

2008's mistrust vs 2020's panic: can ESG hold your institutional investors?

Anastasia Giakoumelou

Department of Management, Ca' Foscari University of Venice, Venice, Italy

Antonio Salvi

Department of Management, University of Turin, Turin, Italy

Giorgio Stefano Bertinetti

Department of Management, Ca' Foscari University of Venice, Venice, Italy, and

Anna Paola Micheli

*Department of Economy and Law, University of Cassino and Southern Lazio,
Cassino, Italy*

Abstract

Purpose – The authors compare two market collapse incidents, focusing on their role as turning points for ESG considerations among investors that do not fall under the SRI class. The authors draw from the signaling theory to posit that ESG performance acts as a buffer to retain institutional shareholders under stress conditions.

Design/methodology/approach – The authors collect extensive data on institutional shareholdings and corporate performance during the pandemic and the 2008 financial crisis to examine the potential of ESG to act as a downward risk hedging mechanism. The authors test whether superior ESG scores function as insurance and resilience signals that lock investors in through times of high probability of divestments.

Findings – Findings indicate that ESG weighs in investment decisions during economic downturn and poor returns. The nature of this positive relationship is not static but dynamic contingent on overall risk materiality considerations.

Research limitations/implications – The authors update regulators, firms, investors and academics on ESG, risk and crisis management. The shifting materiality and the altering impact of ESG practices is our core implication, as well as limitation, in terms of metrics, temporal evolution and interaction with institutional factors, along with portfolio alpha and safe haven potential in ESG asset classes.

Originality/value – The authors extend current literature focusing on portfolio returns and firm valuations to highlight the role of ESG in shareholder retention during poor return periods. The authors further add to existing studies by examining the shifting materiality of ESG pillars during different crisis settings.

Keywords COVID-19 pandemic, Great financial crisis, ESG, Shareholder retention, Institutional shareholders, Materiality

Paper type Research paper

1. Introduction

It was on March 11th 2020 that the World Health Organization (WHO) officially classified COVID-19 as a pandemic, confirming an exponential rise in cases in many countries worldwide. It then took a matter of days before assuming the nature of a financial and



economic crisis. Control and prevention measures, although varied on a national level, took the form of strict lockdowns, travel bans and halted economic activity for most non-essential businesses (Narayan *et al.*, 2021). The pandemic generated a wave of uncertainty and an unprecedented plunge for stock markets, with many companies facing more than a third of value lost (Le *et al.*, 2021; Zhang and Hamori, 2021; Cao and Cheng, 2021).

The March 2020 stock market crash was different from what we had witnessed in the past. The stock market's response to COVID-19, in fact, surpassed earlier shocks such as the 1929 crash, the October 1987 crash and the 2008 collapse (Sharif *et al.*, 2020). On March 12th 2020, European markets registered their worst one-day drop in history: the UK's FTSE 100 shed 9.8%, France's CAC 40 12.3% and Germany's DAX 12.2%. Italian stocks closed nearly 17% lower, which was also the worst single-day loss for the FTSE MIB. On the other side of the Atlantic things did not go much better. The Dow Jones plunged 10% for its worst day since 1987, meanwhile the S&P 500 plunged 9% and the NASDAQ Composite tanked 9.4%, thus officially ending the bull market that began in 2009 during the throes of the Great Recession. Even before the official WHO announcement, many industries had already experienced negative abnormal returns (Chen and Yeh, 2021) and it was not long after that national governments started announcing quantitative easing and aid policies. Examining the latter, Goodell and Huynh (2020) focus on whether legislator trades were ahead of the market, highlighting that a significant number of legislator trades confirm such a temporal relationship. In the meantime, a series of studies focused on the impact the pandemic crisis had on the stock market's reactions, with a negative response being documented for the announcement of the first death in a country (Heyden and Heyden, 2021) and a positive response finding support after the announcement of stimulus packages and containment measures by G7 governments (Narayan *et al.*, 2021) and the announcement of quantitative easing in the US market, with the response being stronger for the worst performing industries (Chen and Yeh, 2021). The latter authors further confirm the relationship between positive market reaction and government aid policies during the 2008 financial crisis as well.

