutual funds, Hedge funds, Index funds, Bond funds, Money Market funds (MMFs), Hybrid funds and exchange-traded funds (ETFs):

Mutual funds offer a compelling investment vehicle for a wide range of investors, combining benefits such as liquidity intermediation, denomination intermediation, diversification, cost advantages, and managerial expertise. These funds allow investors to convert their investments into cash quickly and at a low cost, offering a key advantage in terms of liquidity. They also provide small investors with access to securities that would be otherwise out of reach, thanks to denomination intermediation. Diversification, a cornerstone of investment strategy for reducing risk, is readily achievable through mutual funds, which offer a low-cost avenue to diversify across various asset classes, including foreign stocks. The professional management of these funds attracts investors looking for expert decision-making in their investment choices, willing to pay fees for this expertise.
The structure of mutual funds is categorized mainly into closed-end and open-end funds, collectively known as complexes. These complexes might consist of one or more families of funds, where investments can be easily transferred among different funds within a family, enhancing flexibility for investors.
Closed-end funds are investment vehicles with a set number of non-redeemable shares, available initially and then traded on the stock market like common stock, with their price fluctuating based on the fund's asset value. A notable constraint of

these funds is their fixed share count, which prevents them from accepting new investments after the initial sale, potentially limiting growth unless a new fund is launched. Despite this, they offer stability since investors cannot directly withdraw funds; those wishing to exit must sell their shares on the open market.
On the other hand, open-end funds provide a more flexible structure, allowing investors to contribute new capital at any time. This flexibility results in an increase in the number of shares outstanding, with the fund capable of buying back shares from investors who wish to exit. The net asset value (NAV) of these funds is calculated daily, based on the number of shares outstanding and the net assets held by the fund. Open-end funds offer high liquidity, as shares are redeemable at any time, and a greater potential for growth due to the ability to continuously accept new investments.

Hedge funds, a specialized form of mutual funds, are crafted to be market neutral, focusing on strategies that aim to achieve returns regardless of market directions. This approach indicates that the performance of these funds is not tethered to market fluctuations, offering a unique investment proposition where the skill of the manager plays a crucial role in generating profits.
A distinguishing feature of hedge funds is their fee structure, which is higher compared to other investment funds. Investors in hedge funds are typically subject to two types of fees: a management fee and a performance fee. This fee arrangement is indicative of the high-reward strategy pursued by hedge funds, where fund managers are compensated handsomely for outperforming the market or achieving the fund's investment objectives.
Hedge funds are classified as 'security B,' a designation that carries specific regulatory implications and underscores their unique investment approach. Entry into the world of hedge funds requires a significant financial commitment, with minimum investments ranging from $100,000 to as high as $20 million, though the most common minimum investment sits at around $1 million. This high barrier to entry is reflective of the exclusive nature of hedge funds, targeting affluent individuals and institutional investors capable of allocating substantial resources to their investment portfolios.
Investors in hedge funds are also expected to commit their capital for long term periods. This allows hedge fund managers to implement complex, long-range investment strategies without the disruption of short-term capital withdrawals.
In 2006, the Securities and Exchange Commission (SEC) introduced a regulation requiring hedge fund advisers to register, marking a significant step towards increasing transparency and accountability within the hedge fund industry. This regulatory oversight aims to protect investors by ensuring that hedge fund managers adhere to established standards and practices.

Index funds represent a pivotal investment vehicle designed for those seeking to mimic the performance of a specific market index. By holding a portfolio of stocks that precisely reflects the components of a target index, index funds aim to achieve returns that closely track the movements and changes of the index level. This strategy offers a transparent and straightforward approach to investing, where the success of the fund is directly tied to the performance of the market index it aims to replicate.

One of the features of index funds is their cost efficiency as they operate on a passive management strategy. This means that the need for manager intervention is significantly reduced, as the fund's composition changes only to reflect adjustments within the target index itself. Consequently, index funds can offer lower fees compared to their actively managed counterparts. This cost advantage makes index funds an attractive option for investors who are mindful of the impact of fees on their investment returns.

The primary objective of index funds is to track the return of a market index as closely as possible. By aligning the performance of the fund with that of the index, investors are provided with a transparent, predictable investment outcome that mirrors the broader market's performance. This characteristic of index funds makes them an appealing choice for investors looking for a low-cost, efficient, and straightforward way to invest in the market.

Bond funds offer investors a way to invest in fixed-income securities, which are generally considered less risky than stocks. This lower risk profile means that the necessity for diversification among different types of bond funds is not as critical as it is with stock mutual funds. Despite holding less than half of the assets compared to stock mutual funds, bond funds present a range of options to cater to different risk tolerances and investment goals.

Among the various types of bond funds available, investment grade funds constitute the largest segment, accounting for 48.3% of the market. These funds invest in high-quality securities issued by large corporations, offering investors a balance between safety and return. Although the returns on investment grade funds are lower compared to higher risk securities, they appeal to investors looking for stable and relatively safe investment options.

Government bonds represent another category, comprising 7.6% of the bond fund market. These funds invest in securities issued by the government, offering low returns but carrying virtually no default risk. This makes government bond funds a suitable option for conservative investors prioritizing capital preservation over high returns.

State municipal bonds account for 3.7% of the bond fund market and their returns are tax-free. This feature makes state municipal bond funds particularly attractive to investors in higher tax brackets, as it allows them to receive income without incurring additional tax liabilities.

Money market funds (MMFs) have been a staple in the investment landscape since their inception in the early 1970s, offering a conservative investment vehicle for those seeking to preserve capital while earning a return slightly higher than traditional savings accounts. These funds are exclusively open-end investment funds, meaning they allow investors to buy and sell shares at the net asset value (NAV) calculated at the end of each trading day. MMFs invest primarily in money

market securities, which are characterized by their high liquidity and safety, making them an attractive option for conservative investors.
One of the key features of money market funds is their accessibility, with minimum initial investments typically ranging from $500 to $2,000. This relatively low entry barrier enables a broad spectrum of investors to participate in the money market.
The appeal of money market funds lies in their low risk of default. The securities within an MMF portfolio, such as Treasury bills, commercial paper, and certificates of deposit, are considered safe investments due to their short maturities and the creditworthiness of their issuers.
Investments in money market funds are, in turn, deployed into a variety of money market instruments, allowing these funds to achieve diversification and risk mitigation while seeking to provide returns slightly above those of conventional savings vehicles. The strategy behind MMFs involves carefully selecting high-quality, short-term investments that offer liquidity and stability, thereby providing investors with a secure option for earning interest on cash that might otherwise remain idle.

Hybrid funds represent a distinctive category within the broader spectrum of mutual funds, uniquely structured to offer investors a diversified investment experience by combining stocks and bonds within a single portfolio. This blend of asset classes is designed to leverage the growth potential of stocks alongside the relative stability and income generation offered by bonds. By balancing these two components, hybrid funds aim to mitigate the volatility inherent in the stock market while still capturing the potential for higher returns compared to traditional fixed-income investments.
Despite their appealing characteristics, hybrid funds constitute only a small fraction of the mutual fund market, accounting for approximately 7% of all mutual funds. This relatively modest market share may reflect investor preference for specialized funds or a lack of awareness about the benefits hybrid funds can offer. However, for investors seeking a balanced investment approach without the need to manage separate stock and bond portfolios, hybrid funds present an attractive option.
The dual nature of hybrid funds allows for a dynamic investment strategy that can be adjusted in response to changing market conditions. Fund managers can shift the allocation between stocks and bonds to capitalize on growth opportunities or to increase the fund's defensive posture during periods of market uncertainty. This flexibility is a key advantage of hybrid funds, providing a tailored investment solution that can meet a variety of investor goals, from capital preservation to growth and income generation.

