

Corporate Social Responsibility & Market Volatility: Relationship and Trading Opportunities

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Abstract

This article examines the relationship between corporate social responsibility performance (CSR.P) and market trading volatility (MTV) provoking by the release of the non-farm employment payment-reports (NFP) the first Friday each month in the USA. It also discusses the trading opportunities involved in such as volatile environments. Actually, we consider the interaction between the social performance (for environment, employment and community activities) and the financial and trading performance than would be the case for an accumulated functionality in NFP releases. In general, social performance returns are negatively related to trading returns; so, the relatively poor financial and market trading reward (profit), offered by socially responsible *ethical* ETFs trading the NFP reports, is in accordance to their good social performance regarding employment and environmental aspects. This could be changed if these *ethical* ETFs incorporate into their arsenal of trading tools a number of CSR.mtv functions (utilities) discussed in this article. Impressively, we find also that considerable bizarre returns are obtained by funds, holding a portfolio of socially least *unethical* ETFs, involved in short-term or intraday speculations. In this domain, the complex relationship between social, financial and market trading performance, during the NFP “*psychological time*”, offers great trading opportunities.

Keywords: corporate social responsibility, ethical investing, non-farm employment report, market volatility

JEL Classifications: G10, G14, G18, M14, M20

1. Introduction

There are now a large and growing number of *ethical* mutual funds in the US, Canada, Australia, and Europe investing through ETFs (Note 1). According to the United States Social Investment Forum (US.SIF), over 12% of all ETF, mutual funds, forex, and equity investments are currently managed under Socially Responsible Investment (SRI) guidelines. The concept SRI is related to the *Corporate Social Responsibility* (CSR) (Note 2), and the former often involves a fund or institutions following “*ethical rules*” and implementing “*socially responsible functionalities*” to obey the US.SIF guidelines in order to ensure that it does not invest in ETFs, mutual funds, and companies that have bad or poor performance in the latter. On the other hand the non-farm employment payment-reports (NFP), released on first Friday each month (US government data), is known that creates great market volatility which fuel the momentum in equity, futures and Forex markets offering trading opportunities.

The NFP release timing could be characterized as a Jesse Livermore’s “*psychological time*” in trading (Mercer, 2016). For more discussion about the “*psychological time*” please see Livermore (1940/2001) and Lefèvre, (1923/2010). Finally, many large ETFs, mutual and pension funds, institutions, and swing traders now include “*ethical CSR criteria*” in their stock and ETF selection search engines; and recently there are some evidences that contemporary market analysts have a tendency to produce portfolio research based on SRI ethical issues as well (Note 3).

In this domain, this article introduce the concept “*CSR market trading volatility, CSR.mtv*” to describe the ethical criteria and trading functionalities, as a psychological timing function, for corporate conscience responsible trading of volatile situations like the NFP release reports.

1.1 Problem Introduction

A great number of research reports and papers for CSR has been published in recent years, but it is not clear and well documented whether an investment in socially responsible stocks, ETFs or mutual funds is advantageous to profits (returns). From a theoretical point of view, arguments associated with the *Efficient Markets Hypothesis* (Note 4) would suggest the merit, quality, and integrity of the SRI investments. On the other hand, from a different perspective (speculative traders) the demerit, the worthlessness, and the disadvantage of the socially responsible ethical ETFs are obvious in intraday and short-term trading.

We consider that, at the *firm-level*, under some assumptions concerning the existence of markets and well-defined property and ethical rights; product recognition (marketing), brand awareness, stability and serenity should be achieved after investments on socially responsible activities despite the fact that the marginal profitability would be zero. Also, at the *financial portfolio-level*, by selling-out and isolating stocks, industries, sectors, or even whole countries, on ethical and social responsibility matters, will reduce portfolio functionality, variety, diversification, and efficiency.

So, a good practice is to maintain a portfolio with a well-diversified spread of assets, some of them with social consciences (moral sense), i.e. the ethical part of the portfolio (long-term investment); while the remaining assets of the portfolio would be leveraged non-ethical non-morally right ETFs, ideal for intraday trading market volatile situations like the NFP reports releases.

So, a firm (equity) or an ETF with well organized corporate social responsibility activities should enjoy ethical brand awareness and enhanced returns (profit); relative examples are outlined in Tables 2, 3, and 5 (Section 4). Hence, the point (desideratum) for a strategy for increasing efficiency is to improve firm's operating performance and ETF's trading plan, which improvements may feed through the "*psychological time*" and the "*CSR.mtv*" trading parameters and activities respectively.

We believe that it is possible to give reason for a positive, operative, and functioning relationship between social, financial, and trading performances particularly in leveraged ETFs; and actually, this is the case and the target of this article.

1.2 Literature Review

The European Union promotes a pan-European framework for CSR as: "*a concept whereby companies integrate social and environmental concerns in their business plans and operations, as well as in their interaction with stakeholders on a voluntary basis*" (European Commission, 2001). In this domain, it is important to recognize that the Corporate Socially Responsible Performance (CSR.P) concept is a multi-dimensional function; and hence by paying attention on the wrong aspect it may results in inaccurate and incorporate conclusions. Obviously, having a socially responsible corporate conscience (moral sense), it may enhance an ETF's or firm's profitability by helping to satisfy its stakeholders (institutions, swing traders, intraday speculators, employees, altruistic shareholders, consumers, government, etc.). Brammer, Brooks, and Pavelin (2006) show that a strong CSR.P may enhance or damage an ETF's reputation depending upon how important that particular type of activity is to the stakeholders (Hovakimian & Hu, 2016) and institutional investors as well (Edelen, Ince, & Kadlec, 2015; Chen, Harford, & Li, 2007).