Researchers and investors were fast to compare the pandemic crisis to the financial meltdown that followed the American subprime crisis of 2008, since the impact of the ongoing COVID-19 evolved into rather systematic with all asset classes affected and shock transmission among market registering high (Narayan *et al.*, 2021). This comparison is justified by the similarities shared between the endogenous crisis of 2008 and the exogenous ongoing one that span from the high degree of uncertainty, economic recession, government intervention with fiscal and monetary instruments (Jebabli *et al.*, 2022), both further characterized by significant spillover dynamics. However, while the 2008 crisis started from the US subprime mortgage field and led to a collapse in the banking sector which gradually spread to other sectors and global markets at a moderately fast pace, the pandemic crisis first affected the real sector and supply side, spreading among markets and into the financial sector rapidly and increasing financial risk (Zhang *et al.*, 2020; Bouri *et al.*, 2021).

In line with general theory, investors employ diversification strategies to protect their portfolios from risks. Nevertheless, when spillover turns crisis to global uncertainty and volatility, traditional hedging strategies may fail to prevent downturn. The latter has been documented in various research works that explore the search investors conduct for alternative safe-haven assets during crises (Caballero and Krishnamurthy, 2008; Conover *et al.*, 2010; Hasan *et al.*, 2021). While gold and certain currencies have been found to function as safe-haven investments before the Great Financial Crisis of 2008 (Beckmann *et al.*, 2015; Bekiros *et al.*, 2017), its recurrence in financial markets appears to create a shift towards new asset classes to account for failure of the traditional safe havens to perform as such (Bredin *et al.*, 2015; Shahzad *et al.*, 2019).

This study fills gaps in current literature through its focus on the relationship between investment decisions and ESG corporate profiles under stress conditions. We aim to unfold

whether ESG functioned as a safe-haven asset characteristic that retained investors in poor-performing listed corporations, during both the 2008 and the COVID-19 crisis in Europe and the USA. Furthermore, we delve into the three individual pillars of ESG performance with the objective to identify differences in the significance attributed to the underlying risks by institutional investors and the changing dynamic of safe havens among different crises (Ji *et al.*, 2020; Shahzad *et al.*, 2019). Our sample includes US and European listed firms, due to the prominent role ESG has assumed in the specific regions -high concentration of assets under SRI management (>80% of global distribution), market sophistication, ESG education and legislative orientation.

The next section outlines previous literature in the field of ESG and asset allocation by institutional investors. Proceeding, we present our data and method of analysis and conclude with our findings and the implications generated by our research.

2. Literature review

Despite a widely accepted definition of socially responsible investing (SRI) as the process of asset allocation upon ESG integration within the relative valuations (Johnsen, 2003; Eccles and Viviers, 2011), it is less clear what ESG translates into for investors (Berry and Junkus, 2013). As a matter of fact, existing research primarily focuses on the impact of SRI on investment performance (Cunha *et al.*, 2020), rather than on an exact definition of ESG investing drivers or the decision process *per se*. An extensive literature content analysis by Capelle-Blancard and Monjon (2012), more specifically, indicates that most works encounter a limited or non-existing relationship, stressing that research in the field is mostly data driven and characterized by similar methods that are prone to a type of survivorship bias.

Our study tries to pick up this criticism and look beyond investors that traditionally incorporate ESG into their investment selection process. Focusing on two market contexts of severe stress, we isolate traditional drivers of performance from the potential ESG consideration, which may, in this case, be employed as an extra-financial signal of resilience, managerial competence and risk mitigator where fundamentals seem shaky and safe-haven assets may not protect portfolios from downside risk (Waddock and Graves, 1997; Bauer *et al.*, 2005; Benlemlih and Potin, 2017).

Eurosif (2014) defines ESG integration as “the explicit inclusion by asset managers of ESG risks and opportunities into traditional financial analysis and investment decisions based on a systematic process and appropriate research sources”. Incorporating ESG factors in investment decisions implies focus on several non-financial dimensions of a stock’s performance, including the risk and returns granted to the company on the ESG spectrum and relative stakeholders. For each of these dimensions, information on the firm’s practices is analyzed and used by a portfolio manager to construct a diversified portfolio.

