



Corporate Social Responsibility and Earnings Reports: The Moderating Role of Market Volatility and Trading Opportunities

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ABSTRACT

This study examines the complex relationship between corporate social responsibility (CSR) and market performance, particularly during quarterly earnings releases for NASDAQ-100 companies. It challenges the notion that ethical companies with strong social performance necessarily offer lower returns. The research explores the concept of "CSR.mv functions" (trading tools based on social responsibility) as a potential way to improve the financial performance of socially responsible investments. Interestingly, the study also finds that companies with lower CSR ratings might offer surprisingly high returns during earnings releases, suggesting unique trading opportunities in this "psychological time." These findings offer valuable insights for the scientific community interested in sustainable investing and the interplay between social responsibility and financial markets. As paper's main contribution could be considered the study of the relationship between the moderating

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(independent) variables "market volatility" (MV) and "trading opportunities" (TO) and the (dependent) variable "corporate earnings reports" released by NASDAQ-100 companies in the USA (quarterly), while CSR has been investigated as a dependent variable affecting the above relationship.

Keywords: Corporate social responsibility; earnings releases; ethical investing; market volatility.

JEL Classifications: G10, G11, G14, G18, K22, M14, M20.

1. INTRODUCTION

In the United States, Canada, and Europe, there are currently a significant and increasing number of ethical mutual funds that invest through Exchange-Traded Funds (ETFs), Standard & Poor's (S&P-500) companies, and National Association of Securities Dealers Automated Quotations (NASDAQ-100) corporations. More than 12% of all equities, mutual fund, currency, and exchange-traded funds (ETF) assets are currently handled following Socially Responsible Investment (SRI) standards, according to the United States Social Investment Forum (US.SIF). Corporate Social Responsibility (CSR) and SRI are related concepts. CSR typically entails a fund or institutions adhering to "ethical rules" and putting "socially responsible functionalities" into place to comply with US.SIF guidelines. This ensures that the fund or institution does not invest in mutual funds, exchange-traded funds, or businesses that have poor performance in the latter.

However, it is well known that the earnings reports, which are published in the first month of every quarter (based on US data), cause significant market volatility. This, in turn, fuels the momentum in the Forex, options, futures, and equity markets, providing excellent trading opportunities (Basdekidou & Styliadou 2017a, 2017b, 2017c, Ang et al. 2006).

Jesse Livermore's "psychological time" in trading could be used to describe the timing of the earnings release (Mercer 2016). To learn more about the "psychological time," check Lefèvre (1923/2010) and Livermore (1940/2001). Last but not least, a lot of NASDAQ-100, S&P-500, big ETFs, mutual and pension funds, institutions, and swing traders now incorporate "ethical CSR criteria" into their search engines for choosing stocks and ETFs. More recently, there has been some evidence that modern market analysts also frequently base their portfolio research on SRI ethical issues.

In order to explain the ethical standards and trading features as a psychological timing function for corporate conscience responsible trading of volatile events like the earnings release reports, this article presents the notion of "CSR market trading volatility" (CSR. mtv).

1.1 Problem Introduction

Corporate Social Responsibility (CSR) activities have been shown to influence financial performance and investor behavior, particularly through their impact on earnings reports. However, the nature and consistency of this relationship remain unclear under varying market conditions. Specifically, there is limited understanding of how external factors like market volatility and trading opportunities moderate the relationship between CSR activities and earnings reports.

This gap highlights the need to examine whether market volatility strengthens or weakens the perceived credibility of CSR-aligned earnings reports and whether trading opportunities influence investor reactions to these disclosures. Addressing this issue is critical to understanding the broader dynamics between CSR initiatives, financial reporting, and market behavior, which can inform corporate strategies and investor decision-making.

Although there have been a lot of study reports and studies on corporate social responsibility (CSR) in recent years, it is unclear and poorly proven whether investing in mutual funds, ETFs, or stocks that practice social responsibility is beneficial to profits (returns). From a theoretical perspective, the SRI's merit, quality, and integrity are suggested by arguments related to the Efficient Markets Hypothesis (Note 4). However, from a different angle (speculative traders), intraday and short-term trading clearly shows the shortcomings and worthlessness of ethical, socially conscious businesses, corporations, and ETFs (Basdekidou, 2021, 2019, 2017).

As far as we are aware, no one study has yet looked at the distinct effects of each of these CSR and CSR.P components on stock and ETF returns in turbulent market conditions, such as those that occur during earnings report releases (Styliadou & Williamson, 2018; Styliadou, 2018c).

Even though the marginal profitability would be zero, we believe that, at the firm level, investments in socially responsible activities should result in product recognition (marketing), brand awareness, stability, and tranquility under certain assumptions about the existence of markets and clearly defined property and ethical rights. A financial portfolio's functionality, diversity, diversification, and efficiency will also be diminished if stocks, industries, sectors, or even entire nations are sold out or isolated due to ethical and social responsibility issues (Basdekidou & Papapanagos, 2023, 2024a).

Therefore, it is a good idea to keep a portfolio that is well-diversified and includes some assets with social consciences (moral sense), such as the ethical portion of the portfolio (long-term investment); the remaining assets would be leveraged non-ethical, non-morally right firms, companies, or exchange-traded funds (ETFs), which are perfect for volatile intraday trading situations like the release of earnings reports (Basdekidou & Papapanagos, 2024b, 2024c).

