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ESG Investing Unveiled: Fact vs Fiction in the Pursuit of Sustainable Returns

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ISCTE-IUL

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BUSINESS
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“Nobody who ever gave his best regretted it.”

(George Halas)

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Resumo

Esta dissertação investiga a aplicação prática da utilização de critérios Ambientais, Sociais e de Governança (ESG) na seleção de investimentos no mercado de ações dos EUA. O aumento da popularidade do investimento em ESG reflete a procura por alinhar rentabilidades com comportamentos corporativos responsáveis. Este estudo visa determinar se os ratings de ESG podem funcionar como uma estratégia viável para superar o índice S&P 500. Começou-se com uma amostra de todos os constituintes do S&P 500 e, de seguida, recolheram-se dados sobre as suas pontuações de ESG desde 2009 a 2022, através da Refinitiv Eikon. Com esta informação ESG, construíram-se vários portfólios, selecionando ações com base exclusivamente nas suas pontuações ESG. Surpreendentemente, esta pesquisa revela uma tendência contraintuitiva, na qual os portfólios compostos por ações com classificações ESG mais baixas consistentemente superaram as suas contrapartes de classificações mais altas. Isto desafia a crença fundamental numa correlação direta entre pontuações ESG elevadas e retornos financeiros superiores. Notavelmente, todos os portfólios selecionados, independentemente da sua classificação ESG ser alta ou baixa, superaram consistentemente o benchmark do S&P 500, dentro do período analisado.

Palavras-chave: Investimentos ESG, Estratégias de Investimento, Classificações ESG

JEL Classification System:

O16: Financial Markets; Saving and Capital Investment; Corporate Finance and Governance

M14: Corporate Culture; Diversity; Social Responsibility

Abstract

This dissertation investigates the practical applicability of using Environmental, Social, and Governance (ESG) criteria for investment selection within the US stock market. The increasing popularity of ESG investing reflects the pursuit of aligning profitability with responsible corporate behavior. This study aims to determine whether ESG ratings can serve as a viable strategy for outperforming the S&P 500 index. With a sample of all the constituents of the S&P 500, data on their ESG scores from 2009 to 2022 was collected, using Refinitiv Eikon. With this ESG information, several portfolios were constructed by selecting stocks based solely on their ESG scores. Surprisingly, this research reveals a counterintuitive trend in which portfolios consisting of lower-rated ESG stocks consistently outperform their higher-rated counterparts. This challenges the fundamental belief in a direct correlation between high ESG scores and superior financial returns. Remarkably, all portfolios selected, regardless of their ESG rating being high or low, consistently outperform the S&P 500 benchmark in the analyzed period.

Keywords: ESG Investing, Investment Strategies, ESG Scores

JEL Classification System:

O16: Financial Markets; Saving and Capital Investment; Corporate Finance and Governance

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Chapter 1 Introduction

In recent decades, there has been a compelling drive to transform companies into responsible corporate citizens, mindful of their societal responsibilities. This drive has culminated in the emergence of ESG (Environmental, Social, and Governance) indicators as measures of corporate goodness, reflecting how companies meet these standards. CEOs and major institutional investors have thrown their weight behind the ESG movement, challenging the conventional view that a company's primary responsibility is to maximize shareholder returns, as famously advocated by Milton Friedman. Instead, there is a growing call to prioritize all stakeholders' interests. In theory, ESG promises a win-win: high ESG scores should translate into more profitable and valuable companies, enriching investors and benefiting society at large. However, theory must meet reality (Cornell & Damodaran, 2020).

While ESG investing has gained significant traction, particularly amplified by events like the COVID-19 pandemic, questions multiply regarding its real-world impact, especially from an investor's perspective. The existing literature, notably in the U.S. market, offers conflicting views and lacks practical research to answer the pivotal question investors worldwide seek: "Can I profit from ESG?"

This dissertation addresses this gap by investigating whether ESG ratings can serve as an investment strategy to outperform the U.S. stock market, focusing on the S&P 500 index.

1.1 Background & Contextualization

The advocacy for ESG has yielded substantial success, with a staggering 8 out of 10 U.S. investors planning to increase allocations to ESG products in the next two years, according to a recent PwC report (2022). Predictions also foresee ESG-oriented assets under management (AUM) reaching \$33.9 trillion by 2026, underscoring the urgency for further research.

Notable ESG proponents, including BlackRock's CEO Lawrence Fink, endorse stakeholder capitalism, emphasizing its alignment with capitalism's core principles. So much that on its annual open letter to CEOs around the world, Fink stated the following:

“Stakeholder capitalism is not about politics. It is not a social or ideological agenda. It is not ‘woke’. It is capitalism, driven by mutually beneficial relationships between you and the employees, customers, suppliers, and communities your company relies on to prosper. This is the power of capitalism.” (CNBC, 2022).

This sort of view suggests ESG as a universal solution. However, the truth lies in the research. To delve deeper, we must trace ESG investing's origins.

ESG investing, while relatively new, traces its roots to socially responsible investing (SRI), where some investors started to exclude "unethical" industries such as weapons, tobacco, or alcohol from portfolios. Today's ESG investors are slightly different, they incorporate ESG factors into their decisions, moving beyond exclusion to positive selection of companies aligned with societal values (MSCI, 2023).

Central to modern ESG investing is the rating system provided by independent ESG rating companies such as MSCI, Refinitiv, and Bloomberg. These ratings guide investors by assessing a company's ESG performance across environmental, social, and governance pillars (Billio, Costola, Hristova, Latino, & Pelizzon, 2021).

However, a significant challenge lies in the lack of consensus among rating providers and researchers regarding ESG's impact. The literature offers conflicting views and lacks a comprehensive investor's perspective, especially within the U.S. market. The exponential growth of ESG investments and support from industry leaders like BlackRock underline the necessity for further investigation.

1.2 Research Problem

While there's unanimous recognition of growing demand for ESG-driven investments, the existing literature predominantly focuses on slower-paced markets, employs complex models, and often overlooks portfolio concentration or sector allocations. This creates a critical knowledge gap for investors seeking practical insights into whether ESG ratings can drive superior returns (Halbritter & Dorfleitner, 2015).

Hence, the existing literature fails to provide practical, usable information for investors in the U.S. market. It leaves investors and researchers unequipped to confirm or dismiss the theory that ESG can be beneficial for everyone.

1.3 Research Aim, Objectives & Questions

Given this lack of practical analysis, this dissertation aims to determine if ESG ratings can be utilized as a strategy to construct a successful portfolio within the U.S. market.

1.3.1 Research Objectives:

- 1) Assess whether portfolios with higher ESG ratings can outperform the S&P 500 index benchmark.
- 2) Compare the performance of ESG-heavy portfolios with lower-rated ESG portfolios.
- 3) Identify the ESG component contributing most to portfolio profitability.

1.3.2 Research Questions:

1. Can ESG-heavy portfolios generate higher annual returns than the S&P 500 index benchmark?
2. Do ESG-heavy portfolios outperform lower-rated ESG portfolios in terms of annual returns?
3. Which ESG variable, if any, most significantly impacts portfolio profitability?

1.4 Significance of the Study

This study contributes to ESG and ESG investment knowledge by analyzing whether ESG theory aligns with real-world outcomes. It addresses the shortage of research offering practical insights, benefiting investors, financial institutions, and researchers operating in this rapidly evolving landscape.

1.5 Structure of the Dissertation

This dissertation is organized into four crucial chapters. It commences with a comprehensive Literature Review focused on ESG as a concept and, more specifically, ESG investments. This section is divided into three segments, establishing the essential groundwork for the study. Initially, it delves into the fundamental principles behind the modern ESG investment movement. Subsequently, it explores the intricate realm of ESG ratings and scores, a cornerstone of the system. Finally, it explores the relationship between ESG factors and portfolio returns in a broader context.

The second chapter, Methodology & Data, provides the bedrock upon which this study is constructed, ensuring its replicability and applicability for future testing. This chapter sets the stage for the two most critical chapters that follow. The Findings & Discussion chapter unveils the results and engages in a thorough discussion of the findings. Ultimately, the Conclusions and Recommendations chapter brings the dissertation to a close while proposing possibilities for potential future research.