An ETF's level of corporate social responsibility may be measured along a number of different dimensions, including 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), reduction of adverse environmental impacts (Martinuzzi, Kudlak, Faber, & Wiman, 2011), good treatment of employees and equity returns (Yan & Zhang, 2009; Lou, Polk, & Skouras, 2016), temporal trading functionalities (Basdekidou & Styliadou, 2017). According to our knowledge, no single study has yet examined the differential impacts of each of these aspects of CSR and CSR.P on stock and ETF returns in market volatile situations like those at the announcements of the NFP reports.

Another three CSR dimensions related to market trading volatility are the market timing, the market dynamics and the leveraged ETF. For market timing context and functionality the Hovakimian and Hu (2016) and the Cesari et al. (2012) articles are great reference texts. Market dynamics (returns, functionalities, efficiency, etc.) has been examined in detail by Basdekidou (2015), while the leveraged ETF intraday trading has been discussed by Basdekidou and Styliadou (2017).

Although CSR and CSR.P have, traditionally, been associated with big enterprises, firms and business; the SME business Sector (Note 5) is also a significant Sector in terms of the economic, environmental and social impact it makes worldwide. So, recently, the attention has been turned to discussion and analysis of functions, principles

and practice of CSR and CSR.P in small and medium size businesses as well (Kechiche & Soparnot, 2012). Finally, CSR and CSR.mtv are obviously related on to the global financial crises (Nguyen & Tran, 2016) and should contribute to the national agenda in emerging economies (Chatterjee & Mitra, 2017).

1.3 Paper's Motivation

The current paper aims to contribute to the corporate finance literature by: (i) the introduction, definition and documentation of the innovative term “*CSR market trading volatility (CSR.mtv)*” as a temporal psychological timing function for corporate conscience responsible leveraged ETF trading in volatile situations like the NFP release reports; (ii) the combination of the binary options with the CSR functions; and (iii) the application of *CSR.mtv* functionalities in volatile markets.

For our research we back-tested data both at the *firm-level* and at the *ETF-level*, which we argue is highly desirable particularly for the 3x leveraged ETFs who perform better in volatile markets (e.g. NFP psychological time). To summarise in brief, this paper states that a 3x leveraged ETF under a management, following strictly a plan with both “*ethical criteria*” in long-term investments and “*trading criteria*” in volatile intraday trading, performs better, consistently, and reliably. This is the case of the *CSR.mtv* leveraged ETFs, that is to say socially responsible ethical ETFs ready as well to exploit market trading volatility.

1.4 Paper's Structure

The rest of this article continuous as follows. Section 2 discusses the existing evidence on the relationship between CSR and NFP financial trading performance, while the data and the research methodology are described and examined in Section 3. Following, Section 4 contains the analysis and the relative results. Finally, Section 5 offers some concluding remarks, discussion and suggestions for further research.

2. Corporate Social Responsibility, NFPs, and Financial Returns

In this Section, we review the existing evidence concerning the links and functions between CSR, CSR.P, and NFP market financial performance (Mercer, 2016; Ang et al., 2006). Since our concern lies within the emotional effect of social responsibility on institutions, investors, and traders upon whom accounting-based measures have only an indirect impression; we concentrate upon the studies concerning ETFs and firms (equities) trading returns during the NFP report release *psychological time*.

The literature that we review consists of two dominant classes: (a) evidence and back-testing data (proofs) at the *firm-level*, concerning the assessments of firm's reputation and its stock performance for SRI and non-SRI firms; and (b) evidence and back-testing data (proofs) at the *ETF-level*, regarding the relationship between social performance and the leveraged ETF's returns.

In this domain, many articles have investigated the connection between a firm's or ETF's degree of corporate social responsibility and its reputation and respectability. Enhanced corporate social performance may lead to improved returns either directly through the classical “cost reduction” and “productivity improvement” functions, or indirectly through a renovation and upgrade in firm's or ETF's overall standing and outlook, that makes market analysts and securities advisers more compliant to recommend the particular equity or ETF and the institutions and investors more willing to hold it, regardless of the dividends, profit shares and revenues (*firm-level*) or the NAV and ETF management cost (*ETF-level*).

Gail Mercer (2016), a volume analyst and divergences-based trading expert from North Carolina, examines the average movement of indexes, futures, commodities, equities, mutual funds, ETFs, binary options, and Forex pairs for the 2015 year just after the NFP releases (12 NFP reports). Mercer's study considers the NFP “market volatility”, as well as payroll/financial remunerations and other issues. Then, immediate price reactions (on NFP announcement) and long-term *buy-and-hold* abnormal returns are examined in her article. Also, Mercer (2017) discusses the binary options (see Section 4: CSR and Binary Options) as trading opportunities suitable for volatile market conditions.

Several studies examine the relationship between CSR, financial and trading performances using theoretical rather than empirical models (Brammer, Brooks, & Pavelin, 2006). These theoretical models are strongly related to well-known Merton's (1987) model of capital markets functionality, equilibrium, operation and segmentation. Also, Angel and Rivoli (1997) consider the issue of SRI from a different perspective and examine the impression and impact of environmentally behavior on firm's costs and equity capital. They argued that socially responsible investors will not invest in companies and ETFs whose environmental policies are questionable, and therefore any demand for the shares of such as firms will come only from “neutral” or short-term institutions and investors, i.e. from those who built-up portfolios without a social conscience and moral sense. Obviously, this lack of demand will force up the cost of capital for polluting, corrupt morally, firms and ETFs as opposed to green *ethical* firms and ETFs.