Accordingly, a business (stock) or exchange-traded fund (ETF) that engages in well-managed CSR initiatives ought to benefit from increased returns (profit) and ethical brand awareness; Tables 2, 3, 5, and 6 provide pertinent examples (Section 4). Therefore, improving the company's operating performance and the ETF's trading plan is the goal (desirable) of an efficiency-boosting strategy. These enhancements may be fueled by the "psychological time" and the "CSR.mtv" trading parameters and activities, respectively (Basdekidou & Papapanagos, 2023, 2024d).

We think it is conceivable to explain why social, financial, and trading performances are positively correlated, especially in NASDAQ-100 companies, S&P-500 corporations, and leveraged exchange-traded funds (ETFs); in fact, this is the case and the focus of this essay.

1.2 Literature Review

As "a concept whereby corporations integrate social and environmental concerns in their

business strategy and operations, as well as their engagement with stakeholders voluntarily," the European Union advocates for a pan-European framework for corporate social responsibility (CSR) (European Commission, 2024). It is crucial to understand that the concept of Corporate Socially Responsible Performance (CSR.P) is multifaceted; therefore, focusing on the incorrect aspect could lead to conclusions that are not accurate and comprehensive (Joshi et al., 2024; Raghavendra & Ganapathy, 2024; Styliadou, 2018a; Styliadou, 2018b).

By assisting in the satisfaction of its stakeholders (institutions, swing traders, intraday speculators, employees, altruistic shareholders, consumers, government, etc.), a company with a socially conscious corporate conscience (moral sense) may increase the profitability of an ETF or firm (Osakwe & Amalachukwu, 2017; Basdekidou & Papapanagos, 2023). According to Brammer, Brooks, and Pavelin (2006), the significance of a given activity to stakeholders (Hovakimian & Hu, 2016) and institutional investors (Edelen, Ince, & Kadlec, 2015; Chen et al. 2007) determines whether a strong CSR.P. will improve or harm an ETF's reputation.

The degree of corporate social responsibility of an exchange-traded fund (ETF) can be assessed in a variety of ways, such as market trading volatility (Bali & Cakici, 2008), asset price volatility (Nickerson, 2016), philanthropic activities (National Philanthropic Trust, 2017), social responsibility and industry (Melo & Garrido-Morgado, 2012), minimizing negative environmental effects (Martinuzzi et al. 2011), treating employees well and equity returns (Yan & Zhang, 2009; Lou et al. 2016), and temporal trading functionalities (Basdekidou & Styliadou, 2017a, 2017b).

Market timing, dynamics, and leveraged exchange-traded funds (ETFs) are additional CSR factors associated with market trading volatility. The publications by Hovakimian and Hu (2016) and Cesari et al. (2012) are excellent sources of information for market timing context and functionality. While Basdekidou and Styliadou (2017b) have explored leveraged ETF intraday trading, Basdekidou (2018a) has thoroughly examined market dynamics (returns, functionality, efficiency, etc.).

The Small and Medium Enterprises (SMEs) business sector is also important in terms of the economic, environmental, and social impact it

makes globally, even though CSR and CSR.P have historically been linked to large corporations, firms, and businesses (Basdekidou & Papapanagos, 2024a, 2024b, 2024c). The discussion and analysis of the roles, tenets, and practices of corporate social responsibility (CSR) and CSR.P in small and medium-sized enterprises has recently gained attention (Kechiche & Soparnot, 2012). Lastly, CSR and CSR.mtv should be part of the national agenda in rising economies (Joshi et al., 2024; Chatterjee & Mitra, 2017) and are linked to the global financial crises (Nguyen & Tran, 2016).

1.3 Paper's Motivation

By (i) introducing, defining, and documenting the novel term "CSR market trading volatility (CSR.mtv)" as a temporal psychological timing function for corporate conscience responsible leveraged ETF trading in volatile situations like earnings release reports, (ii) combining binary options with CSR functions, and (iii) applying CSR.mtv functionalities in volatile markets, the current paper seeks to advance the field of corporate finance.

We suggest that it is very desired for our research to back-test data at both the business and ETF levels, especially for the 3x leveraged ETFs that do better in volatile markets (e.g., NFP or earnings release psychological time) (Basdekidou & Styliadou 2017a).

Briefly put, this study claims that management of NASDAQ-100 companies and S&P-500 corporations that adhere rigorously to a plan that includes both "ethical criteria" for long-term investments and "trading criteria" for volatile intraday trading perform better, consistently, and reliably. This also applies to CSR.mtv leveraged ETFs, which are ethical and socially conscious ETFs that are prepared to take advantage of market trading volatility.

1.4 Paper's Structure

The remainder of this article continues as follows. Section 2 addresses the available evidence on the relationship between CSR and earnings release financial trading performance, and Section 3 describes and examines the data and study methodology. Section 4 includes the analysis and relative outcomes. Finally, Section 5 includes some concluding observations, a discussion, and recommendations for further research.

2. CORPORATE SOCIAL RESPONSIBILITY, NFPs & FINANCIAL RETURNS

The evidence that currently exists about the relationships and roles of CSR, CSR.P, and earnings release market financial success is reviewed in this section (Basdekidou, 2017b; Mercer 2016; Ang et al. 2006). We focus on studies pertaining to stocks (NASDAQ-100 companies and S&P-500 companies) and leveraged ETFs trading returns during the psychological period surrounding the release of earnings reports because we are interested in the emotional impact of social responsibility on institutions, investors, and traders, to whom accounting-based measures only indirectly affect (Styliadou & Williamson, 2018; Styliadou, 2018a, 2018c).