Recently, the IMF and the World Economic Forum released reports demonstrating the systemic risks of pandemics and their potential impacts, both in the short and the long term. Rizvi *et al.* (2020) analyzed the investment styles of asset managers across the EU in the period before, during and after the first continental COVID-19 wave to discover whether asset managers adapted their strategies to the new market environment, finding a consistent shift from high volatility, riskier asset classes to safer bets like bonds and, most importantly, sustainable stocks and detecting a tendency to adopt “social strategies” to outperform funds with alternative investment styles during the different phases of the COVID-19 crisis. Another confirmation of the shift towards safer investments, specifically towards sustainable assets, comes from Singh (2020), who claims ESG investing became a sort of safe haven for institutional investors during the pandemic.

The concept of a safe haven was initially introduced by Baur and Lucey (2010), separating the qualified assets from traditional hedging and diversification in their study of stock and

bond returns in the US, UK and Germany. In particular, an asset is deemed a safe haven when it has zero or inverse correlation with another asset or portfolio on average in times of crisis. Various further studies have explored safe haven assets in different periods of crisis in the market building on this first research. Gold has been frequently found to function as a both a hedge and a safe haven (Baur and McDermott, 2010; Hood and Malik, 2013), other precious metals too present the characteristics of safe havens for different periods of time each when gold fails and depending on the institutional, economic and financial context (Lucy and Li, 2015). A safe haven profile for gold, specifically, is also confirmed for both crises we are examining in this article by Dimitriou *et al.* (2020) and Ji *et al.* (2020), findings that are contracted by studies that depict a loss of trust in the asset (Sharzad *et al.*, 2019; Cheema *et al.*, 2020). Ji *et al.* (2020) extend their study to foreign currencies, suggesting that most currencies fail to play the role of a safe haven, while Cheema *et al.* (2020) support this nature for the US dollar during the 2008 crisis and the Swiss franc for both 2008 and the pandemic. Cryptocurrencies and commodities (Bouri *et al.*, 2021), as well as Islamic stock indices (Fogle and Panetta, 2020) have, ultimately, been compared in extensive literature reviews that confirm ambiguous and contradicting findings. Hasan *et al.* (2021) suggest that the role an asset plays as a hedge and safe haven can fluctuate over time and/or be affected by the basic characteristics of the financial crisis and, furthermore, that traditional assets, especially gold, foreign currency, T-bonds and Bitcoin, have lost credibility as a safe haven, leaving space for new safe havens in nontraditional asset considerations.

The pandemic has not only forced asset owners to respond to a crisis but also recalibrate their perception of the financial system and its fragility in the face of “black swans”, risks that present a low probability of happening but have a disastrous effect once they do (Taleb, 2007). Such risks are captured in a series of factors that fall under the ESG umbrella, such as disease, social injustice and climate change. Hartzmark and Sussman (2019) highlight the role of ESG performance as an enhanced risk indicator in the light of the theory that sustainability guarantees better risk-adjusted returns. Ferriani and Natoli (2020) further sustain that asset managers who reacted to the market crash of March 2020 by focusing on low ESG risk stocks were hedged from the most adverse market corrections, both during the crash and during the recovery. The authors further confirm the rising importance of the social and governance pillars compared to the traditionally predominant environmental one, showcasing sustainable investing as a winning strategy during the COVID-19 crisis, against previous literature that supports a Brownian motion for the ex-post returns of sustainable investing compared to traditional benchmarks.

Within the extensive literature on ESG an implied dualism between the environmental and social pillars emerges. This dualism has been studied through the performance analysis of highly scoring “ES” stocks by Albuquerque *et al.* (2020) during the turbulent trading days of the first quarter of 2020. The researchers found evidence that stocks with high ES ratings register significantly higher returns, lower return volatilities and higher trading volumes than other stocks. Firms with high ES ratings and high advertising expenditures perform especially well during the crash.