Finally, there is no a documented analysis of the impact of social responsibility on stock returns at the *firm-level*, aside from some initial studies by Derwall et al. (2004). They focus mainly on the environmental aspect of CSR and suggest that firms who are able to improve their environmental performance can reduce their “betas” (i.e. more risk-free investments), attract socially responsible (mutual) funds and finally raise their stock prices by up to 4%. Derwall et al. (2004) employ data from the “*Innovest*” rating database having records of “eco-efficiency” performances (environmental issues) for the period 1995-2003. Actually, they rank their sample of companies with some eco-efficiency variables and indicators and categorised them into two portfolios (the highest and the lowest *ethical* scoring companies).

3. The Data and the Research Methodology

For the current paper, the shareholding information, the changes in insider holdings & some sample profit/losses trading data (2000-2016) -used in this paper as the shareholding & profit variables- came from many resources: The Barron’s information databases and sources, a Wall Street Journal affiliate (Barron’s, 2016); The StockCharts.com initiative; and The Securities & Exchange Commission/SEC notices, releases & announcements. The United States SEC requires that all institutions with a total position greater than \$100 million of securities or equities positions greater than 10,000 shares or positions in individual shares greater than \$200,000, must report their holdings, using the SEC’s Form 13f, quarterly. In this paper, these numbers were used to estimate total corporate holdings and position changes in a sample 2-day period.

The U.S. Ethical Investment Research Service (EIRIS), as a non-profit organization, specialises in the measurement of corporate social performance against an objective set of criteria, principally for use by institutional investors, funds, and traders. The EIRIS actually survey firms concerning their social performance as well as their research in CSR matters. As a result, they are able to provide social performance data and information for firms and ETFs. Also, EIRIS has been engaged in a process of updating their information databases on a continuous basis, making the distribution of the information they provide fairly stable and accurate over time. Each company is examined at least twice annually and significant pieces of information are added to a company’s profile as they happen (real-time knowledge database updating).

Our data were drawn from the EIRIS database in June 2016. The ratings are based on fairly objective, quantifiable criteria (such as the number and size of environmental fines, the proportion of women and disabled persons on firm’s/ETF’s Board, the net investments in *ethical* research, etc.). Although these data are related to many issues regarding employment, environment, community, human rights, and supply chain management; in this article, we restrict our research to the first three of these CSR issues.

Some previous studies of CSR have investigated both short- and long-term stock returns just after the announcements of new CSR data and activities. However, an examination of the short-run price impact is not feasible in our research since the EIRIS data are updated on a continuous rather than a discrete basis and therefore there is no event date as such. Hence, we have to focus on long-term stock returns following the cut-off date at which the data were collected.

After obtained the EIRIS data we examine the returns for various portfolios categorised according to CSR environmental performance as the *key* field in the sorting procedure and thereafter comparing them with the FTSE 100 and FTSE All-Share indexes as benchmarks. The portfolios are all equally weighted (apart from the FTSE benchmarks), and all assume initial investment on 1st January 2000 for a 5-year holding period. This procedure ensures that a reasonable size of portfolio is examined in each case, and that all of the portfolios contain the same number of firms and ETFs to ensure a valid comparison. Next, we run a cross-sectional regression of the stock returns on the composite CSP measure and separately on the three basic indicators (*environment, employment, and community*). This procedure enables us to separate the effects of the various CSP aspects on returns for more accurate and reliable information.

Also, current paper identifies long- and short-term corporate investors, traders and speculators, based on their average “*NFP release reports turnover*” portfolio, into a 2-day period. The term “*NFP release reports turnover*” is defined, for the purpose of this paper, as a measure of stock liquidity; calculated by dividing the total number of shares traded over this 2-day period by the average number of shares outstanding for that period). Obviously, the higher the “*NFP release reports turnover*” number, the more liquid the trading instrument in the last two days (Yan & Zhang, 2009).

The presented analysis is based on a 2-day period (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). Therefore, in the first category, the institutions ranked in the bottom fourth after having the lowest “*NFP 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 “NFP release reports turnover” were placed; they are classified as short-term swing-trading traders (ST₁ traders). Then, the rest domain is divided into two equal categories (third & fourth category). 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).

The back-tested statistics for the sample NFP period are presented in the following Table 1, which displays the summary numbers of 3x leveraged ETF NFP trading and Non-ETF NFP trading from 1st January 2000 to 30th June 2016 (ETF data were obtained from SEC). Both categories are referred to socially responsible ethical ETFs and firms (equities) respectively.

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 measured over the NFP period.

Market-to-Book is (total assets – book equity + market equity) / 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 is referred to corporate investors, as shareowners both at the beginning and at the end of the NFP period.

Liquidations – This term is referred to ownership cases where old LT investors and ST traders own shares at the beginning of the NFP period, but liquidate their holdings by the end of this period.

Initiations – This term is referred to cases where new LT investors –i.e. owning no shares at the beginning of the NFP period- establish new positions during this NFP period and continue their shareholding and after this period.

Difference - The difference in Means between leveraged ETF and Non-ETF NFP trading.