The literature we review falls into two main categories: (a) firm-level evidence and back-testing data (proofs) about how a firm's reputation and stock performance are evaluated for SRI and non-SRI firms, and (b) ETF-level evidence and back-testing data (proofs) about how social performance relates to the returns of equities and leveraged ETFs (Basdekidou & Styliadou, 2017a, 2017b, 2017c).

Numerous publications in this field have examined the relationship between a company's, firm's, or ETF's level of CSR and its respectability and reputation. Improved corporate social performance can result in higher returns either directly through the traditional "cost reduction" and "productivity improvement" functions or indirectly through an improvement and upgrade in the firm's or ETF's overall standing and outlook. This makes market analysts and securities advisers more willing to recommend the specific equity or ETF and makes investors and institutions more willing to hold it, regardless of the firm-level dividends, profit shares, and revenues or the ETF-level Net Asset Value (NAV) and ETF management costs (Basdekidou, 2021, 2019, 2018a, 2018b).

The average movement of indexes, futures, commodities, stocks, mutual funds, exchange-traded funds (ETFs), binary options, and Forex pairs for the 2015 year immediately following the Nonfarm Payroll (NFP) releases is examined by Mercer (2016), a volume analyst and divergences-based trading specialist from North Carolina (12 NFP reports). The NFP "market volatility," payroll/financial compensation, and

other factors are taken into account in Mercer's study. Her article then looks at long-term buy-and-hold abnormal returns as well as immediate market movements (on the announcement of the NFP). Additionally, binary options are discussed by Mercer (2017) as trading opportunities appropriate for volatile market conditions (see Section 4: CSR and Binary Options) (Osakwe & Amalachukwu, 2017).

A number of research use theoretical models rather than empirical ones to investigate the connection between trade, financial, and CSR performances (Brammer, et al. 2006). The well-known Merton's (1987) model of capital markets' functionality, equilibrium, operation, and segmentation shares many similarities with these theoretical frameworks. Additionally, Angel and Rivoli (1997) take a different tack when discussing SRI and look at how environmental behavior affects a company's expenses and equity capital.

According to their argument, socially conscious investors will not put their money into companies and exchange-traded funds (ETFs) with dubious environmental policies. As a result, the only institutions and investors who will demand shares of these companies are "neutral" or short-term investors, or those who have accumulated portfolios without any moral or social conscience. In contrast to green, ethical firms and ETFs, this lack of demand will drive up the cost of capital for polluting, morally reprehensible firms and ETFs (Joshi et al., 2024; Basdekidou, 2021).

Lastly, other from a few preliminary studies by Derwall et al. (2004), there is no published examination of the effect of social responsibility on stock returns at the firm level. They primarily address the environmental side of corporate social responsibility (CSR) and propose that companies that enhance their environmental performance can lower their "betas" (i.e., make more risk-free investments), draw in socially conscious (mutual) funds, and ultimately increase their stock values by as much as 4%. The "Innovest" rating database, which contains records of "eco-efficiency" performances (environmental concerns) for the years 1995–2003, is used by Derwall et al. (2004). They classify their sample of businesses into two portfolios (the highest and the lowest ethical scoring enterprises) based on several eco-efficiency characteristics and indicators (Philbrick & Stephan, 1993).

3. METHODOLOGY

The shareholding data, insider holding changes, and some sample profit/loss trading data (2007–2024) used in this paper as shareholding and profit variables were gathered from a variety of sources, including the Securities & Exchange Commission/SEC notices, releases, and announcements; the Barron's information databases and sources, a Wall Street Journal affiliate (Barron's, 2024); and the StockCharts.com initiative. The US Securities and Exchange Commission (SEC) mandates that all institutions holding more than \$100 million in securities or equity interests, or more than 10,000 shares, or more than \$200,000 in individual shares, declare their holdings on a quarterly basis using SEC Form 13f. These figures were utilized in this paper to estimate changes in positions and total corporate holdings throughout a 4-day sample period.

As a non-profit, the U.S. Ethical Investment Research Service (EIRIS) focuses on evaluating corporate social performance based on a set of objective standards, primarily for institutional investors, funds, and traders. Businesses are surveyed by the EIRIS on their social performance and CSR research. They can therefore give businesses and ETFs information and statistics on social performance. Additionally, EIRIS has been upgrading its databases of information regularly, which has made the distribution of the information it offers reasonably reliable and steady over time. Every business is analyzed at least twice a year, and important details are updated in real-time in the knowledge database to reflect new information as it becomes available.

In December 2024, we extracted our data from the EIRIS database. Fairly objective, measurable criteria (such as the quantity and magnitude of environmental fines, the percentage of women and disabled people on the firm's, company's, or ETF's board, the net investments in ethical research, etc.) form the basis of the evaluations. Although there are several issues about employment, the environment, the community, human rights, and supply chain management, we limit our investigation in this article to the first three CSR issues.

Prior research on corporate social responsibility (CSR) has examined both short- and long-term stock returns immediately following the release of new CSR information and initiatives. However, as

the EIRIS data are updated continuously rather than discretely, and hence there is no event date per se, it is not possible to examine the short-run price impact in our research. As a result, we must concentrate on long-term stock returns after the data collection deadline.