Broadstock *et al.* (2021) document several empirical regularities. Overall ESG scores are positively associated with short-term cumulative returns around the Wuhan lockdown. When decomposing sub-scores for Environment (E), Social (S) and Governance (G) performance, cumulative stock returns are positively related to E and G, but not S. The authors find modest evidence to suggest that higher ESG firms exhibit lower price volatility during the COVID-19 period. The importance of ESG performance is attenuated in normal times and strengthened during times of crisis, consistent with the assertion that investors in China’s stocks attach higher importance to ESG performance as a signal of future stock performance and/or risk mitigation.

This work acquires even more significance when compared to a paper by [Diaz et al. \(2020\)](#). The researchers discovered that “the COVID-19 pandemic has moved ESG investing strategies into the spotlight . . . the contribution to the ESG literature is three-fold: (1) ESG significantly explains the returns of industry portfolios during this pandemic, (2) the environmental and social pillars of the ESG are the key drivers of the observed patterns and (3) the impact of ESG and its pillars varies across industries.” It is worth noting the paper’s ability to explain how the ESG framework is indispensable to understand investing strategies in the era of Pandemic crisis.

The theoretical basis to examine ESG as a safe haven trait during times of crisis is attributable to the resilience and social capital it endows the underlying asset/company with ([Guiso et al., 2008](#); [Marti et al., 2015](#)). More specifically, firms that present higher levels of sustainability have been found more resilient to systemic shocks than their peers with weaker ESG profiles ([Lins et al., 2017, 2019](#); [Manabe and Nakagawa, 2022](#)), demonstrating a higher level of trust among investors and other stakeholder and a buffer of moral capital to mitigate responses to negative events. Given the loss of the first during the Great Financial Crisis ([Guiso, 2010](#)) and the strong appearance of the second during the pandemic, we have good reason to assume ESG may have assumed an insurance nature in investment decisions in these times of crisis, since institutional investors’ demand for resilience assets only increased so far ([Pagano et al., 2020](#)).

ESG has been associated with several aspects of risk management through literature; one stream of researchers has focused attention on the idiosyncratic component of financial risk, coming up with empirical support for a negative relationship between higher ESG performance and firm risk ([Orlitzky and Benjamin, 2001](#)). The two key arguments in this line of findings are founded on the potential difficulty in forming well-diversified portfolios ([Jo and Na, 2012](#)) and the capability of idiosyncratic risk to deter arbitrage activity, constituting thus the primary obstacle for market efficiency ([Duan et al., 2010](#)). Further research examines the potential for corporate ESG practices to be channeled into systemic risk, which remains the primary concern for investors due to its undiversifiable -and therefore non remunerable-nature. The latter naturally assumes additional significance in a crisis context, where diversification to hedge idiosyncratic risk becomes troublesome and systematic risk shifts. Superior ESG commitment appears, in fact, to mitigate systematic risk and reduced sensitivity to market fluctuations ([Salama et al., 2011](#)), captured also by lower betas ([Gregory et al., 2016](#)).

From an asset pricing perspective, [Fiordelisi et al. \(2021\)](#) highlight the effectiveness of corporate social capital, the intangible and tangible resources built through ESG strategies and practices, to ensure stock market returns against systemic shocks, although dependent upon institutional factors. Their results are further confirmed by findings presented by [Liagkouras et al. \(2020\)](#) supporting the hedging potential behind ESG considerations in diversification and the booster of taking it international.

Different pathways for ESG to be channeled into higher resilience are identified in the relational intangible capital that strong ESG performance generates, which in turn translates into lower litigation risk through positive reputation, stronger customer trust and employee satisfaction. The latter is confirmed by two key studies that examined the dynamics of corporate social capital on total and idiosyncratic risk ([Bouslah et al., 2013](#); [Mishra and Modi, 2013](#)), providing a breakdown of the impact that specific CSR practices under the three ESG pillars have on risk factors surrounding the firm. This field of theory proves key for the crisis contexts we are analyzing in this paper, provided that both market moments are strongly connected to certain negative measures that companies took to tackle the downturn, such as massive dismissals, health risks and volatile work environments. In particular, [Botero et al. \(2004\)](#) associate corporate social capital to stronger coping dynamics through systematic shocks and superior performance against peers, accentuated in heavily regulated labor

