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Title: ESG news and long-run stock returns

Year: 2024

Version: Published version

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Please cite the original version:

Vu, T. N., Junttila, J.-P., & Lehkonen, H. (2024). ESG news and long-run stock returns. *Finance Research Letters*, 60, Article 104915. <https://doi.org/10.1016/j.frl.2023.104915>

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

ESG news and long-run stock returns

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ARTICLE INFO

JEL classification:

G14

G40

Keywords:

ESG news

ESG investing

Market reactions

Sustainability

ABSTRACT

This paper investigates the persistence of ESG news' effects on US stock returns. Utilizing a rolling-portfolio approach to calculate overlapping returns of news-based portfolios, extending up to twelve months post-news release, we find that market reactions to ESG news are fleeting and reversing within a month in the most recent sample period. This suggests ESG news has no enduring influence on stock returns. Notably, the reactions are prominent for social and governance themes but not for environmental-related news. This study is one of the first attempts to understand how ESG news can affect a company's value over the long term.

1. Introduction

This study examines the persistence of the impacts of objective firm-level ESG news on firm valuation, a topic that has thus far been left unexamined. As the role of sustainability-related data in evaluating the financial performance of firms is widely recognized nowadays (Gillan et al., 2021; Hornuf and Yüksel, 2023; Pedersen et al., 2021; Widyawati, 2020), the Environmental, Social, and Governance (ESG) information is collected, processed, and incorporated as an integral part of asset allocation decisions. Consequently, the flow of news, which contains information about the ESG performance of firms, triggers market reactions. These ESG news are linked to stock returns with an expected sign around the news about identified events such as announcements of ESG initiatives, ESG disclosure, or sustainable report filing, with a stronger market reaction to negative ESG news compared to positive news (Cappelle-Blancard and Petit, 2019; De Vincentiis, 2023; Ignatov, 2023; Krüger, 2015; Landau et al., 2020; Serafeim and Yoon, 2022). Recently, because the development of technology allows access to more extensive data sources than previously,¹ some studies have examined market reactions to real-time information from diverse ESG news across a wide range of companies (De Vincentiis, 2023; Nyakurukwa and Seetharam, 2023; Serafeim and Yoon, 2022). The general findings are that the market rewards good behavior and punishes bad activities regarding sustainability. However, these market reactions have mainly been investigated during the advent of news, and the persistence of these impacts remains to be examined. To our knowledge, there is no prior research on the effects of objective ESG news on stock returns in the long-term horizon. In other words, it is uncertain whether the reactions to ESG news will last for an extended period or if they are followed by an eventual price reversal, neutralizing the price changes during and right after the arrival of news.

Therefore, to fill the literature gap, this study explores the long-term impact of ESG news on the market valuation of US firms. We examine whether ESG news imparts information that correlates with a company's fundamental valuation factors, thereby impacting

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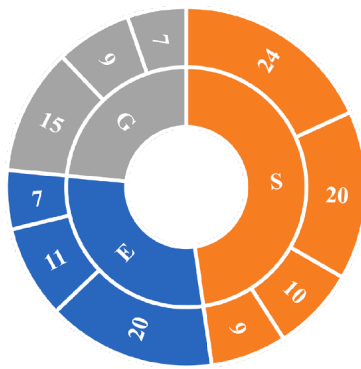
¹ For example, only a bit more than 2000 events (Krüger, 2015), 100 firms (Cappelle-Blancard and Petit, 2019), or about 17,000 observations around report filing dates (Ignatov, 2023) have been used in the previous studies.

<https://doi.org/10.1016/j.frl.2023.104915>

Received 17 July 2023; Received in revised form 19 December 2023; Accepted 20 December 2023

Available online 21 December 2023

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Pillar	Category	No. of indexes
E	Emission	8
E	Environmental Innovation	3
E	Resource Use	2
S	Community	4
S	Human Rights	1
S	Product	4
S	Workforce	7
G	CSR Strategy	1
G	Management	4
G	Shareholders	2

Fig. 1. RMEA companies ESG metrics.

firm valuation. Stock price changes could occur during ESG news events. Still, these market reactions might be reversed entirely over an extended period after the news's arrival, implying that the ESG news has no long-term impact on the firm valuation. Different scholars have already shown the relationship between ESG information and firms' valuation (Bang et al., 2023; Bansal et al., 2022; Bax, 2023; Bolton and Kacperczyk, 2021; Halbritter and Dorfleitner, 2015; Naffa and Fain, 2022; Pedersen et al., 2021; Teti et al., 2023; Wong et al., 2021). However, the ESG information the market utilizes for valuation still needs to be further discussed, as there is no uniform measurement standard for it (Avramov et al., 2022; Berg et al., 2022). Thus, analyzing the information from ESG news and its relation to firms' value is necessary.