Chapter 2 Literature Review: Exploring the ESG>Returns Relationship

In contemporary finance, there is a notable shift toward Environmental, Social, and Governance (ESG) factors, marking a fundamental change in the financial landscape. Once considered a niche concern, ESG considerations now play a central role in shaping investment strategies, portfolio construction, and overall financial market dynamics. The aim of this literature review is not to reproduce existing knowledge blindly but to elucidate key concepts, explore diverse viewpoints, and underscore pertinent findings. Its core objective is to provide readers with essential knowledge, enabling a comprehensive perception of the dynamic ESG terrain.

To achieve this objective, this dissertation centers on the examination of ESG factors and scores, along with their implications for investment portfolios. Specifically, it delves into the influence of ESG scores on investment decisions and their potential impact on portfolio performance. Understanding the focus of this study and acknowledging the relatively limited literature available on this specific topic, the literature review adopts a thematic approach. It begins with an exploration of foundational concepts such as Corporate Social Responsibility (CSR), ESG, and Socially Responsible Investment (SRI). Subsequently, it scrutinizes the intricacies of ESG ratings, dissecting their methodologies and presenting a critical review of their credibility and influence. The review also encompasses the current body of knowledge regarding the relationship between ESG scores and portfolio returns, highlighting key findings from previous studies.

In sum, this literature review offers a comprehensive understanding of the ESG landscape, encompassing both its theoretical foundations and its practical ramifications for investment decision-making.

2.1 Understanding ESG: The key concepts

To understand how this study fits in with the literature, it's necessary to define some key concepts and draw the line on what the study is and what the study is not. So, firstly let's address the key concepts discussed in the literature that often can get confusing.

2.1.1 Corporate Social Responsibility (CSR)

One of the most recurring concepts we can find in the literature is CSR. According to the United Nations Industrial Development Organization (2023), Corporate Social Responsibility (CSR) is a management concept that signifies a corporation's commitment to ethical and responsible operations. This commitment includes financial considerations as well as its impact on various stakeholders, including employees, shareholders, communities, and the environment. In essence, CSR advocates the idea that businesses should go beyond profit generation (as famously emphasized by Milton Friedman) and actively contribute to societal well-being by embodying a triple bottom line approach (profit, people, and planet).

CSR entails a commitment that goes beyond charity or philanthropy. It extends to ethical business practices, sustainable operations, philanthropic endeavors, and engagement in social and environmental initiatives. At its core, it includes initiatives such as reducing carbon emissions, promoting diversity and inclusion in the workplace, support local communities through charitable donations, or ensure ethical supply chain practices. As stated on its online blog by Harvard Business School (2019) the goal is clear: "Do well by doing good". Here is where a question emerges: Does CSR truly enhance firm value? This matter ignites a debate between two opposing perspectives in the literature.

On one hand, proponents argue that CSR practices can enhance a company's reputation and its long-term profitability, aligning ethical conduct with financial success (Ferrell, Liang, & Renneboog, 2016). Studies, such as Ferrell et al. (2016), support this view by uncovering a positive correlation between CSR and firm value.

On the opposing side, some studies like Cornell & Damodaran (2020) suggest that CSR expenses may be inefficient and the primary beneficiaries of the whole CSR and ESG movement could be ESG consultants and ESG rating agencies rather than the companies themselves. This point of view questions whether the effort invested in CSR truly enhances firm value, or if in some cases is just an attempt to "look good" (Cornell & Damodaran, 2020).

This debate reflects the broader discussions regarding the interplay between CSR and financial success, with studies supporting both views, yet without a definitive scientific consensus.

2.1.2 ESG & Socially Responsible Investments (SRI)

With the foundational understanding of CSR in place, let's now move on to another closely related concept: Environmental, Social, and Governance (ESG). Going to its origins, the term ESG traces its roots back to 2004, after the publication of a report named "Who Cares Wins" by the UN Global Compact Initiative. The report set the goal (ambitious at the time) to organize the three main ethical finance pillars: Environment, Social and Governance (Billio et al., 2021).

ESG was born essentially as a way to "commercialize" or "industrialize" the idea of CSR. It is a framework for assessing a company's performance and behavior in key areas that have implications for sustainable and responsible business practices. Framing it in other words, ESG is a set of criteria focused in three major factors: Environment factors (such as the company's carbon footprint), social factors (like labor practices) and corporate governance factors (such as board composition). This criteria is the base upon which investors, analysts, and stakeholders make their judgements and evaluate how a firm is doing in terms of CSR performance (Khemir, 2019).

When ESG criteria is integrated in the investment decision process, then it is commonly referred to as Socially Responsible Investments (SRI) in the literature. SRI, was originally born from ethical investment based in moral values, originated as far back as the 17th century when Quakers, a religious group in North America, refused to engage in profitable activities tied to weapons and slavery (Olmedo, Torres, & Izquierdo, 2010; Renneboog, Ter Horst, & Zhang, 2008). Today's modern SRI has evolved from this moral screening, with its focus shifting towards individual investors' social convictions. It now encompasses considerations of social, environmental, and corporate governance impacts, community investment, and shareholder activism (Olmedo et al., 2010). Overall, the philosophy behind SRI is simple: to align financial goals with ethical, social, and environmental considerations (Ferrell et al., 2016).

Historically there are several investment strategies commonly associated with SRI's. Billio et al. (2021) describes some of the most popular ones like Negative or Positive Screening, where investors exclude or choose companies that have bad or good ESG scores. Another example described by the same author is ESG integration, where investors mix ESG scores with financial indicators to make investment decisions. Also Norm-based screening is another very popular strategy, where investors only invest in stocks adhering to minimum ethical business practices (Billio et al., 2021). In this study for example, we will put the positive screening strategy to the test and see if choosing companies solely based on their ESG scores can be a winning strategy or not.

Socially Responsible Investing (SRI) has experienced a substantial surge in popularity, with scholars like Chen, Zhang, Huang, Xiao, & Zhou (2021) attributing this growth to the pressing demand for sustainable development and the increasingly widespread adoption of pro-social preferences among individuals. This momentum is reinforced by the statements of Cornell & Damodaran (2020), who argue that investment decisions rooted in Environmental, Social, and Governance (ESG) considerations are gaining prominence, particularly among high-profile institutional investors. Consequently, there is no doubt SRI has evolved from being a niche strategy into a widely embraced concept, progressively permeating mainstream investment practices.

Supporting this trend, research by Pacelli, Pampurini, & Quaranta (2022) affirms the escalating investor preference for companies prioritizing sustainability and socio-environmental concerns. This shift is evident from the growing presence of ESG investment funds within the financial landscape. Furthermore, a comprehensive literature review conducted by Fan, Omura, & Roca (2022) highlights the inevitable growth of ESG investing. It emphasizes the ongoing trend of incorporating ESG factors into fundamental analysis, portfolio construction, and risk management, solidifying ESG's crucial role in investment strategies. In essence, the research shows ESG investing is here to stay and further highlights the need for a study to prove if this shift can be also in the best interest of investors.

2.2 ESG Ratings & Scores

As we accelerate through our literature review, it's important to make a fast "pit stop" to reflect on what we've uncovered so far. Firstly, we have demystified the fundamental concepts of CSR, ESG criteria and SRIs. Second, while the literature may present divergent perspectives on the tangible advantages of corporate CSR initiatives or full-scale investor commitment to SRI, one point stands united: CSR programs, ESG principles, and SRI strategies are not dying trends, they are deeply entrenched in contemporary finance and their expansion is inevitable.

Armed with this knowledge, it's only natural to question how investors can effectively assess companies based on their ESG initiatives and practices. Do companies provide standardized reports like their quarterly and annual financial reports? Must investors resort to 007 tactics and spy on these companies to uncover their activities? The response often lies in what could be considered either the financial industry's biggest deception or one of its most groundbreaking innovations: ESG Ratings

ESG ratings are assigned by independent ESG rating agencies, such as Refinitiv, MSCI, or Bloomberg, that evaluate and rate businesses' sustainability performance using unique research methods. Initially driven by socially responsible investors' demand for ESG information, their expertise made these agencies become indispensable for financial markets, companies and academia when it comes to evaluate corporate sustainability performance (Escrig-Olmedo, Fernández-Izquierdo, Ferrero-Ferrero, Rivera-Lirio, & Muñoz-Torres, 2019).