markets where firms face higher firing costs, more complicated dismissal procedures and stronger labor and employment protection laws. What is more, ESG functions as a mitigator against shareholder litigation as well. Especially regarding listed firms in highly regulated markets, an abrupt stock price hit can lead shareholders to file lawsuits (Field *et al.*, 2005) and errors in financial statements and disclosure of material information can trigger legal proceedings by authorities and investors (Mansi *et al.*, 2004). Remaining on the risk reduction rationale, Kim *et al.* (2014) find that firms with superior transparency engage in less harmful news hoarding, hence lowering their exposure to crash risk. Similarly, Boubaker *et al.* (2020) show that firms with higher ESG scores have a lower financial distress risk. Ultimately, funds that factor ESG in their investment decisions rely on longer-term investment strategies and have been found less likely to sell high-scoring assets only on their risk/return performance (Ciciretti *et al.*, 2019).

Drawing from the gaps in existing literature, as it has been presented and discussed thus far, our paper aims to examine whether institutional investors adapt their investment strategies during crisis, incorporating ESG as a screening criterion to hedge risk upon their search for alternative safe havens. Accordingly, we posit:

- H1.* Institutional investors are more likely to divest of equity holdings in firms with poor ESG performance than their strong ESG performance counterparts under market stress conditions.
- H1a.* Institutional investors are more likely to divest of equity holdings in firms with poor social performance than their strong social performance counterparts under market stress conditions.
- H1b.* Institutional investors are more likely to divest of equity holdings in firms with poor environmental performance than their strong environmental performance counterparts under market stress conditions.
- H1c.* Institutional investors are more likely to divest of equity holdings in firms with poor governance performance than their strong social governance counterparts under market stress conditions.

Finally, we dig deeper into the relationship of focus by expanding our study to account for the 2008 financial meltdown. In line with this consideration, we test our hypothesis in two time frames of analysis: (1) the COVID-19 crisis and (2) the Great Recession of 2008. Due to the previously discussed risk mitigation prospects of ESG information and its naturally accentuated role during the crisis, we find it useful to study the COVID-19 crisis in parallel to the Great Recession of 2008. The relatively limited temporal distance of the two events, combined with their substantially different nature, with the pandemic being an externally induced coma to the economy and the 2008 meltdown being a systemic collapse, should provide valuable insights regarding the dynamics and value of extra-financial information in investment decisions. We expect a certain role of ESG to be potentially confirmed in both crises, especially given the emotional aspects of market reaction, but different weights to be found in the three underlying fields of risk valuations (environmental, social and governance).

We are confident our study offers valuable novel insights into ESG investing by non-SRI investors in the market, as well as the downside hedging potential of sustainability, both of which have been widely overlooked in past research.

3. Sample and data

We focus on US and European listed firms that are included in two of the most representative indexes for the markets of reference: S&P500 and EuroStoxx600 respectively. We retrieve

ESG data from Refinitiv, with ESG scores capturing over 500 company-level metrics, a subset of 186 among reflect the most comparable and material data for the scoring process, grouped into 10 categories: Resource use, Emissions and Innovation for the environmental pillar; Workforce, Human Rights, Community and Product Responsibility for the social pillar; Management, Shareholders and Corporate Social Responsibility Strategy for the governance pillar. The overall ESG score is divided as follows: environment Pillar score (weight 22–32%); Social Pillar score (weight 40–50%); Governance Pillar score (weight 22–32%), with the single pillar weights changing on the basis of the industry the single companies belong to account for sector-originated materiality. We ultimately use overall ESG performance and individual ESG dimension (social, environmental, governance) performance as independent variables [1]. We initially removed financial firms from our sample due to potential extensive government intervention and specific regulation that involves the sector and firms that lack data for the independent variable of focus. Our second step of sample construction involves filtering the initial firm universe on the basis of their returns and abnormal returns, collected from Thomson Reuters Datastream, to only include firms that belong to sectors that were hit (lower part of the distribution registering negative returns around the dates signaled by WHO [2]) by the crisis of each subsample. In addition, we account for defaults and delistings that took place during the years of observation, which account for a number of firms that are part of the sample at the beginning of each period that cannot be overlooked. The two periods of analysis span from 2006 to 2009 and from 2018 to 2021, including 496 and 373 firms respectively.

