BOCCONI STUDENTS FOR SUSTAINABLE FINANCE

The impact of ESG news on stock performance: when bad news outweighs good ones

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ABSTRACT

In the past, Environmental, Social, and Governance (ESG) issues have represented a secondary concern for investors, who traditionally focused their attention on traditional value drivers, such as profits and growth. However, the demand for ESG investments has recently boomed due to the benefits that such funds can add to a portfolio: low volatility and consistent returns. Moreover, green stocks are increasingly becoming a fundamental component of portfolios' diversification. Nevertheless, it is not always clear whether ESG could be considered a value driver on its own and if ESG daily news can affect stocks' price. The present report provides a general overview about scholars' studies showing how ESG news impacts on stocks' price, also deepening the analysis with a focus on empirical evidences of such behaviors. In relation to this, results differ if the news is grouped and analyzed in subcategories: negative news tends to move prices more than positive ones do, the type of media disclosing the news affects the result of the outcome and the pieces of information contained in the news are the ultimate factor impacting the firms market capitalization. Therefore, ESG can be considered as a secondary driver for stock prices since the reaction of markets to these types of news varies much depending on each firm's peculiarities.

SUMMARY

INTRODUCTION

Environmental, Social, and Governance (ESG) issues have traditionally represented a secondary concern for investors, who, in most cases, have focused their attention only on one of the famous 3Ps of the Triple Bottom Line: Profits. In recent years, however, the increasing need to diversify away from a portfolio's systematic risk has forced investors to consider the environmental and social impact of their investments as a powerful tool to reduce market risk and create value also in economic terms. Eventually, this has brought investors to pay attention to the other two Ps: People and Planet.

As a consequence of the consistently high increase in demand for ESG investments (in the USA, the CAGR[1] was equal to 16% between 2014 and 2018)[2], also firms begun rethinking their commitment to ESG practices. The benefits arising from such commitment are many, including higher firm's recognition and reputation, creation of positive societal and environmental externalities, but, most importantly, access to cheaper capital (given that lenders usually perceive firms committed to ESG as less risky). While the societal, environmental, and financing benefits of the adoption of ESG actions might seem obvious, it is not clear whether financial markets recognize a premium to companies actively committed to, or involved in, ESG practices or penalizes those that are subject to ESG controversies. In particular, the reaction of the market to a statement directly related to the ESG performance of a company is not of trivial interpretation and can be affected by a plethora of factors, ranging from a company's visibility to its ESG-related additional benefits or costs.

Having this picture in mind, this report aims at investigating the direct impact of positive and negative ESG news on firms' stock price and the possible consequences on shareholders' wealth. The analysis will be looking over the Cumulative Abnormal Return[3] (CAR hereafter) as a financial metric to measure the effect of ESG related news on stock prices. Firstly, an overview of the main factors influencing the magnitude of ESG news on firms' stock value is provided.

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[1] Compound Annual Growth Rate
[2] Global Sustainable Investment Alliance - 2018
[3] CAR: *Sum of the differences between the expected return on a stock (systematic risk multiplied by the realized market return) and the actual return often used to evaluate the impact of news on a stock price.* (NASDAQ)

Finally, some exemplifying case studies are given as a more practical approach to the analysis.

The literature research, constituting the basis of this paper, mainly revolves around the works of G. Capelle-Blancard and A. Petit ("Every little helps? ESG news and Stock Market reaction" - September 2017) and B. Cui and P. Docherty ("Stock Price Overreaction to ESG Controversies" - March 2020).

KEY FEATURES OF SUSTAINABLE INVESTMENTS AND REACTIONS TO ESG NEWS

ESG STOCKS' RISK AND RETURN

Recent studies have shown how ESG investments tend to generate superior risk-adjusted returns. Kumar et al. (2016) demonstrated that companies incorporating Environmental, Social, and Fair Governance (ESG) factors show lower volatility in their stock performances. Kim and Li (2014) showed that higher-rated ESG stocks come with lower crash risk and are less likely to hoard bad information, entailing lower downside risk compared to conventional investments. Such a phenomenon explains how investors' aversion to crash risk might be the cause of increasing demand for ESG investments. Furthermore, especially during crisis periods, stocks of companies committed to ESG practices tend to be more resilient and less volatile (Sabbaghi, 2020). For the sake of conciseness and being not pivotal to the purpose of our analysis, the magnitude of stocks' volatility is not being furtherly investigated.