The fascination with ESG ratings comes from their potential to unveil a company's risks, much like how credit ratings unveil financial risks (Utz, 2019). Yet, unlike the clear criteria we have for credit ratings, ESG ratings present a more complex landscape. The absence of a shared definition, standardized reporting practices, and consistent characteristics across different ESG components and rating agencies makes ESG measurement quite subjective. While financial rating agencies provide a range of metrics like the credit ratings market, ESG ratings rely on diverse and sometimes conflicting definitions. This lack of a universal ESG standard creates a challenging environment for assessing a company's sustainability, and in some instances, renders it nearly impossible to assign them a rating (Billio et al., 2021).

Cornell & Damodaran (2020) take it a step further in their research and highlight the challenge of categorizing companies as “good” or “bad” due to the subjective nature of social responsibility that unlike profitability and returns, lacks universally accepted measures. Utz (2019), also adverts for the potential biases associated with measuring such subjective criteria. Both authors make solid points, just think about this example: If your company has a 20% profit margin, it is factual that it is better than having only a 10% margin. However, is company X’s charity program better than company Z’s charity program? It depends on who do you ask, but one thing is almost certain, it is harder if not impossible to reach a consensus on what is better, because is subjective in the first place, and because we are biased with our personal set of beliefs as well.

In an ideal scenario, major ESG rating agencies would exhibit minimal discrepancies in their assessments. Billio et al. (2021) contend that such alignment among rating agencies could lead to a more consistent selection of stocks by investors, subsequently influencing asset prices. This harmonization would prove advantageous for both passive and active ESG investment funds, as well as ESG investors in general (Billio et al., 2021).

However, our reality is far from perfect. Despite these imperfections, some researchers have looked past the problems and managed to explore the relationship between ESG and returns. Two fundamental questions emerge from these endeavors: How have previous researchers approached this issue in their investigations of the ESG-returns relationship? How will this study address the matter? Various solutions have been proposed, and we will elucidate some of the most prevalent ones.

One common approach, exemplified by Fan et al. (2022) in their study, involves combining ESG scores from multiple rating agencies and deriving a composite score, often an average. Another typical strategy, as illustrated in Torre, Mango, Cafaro, & Leo (2020), entails integrating ESG ratings with various other ESG indicators, including quantitative ratings, scores, and qualitative assessments. Chen et al. (2021), on the other hand, advocate for a more comprehensive approach. They combine ESG scores with selected financial indicators to optimize portfolios in terms of returns, risks, and social value. This approach entails utilizing a broader range of criteria beyond ESG alone when selecting stocks.

The alternative, which aligns with the methodology of this study, involves exclusively utilizing information from a single ESG rating provider. This approach is particularly suited for this research for two primary reasons. First and foremost, combining ESG scores from various providers fails to resolve the fundamental issue of diverging opinions, as computing an average of different assessments does not yield a consensus opinion. Second, the study's objective is to maintain a high degree of practicality. In the real-world context, investors typically have limited access to multiple providers, especially considering that some of these services are fee-based, rendering the multi-provider approach inefficient.

2.3 The Relationship Between ESG and Portfolio Returns

Now that we've acquired a substantial understanding of ESG scores and investments, it is time to explore the academic consensus on the advantages and drawbacks of using ESG as an investment strategy. A comprehensive literature review by Søren Hvidkjær (2017) provides valuable insights. It gives us a broad overview, highlighting that there's evidence of a positive relationship between ESG and returns, particularly up until the mid-2000s (around 2004/2005). However, this trend seems to have faded in more recent years.

Noticing a growing interest among investors in using socially responsible criteria in their stock portfolios, Kempf & Osthoff (2007) decided to test if this could enhance performance. They implemented a straightforward long-short strategy, which involved buying stocks with high ratings and selling those with low ratings. Based on data from KLD Research & Analytics covering the period from 1995 to 2004, their findings revealed that their approach generated significant abnormal returns of up to 8.7%.

Building upon these findings, Statman & Glushkov (2009) reinforced the importance of prioritizing stocks with high social responsibility scores to maximize returns, although for a slightly different time frame, spanning from 1992 to 2007. Their approach emphasized the significant performance boost associated with strong scores in areas such as employee relations and community engagement and, the upside brought by having no exclusion of any sort of company, including those in the tobacco industry for example.

However, Borgers, Derwall, Koedijk, & Ter Horst (2013) introduced a cautionary note. In the periods leading up to 2004, ESG information indeed offered valuable insights that were not fully recognized by financial markets. Yet, as more investors have become aware of this information, and as access to it has become easier, any potential opportunities for mispricing have become short-lived. This suggests that the advantage provided by ESG ratings may diminish with their increasing popularity (Borgers et al., 2013; Søren Hvidkjær, 2017).

Recent studies continue to provide mixed results. Halbritter & Dorfleitner (2015) explored the connection between ESG ratings and financial performance using multiple datasets and concluded that ESG portfolios did not exhibit significant return disparities between high and low ESG-rated companies, challenging prior research.

Pacelli et al. (2022) took a different approach and have examined ESG scores as an additional criterion for portfolio selection. Surprisingly, their findings did not strongly support prioritizing high ESG score securities, leading them to suggest that it might be premature to rely on ESG scores for asset selection.

De Spiegeleer, Höcht, Jakubowski, Reyners, & Schoutens (2023) opted for a different approach and divided portfolios into "Brown" (low ESG) and "Green" (high ESG) types, initially showing varying performance. However, they found no clear portfolio enhancement linked to ESG scores, with results varying depending on the choice of ESG rating agency. This conclusion also hints to the feasibility of shifting to low emission assets without significant risk or loss of returns. In line with these findings, Torre et al. (2020) found that ESG factors played a minor role in return modeling, with varying influences on different companies. The results of their study suggest that Eurostoxx50 companies' performance isn't significantly affected by their ESG efforts, further questioning the added value by good ESG scores.

Examining all the diverse findings and perspectives from various angles and taking a comprehensive overview, can we arrive at a definitive conclusion? The answer is a resounding "No". It would be inaccurate to assume any absolute or conclusive results from the existing literature because these studies analyzed different timeframes, methodologies, geographic regions, and have different levels of complexity (the most recent ones are by far way more complex). This harsh reality of uncertainty calls for this very study. It calls for a fresh perspective while using the practical methods of the past.

To conclude, this literature review has hopefully offered a comprehensive overview of the evolving landscape of Environmental, Social, and Governance (ESG) factors in contemporary finance. While we can observe that the late 1990s and early 2000s witnessed a seemingly positive relationship between ESG and portfolio returns, more recent studies suggest that there has been a shift in dynamics in recent years. The advantages once associated with high ESG ratings appear to have diminished as ESG information becomes more popular and accessible. This transformation has resulted in mixed results in recent research, challenging the earlier consensus.

Nonetheless, this review has clearly emphasized the need for a practical investigation to maneuver the complex and dynamic world of ESG. As the literature gap in this specific area becomes evident, it is crucial to connect theory with real-world applications. The research objectives of this study aim to address this gap by assessing whether portfolios with higher ESG ratings can outperform benchmarks, comparing the performance of ESG-heavy portfolios with lower-rated ones, and identifying the ESG components contributing most to portfolio profitability. By conducting empirical research, this study seeks to provide valuable insights into the practical implications of ESG integration in investment decisions in the modern world, offering guidance to investors operating in this dynamic landscape.

Chapter 3 Methodology & Data

The central objective of this dissertation is to assess the viability of employing Environmental, Social, and Governance (ESG) ratings as an effective strategy for constructing a successful portfolio within the U.S. stock market. This chapter serves as the introduction to the methodological framework employed in this quantitative study, which aims to explore the relationship between ESG ratings and portfolio performance.

Researchers often emphasize the importance of a well-structured methodological framework as a cornerstone of a robust study. This framework stands by a principle similar to that often claimed by automobile manufacturers when introducing a new car: "Form follows function," signifying that each design element serves a specific purpose. Similarly, in this study, each methodological decision is rooted in a well-defined rationale. This chapter provides a comprehensive overview of the key design choices, research strategy, data collection methods, and analysis techniques that support this study. To maximize clarity, these elements will be discussed in separate subsections, encompassing research philosophy, research type, research strategy, time horizon, sampling methodology, data collection procedures, and methods of analysis.