We apply a standard rolling-portfolio method, as in Chan (2003) and Fama (1998), to assess whether the firms with positive ESG news generate better cumulative returns than those with negative ESG news over the twelve months right after the arrival of news. We also focus on relevant sub-periods to examine the potential evolution of market reactions to the ESG news over time. Our study utilizes a dataset provided by Refinitiv MarketPsych ESG analytics (RMEA), which employs an AI-based natural language processing engine to monitor the firm-level sustainability-related news, not including the press releases or reports published by the firms. According to Refinitiv (2022), the biggest advantage of these RMEA indicators is the reflection of external perspectives on ESG activities rather than being in connection to the firm-level internal data, as is the case in many other ESG ratings calculated based on the data from sustainability reports of the companies. The scores are built using 36 metrics defined on three main broad pillars of Environmental (E), Social (S), and Governance (G) themes. The enriched RMEA dataset covering thousands of companies also helps to consolidate the findings about the relationship between ESG news and stock returns.

The main contribution of our study is to examine both the short- and long-term valuation effects of ESG news, i.e., the persistence of the impact of ESG news. We add to the thin literature on external (objective) ESG news, focusing mainly on easily identified events such as the announcements of ESG initiatives, ESG disclosure, or sustainable report filing (Capelle-Blancard and Petit, 2019; Ignatov, 2023; Krüger, 2015; Landau et al., 2020), and without any examination on the long-term impact of ESG news (De Vincentiis, 2023; Nyakurukwa and Seetharam, 2023; Serafeim and Yoon, 2022). The second main contribution of our paper is to utilize external sustainability-related news-based information about firms. This approach offers a more objective perspective on the valuation effects of ESG information compared to the conventional ratings previously used in the relevant literature relying on the internal, firm-level reporting-based data concerning ESG activities of the firms themselves. Consequently, our findings hold substantial relevance, especially for investors and policymakers. The study enhances the understanding of the influence of ESG news on firms' value and the market's perception of ESG information concerning sustainability issues in a much more objective way than previously. Based on the most recent data for the US firms, our findings reveal that the market reacts to this type of ESG information, i.e., the news, only in the short term. In addition, these reactions vary depending on the specific themes within the news (E, S, or G). Furthermore, based on our results, the stock price changes tend to revert in the subsequent months following the release of such news.

The remainder of the study is organized as follows. The data is discussed in Section 2, and the methodology is detailed in Section 3. Section 4 presents empirical results. Section 5 concludes.

2. Data

We utilize a firm-month-level dataset for the US stocks from January 2011 to July 2023. The list of stocks on the Nasdaq and the NYSE was extracted from the Refinitiv Datastream,² monthly stock returns and market capitalizations were retrieved from the Refinitiv

² The configuration in the Refinitiv Datastream navigator is as follows: CATEGORY = Equities, MARKET = United States, EXCHANGE = {NYSE, NASDAQ}, CURRENCY = USD, TYPE = Equity, SECURITY = Major, QUOTE = Primary, RIC LINKED = Yes. The equities are required not to have non-available Mnemonic (Datastream quote identifier), RIC (Refinitiv Identification Code), and Ticker Symbol for data downloading and matching purposes.

Table 1
Main characteristics of the data sample.

