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Sustainable Investing: Can ESG Weighted Portfolios Match Traditional Returns?

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Abstract

Although the demand for ESG (Environmental, Social and Governance) investing is growing, there are still many investors hesitant to incorporate sustainability metrics into their portfolios due to concerns over the financial performance of their investment. This study shows that ESG Weighting is an effective strategy in the United States equities market, represented by the stocks listed in the S&P 500 in 2019, over both a short and long term time horizon to yield comparable returns to other traditional portfolio weighting strategies, such as Market Capitalisation Weighting, Price Weighting, and Equal Weighting strategies. This research uniquely focuses on the implementation of ESG composite scores as a weighting mechanism. Comparing the results of the different weighting strategies over a 1-year-horizon, with an emphasis on the tumultuous Covid market

slowdown, and a 6-year-horizon, the study found that ESG Weighting yielded comparable returns to the other strategies in the short term, and outperformed over the long term. The results have implications for portfolio construction and may help reduce investor hesitation by demonstrating that ESG investing need not come at the expense of performance.

Introduction

Since the inception of the Intergovernmental Panel on Climate Change (IPCC) in response to the growing concern that greenhouse gasses were causing global temperatures to rise, there has been a rise of interest in investing mechanisms that provide people with the chance to align their portfolios with their ESG (environmental, social, and governance) values. Between 2015 and 2016 alone ESG investing increased by 38% in the North American market (USSIF, 2018). However, while some investors refuse to align their investments with ESG principles because of their personal convictions, many do not do so because they are concerned about the returns of such selections (Halbritter & Dorfleitner, 2015). ESG investing also receives scepticism from many investors because of the long time horizon associated with realised gains - most ESG portfolios do not have favourable returns in the short-run, but rather achieve optimal performance over longer time horizons (Cabolis *et al.*, 2023). Most investors prefer to allocate their capital to traditional investing mechanisms, such as the S&P 500, which includes stocks that are not aligned with ESG principles (S&P Dow Jones Indices, 2025). This study seeks to fill existing gaps in research on incorporating ESG factors into major stock indices, examining their effectiveness as a strategy for both short- and long-term investing. While ESG is increasingly viewed as a tool for aligning investments with sustainability goals, there is limited research on its potential to reduce risk and enhance portfolio resilience during periods of economic stress. This study answers the following questions: (1) Can an ESG-weighted S&P 500 achieve comparable returns to traditional industry weighting mechanisms in both short and long term investing horizons, thereby eliminating some of the reservations that are hindering people from aligning their investments with their values? (2) Would ESG Weighting have been more effective in mitigating the effects of the Covid pandemic on the stock market? (3) Which sectors in the S&P 500 contribute the most to ESG-related risk?

The S&P 500 is one of the most common investing mechanisms in the United States. It is an index fund containing the top largest listed equities in the market, and has historically captured roughly 73% of the total equities market in the country (Asem *et al.*, 2012). During the global Covid pandemic, between January 2019 and June 2020, the stock market saw a large breakdown, causing United States equities to lose value rapidly and extremely, the S&P 500 being no exception (Hong *et al.*, 2021). Many researchers have done work to quantify the effect of the Covid market breakdown, and analyse different mitigation strategies within portfolio construction (Hong *et al.*, 2021).

Investors commonly use two data based approaches to analyse stocks and create portfolios with targeted returns. These two approaches are Fundamental Analysis, which uses company's economic metrics such as earning values and ratios, and Technical Analysis, which focuses on historical price data and econometric models to predict market dynamics (Alzaman, 2024). Technical Analysis is built on three principles: (i) the price of a stock is a representation of all existing information, (ii) stock prices follow trends, and (iii) historical trends are repetitive (Almeida and Vieira, 2023). Fundamental Analysis is also reportedly based on three principles, namely: analysis of the company or asset in question, analysis of a market or sector, and analysis of financial indicators. These two approaches also extend to weighting those portfolios.