Table 1. Socially responsible ethical ETFs & Firms (equities) - Sample Shareholding Statistics

	3x Leveraged CSR ETF NFP Trading				CSR Firms (equities) NFP Trading				Differences
	Obs.	Mean	Median	St. dev.	Obs.	Mean	Median	St. dev.	
A. Shareholding Dynamics Data									
Size	3105	4.44	4.54	1.92	80,005	4.60	4.87	2.05	-0.16*
Return	3105	0.35	0.35	1.24	80,005	0.20	0.04	0.87	0.15*
Market-to-book	3105	2.38	1.89	1.62	80,005	1.70	1.26	1.20	0.68*
Total shareholding									
(1) LT investors	3105	8.45	7.90	7.42	80,005	9.40	8.52	9.67	-0.95**
(2) ST ₁ traders	3105	12.29	11.40	10.51	80,005	10.10	8.11	11.63	2.19**
(3) ST ₂ speculators	3105	14.80	12.48	12.50	80,005	11.35	8.71	12.42	3.45*
(4) ST ₃ speculators	3105	16.68	12.12	17.63	80,005	12.88	9.14	13.71	3.80**
B. Shareholding Dynamics Cases									
	Continuing cases			Liquidation cases			Initiation cases		
Old LT investors	1,095			20			0		
ST ₁ traders	20			85			0		
ST ₂ speculators	0			290			0		
ST ₃ speculators	0			360			0		
New LT investors	0			0			70		

* 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

The result is a statistically unbalanced panel, covering the sample time period from January 1st 2000 to June 30th 2016, with up to 83,110 observations for 50 *ethical* CSR ETFs and 1,000 *ethical* CSR firms (equities). The sample period starts from 2000 because from this year the data (shareholding, transaction, etc.) are available in a digital format with a relatively low cost.

While weekly data could allow better and more accurate association of the shareholding ETF changes; time shorter (daily) data were used in particular for two reasons. Firstly, because they help to understand better the changes in ETF ownership during the NFP period; and secondly, they provide flexibility in trading leveraged ETFs without serious throwbacks, which are usually occur in time longer (e.g. weekly) data.

4. Leveraged ETFs with Exposure to CSR: Analysis & Results

In this Section the returns of two thematic categories leveraged ETFs, those incorporating CSR (socially responsible *ethical* ETFs) and those non-incorporating CSR functionalities (*unethical* ETFs), are presented in Tables 2 and 3 respectively. These results show that those ETFs incorporated CSR perform better in the long term, while the other ETFs perform better for the short period (e.g. first 30 minutes) after the NFP releases. Also, in all case, the CSR ETFs have significantly higher average returns in the long run than the benchmarks ones.

For instance, investing equally in two GC (Gold) and two CL (American crude oil) ETFs with top employment and clear CSR policy would have yielded a 15% return higher than the relative FTSE benchmark. Despite the fact that this precious metals/GC and energy/CL portfolio is clearly very small, and therefore its returns will be subject to some statistical effects; actually, it is clear that the CSP *ethical* ETFs provide positive returns in the long term. Also, very interesting is that speculative *unethical* (from a social responsibility standpoint) ETFs provide strong trading performances in short-term and intraday market volatile situations like the first 30 minutes period from the NFP release. In this case, a portfolio comprising from six ETFs, related to GC and CL instrument categories, yields a mean positive return of about 28% in a 2-day period (Table 2), outperforming the benchmarks by 13%. Obviously, critical to economy report releases like the NFPs, create market volatility, which can fuel the securities, futures, commodities and Forex markets.

Following, Table 2 summarizes both, (a) the relative average movement for the 2-day period after the NFP release; and (b) the return for the whole 2000-2016 sample time period. For this purpose a number of socially responsible (CSR) *ethical* 3x leveraged ETFs in typical instrument categories, like Gold, Crude Oil, major equity Indexes and Forex pairs is used.

Table 2. CSR 3x leveraged ETFs and Nonfarm Employment Reports: (a) Relative average movement for the 2-day period after the NFP release; and (b) Average Return for the whole sample period: 2000-2016

Instrument Category (3x leveraged ETFs with exposure to CSR)	CSR 3x leveraged ETFs			
	Average Return for the just after the NFP	Average Return for the 2-day period St. Dev.	Average Return for the 2000-2016 sample period	St. Dev.
GC – Gold cfd futures	30 %	2.14	-22 %	2.70
CL – Crude oil cfd futures	26 %	2.10	-49 %	2.87
DAX – Index (Germany)	10 %	2.12	160 %	2.31
YM – Dow Index futures	7 %	2.10	125 %	2.36
ES – S&P 500 Index futures	4 %	2.15	130 %	2.51
NQ – Nasdaq Index	7 %	2.21	101 %	2.70
USD/CAD – Forex pair	20 pips	2.33	16 %	2.71
USD/JPY – Forex pair	17 pips	2.32	-12 %	2.66

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

Table 3. Non-CSR 3x leveraged ETFs and Nonfarm Employment Reports: (a) Relative average movement for the 2-day period after the NFP release; and (b) Average Return for the whole sample period: 2000-2016

Instrument Category (3x leveraged ETFs with no exposure to CSR)	Non-CSR Exchange Traded Funds			
	Average Return for the just after the NFP	Average Return for the 2-day period St. Dev.	Average Return for the 2000-2016 sample period	St. Dev.
GC – Gold cfd futures	41 %	2.34	-42 %	2.80
CL – Crude oil cfd futures	35 %	2.20	-69 %	2.97
DAX – Index (Germany)	10 %	2.12	160 %	2.31
YM – Dow Index futures	7 %	2.10	125 %	2.36
ES – S&P 500 Index futures	4 %	2.15	130 %	2.51
NQ – Nasdaq Index	7 %	2.21	101 %	2.70
USD/CAD – Forex pair	20 pips	2.33	16 %	2.71
USD/JPY – Forex pair	17 pips	2.32	-12 %	2.66

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

Above Table 3 summarizes both, (a) the relative average movement for the 2-day period after the NFP release; and (b) the return for the whole 2000-2016 sample time period. For this purpose a number of non-socially responsible (non-CSR) *unethical* 3x leveraged ETFs in typical instrument categories is used.