3.1 Methodological Framework

3.1.1 Research Philosophy

The first critical consideration to have in mind is the underlying philosophical perspective guiding this research. In the academic research world, two primary philosophies commonly guide research methodologies: Positivism and Interpretivism. These philosophies represent contrasting approaches. Positivism is a philosophical standpoint that places a strong emphasis on empirical observation and the scientific method as the means to acquire knowledge. It prioritizes the pursuit of objective, quantifiable data and seeks to uncover universal laws and principles governing observable events. In contrast, Interpretivism is a philosophical approach that stresses the significance of subjective understanding, context, and interpretation in knowledge generation. It acknowledges that individuals and societies attribute meaning to experiences and events based on their unique perspectives.

Given the quantitative nature of this study, the philosophy that aligns most effectively with its objectives is Positivism, and it serves as the philosophical foundation for this dissertation. The rationale behind this choice is straightforward: the study aims to impartially measure ESG scores and their influence on portfolio performance, emphasizing the reliability and reproducibility of its findings. By systematically gathering quantitative data connected to the constituent companies of the S&P 500 Index over multiple years and conducting an analysis centered on their annual returns, along with the creation of several portfolios exclusively based on each company's ESG score, the study employs criteria designed to maximize objectivity. As such, it embodies a Positivist philosophy.

3.1.2 Research Type

Regarding the research type, the same fundamental choice applies, with two distinct approaches: Inductive and Deductive research. The distinction lies in their underlying methodologies. Inductive research typically originates with specific observations or data and aims to obtain general principles or theories from these observations. On the contrary, Deductive research initiates with a theory that is subsequently tested through empirical observations. In essence, the first proceeds from the specific to the general, while the second operates from the general to the specific.

This dissertation follows a Deductive research approach. It begins with a claim that ESG is “a win-win for all stakeholders” (suggesting that ESG ratings should have a positive influence on portfolio performance) and puts it to the test. Consequently, empirical data was gathered and analyzed to either confirm or refute this hypothesis. In other words, the research initiates with a theory and utilizes empirical evidence to examine and validate this theory.

3.1.3 Research Strategy

The research strategy employed in this study is the widely used Experimental research strategy, chosen for its ability to create a controlled research environment. Essentially, it materializes by comparing annual returns from portfolios constructed based on various ESG scores with those of the S&P 500 index (our control group). This rigorous comparison allows us to assess the impact of ESG scores on portfolio performance and determine whether the extra effort required for their selection justifies choosing them over the simpler option of passive investment in an S&P 500 index fund for example.

The S&P 500 has a well-documented track record of delivering consistent annual returns, typically ranging from 7% to 10%. This strong performance has solidified its status as a widely accepted benchmark in the financial world. Furthermore, investing in the index is simple, thus making the adoption of an ESG portfolio strategy feasible only if there is a significant additional return on investment to be realized.

3.1.4 Time Horizon

In terms of time horizon, a Longitudinal time-horizon was selected over a Cross-Sectional approach (which examines a single point in time). The rationale for this choice is straightforward: a single point in time would not align with the research objectives.

Being specific about the data used for the study, the data collection and analysis spanned from December 31st, 2009, to December 31st, 2022, with yearly frequency. This extended time frame was selected to allow for the observation of the evolution of ESG scores and portfolio returns over a significant period. By doing so, we can more accurately assess potential variations and trends in ESG-driven portfolio performance, minimizing the influence of short-term fluctuations or isolated "good" or "bad" years for specific companies. This choice aligns with previous research in the field, with some studies using even shorter time series. Moreover, starting at the end of 2009 also avoids the immediate aftermath of the 2008 financial crisis, allowing the market more time to stabilize. Additionally, it encompasses the years 2020 to 2022, which were heavily influenced by the Covid-19 pandemic, also providing a comprehensive view of performance during challenging times.

3.1.5 Sampling Methodology

The sampling method employed, in line with the majority of ESG studies, is Non-probability Sampling. This approach avoids a random selection and initiates with a predefined population, specifically for this case, the constituents of the S&P 500 index. Opting for companies within this universe ensures that our portfolios accurately represent a significant subset of the U.S. market. This strategic choice mitigates the influence of randomness in the results.

S&P 500 companies typically comprise well-established entities, thus eliminating the inclusion of new, high-risk companies or penny stocks that may experience extreme fluctuations. This aligns with the study's aim of replicability and robustness. By focusing on stable, established companies, the research holds greater value, as its findings can potentially guide future investors without reliance on unusual stock appearances.

3.1.6 Data Collection Procedures

The data collection process for this study exclusively entails Quantitative data sourced from the Refinitiv platform. This dataset comprises five primary variables: ESG scores, Environmental Pillar Scores, Social Pillar Scores, Governance Pillar Scores, and Year-to-Date (YTD) Total Returns (%). Notably, the data extraction date consistently falls on December 31st of each year, ensuring that the YTD Total Returns encompass the annual performance of each company, including potential gains from dividends. Incorporating dividend gains into the analysis enhances the alignment with real-world outcomes.

Collecting data from a single source aligns seamlessly with the study's objectives, which aim to adopt an investor's perspective. Moreover, it contributes to result consistency by eliminating disparities that might arise from different ESG score metrics or the use of distinct price sources for return calculations, thus mitigating the risk of incoherence.

3.1.7 Methods of Analysis

Considering the study's objectives, the primary method of analysis utilized is predominantly Descriptive Statistics. This approach is primarily employed to examine and present portfolio returns, aligning with the investor's perspective, which places emphasis on summarizing and interpreting financial gains or losses. Given the myriad of factors influencing stock performance, resorting to inferential statistics is considered unnecessary and could potentially yield erratic conclusions.

In terms of software used for the analysis, again having the objective to be replicable by future researchers or investors in case of success, only Excel was used. This is a well-known and easy to access software program.

3.2 Methodology Summary

The primary objective of this methodology chapter was to identify and rationalize the various decisions that constitute the methodological framework of this dissertation. This goal has been successfully achieved through a comprehensive exploration of the methodological framework and a thorough discussion of the essential decisions made. The adoption of the research philosophy of positivism ensures the dependability of findings within the context of this quantitative study. The utilization of a deductive research approach commences with a hypothesis and is subsequently tested through empirical data analysis. The selection of an experimental research strategy establishes a controlled research environment, facilitating a comparative analysis between ESG-based portfolios and the S&P 500 index. The chosen longitudinal time-horizon spanning from December 31st, 2009, to December 31st, 2022, is designed to capture enduring trends while mitigating the influence of short-term market fluctuations.

In terms of sampling, a non-probability method is employed, drawing from the pool of S&P 500 constituents to ensure a representation of well-established companies. The exclusive reliance on quantitative data collected from Refinitiv ensures data consistency. Descriptive statistics serve as the primary method of analysis, aligning with the perspective of an investor focused on summarizing and interpreting financial gains or losses. The use of Excel for analysis facilitates potential future replicability.

In summary, this chapter delineates the essential methodology employed to examine the relationship between ESG ratings and portfolio performance, with a constant emphasis on the alignment of research choices with the study's objectives and pragmatic considerations.

Chapter 4 Findings & Discussion

This chapter represents the culmination of this extensive research, aimed at determining the viability of ESG ratings as a strategy for constructing a successful U.S. market portfolio. The goal is to explore how ESG scores can impact portfolio performance and discuss their importance in investment decision-making. The findings are crucial in the context of the growing significance of ESG factors in finance, potentially helping to reshape investment strategies and either emphasize or downplay their role in portfolio management.

4.1 Key Findings

The primary objective of this section is to present and discuss the key findings of our research, with the aim of addressing the research questions that have guided this dissertation. To provide a quick refresher for those with busy schedules, let's recap the central research questions explored in this study:

- Can ESG-heavy portfolios generate higher annual returns than the S&P 500 index benchmark?
- Do ESG-heavy portfolios outperform lower-rated ESG portfolios in terms of annual returns?
- Which ESG variable, if any, most significantly impacts portfolio profitability?

To ensure the practical relevance of our findings, we will first present some essential statistical aspects of the dataset utilized in our study before presenting the results.