Panel A. Descriptive statistics							
	N	Mean	SD	Min	Max	Skew	Kurtosis
Return (%) – All	496,127	0.67	13.98	–38.54	54.39	0.57	2.80
Return (%) – Stocks with ESG news	419,593	0.72	13.32	–38.54	54.39	0.51	2.80
ESG	419,593	56.68	18.34	1	100	–0.12	–0.71
E	374,258	52.84	24.43	1	100	–0.03	–0.99
S	417,996	59.93	21.13	1	100	–0.28	–0.66
G	407,283	58.77	23.28	1	100	–0.41	–0.81
Panel B. Sample coverage							
Year	# Firms	Stocks with ESG News		# Firms	Stocks with No-ESG-News		
		# Market value (Million USD)	# Market value (Million USD)				
2011	1460	8184	880	780			
2012	1538	8473	881	871			
2013	1640	9607	888	1188			
2014	1728	10,929	984	1372			
2015	1860	10,865	1026	1409			
2016	1889	10,889	1125	1444			
2017	2050	12,073	1111	1733			
2018	2271	12,435	1084	1777			
2019	2542	12,028	971	1789			
2020	2628	13,003	1071	1706			
2021	2742	16,563	1538	3193			
2022	3144	13,404	1587	2102			
2023	3237	13,361	1408	1973			

Note: Panel A presents the descriptive statistics for the returns (%) of all stocks in the sample, the returns (%) of stocks with ESG news, and ESG news score, E news score, S news score, and G news score. Panel B shows the average number of firms for each year and the average market capitalization of stocks in each group. The average number of firms is calculated by averaging the number of firms in monthly sub-samples during the year. The market value is the mean of capitalization of all firms in each group.

Eikon, and ESG news scores were downloaded from the RMEA. The original scale of these ESG metrics is from -1 to $+1$, with the negative scores representing criticism and positive scores representing positive opinions.³ The ESG total and pillar level scores are weighted averages of the underlying index scores according to their broad pillars (E, S, or G). The final ratings are percentile ranked from 1 to 100 relative to other assets within the Refinitiv Business Classifications (E and S pillars) or the country of incorporation (G pillar). The final sample includes 4953 equities (including delisted firms), of which 4716 firms (95.2 %) have ESG news information from the RMEA during the examined period.

Fig. 1 shows the distribution of the RMEA Companies ESG metrics in detail, and Table 1 presents the descriptive statistics of the main variables in the study. From these, we can see that nearly 85 % of the firm-month observations accompany ESG news scores, and the stocks with news generally account for a large proportion of the dataset, which also increases over the examined period. Notably, the no-news stocks have considerably smaller average market capitalizations than the firms with news information, indicating a concentration of the news information on larger companies.

3. Methodology

We employ a portfolio construction approach to analyze the performance of portfolios defined by grouping equities based on ESG news scores. At the end of each month, stocks are ranked based on their ESG news scores (or individual E, S, and G scores) of that month. We then allocate the stocks into good/bad ESG portfolios, representing the top/bottom 30 % of stocks based on rankings and one no-ESG-news portfolio. The top 30 % share represents the most positive ESG news stocks, while the bottom 30 % represents the most negative ESG news stocks. Equally weighted portfolio returns are calculated for the month of the news release and the following one to twelve months using either raw or abnormal returns⁴ of each stock allocated in the portfolios. We then form the good/bad ESG vs. no-ESG news and good vs. bad ESG news portfolios by simulating the long-short strategies. After that, overlapping holding portfolio returns are calculated as in Chan (2003), Edmans (2011), Fama (1998), and Kothari and Warner (1997). Hence, the returns are calculated based on:

³ Good ESG news are positive opinions expressed in the media contents about the ESG activities of firms, such as inclusion in the listing of best workplaces or investments to improve waste and hazardous-materials management. On the other hand, for example the newspaper articles about poor labor relations or critical reports about the disposal of toxic waste are considered as bad ESG news.

⁴ Abnormal stock returns are the market-risk-adjusted returns with the market beta estimated using OLS regression with at least 36 months of data over the previous five years.

Table 2
Average returns of good vs bad ESG news-accompanied stocks.