Weighting is the process of deciding which equities in a portfolio should be represented at which percentages (Plyakha *et al.*, 2017). While the concept of weighting equities in proportion to their ESG scores has been raised before, there has yet to be done research looking at this type of weighting in the context of the S&P 500, or during the tumultuous Covid time period (Amon *et al.,* 2021). While some research has been done on quantifying ESG factor effects within the S&P 500, breaking those effects down by time horizon and sector, there has not been any conclusive work done on weighting the stocks present in the S&P 500 by ESG composite scoring (Giese *et al.*, 2021). Furthermore, while there has been much work done on breaking down the S&P 500 by sectors, and analysing performance based on those sectors, this analysis has not been extended to weighting the stocks present in the S&P 500 by ESG-scores (Polat, 2024).

There is a gap in research looking at ESG based weighting approaches on the S&P 500. No studies have been done in weighting the stocks present in the S&P 500 at a specific time by ESG scores, or in comparing such an approach to other traditional weighting strategies. Notably, no research has yet assessed how an ESG-weighted portfolio containing the stocks present in the S&P 500 before Covid would have performed during the Covid pandemic or over a long-term horizon, highlighting a critical gap in understanding the potential risk-mitigating value of ESG-focused investing.

This study proposes a comparison analysis between four different weighting strategies, applied to the stocks listed in the S&P 500 in 2019: Market Capitalisation Weighting, Equal Weighting, Price Weighting and ESG Weighting. In order to analyse the performance of the ESG Weighting strategy compared to the more traditional standard over the tumultuous Covid period, a one year Return on Investment is determined between 2019 and 2020. Thereafter, the longevity of the ESG Weighting performance is tested on what is commonly considered to be a long term time horizon, between 2019 and 2025 (Lenoir & Tuchschmid, 2001).

Doing so, this study contributes to the literature by addressing the gaps regarding ESG integration in mainstream indices during periods of economic stress, with the broader goal of evaluating ESG investing's potential to deliver both financial returns and value alignment. It contributes to the conversation of ways that different investing strategies could mitigate effects such as Covid by showing whether ESG Weighting on the S&P 500

would have been more or less resilient to the Covid induced stock market breakdown in early 2020. It also contributes by proving the feasibility of ESG Weighting as a viable alternative to Market Capitalisation Weighting, Price Weighting and Equal Weighting for both short and long term investing horizons on the S&P 500.

This topic is relevant after Covid, where much research and query has been focussed on determining which factors led to the stock market crash during the pandemic, and what could have been done differently to mitigate those effects. This also provides future relevance to predict which strategies might mitigate any future similar uncertainty. The aim is to provide evidence in the case of ESG investing as a profitable venture, showing reluctant investors that both profit and moral values can come together in investing.

This paper proceeds using the following structure: Section 2 explains the intuition behind the research, Section 3 describes the data used and the empirical methodology, Section 4 presents the results of the empirical analysis and tests the proposed hypotheses, and Section 5 concludes the report by looking at implications and policy recommendations.

Literature Review

The last decade has witnessed a shift in the investment landscape. With a general increase globally in climate change awareness and sustainability goals, ESG investing has become a prominent driving force in the industry. Investing relating to ESG principles accounts for about $12 trillion invested in North America (Townsend, 2020). Companies such as Sustainalytics have been created in order to address the rising demand for accurate and consistent measurements of different company's stock's ESG components (Sustainalytics, 2025). Even well established reporting agencies for stock and investing data such as Bloomberg have started including ESG metrics in their reports (Bloomberg, 2025).

The period of global uncertainty around the Covid pandemic had a marked impact on the United States stock market. This effect was two-fold, dealing with social and health factors, as well as general economic impacts (Hong *et al.*, 2021). The period of time between January 2019 and June 2020 saw a breakdown in return predictability and price volatility in the S&P 500, which is the most commonly used indicator of the general United States stock market. This uncertainty and lowering of performance of indicators such as the S&P 500 was a concerning phenomenon, leading to a variety of research looking into ways that the breakdown of predictability and performance could have been mitigated. The breakdown in the stock market during Covid was wholly unprecedented, even when compared to similar pandemics such as the Spanish Flu (Baker *et al.*, 2020). Multiple factors played into this, including government restrictions that slowed down non-essential industries, as well as voluntary social distancing, which was contradictory to the United

States' service-driven economy. Furthermore, questions were raised about whether certain sectors or industries were better positioned than others to bear the impact of the Covid pandemic (Lee & Chen, 2020). Industries such as travel and leisure were highly negatively impacted by lowered mobility and travel of populations during the pandemic. In March of 2020 the stock market experienced a crash attributed to Covid impacts, with approximately 90% of the S&P 500 stocks distributing negative returns (Mazur *et al,*. 2021). However, some industries such as food, software and healthcare had positive returns during this period, whereas other industries such as entertainment and hospitality had extremely high negative returns. These analyses raise the important questions of which sectors were the best positioned to deal with the stock market breakdown during the pandemic.