The CSR Market Trading Volatility – *CSR.mtv*

In this paper, the innovative concept “*CSR market trading volatility, CSR.mtv*” is introduced and it is defined as a socially responsible *ethical* indicator (like the technical indicators, e.g. DMI/ADX, RSI) to describe the *ethical* criteria and the trading functionalities (as psychological timing functions) for corporate conscience responsible trading of volatile situations (like, for instance, the NFP release reports). Following, Table 4 presents - apart from the NFP reports (1st Friday each month at 08:30 am EST New York time) - a number of announcements and releases provoking market trading volatility. All these situations incorporate *CSR.mtv* functionality.

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 monetary policy Meetings	Fed/FOMC conferences at 02:30 pm EST
Fed/FOMC monetary policy Meetings	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

CSR and Binary Options: Relationship in Financial and Social Performances

In 1970, Milton Friedman famously wrote:

"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."

While that may seem like an extreme view, Friedman does have a point. As the owners of a firm, shareholders hire managers to act as their agents. When managers focus on profit maximization, they also tend to maximize shareholder wealth. If they choose, shareholders can then donate part of that wealth to social causes that are important to them.

To the extent that managers pursue objectives other than profit maximization, they may reduce shareholders' wealth and effectively substitute shareholders' priorities with their own. Profit maximization also tends to promote efficiency and accountability. In the pursuit of their self-interest, firms usually allocate scarce resources to their most productive uses. The trouble is that firms do not always bear the full social costs of their actions. Economists call these phenomena negative externalities. For example, a coal power plant that expels its waste into the atmosphere could increase the prevalence of acid rain and make the surrounding area less desirable to live in, potentially hurting property values. Because, the power generating firm does not directly bear these costs (in the absence of regulation), it may produce more electricity from coal than is socially optimal. So a narrow focus on profit maximization does not always lead to the most efficient social outcome.

There is also an argument that this focus can result in an unfair distribution of resources. Perceptions about fairness are very subjective, but they can have a big impact on a firm's image, and ultimately its profitability. For example, Nike (NKE) faced consumer boycotts in the 1990s for its suppliers' use of sweatshop labor. Even though the suppliers paid market wages in the developing countries where they operated, the conditions those workers toiled in and the compensation they received seemed unfair to many Western consumers, who used their purchasing power to express their discontent.

In order to lessen these potential problems, many firms and ETFs have defined their CSR policy, plans and strategy more broadly than Friedman to include the so called “*taking responsibility*” for their impact on the environment and the social welfare even when there is no legal requirement to do so. While that is certainly worthy of praise, from a social perspective of view, an expansive CSR may also be consistent with long-term profit maximization.

In getting out ahead of environmental and social problems that their operations may create, companies may be able to stave off potentially onerous regulations and reduce political risk. A proactive approach can also reduce

the risk of conflicts with non-government organizations and other advocacy groups that can hurt sales and damage the value of a brand. Mindful of this risk, Starbucks (SBUX) developed standards for ethically sourced coffee in partnership with Conservation International in the early 2000s. In accordance with these standards, it now sources most of its coffee from producers with independently verified environmentally friendly practices.

Incorporating binary options in CSR.mtv trading plans has as a result limited risk and reward, as well, on every trade (Mercer, 2017). Traders, on the expenses of \$100, choose their risk on entry and at the end they cannot suffer more loss than they pay on entry. In particular, for the high-volatility NFP trading (“psychological time” at the NFP reports release), binary options are ideal tools by limiting risk on trade entry. Also, traders and speculators can limit their risk, on trading volatile market reports releases, even further by using the more sophisticated *out-of-the-money* (OTM) and *at-the-money* (ATM) binary options. Comparative analysis shows that, for the volatile market report releases, binary options and CSR.mtv temporal functionalities apply better to the following four categories of shareowners:

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

Table 5 uses the data presented in Table 1 and displays the returns of the CSR/binary options combination in NFP trading for socially responsible *ethical* ETFs and firms (equities) respectively. Actually, the numbers of ETFs (50) and firms (1,000) back-tested are somewhat small (covering actually the US market Sectors: Gold, Energy, Resources, Basic industries, General industrials, Cyclical consumer, Non-cyclical consumer, Cyclical services and Non-cyclical services) and predictably increase the statistical standard errors and therefore negatively affect the statistical significance of the interpretations. It is notable that, surprisingly, there is a very little return difference between these nine (9) Sectors after applying the CSR.mtv *ethical* indicator in turn.

At the 2000-2016 horizon, the environment CSR.mtv ethical (indicator) variable negatively affects returns for all these nine Sectors, although only significantly so for two of them (Gold and Energy), while the employment CSR.mtv ethical (indicator) variable only negatively and significantly affects returns for the Resources and the Energy Sectors. Also, this parameter/variable is positive for the Basic industries, Non-cyclical consumer, General industrials and Non-cyclical services Sectors, although never significantly so. Finally, the community CSR.mtv ethical (indicator) parameter has a positive impact for 8 of the 9 sectors, but again it is never statistically significant.