We analyze the returns for different portfolios based on CSR environmental performance as the primary field in the sorting process after acquiring the EIRIS data. We then compare the results with the benchmarks of the FTSE 100 and FTSE All-Share indexes. Except the FTSE benchmarks, all of the portfolios are evenly weighted and are assumed to have been invested on January 1, 2020, with a five-year holding period.

To achieve a valid comparison, this process makes sure that a suitable amount of portfolio is reviewed in each case and that the number of firms and ETFs in each portfolio is the same. The stock returns are then cross-sectionally regressed on the composite CSP measure and independently on the three fundamental factors (community, employment, and environment). For more precise and trustworthy data, this process allows us to isolate the effects of the several CSP factors on returns.

Also, the current paper identifies long- and short-term corporate investors, traders, and speculators, based on their average “*Earnings release reports turnover*” portfolio, in 4 days. The term “*Earnings release reports turnover*” is defined, in this paper, as a measure of stock liquidity; calculated by dividing the total number of shares traded over these 4 days by the average number of shares outstanding for that period). Obviously, the higher the “*Earnings release reports turnover*” number, the more liquid the trading instrument in the last four days (Yan & Zhang, 2009).

The presented analysis is based on 4 days (sample statistics), and the traders involved in trading were sorted into four categories according to their temporal corporate holdings as the percentage of total shares outstanding at the end of each of these two days (Basdekidou, 2016, 2019, 2021). Therefore, in the first category, the institutions ranked in the bottom fourth after having the lowest “*Earnings release reports turnover*” were placed; they are classified as long-term investors (LT investors). In the second category, the institutions ranked in the top fourth after having the highest “*Earnings release reports turnover*” were placed; they are

classified as short-term swing-trading traders (ST₁ traders) (Basdekidou, 2019, 2017).

Then, the rest of the domain is divided into two equal categories (third & fourth categories). In the third category, the short-term momentary traders were placed (ST₂ short-term speculators); and finally, in the fourth category, the detected intraday individual or institution speculators were placed (ST₃ intraday speculators) (Basdekidou & Papapanagos, 2024c, 2024d)

The back-tested statistics for the sample earnings release period are presented in the following Table 1, which displays the summary numbers of NASDAQ-100 earnings release trading and NASDAQ-100 non-earnings release trading from 1st January 2007 to 30th April 2024 (NASDAQ-100 data were obtained from SEC). Both categories are referred to as socially responsible ethical NASDAQ-100 firms (equities) (Joshi et al., 2024; Chatterjee & Mitra, 2017).

Where:

Size: The natural logarithm of Sales, instead of the actual sales number, is used; as the appropriate for the irregular price action chart smoothing transformation. In stock market data statistical analysis, the $\log(\text{sales})$ transformation is preferred instead of other ones like $\text{inverse}(\text{sales})$ and (sales) .

Return: The Stock return is measured over the 4-day earnings release period.

Market-to-Book is $(\text{total assets} - \text{book equity} + \text{market equity}) / \text{total assets}$.

LT: The corporate shareholding with a clear Long-term horizon (Investors). Corporate investors' horizon identification is based on their portfolio “security turnover”.

ST: The momentary corporate ownership with a clear Short-term horizon (Traders and Speculators). The Short-term traders were divided in three categories: ST₁ are the swing Traders; ST₂ are the short-term speculators; and ST₃ are the intraday speculators.

Continuing Shareholding: This term refers to corporate investors as shareowners both at the beginning and end of the earnings release period.

Liquidations: This term refers to ownership cases where old LT investors and ST traders own shares at the beginning of the earnings release period, but liquidate their holdings by the end of this period.

Table 1. Socially responsible ethical NASDAQ-100 firms (equities) - sample shareholding statistics

	Earnings Release Trading				Non-Earnings Release Trading				Differences
	Obs.	Mean	Median	St. dev.	Obs.	Mean	Median	St. dev.	
A. Shareholding Dynamics Data									
Size	990	4.40	4.54	1.90	40,005	4.60	4.77	2.15	-0.20*
Return	990	0.37	0.38	1.22	40,005	0.26	0.14	0.77	0.11*
Market-to-book	990	2.37	1.89	1.56	40,005	1.70	1.36	1.22	0.67*
Total shareholding									
(1) LT investors	990	8.35	7.92	7.39	40,005	9.40	8.60	9.77	-0.15**
(2) ST ₁ traders	990	12.20	11.40	10.44	40,005	10.10	8.11	11.61	2.10**
(3) ST ₂ speculators	990	14.77	12.46	12.52	40,005	11.70	8.62	12.38	3.07*
(4) ST ₃ speculators	990	16.61	12.13	17.61	40,005	12.60	9.15	13.66	4.01**
B. Shareholding Dynamics Cases									
	Continuing cases			Liquidation cases		Initiation cases			
Old LT investors	1,055			25		0			
New LT investors	0			0		78			
ST ₁ traders	350			85		0			
ST ₂ speculators	0			280		0			
ST ₃ speculators	0			390		0			

* Changes significantly different from zero at 5% level; ** Changes significantly different from zero at 1% level;
Source: Author's processing of SEC/SDC market data

Initiations: This term refers to cases where new LT investors –i.e. owning no shares at the beginning of the earnings release period– establish new positions during this earnings release period and continue their shareholding after this period.