4.1.1 Data Description

The dataset used for this study commenced with a pool of 504 companies, representing the constituents of the S&P 500 Index at the time of data collection. Information for five key parameters—ESG score, Environmental Pillar Score, Social Pillar Score, Governance Pillar Score, and YTD Total Returns—was extracted for each of these 504 companies over a period spanning from December 31, 2009, to December 31, 2022, with a yearly frequency. Regrettably, data for two of the companies among the 504 were unavailable through the Refinitiv Eikon platform, reducing the dataset to 502 companies. Within this set, 9.22% of the data had to be excluded due to missing ESG information or YTD total returns, which is not unusual given that some of these companies may not have been listed or had ESG information available in earlier years.

From this refined dataset, the portfolio selection process was designed to be straightforward and replicable for future investors and researchers. Eight portfolios, each comprising 25 stocks, were created with capital evenly distributed among them, resulting in each stock accounting for 4% of the total portfolio value. The selection process for the 25 companies was objectively determined by choosing the top or bottom 25 companies with the highest ESG scores for the selected parameter on an annual basis. This approach ensures that, for example, the portfolio representing the highest ESG scores changes every year to adapt to the top 25 rated ESG stocks for that particular year. The same methodology applies to other portfolios, with only the ESG metric for the top or bottom 25 selections changing accordingly. No additional variables or signals were utilized in the company selection process for any of the portfolios.

After a thorough analysis of the dataset, a broad spectrum of values becomes apparent. Table 1 provides descriptive statistics related to the ESG data gathered for this research. Notably, ESG scores show considerable variability, ranging from almost zero to the maximum score of 100. On average, Environmental Scores tended to be lower than the overall ESG Scores, whereas Governance Scores displayed higher values in comparison to the other two pillars. This pattern is affirmed by both the mean and median values.

Table 1 - ESG data statistics

Data	ESG Scores	Environmental Pillar Scores	Social Pillar Scores	Governance Pillar Scores
Highest Score	95.16237125	98.54580592	98.01059293	99.44149148
Lowest Score	0.59859710	0.00000000	0.26345833	0.61816940
Mean Score	55.90142513	48.88068201	58.01481538	58.86819800
Median Score	58.03603968	53.27666967	59.42323551	61.53735495

4.1.2 The Benchmark

In any kind of research, maintaining consistency and mitigating data disparities holds vital importance. To attain this, the benchmark data was also sourced from the Refinitiv Eikon platform, employing the identical performance metric (YTD Total Returns) and adhering to the same time frame (December 31st, 2009, to December 31st, 2022, on an annual basis). Adding an extra layer of real-world applicability to the analysis, we opted to use the SPY ETF (SPDR S&P 500 ETF Trust), one of the most widely recognized Exchange Traded Index funds, promptly accessible to investors worldwide. This choice enhances the practicality and relevance of our comparative analysis.

Keeping the research objectives in perspective, let's jump into an examination of the benchmark's performance over the analysis period. Table 2 offers a comprehensive overview of the performance metrics employed to assess the SPY ETF's performance from 2009 to 2022.

Table 2 - SPY relevant performance metrics

SPY (S&P 500 ETF)			
Date	Annual Returns	CAGR	Cumulative Value
2009	26.37%	26.37%	\$ 1 263 661
2010	15.06%	20.58%	\$ 1 453 938
2011	1.89%	14.00%	\$ 1 481 387
2012	15.99%	14.49%	\$ 1 718 285
2013	32.31%	17.85%	\$ 2 273 407
2014	13.46%	17.11%	\$ 2 579 456
2015	1.25%	14.70%	\$ 2 611 751
2016	12.00%	14.36%	\$ 2 925 196
2017	21.70%	15.15%	\$ 3 559 973
2018	-4.56%	13.01%	\$ 3 397 743
2019	31.22%	14.56%	\$ 4 458 577
2020	18.37%	14.87%	\$ 5 277 761
2021	28.75%	15.88%	\$ 6 794 856
2022	-18.17%	13.04%	\$ 5 560 116
Average	13.97%		

Let's obtain the key takeaways from the preceding table. Firstly, it's worth noting that while the typical expected average returns for the S&P 500 index typically fall within the range of 7% to 10%, between 2009 and 2022, the average annual total returns surged to 13.97%. This figure stands nearly 4% above the optimistic 10% reference point, implying that the selected portfolios may face a considerable challenge in surpassing the benchmark.

For added perspective and a touch of real-world relevance, Table 2 demonstrates the trajectory of a \$1 million USD investment in the SPY ETF in 2009 over the 14-year period leading to 2022. The results would undoubtedly bring joy to any investor, as the portfolio's value would exceed \$5.5 million by December 31st, 2022, assuming capital reinvestment throughout the years. This performance translates to an impressive compound annual growth rate (CAGR) of 13.04%, marking truly exceptional returns.

This data forms the bedrock of our analysis and represents the focal point of any investor. When it comes to investment strategies, justifying their adoption depends solely on their ability to outperform these benchmark results. It is, after all, illogical for any investor to embrace a strategy that yields inferior returns. Therefore, these benchmark results not only serve as the foundation for our analysis but also serve as the ultimate yardstick for assessing the success or failure of each portfolio strategy.

4.1.3 Top ESG Portfolios

Driven by the pursuit of understanding whether ESG-heavy portfolios can outperform the S&P 500 benchmark in terms of annual returns, the same rigorous analysis was applied to each of the Top ESG portfolios. To reiterate, for those who may need a quick refresher, there exist four distinct portfolios designed for positive ESG integration, each selecting companies based on a different ESG score. The first portfolio consists of the top 25 companies with the highest ESG scores, while the second comprises the top 25 companies with the highest Environmental Pillar score. Similarly, the other two portfolios are constructed using the highest scores for the Social and Governance pillars.

Table 3 thoughtfully compares the total returns of each portfolio alongside those of the benchmark, offering a side-by-side comparison. These findings are critical for evaluating the performance and viability of each portfolio strategy.

Table 3 - Top ESG rated portfolios' annual performance

Date	Top ESG	Top Environmental	Top Social	Top Governance	SPY (S&P 500 ETF)
2009	50.78%	57.01%	57.16%	40.32%	26.37%
2010	14.1%	16.8%	16.5%	14.9%	15.06%
2011	6.60%	-4.61%	4.46%	4.01%	1.89%
2012	11.71%	18.94%	13.19%	14.75%	15.99%
2013	28.07%	37.28%	31.37%	31.67%	32.31%
2014	15.75%	14.30%	18.80%	19.45%	13.46%
2015	0.76%	-4.49%	-0.02%	0.69%	1.25%
2016	18.32%	21.04%	23.46%	33.71%	12.00%
2017	26.39%	21.86%	18.05%	18.20%	21.70%
2018	-6.64%	-9.39%	-1.25%	-6.80%	-4.56%
2019	31.78%	31.88%	29.32%	31.47%	31.22%
2020	6.79%	5.42%	8.61%	7.51%	18.37%
2021	28.34%	31.22%	24.68%	36.76%	28.75%
2022	-3.67%	-10.47%	-2.67%	-6.07%	-18.17%
Mean	16.36%	16.20%	17.26%	17.18%	13.97%

The results offer a two-sided perspective, and while they may seem impressive at first glance, further analysis is essential. In terms of average returns, each high ESG-rated portfolio clearly excels in comparison to the benchmark. The portfolio consisting of the top 25 ESG-rated stocks delivered an average return of 16.36%, with the Top Environmental, Social, and Governance portfolios achieving returns of 16.20%, 17.26%, and 17.18%, respectively. Notably, even the portfolio with the lowest performance, the Top Environmental Pillar Score portfolio, yielded an average total return of 16.20%, surpassing the benchmark by 2.23%.

However, a note of caution is warranted. When examining the number of years with negative returns, none of the ESG portfolios actually outperformed the benchmark, which itself experienced two negative years. Both the Top ESG and Top Governance portfolios matched the benchmark's two years of negative results, while the Top Environmental and Top Social portfolios had four and three negative years, respectively.