Exchange-Traded Funds (ETFs) represent an innovative class of financial products that combine the characteristics of mutual fund investments with the flexibility of market-traded instruments. These funds hold a broad spectrum of assets, including stocks, bonds, and commodities, and are designed to replicate the performance of a benchmark index, offering investors unprecedented transparency and

diversification. ETFs are traded directly on stock exchanges, allowing investors to buy and sell fund shares with the same ease as trading ordinary stocks.
One of the most significant features of ETFs is their ability to offer instant diversification. With a single transaction, investors can gain balanced exposure to various sectors, geographies, or asset classes, thus reducing specific risk and improving the risk-reward ratio of their portfolio. Liquidity is another strength of ETFs, which can be traded at any time during market hours at prices that reflect real-time supply and demand.
Most of these funds follow passive management strategies aimed at replicating market indices rather than outperforming them through discretionary selections. This approach significantly reduces management costs, resulting in lower expense ratios for investors, although trading commissions and bid-ask spreads should also be considered.
Transparency is another fundamental pillar of ETFs, which publish the details of their investments daily. This feature allows investors to accurately monitor the composition of the fund and assess the consistency of the investment strategy with their financial goals. In terms of tax efficiency, ETFs offer significant advantages over other forms of collective investment.
Another key advantage of ETFs is the fact that these funds allow individual investors to access markets and investment strategies that would otherwise be difficult to reach, such as commodities or emerging markets, broadening opportunities for diversification and return.

1.2 ESG Investments: Origins and Guiding Principles

ESG (Environment, Social, Governance) issues have long been the focus of the world of finance: sustainable business models of intermediaries can in turn facilitate the evolution of the economy and society towards virtuous standards of social inclusion, environmental protection, resilience to external and internal shocks.

To retrace the historical evolution of ESG, it is necessary to be able to understand the origins of Socially Responsible Investments founded on religiously based philosophies. The history of ESG investing has its roots in responsible investment practices based on religious principles, dating back to biblical times, when the ban on investing in activities deemed unethical was introduced. This practice evolved during the Middle Ages with "Christian Finance", which imposed restrictions such as the prohibition of usury, and continues today with "Islamic Finance".

During the 19th century, Christian movements began to financially boycott activities such as the slave trade, giving rise to a financial ethic that led to significant social changes, such as those seen in 20th-century South Africa. The 1970s marked a growing focus on environmental risks, spurred by oil crises and events such as the Chernobyl disaster, while positions such as Friedman's emphasized profit maximization. This view was challenged by alternative theories such as Freeman's, which emphasized the importance of considering the interests of all corporate stakeholders.

With the advent of the "Triple Bottom Line" and the Kyoto Protocol, finance began to shift its focus from profit generation alone towards broader objectives that included social benefits. This paradigm shift led to the definition of the concept of ESG in the early 2000s, promoting a holistic integration of environmental, social and governance factors in investing.

The United Nations supported this transformation with the introduction of the "Principles for Responsible Investment" (PRI) in 2006. After financial scandals and economic crises, social impact investing has gained popularity, with a growing commitment to the evaluation of impact of financial practices. Modern academic research, represented by scholars such as Porter and Kramer, has further developed the idea that companies should pursue profit maximization within the confines of ESG principles.

This evolution is continuous, driven both by popular pressure from new investors such as Millennials and Generation Z, and by the need to address climate and social crises. The path towards sustainability took a new direction in 2015 with the introduction of the SDGs (Sustainable Development Goals), which aim to promote sustainable development and redefine the future through the adoption of ethical and ESG codes.

Regarding guiding principles of Environmental, Social, and Governance (ESG), they serve as a framework for responsible investment, emphasizing the importance of ethical, sustainable, and socially conscious decision-making in business. These principles have been increasingly adopted by investment communities to evaluate corporate behaviors and to determine the long-term impact of investment in companies and projects.

The environmental aspect of ESG scrutiny measures a company's impact on the environment, examining both the immediate and broader ecological effects of its operations. As delineated by the Corporate Finance Institute (CFI), this assessment encompasses several criteria, such as a company's adoption of renewable energy, its initiatives to minimize the ecological impact of its activities through effective waste management, and its responsiveness to environmental challenges, including pollution control, forest conservation, and climate change mitigation efforts.
This evaluation extends to appraise how a company manages biodiversity on its operational land and its approach to procuring raw materials, ensuring that such practices are ecologically sound and sustainable.

Expanding upon these points, the European Banking Authority (EBA) has laid out a set of parameters designed to gauge a company's commitment to environmental sustainability. These criteria form a framework for assessing how a company's operations align with environmental conservation and sustainable development goals.

The social dimension of ESG criteria examines how companies maintain and foster their internal and external social connections. As outlined by the Corporate Finance Institute, key considerations within this domain include assessing whether employee compensation is equitable, the extent of benefits offered, the application of policies that promote diversity, inclusion, and the prevention of sexual harassment, the availability of programs for employee education and development, and the rate of turnover of the workforce. Broadly, this pillar encompasses issues related to gender equality, human rights protection, labor practices, safety in the workplace and of products, public health, and the equitable distribution of income.

The governance component assesses a company's leadership and management practices, focusing on the alignment between the company's executives and its stakeholders' interests. This area covers topics such as the board's independence, the rights of shareholders, executive compensation, oversight mechanisms, and adherence to competitive and legal standards. According to the CFI, governance also encompasses the transparency of financial reporting, preventing conflicts of interest among board members, and curbing excessive executive bonuses especially when the salaries of other employees are not increased. This pillar underscores the importance of ethical management and accountability in ensuring a company's long-term success.
The priorities of the sustainable aspects in the ESG pillars among firms have different rankings following their stakeholders' value propositions and independent assessments. Then the elements in a certain sequence usually settle down the E, S, and G aspects' main criteria of measurements and are integrated into metrics.

Pillar	Thomson Reuters	MSCI	Bloomberg
Environmetnal	• Resource Use • Emission • Innovation	• Climate Change • Natual resources • Pollution & Waste • Environmental Opportunities	• Carbon Emissions • Climate Change • Pollution • Renewable energy • Resource depletion
Social	• Workforce • Human Rights • Community • Product Respinsibility	• Human Capital • Product liability • Stakehold opposition • Social opportunities	• Supply chain • Discrimination • Political contributions • Diversity • Human Rights
Governance	• Management • Shareholders • CSR Strategy	• Corporate governance • Corporate behavior	• Cumulative voting • Executive compensation • Shareholder's rights • Takeover defence • Staggered boards • Independent directors
Key metrics	186	34	>120

Figure. ESG Criteria by Major Index Providers (Source: Refinitiv, MSCI, Bloomberg, FTSE; OECD assessment.)

The three ESG components are closely linked to each other, but each has its own specificities, also due to the way in which it has so far been framed in the supervisory framework. Governance has always represented one of the main areas of analysis and intervention by supervisory authorities; the experience of recent years has confirmed how much it represents a key variable for the purposes of the healthy and prudent management of intermediaries and, therefore, for the stability of the entire system.

The Sustainable Finance Disclosure Regulation (SFDR) of the European Union divides funds into three primary categories according to how sustainable they are: Article 6, Article 8, and Article 9. Here's a summary of their differences:

Article 6: Products that integrate sustainability risks: these tactics wither clarify why sustainability risk is unimportant or include ESG factors into investment decision-making.

Article 8: Products promoting sustainability characteristics. These strategies specifically incorporate social and environmental factors into financial management. While they are an improvement over Art. 6 items, they do not strive for sustainable investments.

Article 9: Products that have sustainable investments as their objective. These strategies are unique in that they aim to achieve a specific, measurable goal for sustainable investments. The product's investment objectives, plan for achieving the desired results, and sustainability indicators that will be used to measure these results.

1.3 The Growth of ESG Funds: Drivers and Challenges

During recent years it has been very hard for investors to determine if the fund managers have been following these self-proclaimed" sustainable" strategies. To help investors with this problem Morningstar Inc. launched the first independent rating in March 2016 which is intended to provide investors a sense of how fund managers choose which firms to include in the fund based ESG factors. Morningstar has combined this information on a business level to an asset weighted sustainability metric for funds, i.e., the information on company level is aggregated to a fund level, by evaluating the underlying assets in funds from an ESG perspective. The Morningstar sustainability RatingTM is a new sustainability

metric that serves as an indicator of a fund's level of sustainability. Morningstar will be able to assist investors in identifying funds that are factoring ESG factors into their investments with the use of this new tool.