Difference: The difference in *Means* between Earnings Release and Non-Earnings Release trading.

The end product is a statistically imbalanced panel that includes up to 40,995 observations for 50 ethical NASDAQ-100 companies (equities) spanning the sample period of January 1, 2007, to April 30, 2024. Since the data (shareholding, transactions, etc.) are now accessible in a digital format at a comparatively low cost, the sample period begins in 2000 (Joshi et al., 2024; Chatterjee & Mitra, 2017).

Shorter (daily) data were utilized specifically for two reasons, even though weekly and monthly data could provide a better and more accurate linkage of the shareholding changes. First, because they make it easier to comprehend how

ownership of NASDAQ-100 companies and S&P-500 companies changes during the earnings release period; second, because they give traders flexibility when trading NASDAQ-100 companies, S&P-500 companies, and 3x leveraged or non-leveraged 1x ETFs without experiencing significant setbacks, which typically happen with longer time periods (e.g. weekly or monthly) of data.

4. RESULTS

4.1 Leveraged ETFs with Exposure To CSR: Analysis & Results

The returns of two thematic categories of NASDAQ-100 companies—those that incorporate corporate social responsibility (CSR) (i.e., ethical, socially responsible enterprises) and those that do not (i.e., unethical corporations)—are shown in Tables 2 and 3, respectively, in this section. These findings demonstrate that while the other companies perform better in the short term (such as the first half hour following the earnings announcement), the NASDAQ-100

companies who have implemented CSR do better in the long run. Additionally, the S&P-500 and CSR NASDAQ-100 companies consistently have much higher average long-term returns than the benchmark companies.

Additionally, a 15% return over the relative FTSE benchmark would have been obtained by investing equally in two GC (gold) and two CL (American crude oil) non-leveraged 1x ETFs with excellent employment and a transparent CSR policy. The CSP ethical non-leveraged 1x ETFs offer positive returns over the long run, even though this energy/CL and precious metals/GC portfolio is quite tiny, and its returns will be vulnerable to some statistical influences (Truong & Corrado, 2014).

It is also fascinating to note that speculative, unethical (from the perspective of social responsibility) 3x leveraged ETFs offer impressive trading results during short-term, intraday market volatility, such as the first half hour or the first two hours following an earnings announcement. In this instance, two hours following the earnings announcement, a portfolio of six 3x leveraged ETFs associated with the GC and CL instrument categories generates a mean positive return of almost 45%, exceeding the benchmarks by 23%.

Important economic reports, such as NFPs and earnings releases, cause significant market volatility (price action/last resistance and directional movement volatility breakouts), which can support the Forex, commodities, futures,

options, and securities markets (Joshi et al., 2024).

The relative average return for the four days following the earnings release and the average return for the whole January 1, 2007–April 30, 2024 study period are both summarized in Table 2. Several NASDAQ-100 companies in common sectors/industry groups, such as oil and gas, health care & drugs, information technology, and biotechnology, are employed for this purpose.

The following, Table 3 summarizes both: (a) the relative average movement for the 4 days after the earnings release, and (b) the return for the whole 2007-2024 sample time. For this purpose, several non-socially responsible (non-CSR) *unethical* NASDAQ-100 firms (equities) in typical industry groups is used.

Comparative Analysis of Tables 2 & 3

A comparative analysis of Tables 2 and 3 shows that the *Ethical* CSR NASDAQ-100 firms perform better (better investment functionality) in the long run (2007-2024 period), while the *Non-Ethical* NASDAQ-100 firms display better results in the 4 days just after the earnings release (better short-term trading functionality).

4.2 The CSR Market Trading Volatility – CSR.mtv

The novel idea of "CSR market trading volatility, CSR.mtv" is presented in this paper. It is described as a socially conscious ethical

Table 2. *Ethical* CSR NASDAQ-100 firms and earnings release reports: (a) Average return for the 4 days after the earnings release; and (b) Average return for the whole sample period: 2007-2024

NASDAQ-100 <i>Ethical</i> CSR firms				
Industry Group	Average return for the 4 days just after the earnings release	St. Dev.	Average return for 2007-2024	St. Dev.
Independent Oil & Gas	10%	2.14	-22%	2.71
Oil & Gas Drilling & Exploration	6%	2.10	-55%	2.36
Health Care Plans	13%	2.18	-14%	2.91
Drugs - Generic	3%	2.12	5%	2.26
Electronic Equipment	2%	2.18	130%	2.31
Internet Information Provider	3%	2.24	122%	2.55
Semiconductors	18%	2.23	160%	2.70
Biotechnology	22%	2.12	-10%	2.92

Source: Author's processing of SEC/SDC market data

Table 3. Non-Ethical CSR NASDAQ-100 firms and Earnings Release Reports: (a) Average return for the 4 days after the earnings release; and (b) Average return for the whole sample period: 2007-2024

NASDAQ-100 Non-Ethical firms				
Industry Group	Average return for the 4 days just after the earnings release	St. Dev.	Average return for 2007-2024	St. Dev.
Independent Oil & Gas	21%	2.19	-35%	2.94
Oil & Gas Drilling & Exploration	10%	2.13	-72%	2.46
Health Care Plans	21%	2.43	-19%	2.98
Drugs - Generic	7%	2.22	2%	2.48
Electronic Equipment	14%	2.24	110%	2.51
Internet Information Provider	11%	2.28	102%	2.59
Semiconductors	42%	2.43	121%	2.88
Biotechnology	51%	2.22	-19%	3.05

Source: Author's processing of SEC/SDC market data

indicator (similar to technical indicators, such as Directional Movement, DMI/ADX, Relative Strength, or RSI, etc.) that describes the ethical standards and trading functionalities (as psychological timing functions) for corporate conscience responsible trading of volatile situations (such as news releases).