MARKETS' REACTION TO ESG NEWS

A first attempt to investigate the reaction of the stock market to ESG news can be found in the studies of Krueger (2015) and Aouadi and Marsat (2016). Krueger provides evidence that investors tend to respond strongly to bad news and weakly to positive ones. As a consequence, the impact on the stock performance of a company is much more significant after a bad ESG announcement.

Furthermore, Aouadi and Marsat identify which factors are the most relevant in measuring the impact of ESG controversies on firms' market value. Their research shows a relationship between higher Corporate Social Performance (CSP) and the

impact on a firm's market value (Tobin's Q)[4]. What emerges is that the impact is more relevant for high-attention firms, located in countries with greater press freedom, more searched on the Internet, more followed by analysts, and with an improved corporate social reputation. In other words: the incremental value of CSP is strongly dependent on the firm's visibility.

SOURCE OF THE NEWS AND MARKET REACTION

A firm's visibility is directly correlated to its exposure to different media sources. Blancard and Petit (2017) were able to show that not only it was necessary for a firm to be visible, but also that depending on the provider of the news and the contents of the articles, the market reacted differently. Indeed, the impact of ESG news on firms' market value is larger when it comes from the media, compared to the firms' press releases or NGOs' disclosures, and when the articles contain words referencing to quantitative orientation. In this sense, the sector's reputation can mitigate the loss, but cultural proximity and lexical contents of ESG disclosures play a significant role in the magnitude of the impact. More deeply, the impact is larger:
- when it comes from leading financial newspapers;
- when it comes from media dedicated to CSR;
- for local events or for more proximate geographically or culturally events.

OVERREACTION TO ESG NEWS: A TREND INCREASING OVERTIME

Over the past years, investors have increasingly devoted resources to analyze ESG characteristics, sometimes neglecting other important firm's fundamentals. Over time, this process has led to overreactions of investors to ESG news. This is consistent with the salience theory, according to which, "*when one's attention is differentially directed to one portion on the environment rather than to others, the information contained in that portion will receive disproportionate weighing in subsequent judgments*" (Taylor and Tomson, 1982). Due to limited attention and cognitive capacity, investors have focused on the most salient attributes of options they face, which are consequently overweighted in their decisions. This means that, given investors' preference for ESG (which makes ESG issues a salient

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[4] Tobin's Q is the ratio between the market value and the replacement value of an asset.

aspect of the information set), investors usually overreact to ESG news more than firms' fundamentals change.

Over time, it was also observed that market overreaction is more pronounced around bad news, given that bad news tends to be more salient than good ones (Fiske, 1980). To support this thesis, Blancard and Petit (2017) analyzed more than 30,000 ESG news targeting 100 listed companies taking into consideration the Cumulative Abnormal Return (CAR) calculated on a timeframe spanning from ten days before the news release to ten days after. The result was that, on average, firms reporting negative news experienced a drop in their market value causing a CAR of -0.137%, at a significance level of 1%, whereas positive announcements did not lead to any gain or increase in shareholders' value. The analysis conducted by B. Cui and P. Docherty (2020) further supported this result: while no statistically significant result was drawn concerning good news, the outcome in the case of bad news showed a CAR of -0.733% at a significance level of 1%. This outcome is also coherent with the salience theory, which states that investors overweight future ESG risks of stocks that are subjected to bad news, discounting the price more heavily than can be explained by changes in firms' fundamentals.

OVERREACTION AND MARKET CAPITALIZATION

Thanks to the analysis conducted by B. Cui and P. Docherty, that categorizes the different stocks in the S&P500 index, S&P MidCap400 index, and S&P SmallCap600 index, it is possible to state that the negative announcement return around bad news is substantially larger in magnitude for the smaller stocks, which have higher volatility, greater limits on arbitrage, and are harder to short sell. Moreover, the impact of ESG news on firms' market value is lower for firms in sectors with good ESG reputation, and for firms which are prone to greenwashing. Strictly linked to the concept of stock size is the average abnormal trading volume. Cui and Docherty (2020), indeed, analyzed the increase in abnormal trading volume for bad ESG announcements, concluding that only a small increase can be registered around good ones. Moreover, the increase is negatively correlated with the firm's size and can be seen even several days before the news due to information leakage.