In NFP *psychological time*, buying the stocks of ETFs with poor social performances yields the most striking benefits in the case of the Gold Sector; while buying CSR/binary options ETFs with the lowest environmental performance and the lowest community performance, would lead to average returns 60% and 25% higher respectively than the same ETFs but without the binary option counterpart.

Also, in NFP *psychological time*, buying the stocks of Firms (equities) with poor social performances yields the most striking benefits in the case of the General industrials Sector; while buying CSR/binary options Firms (equities) with the lowest environmental performance and the lowest community performance, would lead to average returns 52% and 21% higher respectively than the same Firms but without the binary option counterpart.

Following, Table 5 presents in summary the ownership (no.) and the shareholding position (%), as well as the trading results (profit %) for the four categories of traders discussed in this paper. The numbers resulted from the Table 1 sample statistics data (3x leveraged ETF). As it was expected, the short-term swing traders (ST₁) got the best returns in NFP trading, thanks to temporal CSR.mtv functionalities (time-based warning dynamics signals and time-based triggering signals) incorporated in their trading plans and strategies.

The CSR.mtv Functions

An array (arsenal) of CSR.mtv functions, incorporated as trading tools in *ethical* 3x leveraged ETFs for volatile markets intraday trading, should be:

- (i) The [2-min, time-frame] on-open price action gaps (usually the gap-ups and in some cases and the gap-downs);
- (ii) The [30-min, time-frame] uprising triangles and cups (as bullish price action patterns for the warning dynamics signals);
- (iii) The [2-min, time-frame] time-based pivotal points and pivotal lines breakouts (accompanied by

volume sectional increase); and

- (iv) The morning/noon/evening price action breaks (accompanied by volume increase as well for the triggering signals).

Where:

1,095 = No. of the old LT investors (shareowners) before NFP time;

1,165 = 1,095 (old LT investors) + 70 (new LT investors) (see Table 1); and

1,145 = 1,165 – 20 (old LT investors liquidations) (see Table 1).

Table 5. Socially Responsible Ethical ETFs & Firms with Binary Options

	Ownership (Shareholding Position %)			Return / Profit (%)	
	Before NFP date	@NFP date (time)	After NFP date	Ethical ETFs	Ethical Firms
Long-term Investors (LT Investors)	1,095 (98.2%)	1,165 (75.7%)	1,145 (99.1%)	0%	3%
Short-term Swing Traders (ST ₁ Traders)	20 (1.8%)	85 (5.5%)	10 (0.9%)	+65%	55%
Short-term Momentary Traders (ST ₂ Speculators)	0 (0%)	290 (18.8%)	0 (0%)	-25%	-20%
Intraday Traders (ST ₃ Speculators)	0 (0%)	0 (0%)	0 (0%)	-40%	-38%
Total	1,115	1,540	1,155		

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

5. Conclusions & Discussion

This paper has studied the relationship between corporate social performance and trading performance for firms (equities) and leveraged ETFs. According to the back-tested data we have used in our research (January 1, 2000 – June 30, 2016) we found that *ethical* firms with higher social performance tend to achieve higher returns in long-term investments but lower returns in short-term trading; while 3x leveraged ETFs with the lowest possible CSR.P, outperform in volatile markets like the NFP employment report releases. Our findings are clearly compatible and relevant to a number of equity and ETF analysts and fund managers as well, suggesting that the introduction of *ethical* rules into their trading plans and strategies will enhance their returns and performance.

Nowadays, within the internet-based trading era, the NFP report releases offer great temporal trading opportunities not only for the *unethical* short-term and intraday traders and speculators, but as well as and for the CSR leveraged ETFs, who could exploit the market volatility during this NFP psychological time. We conclude that, the best way to trade NFP release reports is to incorporate *market trading volatility* (MTV) functionalities and *binary options* in trading plans and strategies, and to use *ethical* 3x leveraged ETF as trading “vehicles” (instruments). Even if an improvement in social performance is rewarded by a share price increase in the short term, in the long run the relationship between social and financial performance may be negative. Future research in the “CSR-leveraged ETF” domain, must be able to spot light on the relative merits of these complementary concepts and may conduct more sophisticated back-tested analysis and studies to examine the temporal time-series context of the impact on its share price after a change in corporate social policy by a respectable firm or ethical ETF in order to exploit the *psychological time* and the trading opportunities involved in volatile markets like the NFP report releases on the first Friday each month.

We know well that *leverage* is a double-edged sword, with a bigger move down being just as possible as a bigger move up. Data analysis shows that even the overnight position in leveraged ETF is risky. Since they use financial derivatives, leveraged ETFs are inherently riskier than their unleveraged counterparts. According to the established perception, leveraged ETFs are not appropriate for long-term socially responsible investors and retirement *ethical* portfolios trying to maintain a low beta coefficient. Hence, incorporating leveraged ETF temporal trading functionalities in socially responsible ethical portfolios is a challenge introduced in this paper but has to be investigated and documented better in the future.