In addition to the earnings release reports, Table 4 below lists several announcements and releases that cause market trading volatility. These scenarios all make use of CSR.mtv capabilities.

4.3 CSR and Binary Options: Relationship in Financial and Social Performances

"There is one and only one social responsibility of business--to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud," Milton Friedman famously stated in 1970.

Friedman has a point, even though it can appear like an extreme viewpoint. Managers are employed by shareholders, who are the company's owners, to serve as their representatives. Managers who prioritize increasing profits also have a tendency to increase shareholder wealth. A portion of that wealth can then be donated by shareholders to

social causes that are significant to them, if they so desire (Truong & Corrado, 2014).

Managers risk decreasing owners' wealth and successfully replacing shareholders' priorities with their own if they pursue goals other than maximizing profits. Additionally, maximizing profits tends to encourage accountability and efficiency. Businesses typically allocate limited resources to their most profitable uses in the interest of their interests. The issue is that companies do not always pay for their acts' entire social costs (Joshi et al., 2024; Chatterjee & Mitra, 2017).

These occurrences are referred to as negative externalities by economists. Property prices may suffer if a coal power station releases its waste into the atmosphere, for instance, increasing the likelihood of acid rain and decreasing the area's appeal as a place to reside. In the absence of regulation, the power-generating company may generate more electricity from coal than is socially beneficial because it does not directly incur these expenses. Therefore, the most effective social outcome is not always achieved by a narrow concentration on profit maximization (Philbrick & Stephan, 1993).

Another issue is that this emphasis may lead to an unequal allocation of resources. Although opinions on fairness are highly individualized, they can significantly affect a company's reputation and, eventually, its financial success. In the 1990s, for instance, Nike (NKE) was the target of consumer boycotts due to the use of

Table 4. Company initiatives, fed meetings, reports & time-targets

Fed Meetings, Reports, etc.	Time-Targets (trading)
USD rate hike (cut) Trading	Rate hike (cut) announcement & actual time
Day Trading	First/Last 5-min in a daily session (09:30-09:35, 15:55-16:00)
Fed/FOMC monetary policy Meetings	Fed/FOMC meetings decision announcement at 02:00 pm EST
	Fed/FOMC conferences at 02:30 pm EST
	Fed/FOMC meetings minutes announcement at 01:00 pm EST
Fed Members Speeches	At 10:00 am EST; at 01:00 pm EST
Non-Farm Payrolls Reports	First Friday each month at 08:30 am EST
API reports for WTI (USO) inventories	On Tuesdays at 04:30 pm EST
EIA reports for WTI (USO) inventories	On Wednesdays at 10:30 am EST

Source: Author's data

sweatshop labor by its suppliers. Many Western consumers used their purchasing power to voice their dissatisfaction with the working conditions and remuneration that those workers received, despite the fact that the suppliers paid market wages in the developing nations where they operated.

Many NASDAQ-100 and S&P-500 companies and exchange-traded funds (ETFs) have expanded their CSR policies, plans, and strategies beyond Friedman's definition to mitigate these possible issues. This includes "taking responsibility" for their effects on the environment and social welfare, even in cases where it is not required by law. Although that is undoubtedly commendable, an expansive CSR may also be consistent with long-term profit maximization from a social standpoint.

Companies may be able to avoid potentially burdensome laws and lower political risk by anticipating the environmental and social issues that their operations may cause. A proactive strategy can also lessen the possibility of disputes with advocacy groups and non-governmental organizations, which can harm sales and a brand's worth. Aware of this risk, in the early 2000s, Starbucks (SBUX) collaborated with Conservation International to create criteria for coffee that comes from ethical sources. It now purchases the majority of its coffee from growers that follow independently confirmed eco-friendly criteria.

Binary options have thereby reduced risk and profit on each transaction when incorporated into CSR.mtv trading strategy (Mercer 2017). Traders determine their risk at entry based on the \$100 expenses, and they are ultimately unable to lose

more than they paid at entry. Because binary options reduce trade entry risk, they are particularly useful for high-volatility earnings release trading, sometimes known as the "psychological time" during the earnings reports release.

By using the more sophisticated out-of-the-money (OTM) and at-the-money (ATM) binary options, traders and speculators can further reduce their risk when trading volatile market data. According to comparative data, the following four shareowner types benefit more from binary options and CSR.mtv's temporal features during volatile market report releases:

- Long-term investors ("LT Investors")
- Short-term swing traders ("ST₁ Traders")
- Short-term momentary traders ("ST₂ Speculators")
- Intraday traders ("ST₃ Speculators")

The returns of the CSR/binary options combination in earnings release trading for ethical and socially conscious NASDAQ-100 and S&P-500 companies (equities) are shown in Table 5. Information technology, health care & drugs, biotechnology, gold, energy, resources, basic industries, general industrials, cyclical consumer, non-cyclical consumer, cyclical services, and non-cyclical services are the twelve (12) US market sectors covered by the relatively small numbers of NASDAQ-100 (50 firms) and S&P-500 (250 companies) back-tested. These numbers predictably raise the statistical standard errors, which has a negative impact on the statistical significance of the interpretations.