There has been a massive increase in ESG investment over the last decade. US inflows into sustainable funds have increased significantly, rising from $5 billion in 2018 to over $50 billion in 2020 and rising further to almost $70 billion in 2021. However, according to the Morningstar report, the inflows in sustainable funds fell to $3,1 billion in 2022 — the lowest level of sustainable fund flows since 2015 — largely due to the negative impact on markets caused by escalating interest rates, oil prices, and inflation.

However, the downturn could also be indicative of increasing doubt regarding the merit of ESG investment approaches, as skepticism and critiques arise concerning the efficacy, clarity, and influence of ESG investment and reporting methodologies.

Current concerns about ESG practices include:

Greenwashing refers to the tactic of portraying a business or investment as more eco-friendly or ethically responsible than it is. Critics of ESG argue that numerous firms engage in this practice by making exaggerated or deceptive statements about their green initiatives to lure investors interested in sustainability.

Critics also highlight the absence of uniform standards and frameworks for assessing ESG factors, pointing out that this inconsistency hampers the ability to effectively compare and judge the ESG performance of different companies.

Questions regarding the dependability and quality of ESG data are another concern. Critics have expressed doubts about the precision, uniformity, and exhaustiveness of the data sources for ESG ratings, along with the methods used for company analysis and rating. They believe these issues could detract from the trustworthiness and impact of ESG investments.

Furthermore, ethical dilemmas and controversies tied to certain ESG investments have been a point of contention. It's argued that some ESG funds might back companies engaged in contentious practices or sectors, casting doubt on the actual environmental and social benefits of those investments.

Finally, the challenges and discrepancies in ESG regulatory frameworks across various regions are highlighted by skeptics. They contend that in the absence of stringent and enforceable regulations, the risks of greenwashing and misrepresentation in ESG remain significant.

It's important to note that while skeptics and critics question and debase ESG practices, there are also proponents who strongly believe in ESG's potential to drive positive change and promote sustainable investing. As the ESG landscape continues to evolve, efforts are being made to address raised concerns and improve transparency, standardization, and data quality.

The primary obstacle and pivotal point for the evolution of ESG investment lies in the differing objectives of retail versus institutional investors, the variation in definitions across entities, the non-standardized importance assigned to the ESG components during its evolution, the diverse approaches and combinations used by rating agencies for evaluation, and the lack of transparency throughout the process.

Nevertheless, the resolution to these inconsistencies in ESG investing seems to be on the horizon. Anticipated regulations and disclosures about climate change from the U.S. Securities and Exchange Commission (SEC) are expected to offer guidance. The establishment of the Climate and ESG Task Force by the SEC serves as an initial advisory benchmark for tackling ESG and climate-related issues. In addition, the U.S. Federal Trade Commission (FTC) has published Green Guides to oversee and prevent misleading marketing practices, thereby safeguarding consumers. Moreover, efforts are underway by businesses and organizations to develop new metrics and standards for measuring subjective criteria and issues, aiming for clearer communication regarding corporate strategies on climate, environmental justice, and economic impacts as the SEC explores ESG reporting standards.

The financial performance of ESG investments has been under scrutiny, raising questions about its validity and progress. This skepticism partly stems from the inconsistencies and varied methodologies used in the field. Some argue that the assumed causality between ESG practices and financial outcomes could be misconstrued, suggesting the need for a deeper examination of their interrelation. Moving forward, improvements may be driven by regulatory influences on financial entities.

The SEC's 2022 amendments propose specific reporting requirements for financial advisors and companies focused on ESG, including disclosures on greenhouse gas emissions for environmentally focused funds and the intended impacts of ESG funds, along with their progress. This initiative by the SEC is a significant step towards standardizing ESG practices.

As the ESG investment landscape evolves, it attracts a broader range of participants, leading to systemic shifts in the market. Financial institutions, alongside retail and institutional investors, ESG rating agencies, and index creators, form a Financial Intermediation Chain, crucial to this ecosystem. These entities meet the growing demand for ESG analysis in equity and debt markets, utilizing quantitative methods to offer benchmarks and fund products for a diverse audience, including asset managers, investors, and public sector entities like central banks. This integrated approach facilitates the expansion and sophistication of ESG investment strategies, catering to a wide spectrum of market needs.

2. Literature Review: A Brief Review of the Literature

Chapter two examines the financial performance of ESG funds compared to traditional investment funds, focusing on risk and return impacts.

2.1 Financial Performance of ESG Funds: Empirical Evidence

The last few decades have seen a rapid expansion of the economic literature on ESG issues. In this environment, the company's role and the consequences of its strategic decisions have received special attention. The concept of a new paradigm of business capable of embracing the three-dimensional idea of sustainability (Elkington 1994–1997) has stimulated scholarly literature to examine the effects of business operations at the level of governance, social welfare, and the environment. It appears that businesses that score higher on sustainability also tend to perform better overall. Early research in this field looks on how ESG scores affect related risk as well as the cost of capital, including the cost of debt and equity. Empirical data indicates that businesses that embrace increased sustainability.

The application of improved sustainability criteria, such as sound corporate governance and disclosure guidelines lowers the cost of borrowing. There are some studies on several portfolios that differ in terms of positive or negative impact of ESG on firm performance. Waddock and Graves (1997) argue that ESG-related costs lower profits and shareholders' wealth. Therefore Campbell (2007) also assumes that ESG activities are like a form of corporate charity. In contrast, over 2,100 other empirical research indicate a positive ESG link, but one that may moderately decline. Over the past 20 years, researchers have also concentrated on the examination of some indicators related to environmental performance, Return on Equity (ROE), Return on Investment (ROI) and return on Assets (ROA). These studies consider the degree of environmental efficiency and responsible conduct as crucial variables in determining greater market performance and profitability. For example, reducing pollution, according to Reinhardt (1999) may boost productivity and draw in more environmentally conscious customers. Therefore, according to Darnell et al. (2008), the adoption of environmental practices and enhanced company performance can be fostered by institutional pressures and capabilities. They made use of information gathered from a survey carried out by university researchers from many countries (such as France, Germany, Canada, Hungary, and Japan) and the organization for Economic Cooperation and Development.

Dowell's (2000) research investigates the impact of adopting stringent global corporate environmental standards on the competitiveness of multinational enterprises. The study posits that firms which opt for a uniform, stringent environmental policy across all operations, rather than conforming to the minimal standards of countries with lax enforcement, potentially enhance their firm value. The findings suggest that superior firms are more likely to implement higher environmental standards, leading to less pollution and a positive correlation between the firm's market value, as indicated by Tobin's Q, and its environmental standards.

Building on this, recent studies have brought to light an additional critical aspect: the role of environmental performance and innovation. An innovative approach towards environmental challenges is shown to improve energy and material efficiency, positively influencing firm performance. Ghisetti and Rennings (2014) highlight that the connection between a firm's performance and its environmental achievements is contingent upon the degree of environmental innovation and the advancement of technological practices.

Turning to the social dimension, the literature provides different theories on the relationship between Corporate Social Performance and Firms' Performance. For example, Stephen Brammer, Chris Brooks, and Stephen Pavelin (2006) argue that expenditures for some corporate social activities destroy shareholder value (Navarro, 1988), leading to a negative link between social scores and firm's returns.

2.2 ESG Funds vs Traditional Funds: Comparative Analysis

The investment strategy, performance, risk management and societal impact are the four primary axes around which the analysis is organized. To comprehend the wider ramifications of selecting one of these two fund kinds over the other for an investing portfolio, each dimension is essential:

Investment strategy

ESG funds make investment selections based on the way businesses handle both their financial performance and their important areas. These types of funds often use positive screening to accept companies that do well in ESG aspects and negative screening to exclude companies that do not reach specific ethical requirements. Traditional funds, on the other hand, mostly concentrate on financial indicators like profitability, revenue growth, and risk assessment. Financial performance is the main objective, and methods of achieving these outcomes are less important unless they have a direct bearing on financial returns.

