

Current Status and Future Challenges for Green Equity

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ABSTRACT

In response to increasing climate concerns, green equity has emerged as complementary to green bonds in attaining sustainable financial goals. It's a new approach for transforming harmful carbon developments towards green and safer investments. Despite of increased awareness of green investment literature on green equity is still scattered and need to be compiled. This study provides an updated overview of research developments concerning green equity along with the potential benefits of green equity for established and new enterprises. Further, we compared the performance of green equity with non-green equity and green bonds. Lastly, we discuss the challenges and future research avenues in this emerging field of sustainable finance.

KEYWORDS: *green investment; green equity; green investors; sustainable finance*

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1. INTRODUCTION

Rapid change in climate conditions has attracted the attention of retail investors', institutional investors and government of almost all the countries towards sustainable investment avenues. The best approach to address climate risks and future costs for businesses is likely through green innovation. It includes technical advancements that minimize an organization's carbon footprint, lower its GHG emission levels, and strengthen environmental management. Given the need of sustainable finance; the United States has proposed to cut its carbon emissions in half by the end of 2030; other signatories, including the European Union and the United Kingdom also intend to be carbon neutral by 2050 (Patterson and Ramkumar, 2021). This breakthrough makes the company and its profits sustainable, which presumably lowers the cost of raising capital.

A wide range of financial products are available under the scope of green finance aimed at environmentally beneficial economic operations have grown in popularity among investors. Investors, businesses houses, and the government are becoming increasingly aware of climate change and related

issues, such as the depletion of natural resources, temperature increases, pollution, and disturbed eco systems. The adverse effects of these climate changes on living conditions are obvious. Green innovations boost a company's market share, social acceptance, and ecological reputation as responsible investors demand more of the company's products.

Green equity is an important component of green finance that provides funding to environmental friendly projects on the path of sustainability. It follows increase in the interest to capitalize funds in the green equities by the environmental conscious investors (Chatziantoniou et al., 2022). Through the times of low returns and unpopular investment, green finance is now appearing more like a sustainable gold rush and less like the specialized interest of socially concerned investors. Banks and other financial institution are speculating that the shift away from fossil fuels is permanent and that they can profit by promoting it, further solidifying the change. (Patterson and Ramkumar, 2021). This notion is supported by the steadily rising values of new battery makers and electric car firms like Tesla Inc. As the

scope and size of the financial markets for green investments increase, exploring the green equity growth and challenges has become an important issue. This helps investors to recognize the scenarios in which green equity is effective and the risks associated with it.

The purpose of this study is to look into the existing state of affairs and future challenges for investing into green equity across various market conditions and investment horizons. To the authors knowledge this is the first paper that provides an updated overview of scholarly developments in green equity market and propose future research in order to investigate the economic consequences of this nascent segment of green finance. The rest of the paper is structured as follows: Section 2 surveys a substantial body of literature on green equity in general terms. Section 3 analyses importance of green equity for the companies. Section 4 offers conclusion of the study and identifies the limits of investing in green equity. Furthermore, this section also suggests new research directions for expanding our understanding in the field of sustainability through green equity.

2. Literature Review

2.1. Green equity with shades of green

In every financial market, stocks vary in their expected returns and risk. Even boom in any particular sector of the market does not provide alpha returns to all the companies of the industry. In the same way there are winner and loser stocks in the green equity market too; All green stocks are not equally attractive for the environmental conscious investors. A study documented that out of 16 green stocks only few were actually providing good returns and could be considered as value picks for the portfolio (Tsolas & Charles, 2015). Tsolas and Charles (2015) analyzed sample using Data Envelopment Analysis [DEA], on the basis of ranking and ratings DEA provided 4 to 5 stocks that were best within its class of green equity and should be considered by the value investors interested into green equity. Study also favored the use of DEA over Sharpe ratio and Jensen's alpha as a measure to evaluate and compared individual stocks returns.

2.2. Green Equity and Green Bonds

Particularly, at times of crises different segments of green finance shows spillover effect. One of such example is provided by Friedman (1970) in his study showing a relation between green equity market and green bond market of China. Although this interdependency is not long lasting and exist only for very short-period of time (Pham, 2021). Therefore, for environment conscious investors green bonds could serve a good option to diversify their portfolio

as its relation with the green equity fades in the long run and at times of crises green bonds absorbs shocks much quickly (Chatziantoniou et al., 2022).

2.3. Different markets integration

With the massive use of internet and free trades among nations now world has become more integrated than ever. Any political, social and environmental act of a nation has impact on other nations as well. Cummins et al. (2014), studied the relationship of prices of green equity with the global indices, sectoral indices and regional indices. This dynamic relation was explored with Granger Causality testing along with the use of Asymmetric Vector Autoregression[AVAR]. The results of the study depicted that local green equity indices is associated with the global indices. Pham (2021) used Cross-quantilogram[CQ] to find directional spillover among various green equity markets across various phases of the financial market. stated that the green equity markets of US, Europe and Asia is interconnected in a way that any slight movement in the US markets and european markets, US biggest shock giver, asian shock receiver; irrespective of the market phase[bull, bear or normal] have an impact on European and Asian markets. While US market show relation with the other markets only in the bear market or negative shocks. Interconnection between Energy commodity and green stocks was found only in the Asian markets. Any movement in the Green index is strongly correlated to the changes in global share market, finTec and commodities markets. Therefore portfolio can be diversified including energu commodity and green stocks of European and Us markets. Following US markets could provide benefits to the investors to enter and exit. Effect of shock is only for a short period so green investors can also diversify portfolio with green stocks of other nations.