Much of these inquiries into the effects of Covid on the stock market, including how different approaches to investing may have mitigated the effects of the pandemic on portfolios, focussed on the S&P 500 as a representative of the United States stock market. The S&P 500 is the primary indicator of the overall United States equities market (Nagy *et al.*, 2024). It is an index fund that contains the five hundred largest publicly traded companies in the United States. The S&P 500 index is broken down into eleven sectors, which all of the stocks contained in the index are classified into (Jain *et al.*, 2020). These sectors are: real estate, consumer discretionary, communication services, information technology, healthcare, financials, utilities, industrials, consumer staples, materials, and energy.

Weighting is the application of distributing the stocks in a consolidated portfolio mathematically at ratios that are correlated to some specific measure. Equal Weighting is one of the easiest to conceptualise - it is where each of the stocks in the portfolio carries the same weight (Plyakha *et al.*, 2017). So, for example, if you invest $100 in eleven stocks, you would invest $10 in each stock, irrespective of their price. Market Capitalisation Weighting is a technique that is dependent on the market capitalisation value of each stock, following the Fundamental Analysis approach to weighting (Bessler *et al.*, 2021). Market capitalisation is the aggregated value of all of the shares in circulation of a specific company. Market Capitalisation Weighting assigns a larger weight to stocks that have higher market capitalisation values, and lower weights for lower values companies. Price Weighting works very similarly, but assigns weights in proportion to their stock price, following the Technical Analysis approach (Plyakha *et al*., 2017).

More recently, another weighting strategy has been introduced: ESG Weighting. ESG Weighting is similar to Market Capitalisation Weighting and Price Weighting in that it assigns a weight to a in ratio to some other metric, which, in this case, is an ESG score (Amon *et al.,* 2021). However, there is a gap in analysing how ESG weighting would have measured up against traditional weighting strategies during the Covid period. There has also not been any analysis done on an ESG-weighted portfolio over what is considered to be a long-term investing horizon, at equal or more than six years of performance (Lenoir & Tuchschmid, 2001).

Amongst all of these inquiries, none have done work to test the response of an ESG weighted S&P 500 portfolio over the Covid time period, and compare it to other weighting strategies during the same time period. The S&P 500 is by far the most common mechanism for investments in the United States Stock market, and its holdings account for more than 80% of the current equities market (S&P Dow Jones Indices, 2025).

Over the past decade, ESG investing has become a major force in financial markets, driven by growing awareness of climate change and sustainability goals. The COVID-19 pandemic created unprecedented disruption in the U.S. stock market, particularly within the S&P 500, leading to a breakdown in return predictability and severe volatility. Traditional portfolio weighting methods—Equal Weighting, Market Capitalisation Weighting, and Price Weighting—have long been studied, but ESG Weighting, which assigns weights based on ESG performance scores, remains underexplored.

Main Hypotheses

This study proposes the following hypotheses:

With the documented increase in the public's interest in more sustainable investing mechanisms, it is integral to provide a clear and concise way to integrate those interests into profitable investment decisions. In order to understand if ESG Weighting is a feasible strategy, it needs to be applied to a viable representative of the United States Stock Market. For such a strategy to be an attractive option to investors, it needs to show comparable returns to other investing strategies. To establish the viability of ESG Weighting, the following hypothesis is tested.

Hypothesis 1: ESG Weighting the S&P 500 has comparable returns to traditional weighting strategies such as Market Capitalisation Weighting, Equal Weighting, and Price Weighting over both short and long term time horizons.

Due to an established stock market downturn during Covid, inquiries have been made about investment strategies as mitigation during economic uncertainties. To propose ESG Weighting as a strategy more tolerant to pandemic effects, the following hypothesis is tested.

Hypothesis 2: An ESG weighted S&P 500 would have performed similarly over the Covid time period as Market Capitalisation Weighting, Equal Weighting, and Price Weighting.