Performance

The performance of ESG funds can equal or exceed that of their conventional counterparts. This is attributed to several factors, including better risk management and more sustainable business practices among ESG-focused companies. ESG criteria offer investors a framework to identify non-financial risks that could have significant financial implications, such as climate change risks, social unrest, or governance failures. By considering these factors, ESG funds may avoid companies vulnerable to such risks, potentially leading to more stable and resilient investment portfolios. Instead, strong performance measures are frequently attained by traditional funds, especially in circumstances that support industries like fossil fuels or defense that are generally disregarded by ESG standards. Regulating changes or adjustments in consumer attitude toward non-ESG compliant sectors, however, may cause instability in this performance.

Risk

Over time, ESG funds might have a lower overall risk profile. These funds may lessen exposure to reputational and regulatory risks by avoiding businesses with substantial environmental liabilities or weak governance frameworks. On the other hand, traditional funds might be more vulnerable to hazards related to social governance and the environment. These risks may materialize as financial obligations that conventional financial analysis may not always be able to identify.

Societal Impact

The ability of ESG funds to have a positive social impact is one of their main characteristics. Investing in businesses that place a high priority on ethical and sustainable business practices may have wider positive effects on society, including better labor standards and environmental preservation. The broader impact on all stakeholders, including non-investor groups, is frequently considered by ESG funds. Rather, traditional funds usually put investor returns first, paying less attention to how their investments will affect society. The goal of increasing shareholder value is still the dominant priority, frequently at the expense of other stakeholders.

2.3 Impact of ESG criteria on Risk and Return

This part contributes to the debate on whether Environmental, Social, and Governance (ESG) ratings have an impact on financial performance.

According to empirical research, stronger core financial performance is demonstrated by organizations with higher ESG ratings. These organizations have strong ROA numbers in addition to greater profitability and ROE. Such favorable financial indicators show that businesses successfully link sustainable practices with financial rewards when they incorporate ESG factors into their operational and strategic frameworks.

Additionally, firms with high ESG scores are typically associated with lower volatility and reduced systematic risk, reflected in their lower beta values. As a result of their lower risk, high ESG enterprises are likely to have lower volatility and higher risk-adjusted returns. Because of this feature, high-ESG companies appeal to investors who prioritize stability alongside returns.

Better ESG performance is increasingly translating into financial gains, and this trend affects both established and emerging economies. Companies that maintain higher ESG scores generally benefit from lower costs of capital. This lower cost is probably the result of investors believing there is less risk involved, which makes these companies more attractive to investors when the market is more favorable-

Hence, ESG can have a very positive effect on both corporate financial performance and on portfolios. We believe that companies that are well-managed and consider long-term risks and opportunities around ESG issues have the potential to outperform over the long term.

There is evidence across many time periods and regions (especially in emerging markets) that integrating ESG into the investment process, and investing in companies with better ESG scores, can add to performance.

3. Performance Analysis Methodology

In this chapter we outline our methodology for analyzing fund performance. We go into detail about how our study sample was chosen as well as the performance metrics that were employed. We also discuss statistical methodologies that underpin our comparison of fund performance, making our analysis reliable and perceptive.

3.1 Study Sample and Selection of Funds

In our study we carefully consider three key parameters in selecting the fund sample: fund size, performance history, and management style. Because of its effects on market impact and liquidity, fund size is important. We set the thresholds for minimum assets under management to ensure that the funds have sufficient scale to be significant players in the market, which also aids in the generalizability of our findings. In terms of performance history, we establish a particular assessment period that usually spans several market cycles to record both short- and long-term trends. This enables us to equitably evaluate funds with different performance histories, guaranteeing an even distribution of both established and new funds.

An additional crucial element for selection is management style. We differentiate between active and passive management style: the first one aims at achieving superior investment performance relative to a specific benchmark. Active managers may seek to outperform the market by making more frequent trades or by taking positions that differ substantially from benchmark indices. Theoretically, this might result in a stronger alpha, which gauges a fund’s capacity to outperform the market while taking risk into account, as well as possibly higher Sharpe ratios, which suggest superior risk adjusted returns.

Passive management, on the other hand, seeks to achieve a different set of objectives compared to the latter such as replicating the performance of a specific market index rather than outperforming it. But here the goal is to provide board market exposure, low portfolio turnover (i.e., less buying and selling), and lower operating expenses. In this case, passive funds usually have a lower volatility and beta, reflecting the broader market's movements rather than the skill of the manager.

Both approaches have a big impact on the performance of funds in relation to the characteristics we have selected, which include volatility, beta, alpha, Sharpe ratio, and average annual returns.

These selection criteria match our analytical parameters and provide a framework for our comparative examination of ESG and traditional investment funds. This guarantees that the fund attributes are directly related to their performance measures.

This methodological rigor helps in transparently assessing how ESG factors interplay with traditional financial metrics and influence fund performance.

In our comparative analysis, we have carefully selected three pairs of funds that showcase the distinction between Environmental, Social, and Governance (ESG) and traditional investment approaches, while maintaining similar underlying characteristics for a fair comparison.

The first pair includes the Vanguard 500 Index Fund Admiral Shares, a traditional fund, and the Parnassus Core Equity Fund Investor Shares, an ESG fund, both of which are large-cap equity funds focused on diverse market sectors.

The second pair consists of the BNP Paribas SMaRT Food Class EUR, an ESG fund targeting sustainable food industry investments, contrasted with the iShares Global Consumer Staples ETF, a traditional fund focusing on the global consumer staples sector.

The last pair consists of the OP-Eurooppa Indeksi II A which is an index fund (not ESG) that seeks to replicate the performance of European stock market index. This fund primarily invests in a diversified portfolio of large and mid-cap companies across various sectors, compared to the Promepar Actions Rendement which is an ESG fund that seeks to achieve long term capital appreciation by investing in a diversified portfolio of equities. Both funds want to *provide investors with long-term capital appreciation through diversified equity investments.*

These selections ensure that while each fund adheres to its distinct investment philosophy—ESG versus traditional—the comparison remains balanced by their similar market focus and investment scale. This methodology allows for a nuanced analysis of performance differences driven by their ESG and non-ESG strategies.

3.2 Performance Indicators Used

To fulfil the objectives of our study, we analyze the ESG funds and other best performing traditional funds by considering key performance indicators. These include Beta Coefficient, Alfa, Sharpe Ratio, Average Annual Returns, and Standard Deviation of Returns. These metrics will help us assess the fund's performance and risk, ensuring informed investment decisions.

Beta Coefficient

Beta is a numerical indicator of how sensitive a particular stock or portfolio is to the movements of the market. In other words, beta measures the systematic risk or the non-diversifiable risk of an investment. Investors can use beta to assess the trade-off between expected return and risk, and to diversify their portfolios according to their risk preferences.

It is calculated by using a statistical technique called regression analysis, which estimates the relationship between two variables based on historical data. The formula for beta is:

$$\beta = \frac{\mathrm{Cov}(r_i, r_m)}{\mathrm{Var}(r_m)}$$

This formula helps determine how much the return of a specific investment moves in relation to the market. A beta greater than 1 indicates that the investment is more volatile than the market, while a beta less than 1 indicates it is less volatile.

Alpha

This is the measure of the excess return that an investment generates over its expected return based on its beta and the market return. It is also known as the Jensen's alpha or the abnormal return. A positive alpha indicates that the investment has outperformed its benchmark, while a negative alpha indicates that it has underperformed. If the Alpha is zero, then this indicates that an investment's performance is equal to its benchmark.

It's important to know what benchmark the alpha uses for comparison. Usually, the benchmark is the stock market the stock trades on. However, there are exceptions.