CORPORATE GOVERNANCE INCIDENCE ON NEGATIVE ABNORMAL RETURNS

In general, the impact of ESG news on firms' market value is larger when the events are associated with a main concern for the firms and when articles contain words referring to potential economic losses or legal consequences. To capture this, Cui and Docherty divided the news announcement into different categories and topic-based subcategories, according to RavenPack taxonomy: Business, Economy, Environment, Politics, and Society. Then, each category was divided into sub-groups, such as labor-issues, legal, war conflict, corporate responsibility, and so on. Studying the average CAR in the 21 trading days around the bad announcements, they founded that corporate governance and, consequently, legal issues based on ESG concerns (such as force majeure, antitrust suit defendant, discrimination defendant, etc.) have the largest (negative) announcement period return.

MARKETS' REACTION TO ESG NEWS EVENTS: MORE PRONOUNCED FOR FIRMS WITH HIGHER INSTITUTIONAL HOLDING

ESG information is a more salient aspect of an institutional investor's information set, compared to a retail investor's one. In respect to that, the Institutional Ownership Level trend, between the two quarters before and the two quarters after the news release, can be analyzed to support this theory: what can be seen is a decrease in institutional holding around bad news (a statistically significant change from 77.76% to 76.91%), compared to the change of average institutional ownership among equivalent stocks around good ones (from 78.95% to 79.19%). To account also for possible trading among institutional investors, it is necessary to include some information about the Institutional Ownership Concentration index. This shows that institutional ownership becomes more concentrated after the announcement of bad compared to good news. As a consequence, firms with ESG concerns have lower levels of institutional ownership.

MEAN REVERSION IN THE LONG RUN

In general, long-run positive (negative) abnormal returns are observed when markets over (under) react to ESG news. As a consequence, there is evidence of positive abnormal returns in the long period after bad announcements, while there is no clear long-term trend in the CAR after positive news.

IMPACT OF SELECTED ESG NEWS ON STOCK RETURNS

An extensive study of the literature concerning the relationship between ESG news and stock markets has shown that the day of the announcement to the public of an ESG news is followed by a reaction of the market. The magnitude of such reaction greatly depends on the type of statement: the bad news is much more impactful than good news.

This section investigates the effect of randomly selected good and bad ESG news on the stock performance of the companies to which that news is related. It is worth noting that the following list of case studies does not want to directly provide any causation link. The 3 periods considered for the stock behavior (1 week, 1 month, 1 quarter), and the timeframes for the CAR analysis, do not imply that the impact of ESG news on the stock performance varies linearly or with a certain pattern over time. The following examples consist of randomly selected recent ESG news and do not represent a statistically significant sample. Rather, they should be looked at as supporting evidence for the analysis discussed in the previous sections.

CAR COMPUTATION

For each of the selected stocks, the present report computed its beta, regressing the stock on the index deemed as more appropriate. The timeframe selected for the regressions were those indicated by the best practice: 2 and 5 years, anticipating the ESG news analyzed. Concerning the interval of the observations, weekly values have been selected to have a higher frequency of data and to mitigate possible outliers. Of the obtained betas, it has been selected the one for which the model had the highest R^2 and, in some cases, stocks have been regressed on multiple indexes to obtain the best possible fit for our data. After calculating and picking a beta for each stock, the following step focused on downloading the data ranging from -10 to 10 days of trading around the news (total of 21 observations) and the data for the reference index. Then, the expected return of each stock has been computed as the return of the market multiplied by each stock's beta. Finally, the analysis provided the calculation of the Abnormal

Return for each trading day, computing it as the difference between Realized Return and Expected Return. The CAR is the sum of all abnormal returns for the interval of interest.

BAD NEWS

BP

News: Oil spill – The Deepwater Horizon oil spill, also called "Gulf of Mexico oil spill", is the largest marine oil spill in history. In September 2014, a U.S. District Court judge ruled that BP plc was primarily responsible for the oil spill because of its gross negligence and reckless conduct.