Interestingly authors also found a causal relation of green equity with the natural gas whereas no relation was found with the oil indices. Lubos Pastor et al. (2022) US green stocks outperforms the brown stocks. Also stated that bitcoin is not correlated to the returns of green indices so can be considered for portfolio diversification (Goodell et al., 2022). This refers to the shifting of investors interest in more environmental friendly fossil fuels (Cummins et al., 2014).

2.4. Hedging against crisis

Impact of any crises can be directly traced with the extreme volatility in the Financial markets. For instance, in 2020 financial markets crashed with the fall in the prices of the stocks worldwide; green equity market efficiency has also been decreased

(Ferreira & Morais, 2022). Tripathi and Bhandari (2012) measured the impact of crises on the green portfolio and non-green portfolio in Indian Stock market. With the application of Asset Pricing Models, study concluded that non-green stocks provided high alphas before crises and during the period of crises. Whereas green portfolio return outperformed the return of non-green portfolio after the crises period. Post crises period induce the demand of greener stocks. conducted in India compared performance of green stock portfolio with non-green stock portfolio and market portfolio. Returns of the portfolios were compared on the basis of three time durations; before, during and after crises of 2007 (Tripathi & Bhandari, 2012). Study concluded that green stock portfolio outperformed market portfolio and non-green portfolio during the crises but no significant difference in returns was found in pre-crisis and post-crisis period. Including green stock in the portfolio could provide high returns and low risks.

Choi (2020) with the goggle search volume identified that when local temperature increases attracts investors' attention towards global warming and resulting into more investment into green stocks. [low carbon emission firms]. Surprisingly even Geopolitical risks have long term positive effect on the adoption of green equity by the investors (Sohag et al., 2022). Reassurers further added Green equities should be avoided at the beginning of the geopolitical tensions when green equities are costlier. Abraham et al. (2022) combing green energy securities equity at the time of financial crises not only reduce risk of overall portfolio but asset also reflects assets to its rational price. At times of high levels of uncertainties investors consider green equity as safe haven. This inclination towards green equity is the result of the measures taken by the investors to hedge against the extreme volatilities of the economy.

2.5. Role of private institutional investors

Although green equity is focused in public market, private equity investors also developing responsible investing practices. Recent COVID-19 crises turmoil shifted interest of the investors towards the equity of socially responsible firms (Crifo & Forget, 2013). Private equity firms can create a unique value for the firm that can differentiate them from other private equity firms in the market. Sustainable practices enhance greater investors engagement with firms.

2.6. Role of media

Often investor's beliefs are altered with kind of information they possess from their surroundings. Active investors always keep an eye on the latest information. The Role of media in providing instant news cannot be denied. In order to explore green

equity market, Researchers have determined the influence of environmental news on the stock returns of the green industry (Wang et al., 2021, Sampei & Aoyagi-Usui, 2009). Wang et al. (2021) with the help of recurrent neural network determined that environmental news have positive impact on the returns of the green stocks through altering the investors sentiment. Adding to it, Sampei & Aoyagi-Usui (2009) concluded that not only environmental news but its frequency is also important in making investors more conscious about the impact of their investment. Moreover, long term-variables are more important in determining how green enterprises are reported in emerging markets (Robinson et al.), but daily news can make investors aware about the environmental conditions (Sampei & Aoyagi-Usui, 2009); sudden concerns of climate decrease in the discount rate of green firms and increase in the discount rate of brown firms attracting more green investment (Ardia et al., 2020).

3. Are all green investors believe in sustainability?

The main goal of green investing is environmental accountability because, if businesses are expected to take proactive measures to safeguard the environment and promote sustainable development, likewise are investors, who must uphold higher standards of social responsibility and ensure a sufficient flow of capital to green businesses. Moreover, Green equity investors are not always environment conscious; they might have randomly picked stocks that turn out as a stock of green equity market. These investors are not conscious about the carbon-emission and global warming. Moreover, it is the green-inducing investors that pressurize the firms to adopt environment friendly practices. And this institutional pressure from the green inducing investors is positively related to the adoption of more environment conscious practices (Noh & Oh, 2020).

4. Going green is necessity or choice for the companies?

In the finance and economics research corporate purpose have been defined differently by different groups of researchers. As per Milton Friedman companies are working for the prime purpose of making profits (Friedman, 1970). Furthermore, some group of researchers stated a companies' prime motive is towards the wealth creation of the shareholders through their active participation in the decision-making in the company's affairs. Jensen (2002) referred stakeholders as "individuals and groups who can substantially affect, or can be affected by the welfare of the firm". The definition broadened the purpose which stretches its purpose in

servicing not only shareholders but the community at large. In this case, in relation to the “greenness” of its activities, investors and community change the firm’s practices in adopting ethical and clean practices (Heinkel et al., 2001). As there are more and more green investors in the market they will refuse to invest in the polluting companies (that do not incorporate green practices) leaving these companies to the investors who are neutral towards environmental practices; these neutral investors have to share extra risk of investing in the polluting companies. Bearing of extra risk will pursue them to expect higher returns on their investment. Pressure of high expected return will also induce polluting firms to reform their practices into green and sustainable.

5. Conclusion

The lack of interdependencies among green investment makes them suitable for diversification in the normal economic conditions. Investors of environmentally friendly assets need to consider the financial market conditions, for short term gains various green investment alternatives can be combined as effect of one investment class spills over to other green investments. Whereas in the long run, combining other green investments with the green equity would give benefits of portfolio diversification and hedge against financial market volatility (Pham, 2021).

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