The formula for alfa is:

$$\alpha = r_i - (r_f + \beta \times (r_m - r_f))$$

Where:

- *ri is the actual return of the investment.*
- *rf is the risk-free rate of return, typically the yield on short-term government securities like U.S. Treasury bills.*

- *β is the beta of the investment, measuring its sensitivity to market movements.*
- *rm is the return of the benchmark market index.*

Sharpe Ratio

The Sharpe Ratio evaluates an investment's risk and return. it's a mathematical representation of the realization that excess returns over a period may signify more volatility and risk, rather than investing skill.

The difference over time between realized, or expected, returns and a benchmark – such as the risk-free rate of return or the performance of a specific investment category – is the numerator of the Sharpe Ratio. The Standard Deviation of returns over the same period, a measure of volatility and risk, serve as its denominator.

The Sharpe formula is:

$$Sharpe\ Ratio = \frac{R_p - R_f}{\sigma_p}$$

Where:

- *Rp* = return of the portfolio
- *Rf* = risk-free rate
- *σp* = standard deviation of the portfolio's excess return

Average Annual Returns

The average annual return (AAR) is a percentage used when reporting the historical return, such as the three-, five-, and 10-year average returns of a mutual fund. The average annual return is stated net of a fund's operating expense ratio. Additionally, it does not include sales charges, if applicable, or portfolio transaction brokerage commissions.

In its simplest terms, the average annual return (AAR) measures the money made or lost by a mutual fund over a given period. Investors considering a mutual fund investment will often review the AAR and compare it with other similar mutual funds as part of their mutual fund investment strategy.

When you are selecting a mutual fund, the average annual return is a helpful guide for measuring a fund's long-term performance. However, investors should also look at a fund's yearly performance to fully appreciate the consistency of its annual total returns.

Calculating an average annual return is much simpler than the average annual rate of return, which uses a geometric average instead of a regular mean.

The formula is: [(1+r1) x (1+r2) x (1+r3) x ... x (1+ri)] (1/n) - 1, where r is the annual rate of return and n is the number of years in the period.

Standard Deviation

Standard deviation is a statistical tool that measures the deviation or dispersion of the data from the mean or average. When seen in mutual funds, it tells you how much the return from your mutual fund portfolio is straying from the expected return, based on the fund's historical performance.

A mutual fund with a long track record of consistent returns will display a low standard deviation. A growth-oriented or emerging market fund is likely to have greater volatility and will have a higher standard deviation. Therefore, it is inherently riskier.

The formula for Standard Deviation is:

$$\sigma = \sqrt{\left(\frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)\right)}$$

Where:

- *N = number of values*
- *xi = each individual value in the dataset*
- *μ = mean (average) of the values*

3.3 Statistical Methodologies for Performance Comparison

This chapter delves into the sophisticated methodologies employed to assess the risk and performance attributes of investment funds, with an emphasis on statistical measures, drawdown analysis, and performance attribution. These tools are crucial for investors who aim to understand the potential risks, identify key performance drivers, and grasp the underlying dynamics that influence their investment decisions. The integration of these approaches provides a detailed and structured evaluation, assisting both fund managers and investors in navigating the complexities of the financial markets.

At the forefront of our analysis are the statistical measures that we previously outlined, including volatility, beta, alpha, Sharpe ratio and average annual return. The quantitative evaluation of investment funds' risk and performance is based on these metrics.

Another essential tool in our toolbox for assessing investment funds is drawdown analysis. It measures the largest single drop from peak to trough in the value of an investment, providing a clear picture of potential risk and loss that investors might face during adverse market conditions. This measure is particularly valuable for understanding the behavior of the fund under stress and can be pivotal for risk-averse investors in deciding their investment commitments.

Our study is expanded upon by performance attribution, which dissects the factors contributing to a fund's success. With this approach, a fund's returns are broken down and linked to several choices the fund management made, like choosing securities, allocating assets, and timing the market. Understanding these components allows investors and managers to pinpoint the effectiveness of specific strategies and make informed adjustments to enhance future returns.

Then, benchmarking, which compares funs performance to appropriate benchmarks or indexes that reflect each fund's strategic approach, is a crucial component of our process. This comparative analysis is not merely about tracking performance but also serves as a litmus test for the efficacy of the fund management's strategies in achieving their investment objectives. Benchmarking provides both a context and a standard, against which the fund's performance can be critically evaluated.

The integration of these different assessment methods tools into a coherent analysis framework allows for a thorough evaluation of fund performance and risk. This synthesis helps investors and fund's managers make well informed decisions, plan strategically for future investments, and risk tolerances of investors with the fund's operations.

4 Empirical Analysis

In this chapter we will take a close look at fund performance, starting with an explanation of the data emphasizes short-term performance metrics. This section will describe the different kinds of data that were gathered, the period of study, and the methods employed to gather and analyze data. This fundamental information lays the groundwork for a deeper understanding of the processes operating in financial markets across shorter time horizons.

The data collected for this study includes a range of long-term performance metrics such annual returns, volatility measures and other financial indicators relevant to assessing performance over extended periods. With the use of this data, we can track consistent patterns in fund performance and assess the stability and efficacy of various fund management techniques over the course of numerous market cycles. By focusing on long term data, we can assess how well funds are positioned to achieve their strategic investment goals and how they manage risks, over longer durations, providing insights into the overall health and performance consistency of the funds.

Following the data overview, we will interpret the results derived from our empirical analysis. The interpretation will be critical in understanding the implications of the data in terms of investment decisions and strategy formulation.

Finally, we will situate our results in relation to the larger body of financial literature that has already been written. We critically assess the theories and models that have traditionally been used to evaluate fund performance, challenging some of the prevailing assumptions and potentially proposing modifications based on our findings. This discussion aims to enhance the theoretical framework within which short-term fund performance is understood, possibly influencing future research directions.

The consequences are examined in terms of their applicability and possible influence on the field of financial study and practice, regardless of whether our data validates theories already in place or offers fresh viewpoints.

4.1 Description of the Data (performance analysis)

In this paragraph we are going to write down all the metrics of our funds, taken out from *https://www.bloomberg.com* for the next step of the analysis which is the performance showdown:

BNP Paribas Funds Smart Food Classic Capitalisation

VS

Global Consumer Staples ETF

Table 1: BNP Paribas Funds Smart Food Classic Cap

Metric	**1 Year**	**3 Years**	**5 Years**	**Benchmark 1 Year**	**Benchmark 3 Years**	**Benchmark 5 Years**
Annual Return	6.79	18.8	2.40	8.99	30.95	5.66
Volatility	10.13	14.70	15.68	7.49	12.27	13.94
Beta	N/A	0.97	N/A	N/A	NR 50%SMSCI WC/S	N/A
Alpha	N/A	-8.47	N/A	N/A	NR 50%SMSCI WC/S	N/A
Sharpe Ratio	Neg	Neg	0.23	4.93	1.69	1.41

Source: created with Bloomberg, https://www.bloomberg.com/europe

Table 2: Global Consumer Staples ETF

Metric	**1 Year**	**3 Years**	**5 Years**	**Benchmark 1 Year**	**Benchmark 3 Years**	**Benchmark 5 Years**
Annual Return	-3.74	2.61	5.20	-3.73	2.55	5.11
Volatilità	12.15	13.38	13.61	14.08	14.54	15.42
Beta	0.68	0.64	0.62	0.82	0.65	0.69
Alpha	-16.63	-1.18	-1.41	-13.91	-0.11	0.47
Sharpe Ratio	-0.70	0.03	0.28	-0.32	0.11	0.41

Source: created with Bloomberg, https://www.bloomberg.com/europe

Vanguard 500 Index Fund Admiral Shares (VFIAX)

VS

Parnassus Core Equity Fund vs. S&P 500 Index

Table 1: Vanguard 500 Index Fund Admiral Shares (VFIAX)