Company: BP plc

Date: April 20, 2010

Category: Environment

Impact:

1-week return: -6.15%

1-month return: -25.49%

1-quarter return: -41.5%

Figure 1 - Yahoo finance

The company's beta has been computed by regressing BP on the FTSE100 index on weekly observations both on 2 years and a 5 years' timeframe, eventually selecting the 5 years' interval for its higher R^2. Then, the calculation of the CAR on stock on 3, 6, 10- and 20- days intervals has been provided. The results of the research highlight a cumulative abnormal loss of 7.47% over the 20 days. After the environmental disaster, the company started performing worse than expected.
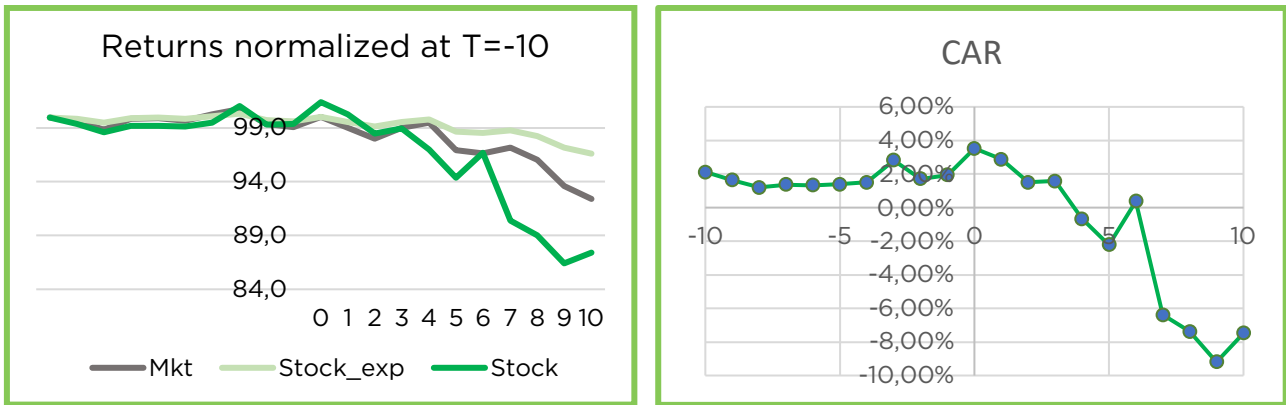
Graph 1 - own production