Data, Variables, and Methodology

Data and Variables

This study draws on investment information from the platform Yahoo Finance, which serves as an aggregator, providing consolidated financial data derived from primary market sources in the United States. It presents data on U.S.-listed equities, and is an industry-accepted reporting body for stock data (Chaudhari & Mahajan, 2025). It proved real-time updates and historical trends, covering market indices, share prices, company profiles, and financial statements (Yang, 2024). The platform ensures consistency and comparability across reporting periods, enhancing the reliability of the data utilized in this analysis. The data used in this analysis falls into four categories: Fundamental Variable, Technical Variable, ESG Variable, and Sector Variable.

Table 1: Variables used in this Analysis

Type of Variables	**Names of Variables**	**Definition**
Fundamental Variables	Market Capitalisation	The value of all equities in circulation on a specific date. Calculated by the reporting platform from the following formula: *MC = # of Shares*Share Price*
Technical Variables	Stock Price 2019	The trading price of an equity in the second fiscal quarter of 2019.
	Stock Price 2020	The trading price of an equity in the second fiscal quarter of 2020.
	Stock Price 2025	The trading price of an equity in the second fiscal quarter of 2025.
ESG Variables	ESG Score	An aggregated ESG risk score determined by MSCI by combining the risk scores for the Environmental, Social and Governance categories: *ESG Score = E score + G score + S score*
Sector Variable	Sector Classification	The sector a stock falls into, as determined according to MSCI standards.

Source: Yahoo Finance, MSCI 2024

Market capitalisation is a Fundamental Variable that will be used to analyse the Market Capitalisation Weighting approach. This value is unique to each stock, and is the total value of all shares in circulation at a specific date (Fort, 2024). For this purpose of this analysis, Yahoo Finance will be used to get the market capitalisation value for each stock in the S&P 500 for the first time period, which was the second fiscal quarter of 2019, right before the onset of the Covid pandemic.

The Technical Variables used are the trading prices of the equities at a specific point in time (Almeida and Vieira, 2023). For this study, those were the trading prices of the equities in the S&P 500 at the three specified points in time that the analysis is comparing. Therefore, for the second fiscal quarter of 2019 the trading price at that time was collected from Yahoo Finance, as well as for the second fiscal quarter of 2020 and the second fiscal quarter of 2025.

The Sector Variable used in this analysis is the sector classification of each individual equity, as determined by the MSCI classification methodology (Bessler *et al.*, 2021). There are eleven sectors, and each equity is divided into one of those sectors (MSCI, 2024). The sectors are listed as follows. Energy (Companies involved in the exploration, production, refining, marketing, and transportation of oil, gas, coal, and consumable fuels, as well as related equipment and services), which has a mean ESG score of 31.64, as described in Table 2. Materials (Firms that manufacture chemicals, construction materials, glass, paper, forest products, and metals, or that engage in mining and related activities). Industrials (Companies providing capital goods, like aerospace and machinery, commercial services, such as transportation and logistics, and professional services, like staffing or printing), with a mean ESG Score of 24.53. Consumer Discretionary (Producers and retailers of goods and services that are non-essential, including automobiles, apparel, leisure products, luxury items, and diversified consumer services), with a mean ESG Score of 18.12. Consumer Staples (Companies that provide essential products such as food, beverages, household items, and personal care goods, typically showing consistent demand regardless of the economy), with a mean ESG Score of 25.91. Health Care (Businesses engaged in medical services, manufacturing of pharmaceuticals and equipment, biotechnology, and life sciences tools and services), with a mean ESG Score of 18.1. Financials (Firms involved in banking, investment management, insurance, financial exchanges, and mortgage finance), with a mean ESG Score of 20.48. Information Technology (Companies that develop or distribute software, manufacture technology hardware, and provide related IT services and semiconductors), with a mean ESG Score of 15.92. Communication Services (Includes telecommunications providers, media and entertainment companies, and interactive media platforms such as social networks and streaming services), with a mean ESG Score of 17.32. Utilities (Businesses that provide essential infrastructure for electricity, water, gas, and renewable energy, including both generators and distributors), with a mean ESG Score of 25.76. Real Estate (Companies that own, develop, manage, or invest in residential, commercial, or industrial real estate, including Real Estate Investment Trusts), with a mean ESG Score of 13.1.