k	ESG Good vs. bad		E Good vs. bad		S Good vs. bad		G Good vs. bad	
	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns
0	1.06*** (12.63)	1.07*** (13.3)	0.11 (0.91)	0.03 (0.32)	0.92*** (11.08)	0.89*** (11.15)	0.81*** (9.38)	0.83*** (10.20)
1	-0.07 (-1.14)	-0.02 (-0.32)	0.06 (0.60)	-0.03 (-0.25)	-0.17** (-2.49)	-0.10 (-1.65)	-0.05 (-0.72)	-0.01 (-0.10)
2	-0.04 (-0.65)	-0.05 (-0.69)	0.02 (0.14)	-0.08 (-0.75)	-0.09 (-1.38)	-0.10 (-1.49)	-0.14 (-1.61)	-0.06 (-0.73)
3	-0.03 (-0.47)	-0.05 (-0.64)	0.02 (0.20)	-0.10 (-0.89)	-0.11 (-1.45)	-0.11 (-1.47)	0.00 (0.02)	-0.01 (-0.09)
4	-0.15** (-2.26)	-0.11* (-1.67)	-0.03 (-0.28)	-0.10 (-0.99)	-0.18*** (-2.61)	-0.18*** (-2.62)	-0.13* (-1.87)	-0.07 (-0.97)
5	0.02 (0.35)	-0.02 (-0.25)	0.07 (0.60)	0.01 (0.06)	0.00 (0.03)	-0.04 (-0.60)	0.01 (0.09)	0.03 (0.47)
6	-0.03 (-0.48)	-0.03 (-0.46)	0.01 (0.12)	-0.08 (-0.87)	-0.02 (-0.25)	-0.04 (-0.54)	-0.13* (-1.79)	-0.12* (-1.72)

Note: This table presents the difference between average returns on stocks with good versus bad ESG news (top/bottom 30 % regarding the ESG news score in the previous k months). The average returns are calculated using raw or abnormal returns of individual underlying stocks. Abnormal stock returns are the risk-adjusted returns with the market beta estimated using OLS regression with at least 36 months of data over the previous five years. The t-statistics are in parentheses. ***, **, * are statistically significant at the 1, 5, and 10 % levels, respectively.

$$CR_k = \sum_{m=0}^k r_{t-m}$$

where CR_k is the cumulative return over analyzed months, and r_{t-m} is the portfolio's return sorted by m-month lags of the ESG scores.⁵

This sum could be considered as the payoff of the portfolio in which $1 / (k + 1)$ stocks would be reallocated every month. While it is not practical to perform this trading strategy since the sum includes the contemporaneous return component, this method helps us see how the ESG news affects the stock prices and returns in the extended horizons. When the news arrives at time t , the market reactions trigger price changes in $1 / (k + 1)$ stocks in the portfolio. Nevertheless, this variation could be offset by the reversal of $1 / (k + 1)$ stocks that had received the ESG news in the previous k, k-1, ..., or one month(s). Hence, if the portfolio's cumulative return is not significantly different from zero, it implies a reversal, indicating that the ESG news may not be linked to the fundamental valuation of stocks but to the market attention only. On the other hand, if there is no reversal in the returns of $1 / (k + 1)$ stocks obtained based on the ESG news in the preceding months, the cumulative returns of the portfolio should be significantly different from zero.

4. Results

We first analyze the performance of portfolios based on the ESG news scores across different time horizons. The results in Table 2 display the average return of good vs. bad portfolios, formed in month $k = (0, 1, \dots, 6)$ after the news. Generally, the stocks with good news exhibit significantly better performance than those linked to bad news, reflecting a positive price pressure during the advent of ESG news. However, in the subsequent months, the difference between the returns of portfolios based on good or bad news is largely indistinguishable. This implies that the impact of ESG news on stock returns is relatively contemporaneous with the arrival of information, and the price pressures attributed to the news disappear in the following month. The ESG news does not seem to provide substantial financial benefits for investors when forming an investment strategy based on the lagged values. This outcome is not highly unexpected as information is quickly reflected in stock prices in an efficient market. Furthermore, the average portfolio returns indicate that the stock return differentials attributed to the ESG news may reverse in the months following the news, as evidenced by the negative signs observed for the total ESG news and the S and G pillars. Interestingly, there is no significant reaction to the news belonging to the E themes. This discrepancy indicates that the market differentiates its responses to the different categories (pillars) of ESG information.

Our discussion primarily focuses on comparisons between the abnormal returns for the stocks with good vs. bad ESG news for two reasons. First, the analysis of risk-adjusted returns can provide more useful information by mitigating the impact of noise generated by the more volatile stocks. The cumulative returns of good (bad) vs. no-ESG news portfolios reduce substantially in magnitudes after controlling for the market risks (as shown in columns 2–5 in Table 3 panel A), suggesting a potential influence stemming from the highly volatile stocks. Second, the differences between returns of ESG news and no-ESG-news stocks can be attributed to the size premium effect, as the no-ESG-news stocks exhibit a smaller market capitalization (see Table 1). We find that the stocks with bad ESG news have significantly lower abnormal returns than no-ESG news stocks, but no significant differences are observed when comparing

⁵ As an example, if we want to examine the impact of ESG news on firms' value over the next $k = 3$ months, we evaluate the cumulative returns as the sum of returns in month t of the portfolios based on the ESG ratings from month $t-3$ to the current month (t).