Wells Fargo

News: Widespread consumer abuse - On February 2, 2018, the Federal Reserve took the unusual step of sanctioning Wells Fargo, citing "widespread consumer abuses and other compliance breakdowns". Among the reasons, Wells Fargo engaged in the practice of opening unauthorized deposit accounts for existing customers and transferring funds to those accounts from their owners' other accounts, without their customers' knowledge or consent.
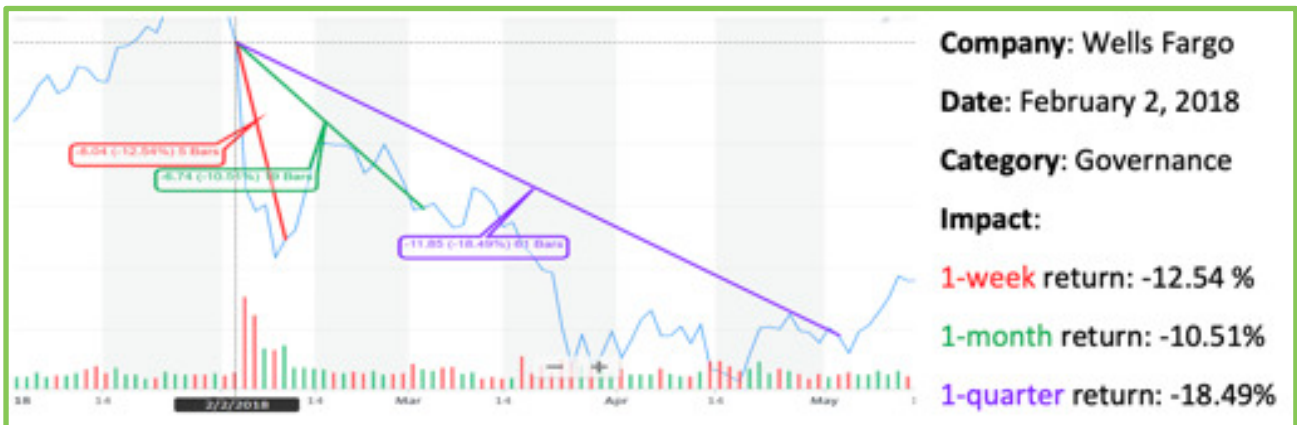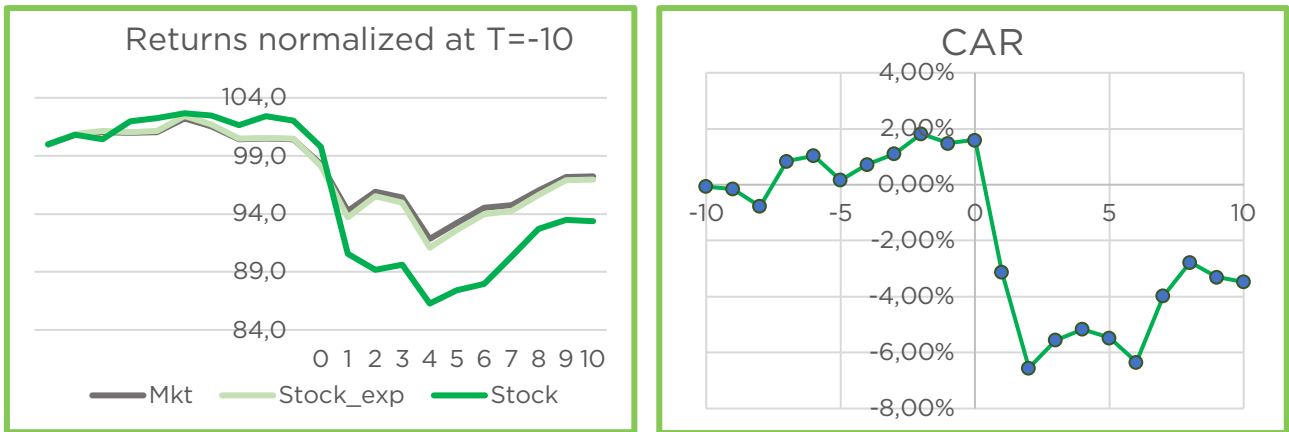

Figure 2 - Yahoo finance

The company's beta has been computed by regressing Wells Fargo on the S&P500 index on weekly observations eventually selecting the 5 years' interval for its higher R^2. Then, the calculation of the CAR on WFC stock on 3, 6, 10- and 20-days intervals has been provided. The results of the research highlight a cumulative abnormal loss of 3.47% over the 20 days. It's around the news disclosure, namely the 7- and 11- days intervals, that the CAR analysis gains

significance. After the news disclosure, WFC lost in two days more than 10% with a cumulative of 8.15% in abnormal loss.

Graph 2 - own production

The banking sector in this single example confirms its high sensitivity to Governance related negative news.

Toshiba

News: Accounting irregularities - Toshiba's operating profit was inflated by about US$4.1 billion over the three fiscal years from March 2012 to February 2015. A large part of the problem stemmed from the improper use of an accounting method called "percentage-of-completion", which is commonly used in long-term projects.

Figure 3 - Yahoo finance

The company's beta has been computed by regressing Toshiba on the NIKKEI 300 index on weekly observations both on 2 years and a 5 years' timeframe, eventually selecting the 5 years interval. Then, the calculation of the CAR on Toshiba's stock on 3, 6, 10- and 20-days intervals has been provided. The results of the research highlight a cumulative abnormal loss of 8.50% over the 20 days with the biggest drop in the stock price happening before the news disclosure, probably due to news spill. The big market reaction may have been amplified by the ability to value the economic loss deriving from the accounting misconduct. As previously described, articles reporting values connected to irregularities are often causing a clearer reaction. As a governance-related violation, it also drew investor's attention more.

Vale

News: Collapse of tailings dam - On 25 January 2019, a tailings dam at the Córrego do Feijão iron ore mine (Brazil), owned by the company Vale, suffered a catastrophic failure. As a result of the collapse, 270 people died.

Figure 4 - Yahoo finance

We regressed Vale on the S&P500 index on weekly observations eventually selecting the 2 years' timeframe. Then we calculated the (CAR) on VALE stock at 3, 6, 10- and 20-days intervals. The results of the research highlight a huge cumulative abnormal loss of 24.35% over the 20 days. It is interesting to see how the collapse of the dam causes the collapse of the stock value in terms of abnormal returns.