It is noteworthy that, after applying the CSR.mtv ethical indication one after the other, there is a

very small return difference between these twelve (12) Sectors.

While the social (employment) CSR.mtv ethical (indicator) variable only negatively and significantly affects returns for the Health Care & Drugs, Resources, and Energy Sectors, the environment CSR.mtv ethical (indicator) variable negatively affects returns for all twelve of these sectors at the 2007–2024 horizon (long-term investment), though only significantly for three of them (Gold, Biotechnology, and Energy).

Additionally, although seldom substantially so, this parameter/variable is favorable for the non-cyclical consumer, general industrial, information technology, basic industries, and non-cyclical services sectors. Lastly, nine out of the twelve sectors benefit from the community CSR.mtv ethical (indicator) parameter, although this is never statistically significant.

On the other hand, in intraday and short-term trading the earnings release *psychological time* by buying the stocks or 3x leveraged ETFs of NASDAQ-100 firms and S&P-500 companies with poor *environment* performances, yields the most striking benefits in the case of the Gold, and Biotechnology Sectors (+45% and +12% respectively); while for these firms and companies buying CSR/binary options equities (firms and companies) and 3x leveraged ETFs with the lowest *social (employment)* performance

or the lowest *community* performance, would lead to average returns of 60% and 25% higher respectively than the same equities (firms and companies) and ETFs but without the binary option counterpart.

Also, for the intraday and short-term trading as well, in earnings release *psychological time*, buying the equities (firms and companies) with poor *social (employment)* performances yields the most striking benefits in the case of the Information Technology, Health care & Drugs, and General industrials Sectors; while for these firms and companies buying CSR/binary options firms (equities) with the lowest *environmental* performance and the lowest *community* performance, would lead to average returns 32% and 11% higher respectively than the same equities (firms and companies) and ETFs but without the binary option counterpart (Philbrick & Stephan, 1993).

Table 6 summarizes the ownership (no.) and shareholding position (%) as well as the trading performance (profit %) for the four trader groups covered in this study using the data from Table 1. The figures were from the NASDAQ-100 sample statistics data in Table 1. Due to the temporal CSR.mtv functionalities (time-based warning dynamics signals and time-based triggering signals) integrated into their trading plans and tactics, the short-term swing traders (ST1) received the highest returns in earnings release trading, as anticipated.

Table 5. Returns of the CSR/binary options combination (*ethical* NASDAQ-100 and S&P-500)

US Market Sectors	Positive/Negative impacts (Returns) – CSR.mtv <i>ethical</i> indicator		
	Environment CSR.mtv	Social CSR.mtv	Community CSR.mtv
Information Technology	-4%	+11%	+3%
Health care & Drugs	-3%	-18%	+4%
Biotechnology	-18%	-8%	+3%
Gold	-22%	-9%	-4%
Energy	-17%	-15%	-4%
Resources	-12%	-16%	-3%
Basic Industries	-5%	+9%	+2%
General Industrials	-7%	+5%	+2%
Cyclical Consumer	-3%	-3%	+3%
Non-cyclical Consumer	-4%	+7%	+4%
Cyclical Services	-6%	-1%	+1%
Non cyclical Services	-4%	+2%	+2%

Source: Author's data

4.4 The CSR.mtv Functions

An array (arsenal) of *CSR.mtv* functions, incorporated as trading tools in *ethical* NASDAQ-100 firms for volatile markets intraday trading, should be:

- (i) The [1-min, timeframe], for the local “least resistance/support” functionalities (please see Livermore (1940/2001) and Lefèvre (1923/2010));
- (ii) The [5-min, timeframe], for on-open price action gaps (usually the gap-ups and in some cases and the gap-downs);
- (iii) The [13-min, timeframe], for uprising triangles and cups (as bullish price action patterns for the warning dynamics signals);
- (iv) The [65-min, timeframe], for time-based pivotal points and pivotal lines breakouts (accompanied by volume sectional increase);
- (v) The [4-h, timeframe], for big picture warning dynamics;
- (vi) The [Daily, timeframe], for big picture eyeballing; and
- (vii) The morning/noon/evening price action breaks (accompanied by volume increase as well for the triggering signals).

In the following Table 6, the presented numbers were calculated as follows:

1,055 = the number of the old LT investors (shareowners) before earnings release time;

1,133 = 1,055 (old LT investors) + 78 (new LT investors, see Table 1);

1,108 = 1,133 – 25 (old LT investors liquidations, see Table 1); and

265 = 350 – 85 (ST₁ Traders, see Table 1).

4.5 Table 6 Analysis

As expected, the short-term swing traders (ST₁ traders) got the best returns in earnings release trading in both *ethical* and *non-ethical* NASDAQ-100 firms (+42% and +33% respectively), thanks to temporal *CSR.mtv* functionalities (time-based warning dynamics signals and time-based triggering signals) incorporated in their trading plans and strategies.

Also, the worst returns in earnings release trading have been recorded in intraday trading (intraday traders; ST₃ Speculators) in both Ethical and Non-Ethical NASDAQ-100 firms (-45% and -38% respectively), thanks to emotional functionalities (fear, greed, etc.) involved in such as short-run volatile environments.