Furthermore, the frequency with which each portfolio outperformed the SPY ETF was assessed. Except for the Top Environmental portfolio, which outperformed the benchmark in all 14 years, the remaining three portfolios only outperformed the benchmark in 50% of the years (7 out of 14). These statistics indicate a considerable degree of volatility in the portfolio returns, a factor that may raise concerns for some investors.

To enhance our understanding, Table 4 presents the Compound Annual Growth Rate (CAGR) attained between 2009 and 2022 for each portfolio, offering a direct comparison with the benchmark. In a complementary manner, Table 5 visually portrays the evolution of a \$1 million USD investment over the same time frame, comparing it with the performance of the SPY ETF. These tables provide valuable insights into the long-term performance and growth potential of each portfolio, as well as how it measures up against the benchmark.

Table 4 - Compound Annual Growth Rate of Top ESG portfolios

Date	Top ESG	Top Environmental	Top Social	Top Governance	SPY (S&P 500 ETF)
2009	50.78%	57.01%	57.16%	40.32%	26.37%
2010	31.16%	35.44%	35.29%	26.95%	20.58%
2011	22.40%	20.50%	24.12%	18.79%	14.00%
2012	19.64%	20.11%	21.29%	17.77%	14.49%
2013	21.28%	23.36%	23.24%	20.43%	17.85%
2014	20.34%	21.80%	22.49%	20.26%	17.11%
2015	17.32%	17.64%	18.99%	17.25%	14.70%
2016	17.45%	18.06%	19.54%	19.19%	14.36%
2017	18.41%	18.48%	19.37%	19.08%	15.15%
2018	15.63%	15.34%	17.13%	16.20%	13.01%
2019	17.01%	16.76%	18.19%	17.51%	14.56%
2020	16.12%	15.77%	17.36%	16.64%	14.87%
2021	17.02%	16.89%	17.91%	18.08%	15.88%
2022	15.40%	14.68%	16.30%	16.16%	13.04%

Table 5 - \$1 million USD investment evolution

Date	Top ESG	Top Environmental	Top Social	Top Governance	SPY (S&P 500 ETF)
2009	\$ 1 507 805	\$ 1 570 104	\$ 1 571 550	\$ 1 403 165	\$ 1 263 661
2010	\$ 1 720 333	\$ 1 834 447	\$ 1 830 321	\$ 1 611 553	\$ 1 453 938
2011	\$ 1 833 825	\$ 1 749 847	\$ 1 912 020	\$ 1 676 243	\$ 1 481 387
2012	\$ 2 048 528	\$ 2 081 267	\$ 2 164 179	\$ 1 923 539	\$ 1 718 285
2013	\$ 2 623 477	\$ 2 857 120	\$ 2 843 067	\$ 2 532 818	\$ 2 273 407
2014	\$ 3 036 690	\$ 3 265 567	\$ 3 377 576	\$ 3 025 554	\$ 2 579 456
2015	\$ 3 059 805	\$ 3 118 886	\$ 3 377 035	\$ 3 046 454	\$ 2 611 751
2016	\$ 3 620 456	\$ 3 775 176	\$ 4 169 276	\$ 4 073 308	\$ 2 925 196
2017	\$ 4 575 892	\$ 4 600 250	\$ 4 921 731	\$ 4 814 519	\$ 3 559 973
2018	\$ 4 271 927	\$ 4 168 208	\$ 4 860 163	\$ 4 486 953	\$ 3 397 743
2019	\$ 5 629 614	\$ 5 497 020	\$ 6 285 214	\$ 5 899 166	\$ 4 458 577
2020	\$ 6 011 919	\$ 5 795 120	\$ 6 826 300	\$ 6 341 995	\$ 5 277 761
2021	\$ 7 715 626	\$ 7 604 311	\$ 8 510 710	\$ 8 673 406	\$ 6 794 856
2022	\$ 7 432 410	\$ 6 807 860	\$ 8 283 399	\$ 8 146 634	\$ 5 560 116

A noteworthy observation from the examination of both tables is that none of the Top ESG portfolios exhibited lower values than the SPY ETF throughout the entire period. This pattern remains consistent when we dissect the analysis into two distinct periods: 2009-2015 and 2016-2022. In both instances, the Top ESG portfolios outshine the benchmark in terms of average returns, Compound Annual Growth Rate (CAGR), and total cumulative value. While the disparity narrows between 2016 and 2022, the overarching trend remains evidently in favor of the Top ESG portfolios. In summary, the data suggests that ESG-heavy portfolios indeed generate higher annual returns than the S&P 500 index benchmark.

4.1.4 Bottom ESG Portfolios

Moving on with our research journey, the focus has now shifted towards unraveling whether ESG-heavy portfolios can surpass their lower-rated ESG counterparts in terms of annual returns. In pursuit of this objective, the same analysis was made to the low-rated ESG portfolios, leading to intriguing findings.

In a manner consistent with our previous methodology, Table 5 presents year-over-year total returns for each of the low-rated ESG portfolios, also drawing a direct comparison with the SPY benchmark over the identical time frame. This analysis provides valuable insights into the performance of the lower-rated ESG portfolios and how they stack up against the benchmark and allows us to compare these results with the ones from the Top ESG portfolios.

Table 6 - Bottom ESG rated portfolios' annual performance

Date	Bottom ESG	Bottom Environmental	Bottom Social	Bottom Governance	SPY (S&P 500 ETF)
2009	59.17%	57.12%	51.83%	44.41%	26.37%
2010	29.3%	26.1%	37.7%	26.5%	15.06%
2011	9.78%	11.44%	9.77%	8.33%	1.89%
2012	30.61%	25.72%	28.61%	32.12%	15.99%
2013	55.94%	44.89%	45.57%	70.86%	32.31%
2014	21.80%	30.99%	20.47%	21.96%	13.46%
2015	24.13%	12.76%	10.67%	19.14%	1.25%
2016	10.88%	8.77%	16.76%	8.20%	12.00%
2017	44.11%	35.90%	41.63%	38.55%	21.70%
2018	15.42%	14.86%	2.27%	2.22%	-4.56%
2019	58.16%	49.58%	31.92%	64.79%	31.22%
2020	38.67%	36.65%	24.80%	35.63%	18.37%
2021	35.38%	23.31%	28.84%	31.40%	28.75%
2022	-12.49%	-10.62%	-10.10%	-11.20%	-18.17%
Mean	30.06%	26.25%	24.34%	28.07%	13.97%

Remarkably, it's evident that every Bottom ESG portfolio demonstrates substantial outperformance when compared to both the benchmark and the top ESG portfolios. The results are nothing short of astonishing, with the average total return over the selected period for the Bottom ESG portfolio even reaching an impressive 30.06%. As for the bottom Environmental, Social, and Governance pillars portfolios, the total returns averaged 26.25%, 24.34%, and 28.07%, respectively. The differences are remarkable, with the best-performing bottom ESG portfolio achieving an average annual return of more than double that of the benchmark (30.06% vs 13.97%).

Furthermore, the superior performance of the bottom ESG portfolios extends to the frequency of negative returns. Across the 14-year timeframe, these portfolios registered negative returns solely in 2022. Notably, even in that year, the magnitude of the negative returns exceeded those of the benchmark by a substantial margin. This trend persists when making comparisons between top and bottom ESG portfolios. The bottom ESG portfolios consistently outperform both the top ESG portfolios and the benchmark, with the bottom Social Pillar portfolio even surpassing the benchmark in all 14 years.

To further enhance our understanding, in a similar fashion to the previous analysis conducted for the Top ESG portfolios, Table 7 presents the Compound Annual Growth Rate (CAGR) achieved between 2009 and 2022 for each portfolio, offering a direct comparison with the benchmark. Additionally, Table 8 provides a visual representation of how a \$1 million USD investment would have evolved over the same period, comparing it with the performance of the SPY ETF.