The destruction of the dam, the possible compensation due to the families of the victims, and possible prosecutions may together be the trigger of the company's stock loss.

Boohoo

News: Workers' exploitation – The business model of the UK-based apparel company has historically been based around being ultra-fast and ultra-cheap, with an average price point of US$17. A Sunday Times investigation found that workers in its UK factories were being paid as little as £3.50 an hour.

Figure 5 - Yahoo finance

The company's beta has been computed by regressing Boohoo on the Stoxx600 index on weekly observations both on 2 years and a 5 years' timeframe eventually selecting the 2 years interval for its higher R^2. Then we calculated the CAR on Boohoo stock on 3, 6, 10- and 20- days intervals. The results of the research highlight a cumulative abnormal loss of 38.67% over the 20 days. It's around the news disclosure, namely the 7- and 11- days intervals, that the CAR analysis shows even more impressive results. In the 3 days interval, the CAR is -49.95%.

GOOD NEWS

ENEL

News: Sustainable bond - Enel Finance under Dutch law International N.V. has launched on the European market a multi-tranche "sustainable" bond for a total of 2.5 billion euros destined to institutional investors, linked to the achievement of the Sustainable Development Goals (SDGs) of the United Nations. This is the

first General Purpose SDG Linked Bond launched by Enel Group on the European market.

Figure 6 - Yahoo finance

The company's beta has been computed by regressing ENEL on the FTSEMIB index on weekly observations both on 2 years and a 5 years' timeframe, eventually selecting the 5 years' interval for its higher R^2. Then, the calculation of the CAR on s stock on 3, 6, 10- and 20- days intervals has been provided. Each of the four intervals analyzed in the CAR computation reports a negative abnormal return despite the positive ESG news. As already said, reactions to positive ESG news are less relevant than their negative counterpart. It is interesting to spot that in the 10 days preceding the news disclosure the stock gained about 2% in abnormal return. Although this may not be caused by the emission of green bonds, the spill of this news may have benefitted somehow.
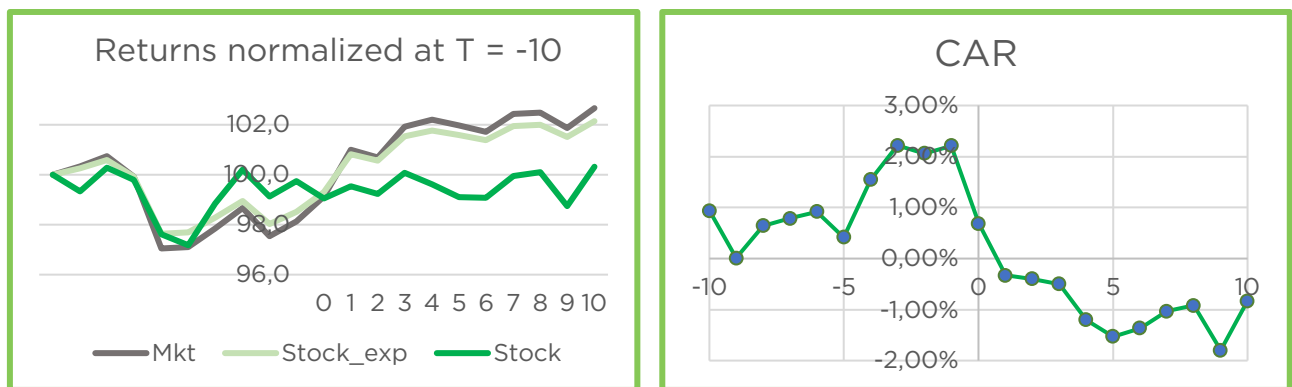
Graph 3 - own production

Moncler

News: Down Jones Sustainability Index - Moncler enters the Djsi-Dow Jones sustainability index for the first time and ranks first as Industry leader in the textiles, apparel & luxury goods sector.

Figure 7 - Yahoo finance

The company's beta has been computed by regressing MONC.MI on the STOXX600 index on weekly observations both on 2 years and a 5 years' timeframe, eventually selecting the 2 years' interval for its higher R^2. Then, the CAR's calculation of s stock on 3, 6, 10- and 20- days intervals has been provided. No relevant positive reaction to the news was to be highlighted in this case.