Table 3
Cumulative return (%) of long-short ESG news portfolios.

Panel A		ESG					
Holding period k	Good vs. no-news		Bad vs. no-news		Good vs. bad		
	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns	
0	-2.57 (-0.95)	0.26 (1.53)	-3.64 (-1.34)	-0.81*** (-4.92)	1.06*** (12.63)	1.07*** (13.30)	
1	-5.85 (-1.11)	-0.36 (-1.03)	-6.84 (-1.30)	-1.41*** (-4.25)	0.99*** (7.99)	1.05*** (8.47)	
2	-8.87 (-1.16)	-0.86* (-1.68)	-9.82 (-1.28)	-1.86*** (-3.80)	0.94*** (5.68)	1.00*** (5.96)	
3	-12.06 (-1.18)	-1.43** (-2.10)	-12.97 (-1.27)	-2.38*** (-3.60)	0.91*** (4.29)	0.95*** (4.36)	
4	-14.99 (-1.20)	-1.96** (-2.30)	-15.75 (-1.26)	-2.80*** (-3.39)	0.76*** (3.09)	0.84*** (3.30)	
5	-17.68 (-1.20)	-2.39** (-2.34)	-18.47 (-1.25)	-3.22*** (-3.25)	0.79*** (2.74)	0.82*** (2.83)	
6	-20.75 (-1.20)	-2.95** (-2.45)	-21.5 (-1.25)	-3.74*** (-3.22)	0.76** (2.28)	0.79** (2.41)	
9	-29.22 (-1.20)	-4.43** (-2.59)	-29.9 (-1.23)	-5.05*** (-3.03)	0.68 (1.46)	0.63 (1.39)	
12	-37.26 (-1.21)	-5.98*** (-2.71)	-37.72 (-1.22)	-6.34*** (-2.93)	0.46 (0.79)	0.36 (0.62)	

Panel B		E		S		G	
Holding period k	Good vs. bad		Good vs. bad		Good vs. bad		
	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns	
0	0.11 (0.91)	0.03 (0.32)	0.92*** (11.08)	0.89*** (11.15)	0.81*** (9.38)	0.83*** (10.20)	
1	0.17 (0.84)	0.01 (0.05)	0.75*** (6.03)	0.79*** (6.52)	0.76*** (5.88)	0.83*** (6.95)	
2	0.18 (0.62)	-0.07 (-0.26)	0.66*** (4.03)	0.69*** (4.35)	0.62*** (3.41)	0.77*** (4.61)	
3	0.20 (0.52)	-0.17 (-0.45)	0.55*** (2.67)	0.58*** (2.87)	0.62*** (2.93)	0.76*** (3.89)	
4	0.18 (0.37)	-0.27 (-0.58)	0.38 (1.56)	0.40* (1.69)	0.49* (1.96)	0.70*** (3.01)	
5	0.24 (0.43)	-0.26 (-0.48)	0.38 (1.35)	0.36 (1.34)	0.49* (1.73)	0.73*** (2.75)	
6	0.26 (0.39)	-0.34 (-0.55)	0.36 (1.12)	0.32 (1.06)	0.36 (1.13)	0.61** (2.07)	
9	0.18 (0.20)	-0.76 (-0.85)	0.27 (0.60)	0.14 (0.34)	0.07 (0.16)	0.48 (1.20)	
12	0.27 (0.22)	-1.02 (-0.89)	0.08 (0.13)	-0.07 (-0.14)	-0.07 (-0.12)	0.41 (0.81)	