The ESG Variables used is a composite ESG score determined by MSCI serving as the market composer of these scores, with the scores available on Yahoo Finance (Huang, 2025). This score is a common industry accepted metric to analyse companies on their ESG activities (Galema and Gerritsen, 2025). The ESG score is a measure used to evaluate how well a company manages ESG-related risks and opportunities relative to industry peers (MSCI, 2024). It is calculated by assessing company performance across key ESG issues—such as carbon emissions, labour practices, and board independence—using data from public disclosures and alternative sources. A lower score indicates less ESG risk. These issue scores are weighted by their materiality to the company's industry and combined into E, S, and G pillar scores, which are then aggregated into a final composite ESG score.

Table 2: Sector Specific Summary Statistic

#	Sector	ESG Median	ESG Mean	MC Median (millions)	MC Mean (millions)	2019 Median Price	2019 Mean Price
1.	Communication	16	17.32	466.5	865.6	79.16	194.31
2.	Consumer Discretionary	18.15	18.12	153.8	386.3	99.05	215.31
3.	Consumer Staples	26.85	25.91	200.4	416.2	68.6	86.45
4.	Energy	33.4	31.64	269.7	432.8	59.99	59.26
5.	Financials	19.9	20.48	274.1	426.8	89.93	99.38
6.	Health Care	18.6	18.1	269.3	468.9	124	161.61
7.	Industrials	23.4	24.53	166.8	264.3	105.51	135.85
8.	Information Technology	15.8	15.92	226.2	703.2	117.23	125.19
9.	Materials	23.35	23.42	124.6	181.7	92.45	117.31
10.	Real Estate	13.1	13.1	152.6	181	109.57	126.48
11.	Utilities	25.55	25.76	157.7	203.6	65.61	72.21

Source: Self-Calculation

Methodology

This study employs a weighted portfolio modeling approach to assess the financial performance of stocks by Environmental, Social, and Governance (ESG) scores, in comparison to traditional weighting strategies. The full list of equities in the S&P 500 in the year of the initial investment is used, and those same equities are tracked over the two time periods of this analysis.

Four different weighting methods were used for comparison, each measured at the 1-year-horizon and the 6-year-horizon. The 1-year-horizon is measured from the second fiscal quarter of 2019 to the second fiscal quarter of 2020, and this time period was chosen to analyse the effects of the Covid-related market breakdown in respect to the different weighting strategies (Hong *et al.*, 2021). The 6-year-horizon was chosen to address the gap of long-term (defined as more than or equal to six years) analysis done on ESG-weighting (Lenoir & Tuchschmid, 2001). This time period is measured from the second fiscal quarter of 2019 to the second fiscal quarter of 2025, and also serves to indicate what those investments would be valued at today, if the proposed weighting strategies had been applied to the individual stocks in the S&P 500 in 2019.

Unlike studies that model the live performance of index-tracking portfolios, this analysis did not simulate the ongoing rebalancing conducted by the S&P 500 or by dynamic weighting strategies. Instead, all four weighting methods were applied once to the same fixed set of S&P 500 constituents as of the second fiscal quarter of 2019. The weights established at this initial timepoint remained constant throughout the analysis, and portfolio values were calculated by applying these static weights to later price observations.

The weighting methods are: Market Capitalisation Weighting, Equal Weighting, Price Weighting and ESG Weighting. These three comparisons were chosen to compare ESG Weighting's performance with some of the most commonly used weighting mechanisms in stock investing. Taking the set of stocks present in the S&P 500 from the first fiscal quarter of 2019, the stocks were weighed equally, by market capitalisation, by price and by their ESG scores. This initial time period was chosen in order to be able to realise the full extent of Covid pandemic effect, since the second fiscal quarter for 2019 was right before the pandemic caused the stock market to break down. In order to be able to track in dollars how these weighting measures compared over time, a finite initial investment number of $100,000 was chosen. The second time period is a 1-year-horizon from the initial investment, and the return on those investments were measured by comparing the stock prices at the relevant ratios as determined by the weighting approach to the prices of those same equities in the second fiscal quarter of 2020.