In paper's back-tested sample data for the NFP release reports (Table 5), the long-term investors enjoy no return of their capital. Also, data analysis applied found that short-term swing traders incorporating in their strategies the CSR.mtv functionalities (intraday warning dynamics signals, triggering signal) with binary options are benefit (+65%) at the expense of short-term momentary and intraday speculators. Obviously, this excellent return (+65%) is risky and uncertain and will be much lower if binary options are incorporated for a more safely NFP trading. So, an ethical 3x leveraged ETF armed with CSR.mtv functionalities would perform better in long-term

investments as a respectable fund, as well as in NFP intraday trading (volatile markets).

Paper contributes to corporate finance literature by: (i) the introduction, definition, and documentation of the innovative term “*CSR market trading volatility (CSR.mtv)*” as a (socially responsible) ethical indicator and temporal psychological timing function for corporate conscience responsible leveraged ETF trading in volatile situations, like the employment NFP release reports; (ii) the combination of the binary options with the CSR functions; and (iii) the application of *CSR.mtv* functionalities in volatile markets (long/short trading on normal session: 09:30 am – 04:00 pm EST, swing & intraday time-based trading strategies, etc.) to securities, leveraged ETF, futures, and Forex trading.

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Conflict of Interests

The authors have not declared any conflict of interests.

References

- Ang, A., Hodrick, R. J., Xing, Y., & Zhang, X. (2006). The Cross-Section of Volatility and Expected Returns. *Journal of Finance*, 61, 259-299. <http://dx.doi.org/10.1111/j.1540-6261.2006.00836.x>
- Angel, J. J., & Rivoli, P. (1997). Does Ethical Investing Impose a Cost upon the Firm? A Theoretical Perspective. *Journal of Investing*, 6(4), 57-61. <http://dx.doi.org/10.3905/joi.1997.57>
- Bali, T. G., & Cakici, N. (2008). Idiosyncratic Volatility and the Cross Section of Expected Stock Returns. *Journal of Financial and Quantitative Analysis*, 43, 29-58. <http://dx.doi.org/10.1017/S002210900000274X>
- Barron's Financial Investment News and Market Data. (2016). Retrieved from <http://www.barrons.com/data>; and <http://www.wsj.com>; and <http://www.wsj.com/europe>
- Basdekidou, V. A. (2015). *Functionality, Returns and Efficiency before and after the Debt Crisis: An Empirical Analysis of the Greek Stock Market* (Unpublished doctoral dissertation). Bulgarian Academy of Sciences – Economic Research Institute, Bulgaria.
- Basdekidou, V. A. (2016). IPO Trading with Short-term & Intraday Temporal Functionalities. *Business and Economics Journal*, 7(4). <http://dx.doi.org/10.4172/2151-6219.1000257>
- Basdekidou, V. A., & Styliadou, A. A. (2017). Technical Market Anomalies: Leveraged ETF Trading with Daily and Intraday Temporal Functionalities. *Business and Economics Journal*, 8(1). <http://dx.doi.org/10.4172/2151-6219.1000275>
- Brammer, S., Brooks, C., & Pavelin, S. (2006). Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures. *Financial Management*, 35(3), 97-116. <http://dx.doi.org/10.1111/j.1755-053X.2006.tb00149.x>
- Cesari, A. D., Espenlaub, S., Khurshed, A., & Simkovic, M. (2012). The Effects of Ownership and Stock Liquidity on the Timing of Repurchase Transactions. *Journal of Corporate Finance*, 18, 1023-1050. <http://dx.doi.org/10.1016/j.jcorpfin.2012.06.004>
- Chatterjee, B., & Mitra, N. (2017). CSR should contribute to the national agenda in emerging economies - the ‘Chatterjee Model’. *International Journal of Corporate Social Responsibility*, 2(1). <http://dx.doi.org/10.1186/s40991-017-0012-1>
- Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics*, 86, 279-305. <http://dx.doi.org/10.1016/j.jfineco.2006.09.005>
- Derwall, J., Günster, N., Bauer, R., & Koedijk, K. (2004). The Eco-Efficiency Premium Puzzle Mimeo. Erasmus Research Institute of Management (ERIM), Erasmus University, Rotterdam, NL. ERIM reference no. ERS-2004-043-F&A. Retrieved from: <file:///C:/Users/Styl/Downloads/ERS%202004%20043%20F&A.pdf>
- Edelen, R. M., Ince, O., & Kadlec, G. B. (2015). Institutional Investors and Stock Return Anomalies. *E- Journal SSRN*. <http://dx.doi.org/10.2139/ssrn.2359744>
- European Commission. (2001) Promoting a European Framework for Corporate Social Responsibility Green Paper 264, Final, Brussels.
- Hovakimian, A., & Hu, H. (2016). Institutional Shareholders and SEO Market Timing. *Journal of Corporate*