Table 7 - Compound Annual Growth Rate of Bottom ESG portfolios

Date	Bottom ESG	Bottom Environmental	Bottom Social	Bottom Governance	SPY (S&P 500 ETF)
2009	59.17%	57.12%	51.83%	44.41%	26.37%
2010	43.48%	40.75%	44.58%	35.17%	20.58%
2011	31.23%	30.21%	31.90%	25.55%	14.00%
2012	31.07%	29.08%	31.07%	27.16%	14.49%
2013	35.71%	32.09%	33.85%	34.90%	17.85%
2014	33.28%	31.91%	31.52%	32.65%	17.11%
2015	31.94%	28.99%	28.32%	30.63%	14.70%
2016	29.10%	26.27%	26.81%	27.59%	14.36%
2017	30.69%	27.30%	28.38%	28.76%	15.15%
2018	29.07%	26.00%	25.49%	25.83%	13.01%
2019	31.48%	27.98%	26.06%	28.95%	14.56%
2020	32.06%	28.68%	25.96%	29.49%	14.87%
2021	32.32%	28.26%	26.18%	29.64%	15.88%
2022	28.47%	24.99%	23.16%	26.18%	13.04%

Table 8 - \$1 million USD investment evolution

Date	Bottom ESG	Bottom Environmental	Bottom Social	Bottom Governance	SPY (S&P 500 ETF)
2009	\$ 1 591 687	\$ 1 571 205	\$ 1 518 330	\$ 1 444 071	\$ 1 263 661
2010	\$ 2 058 738	\$ 1 981 186	\$ 2 090 403	\$ 1 826 966	\$ 1 453 938
2011	\$ 2 260 013	\$ 2 207 912	\$ 2 294 643	\$ 1 979 081	\$ 1 481 387
2012	\$ 2 951 721	\$ 2 775 724	\$ 2 951 158	\$ 2 614 694	\$ 1 718 285
2013	\$ 4 602 853	\$ 4 021 764	\$ 4 296 101	\$ 4 467 436	\$ 2 273 407
2014	\$ 5 606 239	\$ 5 268 090	\$ 5 175 408	\$ 5 448 283	\$ 2 579 456
2015	\$ 6 958 793	\$ 5 940 332	\$ 5 727 504	\$ 6 490 955	\$ 2 611 751
2016	\$ 7 715 898	\$ 6 461 080	\$ 6 687 635	\$ 7 022 992	\$ 2 925 196
2017	\$ 11 119 599	\$ 8 780 635	\$ 9 472 014	\$ 9 730 424	\$ 3 559 973
2018	\$ 12 834 454	\$ 10 085 658	\$ 9 686 970	\$ 9 946 633	\$ 3 397 743
2019	\$ 20 298 558	\$ 15 086 625	\$ 12 779 467	\$ 16 390 878	\$ 4 458 577
2020	\$ 28 147 854	\$ 20 616 579	\$ 15 949 375	\$ 22 231 300	\$ 5 277 761
2021	\$ 38 105 782	\$ 25 422 601	\$ 20 548 474	\$ 29 212 324	\$ 6 794 856
2022	\$ 33 347 803	\$ 22 722 249	\$ 18 472 447	\$ 25 941 484	\$ 5 560 116

Regardless of the metric under scrutiny, the lowest-rated ESG portfolios consistently exhibit outperformance when compared to both the benchmark and the highest-rated ESG portfolios. This difference is substantial in every aspect. Even if we were to conduct the same analysis by dividing it into two distinct periods (2009-2015 and 2016-2022), the pattern of outperformance would remain significant in both cases. Our findings point to a unequivocal conclusion: ESG-heavy portfolios do not surpass their lower-rated ESG counterparts in terms of annual returns, quite the contrary seems to be evident.

In addressing the conclusion regarding which variable most significantly influenced portfolio profitability, the results suggest that a low ESG global score appears to be linked to higher portfolio profitability. However, it's important to note that the answer here is not as straightforward as in the previous case, as each portfolio outperformed the benchmark (even the Top ESG portfolios). The discernible pattern is that lower ESG-rated portfolios consistently outperformed their higher ESG-rated counterparts, though the exact degree of impact may require further examination.

4.2 Discussion of Results

The previous section unveiled the key findings of this research, highlighting the performance of ESG-heavy portfolios in comparison to both the SPY ETF benchmark and low ESG-rated portfolios. In this section, the objective is distinct: the goal is to look into the potential factors underlying these observed trends, assessing their significance not only within the realm of ESG investing but also in the broader scope of investment practices. Furthermore, we discuss the implications of these findings.

The primary objective of this dissertation was to carefully examine the notion that the ESG (Environmental, Social, Governance) movement is universally beneficial, particularly from the perspective of investors. We set out to determine whether ESG ratings can serve as a viable strategy for constructing a successful portfolio within the US market, essentially investigating whether investors seeking profits should prioritize ESG performance and integration to maximize returns.

Building on the prevailing momentum for ESG integration, the anticipated outcome was that high ESG ratings would indeed function as a successful strategy, aligning the interests of all stakeholders. However, the data, somewhat surprisingly (or perhaps not), points in a different direction: stocks with lower ESG scores significantly outperformed those with higher scores. This suggests that the real potential for sustainable returns may lie within the realm of lower ESG ratings, at least from an investor's standpoint. To comprehend the underlying factors driving these results, we shall proceed with a critical analysis.

4.2.1 Critical Analysis

To proceed with a critical analysis, firstly it is necessary to address the “elephant” in the room: more surprising than the revelation that lower ESG scores seem to be linked to superior performance, is the fact that each and every one of the portfolios in our analysis outperformed the S&P 500 benchmark. This revelation is nothing short of astonishing, especially when we consider that, historically, even the most proficient investors, hedge funds, and other investment vehicles have grappled to surpass the S&P 500's historical average returns, which typically hover around 10%, and during the period under analysis, even exceeded that benchmark. Such consistent and robust outperformance naturally begs the question of what contributing factors may have played a pivotal role in achieving these impressive results. From our perspective, beyond the inherent association with high and low ESG scores, it is plausible that other influential factors have contributed to this remarkable streak of success in the results.

The first significant factor that comes into play is the macroeconomic context. A broader analysis of the market conditions during the selected timeframe for this study reveals that it included the post-global financial crisis period (in 2008). The major market crash had already taken place, and interest rates had fallen to historically low levels, remaining at these lows for an extended duration, thus creating favorable market conditions. This also helps to elucidate the extraordinary performance of the S&P 500 index observed during these years. Consequently, it's only logical to assume that there was a natural tendency for overall stock market outperformance during this period, given that alternative investments such as bonds or fiduciary deposits, had become less interesting from an investment point of view.

Another factor that could help to explain the positive overall results obtained might be the sample chosen for the analysis. We began with the constituents of the S&P 500 and then handpicked a specific subset of stocks, selecting 25 from a pool of approximately 500 “winners”. The term "winners" here underscores that only established and successful companies find their way into the S&P 500 index, which inherently increases the chances of some of these selected stocks performing exceptionally well. However, it's important to emphasize that out of the 500 companies listed, only 25 were chosen for each portfolio. If achieving returns that surpass the historical performance of the S&P 500 was as straightforward as randomly selecting 25 companies from the index, then everyone would be capitalizing on this approach. Thus, while there's no denying that a pool of potential winners exists, the selection process based on ESG scores undeniably plays a pivotal role in the portfolio's success.

Another alternative factor that could have significantly influenced the portfolios' performance relates to the number of stocks with exceptional annual returns across the majority of years. It was common for the highest-performing stock among the 25 of each portfolio to achieve total annual returns exceeding 100%, while the lowest-performing stock rarely incurred losses close to or greater than 50%. Additionally, the number of stocks with negative total annual returns within each portfolio was consistently in the minority, particularly within the lower-rated ESG portfolios. This indicates that the overall range of total returns was considerably wide, often approaching or even exceeding 100% basis points in terms of returns, among the 25 stocks in the portfolio, ultimately contributing to the impressive overall performance.

Now that we've addressed the “elephant” in the room, it's worth taking a look into the disparities between the high and low ESG portfolios and trying to uncover an explanation for why the lower-rated ESG portfolios outperformed the others. A crucial aspect that becomes immediately apparent when examining the data is the industries in which the highest and lowest ESG-rated selected companies operate in.

The technology sector, exemplified by companies like Amazon, is expected to grow at a faster pace compared to, for instance, retailers like Walmart. Surprisingly, some of the companies featured in the highest ESG-rated portfolios belonged to industries such as energy, with examples like Chevron, Exxon Mobil, and ConocoPhillips, as well as well-established giants like PepsiCo, 3M, Nike, and financial institutions such as Wells Fargo and J.P. Morgan. Even companies like Ford Motor Co. were part of the high ESG-rated portfolios, which left us somewhat surprised, and probably most people will be as well.