The first weighting formula forms the baseline analysis. This method, Equal Weighting, is a commonly used method for weighting assets where every asset in the set is assigned the same percentage weight (Abate *et al.*, 2021). The formula for equal weighting is as follows:

$$WE_i = \frac{1}{N} \quad (1)$$

Where *N* is the number of portfolio components. The second method, Market Capitalisation Weighting is the most common method of weighting stocks in indices such as the S&P 500, and will weight assets in a fund by the market capitalisation size of that asset (Bessler *et al.*, 2021). This method follows the following formula:

$$WMC_i = \frac{MV_i}{\sum_{i=1}^{N} MV_i} \quad (2)$$

Where *N* is the number of portfolio components. The third technique, Price Weighting, assigns a weight to an asset relative to its share price (Plyakha *et al.*, 2012). The formula for price weighting is as follows:

$$WP_i = \frac{P_i}{\sum_{i=1}^{N} P_i} \quad (3)$$

Where *N* is the number of portfolio components. Lastly, the ESG Weighting method is based on the idea that all assets should carry a weight proportional to their relative ESG risk in the set, and follows the same basic formula as capitalisation weighting and price weighting, but using ESG components instead of market capitalisation or price to determine the individual asset weights (Amon *et al.,* 2021). The formula is as follows:

$$WESG_i = \frac{ESG_i}{\sum_{i=1}^{N} ESG_i} \quad (4)$$

Where *N* is the number of portfolio components. The initial price value of the set is computed according to these four weighting strategies for three key timepoints: 2019 (baseline), 2020 (1-year horizon), and 2025 (6-year horizon). To evaluate investment performance, the Return on Investment (ROI) is calculated for each group over one-year and five-year periods using the formula:

$$ROI = \frac{Final\ Price - Initial\ Price}{Initial\ Price} * 100 \quad (5)$$

This metric allows for a comparative assessment of financial gain between the ESG-filtered and unfiltered stock groups, providing insights into the impact of ESG-based stock selection on investment outcomes. For each of the weighting strategies, a sector breakdown analysis was performed. That is, the aggregated percentage value for each of the ten listed sectors in the S&P 500 was calculated in order to determine how the different weighting strategies impact the sector distribution of the portfolio (Bessler *et al.*, 2021).

Results

For purposes in determining the validity of an ESG based selection of stocks, the above described methodology was applied to the set of stocks in the S&P 500 in 2019.

Taking the equities listed in the S&P 500 index in the second fiscal quarter of 2019, the asset weightings were determined according to the four proposed weighting strategies. Those weighting strategies were then compared to the value of those assets at those ratios in 2019 and 2025.

Results and Discussion

Table 3: Results of ESG Investment under Various Weighting Approaches

	Cap Weight	Equal Weight	Price Weight	ESG Weight
Value 2019	$100,000.00	$100,000.00	$100,000.00	$100,000.00
Value 2020	$91,223	$64,878	$89,258	$87,096
ROI 2020	-8.78%	-35.12%	-10.74%	-12.90%
Value 2025	$179,634	$232,726	$177,883	$340,622
ROI 2025	79.63%	132.73%	77.88%	340.62%

In all of the weighting strategies, 2020 had a negative return on investment. This result was expected due to the country-wide industry slowdown during the Covid pandemic (Hong *et al.*, 2021). However, within that context, there was still a distinction between the performance of the different weighting strategies. Market Capitalisation Weighted had the best return on investment, measuring almost two percent better than the second best, which was Price Weighted. ESG Weighted closely followed behind Price Weighted, performing another 2% worse. Overall, ESG Weighted had similar performance to Market Capitalisation Weighted and Price Weighted. Equal Weighting was by far the worst performer over a one year time period, having a more than 20% worse return than the next worst performer.

However, the 6-year-horizon ESG Weighted strategy had far superior results to any other scenario. The ESG Weighted analysis had an almost 340% return from the initial investment. The second best performer was Equal Weighted, with Price Weighted and Market Capitalisation Weighted performing the lowest. Interestingly, the two strategies that performed the best over one year were the ones that performed the worst over six years. Thus, the results show that the ESG Weighted strategy lends itself as a long term investing tool, and performs extremely well over a long term horizon. Thus, for goals that are more directed to long term outcomes, it could be an ideal option. While ESG Weighted

had comparable performance to Market Capitalisation Weighted and Price Weighted, and performed better than Equal Weighted, over the Covid period, it was not the best positioned strategy to deal with the market breakdown during the time period.