- Finance*, 36, 1-14. <http://dx.doi.org/10.1016/j.jcorpfin.2015.09.009>
- Kechiche, A., & Soparnot, R. (2012). CSR within SMEs: Literature Review. *International Business Research*, 5(7) 97-104. <http://dx.doi.org/10.5539/ibr.v5n7p97>
- Lefèvre, E. (2010). *Reminiscences of a Stock Operator*. (J. D. Markman, Annotated edition). Hoboken, NJ: John Wiley & Sons, Inc., 423 pages, ISBN: 978-0-470-48159-2. (Original work published 1923)
- Livermore, J. (2001). *How to Trade in Stocks*. (R. Smitten, Translation). New York, NY: McGraw-Hill, 179 pages, ISBN: 0-07-146979-6. (Original work published 1940)
- Lou, D., Polk, C., & Skouras, S. (2016). A Tug of War: Overnight versus Intraday Expected Returns. London School of Economics and Political Sciences working paper, LSE London, UK. Retrieved from <http://personal.lse.ac.uk/loud/overnightmom.pdf>
- Martinuzzi, A., Kudlak, R., Faber, C., & Wiman, A. (2011). CSR Activities and Impacts of the Construction Sector. *RIMAS Working Papers*, 1, 1-28. Research Institute for Managing Sustainability (RIMAS), Vienna University of Economics and Business, Vienna, Austria. Retrieved from http://www.sustainability.eu/pdf/csr/impact/impact_sector_profile_construction.pdf
- Melo, T., & Garrido-Morgado, A. (2012). Corporate Reputation: A Combination of Social Responsibility and Industry. *Corporate Social Responsibility and Environmental Management*, 19, 11-31. <http://dx.doi.org/10.1002/csr.260>
- Mercer, G. (2016). Trading the Nonfarm Employment Report. *Technical Analysis of Stocks & Commodities*, 34(12) 30-32 and 43. <http://technical.traders.com/archive/articlefinal.asp?file=\V34\C12\340MERC.pdf>
- Mercer, G. (2017). About those Binary Options. *Technical Analysis of Stocks & Commodities*, 35(3) 32-34. Retrieved from <http://technical.traders.com/archive/articlefinal.asp?file=\V35\C03\396MERC.pdf>
- Merton, R. C. (1987). A Simple Method of Capital Market Equilibrium with Incomplete Information. *Journal of Finance*, 42(3), 483-510. <http://dx.doi.org/10.1111/j.1540-6261.1987.tb04565.x>
- National Philanthropic Trust. (2017). A Guide to Your Donor-Advised Fund. ICGF-Independent Charitable Gift Fund in partnership with the Hollencrest Securities (donor guide). Retrieved from [https://www.nptrust.org/daf-forms/A_Guide_to_Your_Donor-Advised_Fund_\(ICG\).pdf](https://www.nptrust.org/daf-forms/A_Guide_to_Your_Donor-Advised_Fund_(ICG).pdf)
- Nguyen, X. M., & Tran, Q. T. (2016). Dividend Smoothing and Signaling Under the Impact of the Global Financial Crisis: A Comparison of US and Southeast Asian Markets. *International Journal of Economics and Finance*, 8(11), 118-123. <http://dx.doi.org/10.5539/ijef.v8n11p118>
- Nickerson, D. (2016). Asset Price Volatility, Credit Rationing and Rational Lending Discrimination. *International Journal of Economics and Finance*, 8(10), 140-158. <http://dx.doi.org/10.5539/ijef.v8n10p140>
- Yan, X., & Zhang, Z. (2009). Institutional Investors and Equity Returns: Are Short-term Institutions Better Informed? *The Review of Financial Studies*, 22, 893-924. <http://dx.doi.org/10.1093/rvf/hhl046>

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Notes

Note 1. ETF – *Exchange Traded Fund*. An ETF is a marketable security that tracks an index, a commodity, bonds, or a basket of assets like an index fund. Unlike mutual funds, an ETF trades like a common stock on a stock exchange. ETFs experience price changes throughout the day as they are bought and sold. ETFs typically have higher daily liquidity and lower fees than mutual fund shares, making them an attractive alternative for individual investors. Because it trades like a stock, an ETF does not have its *Net Asset Value (NAV)* calculated once at the end of every day like a mutual fund does.

Note 2. CSR - *Corporate Social Responsibility*. Also called *Corporate Conscience, Corporate Citizenship or Responsible Business*, is a form of corporate self-regulation integrated into a business model. CSR policy functions as a self-regulatory mechanism whereby a business monitors and ensures its active compliance with the spirit of the law, ethical standards and national or international norms. Critics questioned the "lofty" and sometimes "unrealistic expectations" in CSR or that CSR is merely window-dressing, or an attempt to pre-empt the role of governments as a watchdog over powerful multinational corporations. Political sociologists became interested in CSR in the context of theories of globalization, neoliberalism and late capitalism. Some sociologists viewed CSR as a form of capitalist legitimacy and in particular point out that what began as a social movement against uninhibited corporate power was transformed by corporations into a 'business model' and a 'risk management' device, often with questionable results. CSR is titled to aid an organization's mission as well as serve as a guide to what the company represents for its consumers. Business ethics is the part of applied ethics that examines ethical principles and moral or ethical problems that can arise in a business environment. ISO 26000 is the recognized international standard for CSR. Public sector organizations (the United Nations for example) adhere to the triple bottom line (TBL). It is widely accepted that CSR adheres to similar principles, but with no formal act of legislation.

Note 3. "*Big investors want SRI research*". Editorial on *Financial Times* Fund Management Supplement, page 1, 18 October 2004, New York.

Note 4. EMH – *Efficient Market Hypothesis*. The efficient market hypothesis is an investment theory that states it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information. According to the EMH, stocks always trade at their fair value on stock exchanges, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. As such, it should be impossible to outperform the overall market through expert stock selection or market timing, and the only way an investor can possibly obtain higher returns is by purchasing riskier investments.

Note 5. SME – *Small and Midsize Enterprises*. Small and midsize enterprises are businesses that maintain revenues, assets or a number of employees below a certain threshold. Every country and economic organization has its own definition of what is considered a small and medium-sized enterprise. In the United States, there is no distinct way to identify SMEs, but in the European Union, a small-sized enterprise is a company with fewer than 50 employees, while a medium-sized enterprise is one with fewer than 250 employees.

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