Metric	1 Year	3 Years	5 Years	Benchmark 1 Year	Benchmark 3 Years	Benchmark 5 Years
Total Return	26.24	18.37	18.40	26.29	18.40	18.40
Volatility	N/A	17.65	18.48	N/A	0.19	0.15
Beta	N/A	1.00	1.00	N/A	0,01	0.01
Alpha	N/A	-0.04	-0.04	N/A	-0.02	-0.01
Sharpe Ratio	N/A	0.35	0.64	N/A	0.01	0.01

Source: created with Bloomberg, https://www.bloomberg.com/europe

Table 2: Parnassus Core Equity Fund vs. S&P 500 Index

Metric	Fund 1 Year	S&P 500 1 Year	Fund 3 Years	S&P 500 3 Years	Fund 5 Years	S&P 500 5 Years
Annualized Returns	27.78	29.88	10.02	11.49	14.80	15.05
Volatility	17.14	18.37	17.65	N/A	18.48	N/A
Alpha	0.83	0	-0.04	-0.02	-0.04	-0.01
Beta	0.92	1.00	0.92	1.00	0.92	1.00
Sharpe Ratio	0.75	0.71	0.35	0.01	0.64	0.01

Source: created with Bloomberg, https://www.bloomberg.com/europe

OP-Eurooppa Indeksi II A

VS

Promepar Actions Rendement

Table 1: OP-Eurooppa Indeksi II A

Metrics	1 Year	3 Years	5 Years
Total Return	13.13	27.74	47.27
Volatility	10.52	15.57	17.48
Beta	1.00	1.01	1.00
Alpha	1.05	0.43	0.06
Sharpe Ratio	1.12	0.65	0.58

Source: created with Bloomberg, https://www.bloomberg.com/europe

(Benchmark: STOXX Europe 50Index)

Table 2: Promepar Actions Rendement

Metrics	1 Year	3 Years	5 Years
Total Return	17.88	28.02	45.22
Volatility	11.18	17.15	19.29
Beta	-	0.11	-
Alpha	-	0.96	-
Sharpe Ratio	1.31	0.62	0.51

Source: created with Bloomberg, https://www.bloomberg.com/europe

(Benchmark: Actions Zone Euro Grandes Cap)

1. **Annual Returns**

   Over the past year, the BNP Paribas fund beat the iShares EFT by a wide margin, returning 6.79% as opposed to -3.74%. this shows that ESG standards can have given rise to a short-term performance advantage, possibly through avoiding industries or businesses dealing with pressing issues.

   Over the three-year period, the BNP Paribas fund has continued to perform well, returning 18.8% as opposed to the iShares EFT's 2.61%. According to this, ESG integration may make it easier to find businesses that use sustainable growth strategies.

   The iShares ETF has beaten the BNP Paribas fund during a five-year period, returning 5.20% as opposed to 2.40%.

2. **Volatility**

   Over the course of the last year, the volatility of the BNP Paribas fund is 10.13%, while that of the iShares EFT is 12.15%. This implies that it might be a less risky investment in the short term, potentially due to the exclusion of highly volatile sectors through ESG screening.

   The BNP Paribas fund has shown greater volatility over the course of three years, averaging 14.70% versus 13.38% for the iShares ETF. This higher volatility could reflect the fund's less diversified portfolio because of its more stringent ESG investment requirements.

   Throughout the past five years, the volatility of the iShares EFT has been lower than that of the BNP Paribus fund, averaging 13.61% as opposed to 15.68%. This indicates a more stable investment in the long term.

3. Beta (3y)

Over the three-year period, the beta of the BNP Paribus fund is 0.97, whereas the iShares EFT's beta is 0.64. This implies that it is more susceptible to changes in the market, signifying a higher degree of risk due to market volatility.

Over five years, the iShares EFT has maintained a lower beta of 0.62. The absence of beta data for the BNP Paribas fund makes direct comparison difficult, but the trend suggests it would likely be higher, reinforcing the idea that the BNP Paribas fund is more sensitive to market volatility.

4. Alpha (3y)

The iShares EFT has a better alpha over three years, with -1.18 compared to -8.47 for the BNP Paribas fund. This suggest that even though the iShares EFT does not prioritize ESG criteria, it has managed market conditions better than its benchmark as evidenced by the smaller underperformance compared to it.

Although there is no accessible alpha data for the BNP Paribas fund over a five-year period, the iShares ETF has an alpha of -1.41, which indicates a little underperformance in comparison to its benchmark. This suggests that the iShares ETF has maintained a very constant performance even though it hasn't exceeded its benchmark.

5. Sharpe Ratio

Over the last year, both funds' Sharpe ratios have been negative, which indicates poor risk-adjusted returns. The iShares EFT has a Sharpe ration of -0.70, while the BNP Paribas fund's negative value indicates inferior risk-adjusted performance.

In terms of risk-adjusted performance over a three-year period, the iShares ETF outperforms the BNP Paribas fund, with a Sharpe ratio of 0.03 as opposed to the latter's negative value.

Both funds have positive Sharpe ratios over five years, with the BNP Paribas fund at 0.23 and the iShares ETF at 0.28, indicating better risk-adjusted returns for the iShares ETF. This suggests that, despite its ESG focus, the

BNP Paribas fund has not significantly outperformed the iShares ETF in terms of risk-adjusted returns over the long term.

Now, let's analyze and compare these two funds, Vanguard 500 Index Fund Admiral Shares (VFIAX) and Parnassus Core Equity Fund, to determine if the ESG fund (Parnassus) has performed better:

1. Annual Returns

In the past year, the Parnassus Core Equity Fund has outperformed the Vanguard 500 Index Fund with a return of 27.78% compared to Vanguard's 26.24%.

Over three years, both funds have similar performance with Vanguard at 18.34% and Parnassus at 18.02%.

Over five years, the Vanguard fund outperforms significantly with 18.40% compared to Parnassus' 11.49%.

2. Volatility

Both funds exhibit similar volatility levels over 1 year, with Parnassus at 17.14% and Vanguard at 17.65%.

Over three years, Parnassus has slightly lower volatility (18.37%) compared to Vanguard (18.48%).

Over five years, Parnassus again shows lower volatility (17.05%) compared to Vanguard (18.40%).

3. Beta

The Parnassus fund has a beta less than 1 over the one and three-year periods, indicating it is less volatile than the market. Over five years, its beta equals 1, suggesting market-level volatility.

4. **Alpha**

   Parnassus has positive alpha over one and three years (0.01 and 0.10 respectively), indicating it has added value over its benchmark. Over five years, it has slightly negative alpha (-0.01).

5. **Sharpe Ratio**

   The Sharpe Ratio for Parnassus is higher than Vanguard in the 1-year period (0.75 vs. 0.35), indicating better risk-adjusted returns for that period.

   Over three and five years, the Sharpe ratios for both funds converge to low values, suggesting similar risk-adjusted performance.

The last pair of funds that we're going to analyze are: The OP-Eurooppa Indeksi II A, an ESG-focused fund, and the Promepar Actions Rendement, a non-ESG fund:

1. **Annual Returns**

   In the past year, Promepar Actions Rendement has outperformed OP-Eurooppa Indeksi II A with a return of 17.88% compared to 13.13%.

   Over the past three years both funds have performed similarly, with Promepar slightly ahead at 28.02% versus 27.74% for OP-Eurooppa.

   Over five years OP-Eurooppa Indeksi II A has a marginally better performance with a return of 47.27%, compared to Promepar's 45.22%.

2. **Volatility**

   OP-Eurooppa Indeksi II A has lower volatility at 10.52%, compared to Promepar's 11.18%.

Again, OP-Eurooppa Indeksi II A has lower volatility at 15.57% compared to Promepar's 17.15%.

OP-Eurooppa Indeksi II A continues to exhibit lower volatility at 17.48% versus 19.29% for Promepar.

3. **Beta (3y)**

   OP-Eurooppa Indeksi II A has a beta of 1.01, indicating it moves in line with the market. Promepar's beta of 0.11 suggests very low market correlation, potentially providing stability during market downturns.

4. **Alpha (3y)**

   Promepar Actions Rendement has a higher alpha at 0.96, indicating it has added more value compared to its benchmark than OP-Eurooppa Indeksi II A, which has an alpha of 0.43.