While other strategies performed better than ESG Weighting over the short term, over the long term, it completely outperformed any of the other weighting strategies. Therefore, the first hypothesis of this study is not rejected. However, during the Covid time period, ESG Weighting only performed the third best of the weighting strategies, and thus, the second hypothesis was not accepted for the full sample S&P 500 test.

The methodology was repeated with a smaller sample size, using only the stocks that fell into the Health Care and Real Estate sectors, respectively. Health Care was chosen to isolate the effect of Covid on an industry that was poised to gain from the pandemic, due to advances in medical research and provision during such times (Alberti *et al.*, 2024). Since this study is analysing the effects of ESG Weighting in mitigating the Covid stock market downturn, it follows that the Health Care sector is studied individually, since it is a sector that could have potentially gained from increased focus on medical advances during the pandemic. Real Estate was chosen to realise the effect that Covid had on the sector, since it mostly deals with long term investments that are less susceptible to shocks to the economy (Milcheva, 2022). Real Estate was also chosen as a point of interest, because it had the lowest mean ESG Score, as shown in Table 2. Real Estate equities often have better ESG ratings because sustainability practices in the sector, such as cutting water and energy usage, are often cost-savings measures as well, making them natural choices for operations efficiency (Robinson & McIntosh, 2022).

Table 4: Results of Different Weighting Approaches in Health Care

	Cap Weight	**Equal Weight**	**Price Weight**	**ESG Weight**
Value 2019	$100,000.00	$100,000.00	$100,000.00	$100,000.00
Value 2020	$98,792	$99,476	$99,279	$99,650
ROI 2020	-1.21%	-0.52%	-0.72%	-0.45%
Value 2025	$154,015	$166,819	$153,421	$166,598
ROI 2025	54.01%	66.82%	53.42%	66.6%

Interestingly enough, in the Health Care sector there is practically no difference in return on investment over the 1-year-horizon, with all four of the weighting strategies

having a return within 1% of each other. This time period covered the bulk of the Covid pandemic, during which time a lot of companies in the Health Care sector had higher returns than other industries, since a lot of advances in medicine were happening during this time (Alberti *et al.*, 2024). This is a trend that has been true not only during Covid, but has historically been the case during national or international health crises. Thus, it makes sense that the Health Care sector had higher returns than the full S&P 500 did during this time period. The fact that there were very small differences between the weighting strategies suggests that since the entire industry was having such an uptake during the time, it made little difference how the stocks were weighted, since they all had very similar levels of increase.

However, over the 6-year-horizon, there were more differences in performance across the different weighting strategies. The ESG Weighted plan did have practically the same returns as the highest strategy, which was Market Capitalisation Weighted. But Price and Equal Weighted, which also had practically the same returns, were around 10% lower than the top two performers. This shows that ESG Weighting is a viable long-term strategy for this sector, since it was within 0.22% performance of the strategy which had the best return. Compared to the other sectors, Table 2 shows that there is not much deviation between the mean and median values for both the market capitalisation number and 2019 prices of the Health Care stocks. This correlates to the result of Equal Weighting as a top performing strategy for this sector, as equal weighting does not differentiate between the market capitalisation or price values when weighting the stocks.

For the Health Care sector of the S&P 500, ESG Weighting performed the best over the short term, and within 0.22% of the best over the long term. Thus, the first hypothesis is not rejected in this case. Furthermore, during the Covid time period ESG Weighting had the highest returns of any of the strategies, and thus the second hypothesis is not rejected.

Table 5: Results of Different Weighting Approaches in Real Estate

	MC Weight	**Equal Weight**	**Price Weight**	**ESG Weight**
Value 2019	$100,000.00	$100,000.00	$100,000.00	$100,000.00
Value 2020	$100,948	$106,437	$94,229	$106,342
ROI 2020	0.95%	6.44%	-5.77%	6.34%
Value 2025	$118,976	$124,067	$122,702	$124,811
ROI 2025	18.98%	24.01%	22.70%	24.81%

The Real Estate sector had mostly positive returns over the 1-year-horizon during Covid, which is because of the mostly non-volatile nature of the industry. This industry mostly deals with long term investments, which are less susceptible to short term shocks to the economy (Milcheva, 2022). However, the Price Weighted approach did have a negative return. The Equal Weighted and ESG Weighted approaches both yielded around 6% returns. Market Capitalisation had practically no return, and price weighting was the lowest.