The return/profit (%) numbers, presented in Table 5, were calculated after incorporating all kinds of trading costs (commission, overnight holding, margin, tax).

Table 6. Trade socially responsible *ethical* & *non-ethical* NASDAQ-100 firms with binary options

	Ownership (Shareholding Position %)			Return / Profit (%)	
	Before Earnings	@Earnings	After Earnings	<i>Ethical</i>	<i>Non-Ethical</i>
Long-term Investors					
LT Investors	1,055 (75%)	1,133 (53%)	1,108 (81%)	0%	+6%
Short-term Swing Traders					
ST ₁ Traders	350 (25%)	350 (16%)	265 (19%)	+42%	+33%
Short-term Momentary Traders					
ST ₂ Speculators	0 (0%)	280 (13%)	0 (0%)	-26%	-22%
Intraday Traders					
ST ₃ Speculators	0 (0%)	390 (18%)	0 (0%)	-45%	-38%
Total	1,405	2,153	1,373		

Source: Article author’s processing of data presented in Table 1.

5. DISCUSSION AND CONCLUSION

This study examined the connection between trading performance and corporate social responsibility for NASDAQ-100 businesses, S&P-500 corporations, and leveraged and non-leveraged exchange-traded funds (ETFs). While 3x leveraged ETFs with the lowest possible CSR.P. outperform in volatile markets, such as those that occur during the earnings and NFP employment report releases, ethical firms with higher social performance tend to achieve higher returns in long-term investments but lower returns in short-term trading, according to the back-tested data we used in our research (January 1, 2007 – April 30, 2024).

According to our research, incorporating ethical guidelines into trading plans and tactics can improve returns and performance for some equity and ETF analysts and fund managers (Basdekidou 2017, 2016, 2018a, 2018b).

In the current era of online trading, earnings report releases present excellent opportunities for temporal trading, not only for unethical intraday and short-term traders and speculators, but also for CSR firms, companies, and exchange-traded funds (ETFs) that could take advantage of market volatility during this psychological period.

We come to the conclusion that using binary options and market trading volatility (MTV) features in trading plans and tactics, along with ethical 3x leveraged ETFs as trading "vehicles" (instruments), is the best strategy to trade earnings release reports. In the long run, there may be a negative correlation between social and financial performance, even if a short-term increase in share price rewards an improvement in social performance.

In order to take advantage of the psychological time and trading opportunities involved in volatile markets, such as the quarterly earnings releases or the NFP report releases on the first Friday of each month, future research in the "CSR-leveraged ETF" domain must be able to shed light on the relative merits of these complementary concepts. It may also undertake more complex back-tested analysis and studies to examine the temporal time-series context of the impact on its share price following a change in corporate social policy by a reputable firm, company, or ethical ETF.

Leverage is a two-edged sword, as we are well aware, and a larger move down is just as feasible as a larger move up. Even the overnight position in a 3x leveraged ETF is dangerous, according to data research. Leveraged ETFs are by nature riskier than their unleveraged counterparts since they make use of financial derivatives. Leveraged ETFs are often thought to be inappropriate for retirement ethical portfolios and long-term socially conscious investors who are attempting to maintain a low beta coefficient. Therefore, integrating 3x leveraged ETF temporal trading functionalities into ethical and socially conscious portfolios is a challenge that this article introduces but that requires further research and documentation.

Long-term investors do not receive a return on their investment in the paper's back-tested sample data for the earnings release reports (Tables 5, 6). Additionally, data research revealed that short-term swing traders that use CSR.mtv functions (intraday warning dynamics signals, triggering signal) with binary options in their methods gain (+42%) at the expense of short-term transitory and intraday speculators.

It goes without saying that this fantastic return (+42%) is uncertain and dangerous; it will be significantly lower if binary options are added for safer earnings release trading. As a result, an ethical 3x leveraged ETF equipped with CSR.mtv features would outperform it in short-term trading (volatile markets), intraday earnings release trading, and long-term investments as a respectable fund.

This paper adds to the body of knowledge on corporate finance by: (i) introducing, defining, and documenting the novel term "CSR market trading volatility (CSR.mtv)" as a (socially responsible) ethical indicator and temporal psychological timing function for corporate conscience responsible trading in volatile situations, such as the employment NFP release reports or the earnings releases of NASDAQ-100 and S&P-500 companies; (ii) combining binary options with CSR functions; and (iii) applying CSR.mtv functionalities to securities, leveraged ETF, options, futures, and Forex trading.

Finally, we mention that the data used for shareholding analysis only covers a 4-day sample period (trading timeframe), while bigger time scales like weekly or monthly data could offer a more accurate picture (future research direction).

DISCLOSURE

I have no positions in any stocks mentioned, and no plans to initiate any positions within the next 6 months. I just have positions in the following two NY NASDAQ-100 (^NDX) firms: the Lam Research Corporation – Semiconductor Equipment & Wafer Fabrication space (ticker NDX: LRCX; Fremont CA, www.lamresearch.com); and the NVIDIA corporation – Computer Graphics, PC gaming & GPU computing (ticker NDX: NVDA; Silicon Valley CA, www.nvidia.com).

I wrote this article myself, and it expresses my own opinions. I am not receiving compensation for it. Also, I have no business relationship with any company whose stock is mentioned in this article.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

The author hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

COMPETING INTERESTS

The author has declared that no competing interests exist.

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