Note: At the end of each month, stocks are ranked by their ESG news scores in that month or in the previous 1–12 months. The stocks are then allocated into three portfolios: good (top 30 % regarding the ESG news score), bad (bottom 30 % regarding the ESG news score), and no-news (stocks without ESG news). Good vs. no-news, bad vs. no-news, and good vs. bad portfolios are calculated accordingly, simulating the long-short strategies. Portfolio returns are calculated using individual underlying stocks' raw or abnormal returns. Abnormal stock returns are the risk-adjusted returns with the market beta estimated using OLS regression with at least 36 months of data over the previous five years. Cumulative returns over period k are the summed raw returns of all portfolios based on the ESG scores from t-k to month t. The ESG data covers from 2011 to 2023, and the portfolios returns are from 2012 to 2023, as we remove the observations for 2011 to make equal lengths of periods across holding periods. Panel A reports the results for the aggregate ESG news data, while Panel B shows them separately for E, S, and G news components. The t-statistics are in parentheses. ***, **, * are statistically significant at the 1, 5, and 10 % levels.

returns of good ESG news vs. no-ESG news during the arrival of news. However, these returns might be influenced by the size characteristic. The average market value of no-news stocks is ten (seven) times smaller than that of news-accompanied stocks in 2011 (2023). Additionally, over the extended holding periods, cumulative abnormal returns of stocks with either good or bad ESG news tend to be comparatively lower than those for the stocks without ESG news because the equities of smaller firms consistently yield notably larger average returns than the larger firms. Besides, as ESG news information covers 85 % of the firm-month observations in the dataset, focusing on news-accompanied stock returns provides a more comprehensive representation of the market's perspective on ESG news.

Analyzing the impact of good vs. bad ESG news over twelve months after the arrival of news (see the last two columns in Table 3 panel A), we find that the negative news results in lower abnormal returns, but the positive cumulative returns of good vs. bad news portfolios begin to decrease in the magnitude one month after the event, illustrating a reversal after the news. All gains from contemporaneous market reactions to the ESG news disappear over twelve months after the news, as there is no significant difference in the cumulative returns between the stocks with good and bad ESG news. Our findings indicate that ESG news does not significantly correlate with long-term stock returns. The market reactions during the advent of news might not matter to investors since the stock

Table 4
ESG news and cumulative returns: sub-periods.