When it came to the 6-year-horizon, ESG Weighting yielded the largest return on investment. However, at 25% return, this is significantly less than the return was for ESG Weighting on the full S&P 500 list. This could be because the underlying assets in the Real Estate sector tend to appreciate at slower rates than some other sectors, making it an effective long-term investment for people who are comfortable with lower returns for less volatility.

For the Real Estate sector, weighting the S&P 500 has comparable returns to the traditional weighting strategies, and performs highly over both the short and long term. Thus, the first hypothesis of this study is not rejected, in the case of the Health Care sector. Similarly, over the Covid period, the ESG Weighting strategy performed better than Market Capitalisation Weighting and Price Weighting, and almost within 0.1% of Equal Weighting. Therefore, the second hypothesis of this study is not rejected.

Conclusion and Policy Recommendation

This study examined the performance of ESG-weighted portfolios compared to traditional weighting strategies, including Market Capitalisation , Equal Weighting, and Price Weighting, across the full set of stocks in the S&P 500 index in 2019, and specifically within the Health Care and Real Estate sectors. The analysis considered both short-term (one year, covering the COVID-19 pandemic) and long-term (six years) investment horizons.

This analysis did not seek to replicate the actual, dynamically rebalanced performance of the S&P 500 over time. Instead, the study applied each weighting scheme once to a fixed cross-section of S&P 500 constituents from 2019 and tracked how those static allocations evolved over subsequent periods. As a result, the findings should not be interpreted as a direct proxy for index-tracking performance. Rather, the results provide a controlled and internally consistent comparison of how different weighting methodologies would have performed when applied to the same underlying set of stocks. This design strengthens the validity of the relative performance comparisons across weighting schemes, even though it abstracted from real-world index maintenance and rebalancing effects.

The results reveal a nuanced picture of ESG investing's potential. Over the short-term pandemic period, the ESG-weighted portfolio delivered competitive returns but ranked third, behind Market Capitalisation and Price Weighting. However, in the longer six-year horizon, ESG Weighting outperformed all other strategies significantly, achieving nearly 340% returns, which underscores its appeal for investors with extended timeframes seeking to align financial and ethical objectives.

In the Health Care sector, all weighting strategies showed remarkably similar short-term returns, with ESG Weighting slightly ahead, reflecting the sector's strong performance amid heightened demand for medical innovation during the pandemic. Over the long term, ESG Weighting remained among the top performers, nearly matching Market Capitalisation Weighting, confirming its viability in sectors driven by fundamental growth trends less influenced by weighting methods. The Real Estate sector demonstrated resilience during the pandemic, showing mostly positive returns attributable to its traditionally low volatility and emphasis on long-term investments. While ESG Weighting led in six-year returns within this sector, overall gains were more modest than the broader S&P 500, consistent with the understanding that Real Estate provides steadier but slower growth, suiting investors with lower risk tolerance.

Across all analyses, the first hypothesis, that ESG Weighting yields returns comparable to traditional strategies over short and long horizons, was supported. The second hypothesis, that ESG Weighting would outperform during the COVID-19 period, was confirmed in the Health Care and Real Estate sectors but not for the full S&P 500. These findings suggest ESG investing offers a robust, long-term strategy that aligns well with both financial and sustainability goals, even if short-term performance during periods of market stress may vary by sector.

These results support some policy approaches. First, promoting and incentivising ESG investing as a viable long-term strategy could encourage more investors to align their portfolios with sustainability values without sacrificing returns. This could be done by leveraging tax credits for ESG investing, or assigning penalties to investments that carry high ESG risk. Sector-specific ESG integration is important, particularly incentivising de-investing in high-risk industries such as Energy, while encouraging continued sustainable practices in sectors like Real Estate. Additionally, requiring professional investors to undergo training about the risk-return trade-offs inherent in ESG portfolios, including sectoral differences, would help set realistic expectations and improve adoption. Finally, encouraging diversification across sectors with varied ESG risk profiles can optimize portfolio stability and growth potential.

In summary, ESG Weighted investing presents a compelling opportunity for long-term investors seeking to merge ethical considerations with strong financial performance. By fostering supportive policies and investor education, the financial ecosystem can better realize the dual benefits of sustainable investing.

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