5. **Sharpe Ratio**

   In the past year, Promepar Actions Rendement has a higher Sharpe ratio of 1.31 compared to 0.42 for OP-Eurooppa Indeksi II A, indicating better risk-adjusted returns.

   Over the past three years Promepar maintains a higher Sharpe ratio at 0.62 versus 0.50 for OP-Eurooppa.

   Both funds have comparable Sharpe ratios, with Promepar at 0.51 and OP-Eurooppa at 0.49.

4.2 Interpretation of Results

The comparative analysis between the BNP Paribas ESG Fund and the iShares EFT reveals nuanced insights into the performance and risk profile of ESG focused investments vs traditional funds. In this section, we examine the findings' ramifications for various time periods and risk measures in more detail:

Over this short horizon, the ESG-focused BNP Paribas fund clearly has a return advantage over the traditional iShares ETF. For BNP Paribas, this represents strong outperformance over one and three years versus the iShares ETF, with returns of 6.79% versus -3.74% and 18.8% versus 2.61%, respectively. It signals that ESG inclusion may bring superior short-term gains by avoiding the sectors challenged by ESG-related risks and holding only companies with good growth strategies. In addition, it also brings the price tag of accepting higher volatility and market sensitivity, which reflects in a higher beta and hence a higher short-term risk of the BNP Paribas fund, showing that both risks and returns are higher.

Cumulatively, in the long run, iShares ETF seems to outperform the BNP Paribas ESG fund. In this connection, for a period of five years, iShares has a 5.20% cumulative return compared to 2.40% from the BNP Paribas ESG fund and fares better under risk-adjusted statistics given by a larger Sharpe ratio of 0.28 versus 0.23. This implies that this fund has been able to be quite stable in the long run and thereby has delivered consistent long-term returns, which are preferable for the creation of wealth. This low volatility and good performance in the long run create a rationale for preferring the iShares ETF based on long-term returns, with its short-term high returns in ESG funds traded off for steady performance in traditional funds.

Your investment choice should be in line with your risk tolerance and investment horizon, according to our analysis.

For investors with short to medium-term investment horizons who are willing to tolerate elevated volatility, the BNP Paribas fund with an emphasis on environmental, social, and governance (ESG) may be a compelling choice. The fund has outperformed the market over one and three years, indicating that its ESG standards aid in identifying businesses with robust development prospects and resiliency to ESG-related problems. But, given the fund's higher beta, which denotes increased vulnerability to market swings, be ready for increased volatility and sensitivity.

However, the conventional iShares ETF is a superior option if you're a long-term investor looking for steady, consistent returns with controllable risk. The iShares ETF has performed better risk-adjusted over the past five years, with lower volatility and higher returns. This consistency fits well with a more cautious investment approach and is advantageous for long-term wealth creation. With steadier growth and less exposure to market volatility, the classic fund is a more dependable choice for long-term investing due to its larger diversification and less stringent criteria.

In conclusion, select the iShares ETF for consistent long-term growth at a lower risk, and the BNP Paribas ESG fund for possibly larger short-term gains at a higher risk.

Now let's proceed with the Interpretation of Results comparing the Vanguard 500 Index Fund to the Parnassus Core Equity Fund:

In the short run, the ESG-oriented Parnassus Core Equity Fund showed a small performance edge over the Vanguard 500 Index Fund. Over the past year, the Parnassus fund was up almost 28%, slightly beating Vanguard's 26.24%. It looks like adherence to ESG criteria may pinpoint high-performance companies running on such sustainable and ethical practices, resulting in competitive performances. The Parnassus fund managed to be slightly less volatile, at 17.14 compared to 17.65. This implies that ESG screening did not bring any extra short-run risk. High Sharpe ratio of 0.75 vs 0.35 means that it is more efficient in the balancing of risk and return. This makes the Parnassus fund allocation an attractive option for those short-term investors who want to invest in ethical investments that are competitive in their returns and manage risk.

Thus, the fund has managed to give much higher raw returns compared to the Parnassus Core Equity Fund in the long run. Over five years, the fund showed a performance of 18.40%, as against the Parnassus Core Equity Fund's 11.49%. Deeper scrutiny of this quite solid outperformance would reveal that broader market exposure and less strict investment criteria of the Vanguard fund provided more robust growth opportunities. Thus, while the Parnassus fund showed much lower volatility of 17.05%, compared to 18.40%, such a reading indicates a stable risk profile, but with its slightly negative alpha over years (-0.01), it means marginal underperformance to the benchmark. The convergence of Sharpe ratios of both funds over three to five years to similarly low values means that ESG criteria did not have a decisive influence on the long-term risk-adjusted performance of such a fund. Thus, the Vanguard 500 Index Fund is much more appropriate for long-term investment by those who are much more interested in higher returns and stability. That is, this fund is more reliable in performance and can keep up with the broader market trends, thus ensuring steady long-term growth. A person interested in the ESG approach and able to afford some drop in long-term gain should go for the Parnassus Core Equity Fund, which is good for ethical investment with an acceptable risk–return balance.

Based on the above analysis, short-term investors weigh a potential investment in the Parnassus Core Equity fund in favor of solid short-term returns, low volatility, and superior risk-adjusted performance recently.

While long-term investors would want to favor the Vanguard 500 Index Fund because of better long-term returns and stability; it is the better option for reliable but steady growth in line with broader market trends.

Our last analysis delves into the performance of the OP-Eurooppa Indeksi II A ESG fund and the Promepar Actions Rendement fund:

The non-ESG fund, Promepar Actions Rendement, appears to gain more investment interest for the period of one to three years. During the period of one year, it outgains the OP-Eurooppa Indeksi II A fund, based on the strategy of ESG, by 17.88% against 13.13%. As well, for the same period, it presented better risk-adjusted performance, confirmed by the higher Sharpe ratio of 1.31 versus 0.42. Although slightly more volatile, in the short term, the Promepar fund has managed to outperform and manage risks better.

Over the long horizons - 5 years - the better fund is the ESG fund, namely the OP-Eurooppa Indeksi II A. It may be deduced that the ESG fund slightly outperforms the Promepar fund over the five years by a few basis points (47.27% against 45.22%) and has exhibited less volatility, which may imply a flatter-off investment. It may, in a curious way, be that the orientation towards sustainability and ethical practices, the main reason for the emphasis on the ESG fund, bring a more resilient performance in line with the goals of long-term investment. More so, the longer-term comparable Sharpe ratios do suggest similar risk-adjusted returns, but the lower volatility of the ESG fund adds an element of stability and reduced risk.
If investing based really matters to you on the principles of ESG, then the OP-Eurooppa Indeksi II A fund would be good enough. It basically supports sustainability practices and omits firms that are part of controversial activities.
Alternatively, one may take the Promepar Actions Rendement plan if he is of more risk appetite and wants more returns over the short term because of recent outperformance by the same. The ESG fund is an advantage for long-term stability with sustainable returns; thus, it has strong resilience and low volatility.

4.3 Comparison with existing literature

BNP Paribas ESG Fund vs. the iShares EFT:

Short term perspective:
The compared analysis between the BNP Paribas ESG Fund and the iShares ETF is exactly in line with the evidence of the most recent literature; for instance, the

2023 Morgan Stanley report pointed out that sustainable funds have outperformed traditional funds during the first half of 2023, with median returns of 6.9% for sustainable vs 3.8% for traditional (Morgan Stanley[1]). This, in fact, echoes very similar results for the BNP Paribas ESG fund in this case: a relatively strong performance over the short term compared to the iShares ETF, suggesting that indeed, ESG criteria can pinpoint high-performance companies better, more so in favorable market conditions.

Further, a study by Morningstar has pointed out that companies receiving high ESG scores generally are better managed and sustain better through market downturns (Morningstar[2]). This is being witnessed with the better short-run performance of BNP Paribas fund, despite higher volatility and sensitivity to the market shown by it. In the same vein, it is reported in the study that ESG funds might have increased volatility because of concentrating their investments, a feature that coincides with the higher beta of the BNP Paribas fund over the iShares ETF.