k	ESG		E		S		G	
	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns	Raw return	Abnormal returns
Panel A: 2012–2015								
0	1.23*** (10.43)	1.22*** (10.82)	0.25 (1.46)	0.13 (0.85)	1.11*** (9.38)	1.04*** (9.38)	1.23*** (10.93)	1.22*** (10.83)
1	1.20*** (6.35)	1.14*** (6.35)	0.48* (1.78)	0.24 (0.96)	1.01*** (5.42)	0.93*** (5.28)	1.20*** (6.37)	1.18*** (6.30)
2	1.15*** (4.88)	1.11*** (4.67)	0.55 (1.40)	0.17 (0.45)	0.90*** (3.80)	0.86*** (3.72)	1.17*** (4.67)	1.15*** (4.59)
3	1.27*** (4.09)	1.16*** (3.71)	0.69 (1.29)	0.16 (0.32)	0.95*** (3.11)	0.83*** (2.84)	1.25*** (4.27)	1.22*** (4.17)
4	1.11*** (3.09)	1.02*** (2.82)	0.72 (1.13)	0.11 (0.18)	0.76** (2.14)	0.63* (1.82)	1.10*** (3.18)	1.08*** (3.11)
5	1.28*** (2.98)	1.17*** (2.74)	0.95 (1.26)	0.23 (0.32)	0.92** (2.22)	0.77* (1.93)	1.17*** (2.91)	1.22*** (3.02)
6	1.39*** (2.71)	1.18** (2.38)	1.10 (1.27)	0.24 (0.29)	1.07** (2.19)	0.78* (1.67)	1.02** (2.21)	1.09** (2.36)
9	1.57** (2.21)	1.10 (1.66)	1.44 (1.18)	0.27 (0.23)	1.12* (1.70)	0.63 (1.04)	1.09* (1.77)	1.18* (1.87)
12	1.55* (1.69)	0.94 (1.07)	1.83 (1.18)	0.31 (0.21)	1.09 (1.28)	0.48 (0.60)	1.17 (1.50)	1.39* (1.76)
Panel B: 2016–2019								
0	1.28*** (8.90)	1.21*** (8.26)	0.09 (0.51)	−0.01 (−0.07)	1.11*** (8.29)	1.03*** (7.04)	0.75*** (5.00)	0.81*** (5.87)
1	1.11*** (5.09)	1.12*** (4.71)	−0.01 (−0.03)	−0.23 (−0.82)	0.87*** (4.42)	0.89*** (3.84)	0.70*** (3.39)	0.75*** (3.76)
2	0.99*** (3.33)	0.98*** (2.96)	0.07 (0.17)	−0.24 (−0.58)	0.64** (2.42)	0.64** (2.08)	0.51* (1.89)	0.66** (2.56)
3	0.78** (2.10)	0.76* (1.80)	−0.02 (−0.03)	−0.42 (−0.79)	0.38 (1.11)	0.39 (0.99)	0.44 (1.35)	0.62* (1.95)
4	0.53 (1.27)	0.54 (1.10)	−0.13 (−0.18)	−0.62 (−0.92)	0.18 (0.46)	0.19 (0.42)	0.30 (0.77)	0.68* (1.79)
5	0.43 (0.88)	0.32 (0.58)	−0.29 (−0.35)	−0.86 (−1.06)	0.11 (0.25)	0.00 (0.00)	0.27 (0.62)	0.62 (1.47)
6	0.32 (0.57)	0.20 (0.31)	−0.25 (−0.25)	−0.95 (−0.99)	0.05 (0.09)	−0.02 (−0.04)	0.03 (0.07)	0.39 (0.83)
9	0.10 (0.13)	−0.17 (−0.20)	−0.46 (−0.33)	−1.60 (−1.16)	0.03 (0.04)	−0.14 (−0.18)	−0.63 (−0.99)	−0.07 (−0.13)
12	−0.48 (−0.51)	−0.72 (−0.70)	−0.41 (−0.22)	−1.12 (−1.12)	−0.37 (−0.41)	−0.48 (−0.50)	−1.17 (−1.42)	−0.46 (−0.62)
Panel C: 2020–2023								
0	0.58*** (3.48)	0.71*** (4.41)	−0.07 (−0.26)	−0.04 (−0.16)	0.45** (2.6)	0.51*** (3.28)	0.28* (1.71)	0.31* (1.99)
1	0.56** (2.35)	0.85*** (3.51)	−0.08 (−0.15)	−0.05 (−0.11)	0.27 (1.01)	0.47** (2.05)	0.22 (0.80)	0.41* (1.83)
2	0.61* (1.72)	0.88** (2.68)	−0.20 (−0.27)	−0.23 (−0.31)	0.34 (0.93)	0.50 (1.67)	−0.03 (−0.07)	0.35 (0.95)
3	0.55 (1.25)	0.88** (2.05)	−0.22 (−0.23)	−0.36 (−0.37)	0.20 (0.45)	0.45 (1.15)	−0.06 (−0.13)	0.28 (0.66)
4	0.54 (1.01)	0.93* (1.84)	−0.24 (−0.20)	−0.41 (−0.35)	0.05 (0.10)	0.31 (0.69)	−0.15 (−0.26)	0.16 (0.32)
5	0.50 (0.83)	0.92 (1.63)	−0.14 (−0.10)	−0.27 (−0.19)	−0.09 (−0.14)	0.19 (0.37)	−0.20 (−0.29)	0.15 (0.26)
6	0.36 (0.53)	0.93 (1.54)	−0.35 (−0.22)	−0.48 (−0.30)	−0.27 (−0.39)	0.07 (0.13)	−0.18 (−0.24)	0.18 (0.28)
9	0.09 (0.09)	0.85 (0.97)	−0.87 (−0.37)	−1.27 (−0.56)	−0.65 (−0.66)	−0.22 (−0.27)	−0.58 (−0.56)	0.10 (0.11)
12	0.01 (0.01)	0.75 (0.68)	−1.16 (−0.39)	−1.78 (−0.62)	−0.84 (−0.69)	−0.40 (−0.39)	−0.56 (−0.43)	0.00 (0.00)

Note: See Table 3 for the notations. The results are given for the aggregate ESG news, as well as for E, S, and G news components separately; Panel A is for the period from 2012 to 2015; Panel B for the period from 2016 to 2019; and Panel C for the period from 2020 to 2023.

prices swing back to the level before the news in the following months. It appears that the ESG news does not contribute to or convey unexpected information concerning the fundamental factors that underpin market valuation over an extended period. The advent of ESG news primarily captures market attention, triggering reactions. Returns stemming from attention shocks tend to experience reversals soon after the news's arrival, eliminating all the price changes during the news's arrival (Barber and Odean, 2008; Da et al., 2011). Therefore, the influence of ESG news under this mechanism is only transitory, as reflected in our results.