While these are undoubtedly well-established and consolidated corporations, they may have limited growth potential compared to the second set of companies in the low ESG-rated portfolios. This second group includes names like Berkshire Hathaway, Amazon, Take-Two Interactive, and Netflix, all associated with sectors that offer greater growth potential. This contrast may help explain why the low ESG-rated portfolios significantly outperformed their high ESG-rated counterparts.

4.2.2 Framing the Findings within the Existing Research

Our findings prompt us to consider how they align with the existing body of research that explores the intricate relationship between ESG scores and portfolio returns. Existing studies have revealed a complex and ever-changing landscape in this regard. To draw a meaningful comparison, it's crucial to recognize the nuances of our practical, real-world study in contrast to the more theoretical settings commonly addressed in previous research. These differences in methodology and approach may well explain some of the disparities between our results and those of earlier studies.

In retrospect, early studies by Kempf & Osthoff (2007) and Statman & Glushkov (2009) seemingly favored the notion that emphasizing high ESG scores could significantly enhance portfolio performance. However, these studies were conducted within more theoretical frameworks, whereas our research unfolds in a practical, almost real-world context. This distinction highlights the potential variance in conclusions, influenced by the different natures of each study.

Moreover, our findings diverge from more recent research, such as Halbritter & Dorfleitner (2015), which discovered no substantial differences in returns between high and low ESG-rated companies. In contrast, our results distinctly indicate significant disparities between these two categories. This provides a fresh perspective and potentially adds to the ongoing debate regarding the efficiency of ESG or CSR orientations, which could have implications for Milton Friedman's theory that a company's primary objective should be profitability.

Consistent with the research conducted by Borgers et al. (2013), our data also suggests that the advantage of choosing high ESG-rated portfolios diminishes over time. This phenomenon could be attributed to the increasing popularity of ESG investing, resulting in more market participants chasing the same opportunities, ultimately leveling the playing field. In essence, as ESG information becomes more widely accessible and appealing, the unique advantage of high ESG-rated stocks appears to wane, matching the observations of these previous researchers.

In summary, our findings seem to mostly deviate from prior research, showing that lower ESG-rated portfolios outperform their higher-rated counterparts. This contradicts earlier studies, which suggested that high ESG scores could boost portfolio performance. Notably, our results align with the idea that the advantage of high ESG scores may diminish over time due to increased ESG information accessibility.

4.2.3 Practical Applications

This study stands out for its practical, real-world approach. It takes the perspective of an investor and focuses on the pivotal question: “Can I profit from ESG?”. The findings presented in this dissertation provide valuable insights for investors who must weigh potential profits against ethical alignment when making investment decisions. It reveals a dual perspective, suggesting that choosing lower-rated ESG stocks, which some may perceive as being “unethical”, can yield superior returns. At the same time, the results also indicate that investors who prioritize high-rated ESG companies can still benefit, although with a narrower margin.

However, it's essential to note that these findings rely on Refinitiv data, which may limit their generalizability due to variations among different data providers. As discussed earlier, ratings can diverge significantly, potentially leading to opposite results when using data from another provider.

Chapter 5 Conclusion & Recommendations

In conclusion, this research addresses a critical gap in the existing literature by exploring the practical aspects of ESG (Environmental, Social, and Governance) investing within the U.S. market. While there's a unanimous recognition of the increasing demand for ESG-driven investments, previous studies have predominantly focused on smaller markets outside the U.S., often employing complex models that may not fully reflect real-world applicability. Our primary aim was to put the ESG premise to the test, by determining whether ESG ratings could be employed as a strategy for constructing a successful portfolio in the U.S. market.

Examining our research questions, the findings paint a complex picture. ESG-heavy portfolios indeed exhibit the potential to yield returns surpassing the S&P 500 index benchmark. Yet, a significant twist unfolds when we analyze the performance between ESG-heavy portfolios and their lower-rated ESG counterparts. Surprisingly, the lower-rated ESG portfolios consistently outperformed those with higher ESG ratings, challenging the established belief that ESG inherently leads to superior financial returns.

Perhaps even more astonishing was the fact that all selected portfolios, regardless of their ESG ratings, managed to outperform the S&P 500 benchmark. This incredible consistency raises questions about the effectiveness of simpler investment strategies or the influence of unknown factors. Was it luck or a winning strategy at play? These questions urge us to consider whether investors must choose between a firm commitment to ESG principles and a relentless pursuit of financial returns, even at the cost of ethical considerations.

This contradiction underscores the intricate dynamics of the ESG landscape. The utopian concept of ESG, rewarding companies that serve humanity and the environment, faces challenges when we find names like Lockheed Martin or Exxon Mobil within high ESG-rated portfolios. The validity of ESG rating system and the alignment of ESG scores with actual ethical and sustainable business practices may need further exploration in the future, hinting at the complex interplay of ethical, environmental, social, and financial factors in modern investment choices.

In conclusion, this research not only bridges the gap for a practical approach to ESG investing but also adds to the conversation by emphasizing the elaborate relationship between ESG scores and financial performance. Hopefully, it will serve as a guide for investors, financial institutions, and researchers active in the U.S. investment scene, where profit and ethics coexist in a unique and ever-evolving landscape.

For me, this dissertation is more than just a research study: it is a journey into the heart of modern investments, where financial returns and ethical concerns must find a way to harmoniously coexist, and where simplicity and luck sometimes outshine complexity. It offers a fresh perspective in the world of ESG investing, one where practicality and adaptability take center stage, emphasizing the importance of well-informed decision-making.

5.1 Limitations & Future Research

While this study aims to offer valuable insights, it does have limitations. The first notable limitation to consider is the potential for a selection bias. This arises because the initial selection of companies for analysis is based on their inclusion in the present-day S&P 500 index. Consequently, the study primarily focuses on the "successful companies" within this index, potentially overlooking those that performed poorly and were excluded during the analyzed period. While this may affect the generalizability of the findings to the broader market, this bias is a deliberate aspect of the research design. The S&P 500 is a well-recognized representation of the most successful companies in the U.S. market and given the time constraints and the unpracticality associated with sourcing the data for each company present in the SP 500 index of each year, it was the most reasonable approach to adopt.

Another limitation to acknowledge relates to data quality, a topic extensively discussed in the literature review. Despite Refinitiv's reputation as a reliable data source, the study's results are valid only within the context of Refinitiv data. This limitation was chosen intentionally to mirror an investor's perspective, as investors typically rely on a single source of information for ESG scores. Additionally, attempts to merge data from various sources have not proven to be more accurate than relying solely on one reputable source for ESG data. This, too, is an important limitation to consider.

Finally, the issue of causality presents another constraint. While descriptive statistics provide valuable insights into portfolio returns, they do not establish causality. This limitation is inherent in stock market research in general, where establishing causal relationships can be challenging. Nevertheless, it is crucial to acknowledge this limitation and emphasize that the study's primary aim is to present facts and observations. Future research may delve into exploring causal relationships further.

When thinking of possible future research endeavors, several intriguing pathways come to mind. One promising avenue involves scrutinizing diverse ESG rating providers in a similar study, offering insights into the potential disparities stemming from a mere alteration of data sources. This research would play a vital role in assessing the reliability and resilience of ESG data. Furthermore, subsequent studies stemming from this research could emulate its methodology while incorporating a distinctive element. Instead of adhering to the unchanging S&P 500 index, researchers might consider the prospect of annually adjusting the index to reflect each year's composition. This adaptation would enhance the findings' practical applicability, effectively bridging the chasm between theoretical insights and real-world practice.

Furthermore, two additional paths come to mind. First, building upon our findings, we contemplate the key drivers behind the exceptional performance of our selected portfolios. Does the influence of ESG ratings solely underpin this success, or is portfolio concentration a crucial factor? A captivating analysis might explore the outcomes of concentrating a handpicked selection of S&P 500 stocks, such as the top 20 each year, comparing their performance to the index. Secondly, within the ESG domain, a critical examination of companies boasting the highest ESG scores could be an exciting endeavor. The potential for surprises within these high-scoring entities warrants thorough investigation, inviting a deeper exploration of their ESG credentials.

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