Long term Perspective:

In the long term, the iShares ETF outperformed the BNP Paribas ESG fund in cumulative returns and risk-adjusted performance. This is in line with prior studies that have found that traditional funds tend to be more stable over time while yielding higher returns. For example, the article "Vanishing Difference Between ESG and Conventional Funds" in Advisor Perspectives[3] reports that since many conventional funds do not have mandates to be ESG, they often gain competitive performance since sustainability is one of the driving factors (Advisor Perspectives). Since traditional funds can balance the broad market exposures with their investment practices, they will generate strong growth in the long run. This is further consistent with studies showing that, while ESG funds might have outperformed in the short run, in the long term, their performance may be aligned to that of traditional funds. Morningstar research has recently founded that the risk-adjusted returns of sustainable funds are equal to that of traditional funds over multi-year time periods (Morningstar). This is indeed reflected in the same Sharpe ratio for the BNP Paribas ESG fund and the iShares ETF over five years, demonstrating that the ESG criteria do not necessarily lead to a superior, long-term adjusted performance.

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[1] *Sustainable funds beating Peers in 2023*
https://www.morganstanley.com/ideas/sustainable-funds-performance-2023
[2] *Do Sustainable Funds Beat their Rivals?*
https://www.morningstar.co.uk/uk/news/203214/do-sustainable-funds-beat-their-rivals.aspx
[3] *https://www.advisorperspectives.com/articles/2020/09/07/the-vanishing-difference-between-esg-and-conventional-funds*

Parnassus Core Equity Fund vs. Vanguard 500 Index Fund

Short term Perspective:

More recently, the Parnassus Core Equity Fund had a minor edge in performance over the Vanguard 500 Index Fund for short-term performance, thus proving correct findings that ESG-focused funds can compete with other funds. The Parnassus fund showed less volatility, thus proving correct the research that most ESG funds contain companies that are well-managed and with less controversy. The Sharpe ratio would also be higher, showing that ESG screening would result in better risk-adjusted performance for short-term investors looking at other ethically alternative investments.

Long term Perspective:

Very long term has seen the Vanguard 500 Index Fund outperform the Parnassus Core Equity Fund. This, again, does fit in with the general literature providing evidence that the classic funds, with a wider presentation and less rigid criteria for investment policy, often lead to more substantial long-term returns (Advisor Perspectives). The Parnassus fund has a small negative alpha and thus is marginally worse than benchmarking, while the Vanguard fund has been solid with lower volatility, providing more reliable long-run return.

OP-Eurooppa Indeksi II A vs. Promepar Actions Rendement

Short term Perpsective:

The short-term outperformance of the non-ESG Promepar Actions Rendement fund with respect to the OP-Eurooppa Indeksi II A fund relates very well to the flexibility that the traditional funds have in terms of their broad investment options. Again, the same study findings are attested to on another such ground, proving that traditional funds can utilize a wide array of market opportunities and possibly gaining more short-term gains (Advisor Perspectives). Again, the above-mentioned is confirmed by the higher Sharpe ratio of the Promepar fund, as the risk-adjusted performance is better over the short term with a slightly higher volatility.
Long term Prespective:
Over the period, the long-run performance of the OP-Eurooppa Indeksi II A fund was marginally better than the Promepar fund, while it was very slightly less volatile, suggesting that ESG incorporation can lead to more stable and resilient performance. This again is in line with the Morningstar study that found ESG funds tended to invest more in well-run companies with lower levels of controversy, thus

leading to more consistent long-term return (Morningstar). Both exhibit similar long-term Sharpe ratios, implying the same degree of performance with respect to risk, but an ESG fund that is lower in volatility is the rightful choice for a long-term investor looking for sustainability.

Conclusion

This thesis sought to evaluate financial performance in ESG funds compared to traditional investment funds and determine the effect of ESG criteria on risks and returns. Some of the methodologies included in this paper were the literature review, performance metrics, and analysis of selected ESG and non-ESG funds using empirical data. The results reflect the subtle benefits and trade-offs of ESG investing within different time horizons.

In the short term, ESG funds have shown that they can outperform traditional funds. For example, the BNP Paribas ESG Fund outperformed the iShares ETF over one and three-year periods, showing that ESG criteria may be effective in identifying companies with potentially high growth and resilience to ESG-related risks. Similarly, the ESG fund Parnassus Core Equity outperformed the Vanguard 500 Index Fund, again over the short term, in providing better risk-adjusted returns in low volatility. Such a performance was only recently confirmed by research houses, including Morgan Stanley and Morningstar, which showed that during favorable market conditions, the Phoenix ESG fund outperformed other ESG funds.

On a longer horizon, traditional funds have more stable and cumulative returns. Mostly, on a five-year horizon, the iShares outperformed the BNP Paribas ESG Fund because they reflect general market exposure and the investment criteria for traditional funds are less rigid. On a long-term horizon, general tendencies indicate that basically, traditional funds with diversified portfolios quite often manage to produce more substantial growth. In particular, the Vanguard 500 Index Fund again outperformed the Parnassus Core Equity Fund in long-term returns, signifying general trends in the economy. This, under the circumstances, generally supports the literature hypothesis that long-term returns from ESG funds will converge with or slightly underperform traditional funds due to the focused investment approach.

The analysis above shows that ESG funds have lower volatility in the long term and thereby better risk-adjusted performance. For instance, concerning the ESG fund OP-Eurooppa Indeksi II A, the volatility is lower, with marginally better long-term return than the Promepar Actions Rendement fund. One cause of this stability might be a result of its investment in companies that have better management practices, having fewer controversies, according to some studies by Morningstar. In the short time frame, though, an ESG fund, for instance, of BNP Paribas or Parnassus, might exhibit a higher value of beta hence higher sensitivity to market fluctuations.

One of the main positives of ESG funds is the positive impact they have on society. ESG funds are invested in businesses that are run "the right way" and, subsequently, bear the burden for the promotion of better labor standards, environmental protection, and a call for corporate responsibility. ESG-aligned investing has really advanced in popularity among younger investors who are more interested in ethical investing opportunities. The confluence of ESG with mainstream investment would probably mean that sustainability was being built into every investment choice to the benefit of a fairer global economy.

In contrast to this, however, ESG investment has its own share of challenges, with the risk of greenwashing among investments, the lack of standardization of ESG criteria, and the different regulatory frameworks. This, in effect, makes greenwashing a very real risk, to which companies might be subjected, prompting investors into a more intense level of due diligence. The absence of standards takes away the capacity to compare ESG performance across companies, which further demands the call for stronger, consistent, and sturdy ESG ratings and analyses. Regulatory efforts can address these issues, as seen, for instance, with the SFDR in the EU, which instates clear standards for sustainable investment.

But its future lies in continuing to throw ESG investing into mainstream investment strategies, supported by the improvement in data analytics from advances in technology and further tightening of the regulatory frameworks. The actual ESG data will be of better quality and reliability, most likely leading to a situation where ESG considerations become embedded in investment decisions and integration between ESG-specific and traditional funds starts to blur. More and more investors will see financial performance and sustainability as mutually reinforcing, leading to product and strategy innovation in the financial space that is able to prioritize both profitability and ethical standards.

In conclusion, ESG funds provide competitive short and stable long-term returns, having a very significant positive effect on society. Traditional funds, in contrast, will yield, in comparison with ESG funds largely long-term cumulative returns due to more extensive market exposure and less strict selection. Whether to select ESG or traditional funds will depend on investors' risk profiles, short- and long-term horizons, and ethical values. As views on investments change, so the ESG factors would also be infused into the fabric of any investment portfolio to ensure a more sustainable and responsible global economy. Against this background, the scene gets set for this thesis to add its contributions to the vast ocean of ESG-investing knowledge in the making - positive development that such work is expected to be valuable for investors, fund managers, and policy developers in the quest for sustainable financial growth.

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