When investigating the impact of news under individual pillar themes (E, S, and G) by forming the portfolios based on the scores for each pillar (Table 3 panel B), the news under the E themes provides no abnormal returns, consolidating the dissimilarity of the market reactions to different types of ESG news. In these data, the information on emissions in production processes accounts for a large proportion of the E score (8 out of the 13 core indexes under environmental themes, see Fig. 1). Very recently, Aswani et al. (2023) have argued that the emissions information could simply reflect the effect of firm fundamentals on stock prices. Therefore, as seen from our results, E news does not trigger any changes in the returns. In contrast, the market reactions to the news under both the S and G themes are substantial, but the effects are mostly contemporaneous, similar to the impacts of the overall ESG news, whose benefits diminish after three to six months.

The most recent literature suggests that the relationship between ESG information and stock returns depends on the investors' ESG awareness (Pedersen et al., 2021). Furthermore, given the increasing public concerns about sustainability, the market reaction to ESG news may vary across different periods. Therefore, at the final stage of our analysis, we divided the whole sample into three sub-periods: 2012–2015, 2016–2019, and 2020–2023.⁶ The first break-point event is the Paris Agreement 2015, which marks a significant global effort towards sustainable initiatives and potentially raises awareness about ESG risks in societies worldwide. The last sub-period, 2020–2023, captures the most recent crisis time, with two significant global unexpected events, e.g., the COVID-19 pandemic and the Russia-Ukraine war. These results are presented in Table 4. Consistent with our previous findings, the market reactions are short-term, with diminishing gains during the months right after the news. Furthermore, the impact of ESG news is mainly driven by information related to the S and G themes, and the environmental-related news does not significantly influence the abnormal stock returns, as the market reaction to the E news is insignificant in all sub-samples. Notably, the benefits of positive news over negative news diminish faster through time, and they are strongest during 2011–2015 and weakest during the 2020–2023 sub-period. The initial price pressure caused by the ESG news still exists up to twelve months after the news during 2011–2015, but it only takes less than two months to get entirely reversed in the latest subsample. As ESG becomes a well-recognized criterion with a substantial amount of available data sources, the market appears not to treat the ESG news as an unexpected information source about firms. The ESG news mainly triggers attention, causing only short-term price movements rather than long-term impacts on firm valuation.

5. Conclusion

This paper represents one of the first investigations into the enduring influence of objective ESG news on stock returns. Utilizing an extensive ESG news dataset from the RMEA, our findings underscore that the market reactions to these ESG news are only short-term. The gains or losses resulting from the transient fluctuations dissipate in the ensuing months after the news release. These findings imply that the ESG news may primarily capture investors' attention without substantially contributing to the insights concerning firms' fundamentals. Our results raise questions about the role of sustainability criticism in encouraging firms to do better due to the potential dismissal of the effects of ESG news shocks in the long-term firm valuation.

The findings are, however, limited by the data availability of the RMEA. There is a lack of information to classify news according to fundamentals and risks (physical, transition, and litigation risks) that might explain the market reactions to ESG information. We treat all news equally rather than considering whether the ESG news provides unexpected information. Hence, several directions could be explored to improve this study. For example, the interplay between ESG news and ESG performance ratings could be an intriguing topic for more exploration. Future research can also focus on the differences between the impact of ESG news and other conventional news.

CRedit authorship contribution statement

Thanh Nam Vu: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Juha-Pekka Junttila:** Writing – review & editing, Supervision, Project administration, Conceptualization. **Heikki Lehkonen:** Writing – review & editing, Supervision, Resources.

Data availability

Data will be made available on request.

Acknowledgment

We would like to thank editor Jonathan A. Batten, three anonymous referees, and Markku Kaustia for their comments and suggestions. Vu also thanks the OP Group Research Foundation [grant numbers 20210056 and 20220058] and the Finnish Foundation for Share Promotion [grant number 2021-0024A] for the financial support.

⁶ The ESG data for forming portfolios covers the period 2011–2023, and the portfolios returns are from 2012 to 2023, as we remove the observations for 2011 to make equal length of periods across holding periods.

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