Microsoft

News: Renewable energy of data center - Microsoft says at the end of 2018 half the power used by its data centers came from renewable energy and it should hit 60% by the end of 2019. With the 60% milestone in sight, the company is now targeting over 70% renewable energy for its data centers by 2023.

Figure 8 - Yahoo finance

The company's beta has been computed by regressing MSFT on the S&P500 index on weekly observations both on 2 years and a 5 years' timeframe, eventually selecting the 2 years' interval for its higher R^2. Then, the calculation of the CAR on s stock on 3, 6, 10- and 20- days intervals has been provided. Although the immediate reaction to the news is not relevant; in the 10 days following the disclosure, MSFT stock gained a Cumulative Abnormal Return of 6.93%.
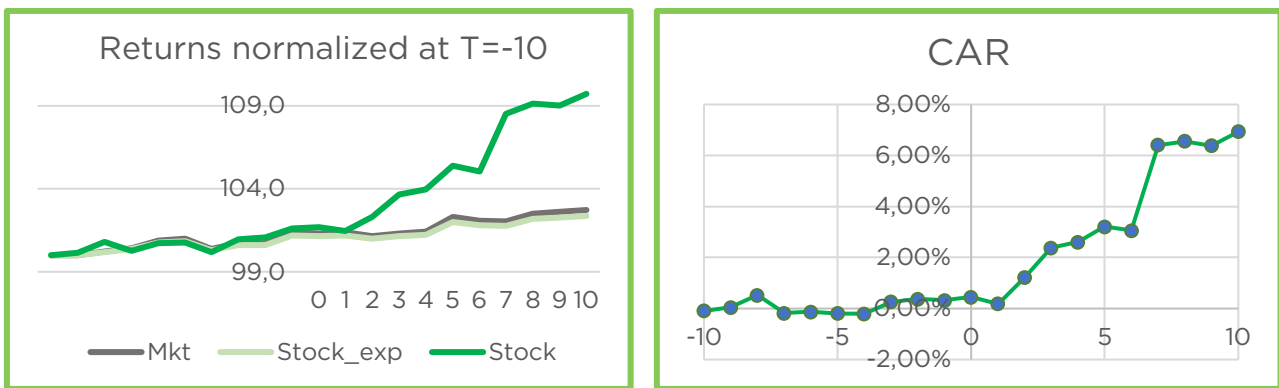
Graph 4 - own production

Unilever

News: Sustainable bonds – Unilever has issued a £250m "green bond", a development that could open a new chapter for this form of financing. The £250m raised will be used to fund several new factories, which will cut in half the amount of waste, water usage, and greenhouse gas emissions of existing factories.

Figure 9 - Yahoo finance

The company's beta has been computed by regressing UL on the STOXX600 index on weekly observations both on 2 years and a 5 years' timeframe, eventually

selecting the 2 years' interval for its higher R2. Then, the calculation of the CAR on s stock on 3, 6, 10- and 20- days intervals has been provided.

CONCLUSION

This report has shown how financial markets tend to assign a premium to companies actively involved in ESG practices and perceive them as more resilient thus less risky. This translates into higher risk-adjusted returns. The most significant result, however, comes from the assessment of the impact of ESG news on stock performance, and the factors driving the magnitude of such impact. The case studies of Toshiba, Boohoo, Vale, Wealth Fargo, and BP plc are strong empirical evidence of the results of the analysis conducted by G. Capelle - Blancard and A. Petit and of the study of B. Cui and P. Docherty: the magnitude of the impact of bad news is more pronounced compared to the one of good news. The analysis of the CAR doesn't show a clear and unilateral pattern for good ESG news, which, in any case, seems to be statistically non-significant. On the contrary, negative abnormal returns show that firms, especially those who suffer additional costs when subject to controversies and bad ESG news, lose significant value. The market's overreaction to bad ESG releases, as supported by the salience theory, is due to investors' preference for ESG news rather than firms' fundamentals change, which makes ESG issues a salient aspect of the information set. Therefore, institutional investors that incorporate ESG as part of their information set need to carefully condition their trading activities around ESG news to avoid losses that might be incurred when not taking into account firms' core fundamentals.

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