We proceed to collect data on our dependent variable that measures institutional equity stakes in the sample's companies from Morningstar. Our sample is further controlled with data from Bloomberg's Global Mutual Fund Portfolio Holdings Data. We complete our sample with the key control variables that are commonly deemed important, in terms of explanatory power for return differences and portfolio allocation. In particular, we follow previous research (Fama and MacBeth, 1973; Coval and Stafford, 2007; Lins *et al.*, 2017) and include firm size as market capitalization, book-to-market ratio, cash holdings, long-term debt, short-term debt, profitability measured by ROA, momentum, idiosyncratic risk, lagged one-month return and lagged 11-month return. More specifically, *Long-Term Debt* is computed as long-term debt divided by assets, *Short-Term Debt* is computed as debt in current liabilities divided by assets, *Cash Holdings* is computed as cash and marketable securities divided by assets, *Profitability* is computed as operating income divided by assets, *Book-to-Market* is computed as book value of equity divided by market value of equity, *Momentum* is the raw one-year return, *Idiosyncratic Risk* is computed as the residual variance from the market model estimated over the five-year period, using monthly data. Control variables and returns are winsorized at the 1st and 99th percentiles.

Following, Tables 1 and 2 present the descriptive statistics for both periods of observation.

It is worth noting from what we can observe in the two tables above that ESG profiles, both in their overall scores and in individual pillar performance, have demonstrated a strong improvement for the two indexes in the period that followed 2008 up until 2021, confirming a real shift of attention in the market. Furthermore, this first overview of our data indicates a different movement for equities during the two crises. More specifically, we observe mean and median values for the *momentum* variable that remained negative during the three-year period that characterizes the 2008 meltdown, something that is not repeated in data that span the 2018–2021 period of observation. This may be attributed to several factors, which would in turn need more thorough investigation: first off, the negative shocks between the two crises had a different duration and/or scale and secondly, the period before and after the pure shock was characterized by a stronger uptrend for equities before the pandemic compared to 2008.

Table 1.

Descriptive statistics
for period 2006–2009

Variable	Mean	St. Dev	25th perc	Median	75th perc
ESG score	35,023	13,231	12,987	41,928	58,236
Env score	34,141	12,898	12,660	36,721	56,769
Social score	34,207	12,923	12,684	40,811	56,879
Governance score	42,552	16,075	15,779	42,232	70,756
Market cap (ln)	5,092	18,982	631	1,002	3,078
Book-to market ratio	0.399	0.297	0.211	0.411	0.672
Lagged one-month returns	−0.015	0.348	−0.221	0.013	0.310
Lagged 11-month returns	0.006	0.171	−0.199	0.009	0.277
Long-term debt	0.214	0.101	0.018	0.225	0.318
Short-term debt	0.033	0.042	0	0.0079	0.051
Cash holdings	0.238	0.098	0.033	0.104	0.388
Profitability	0.029	0.017	0.02	0.031	0.039
Momentum	−0.041	0.411	−0.146	−0.001	0.219
Idiosyncratic risk	0.022	0.013	0.004	0.009	0.02

Table 2.

Descriptive statistics
for period 2018–2021

Variable	Mean	St. Dev	25th perc	Median	75th perc
ESG Score	58,573	18,128	21,720	70,155	94,395
Env Score	57,098	19,570	21,173	68,137	90,942
Social Score	57,208	18,612	21,214	64,288	91,126
Governance Score	71,165	20,885	26,389	67,387	95,333
Market cap (ln)	5,592	15,151	504	800	2,457
Book-to market ratio	0.352	0.559	0.397	0.451	0.592
Lagged one-month returns	0.054	0.348	−0.221	0.013	0.310
Lagged 11-month returns ^a	0.060	0.171	0.009	0.073	0.151
Long-term debt	0.216	0.125	0.020	0.227	0.321
Short-term debt	0.056	0.071	0.000	0.013	0.087
Cash holdings	0.424	0.042	0.059	0.185	0.691
Profitability	0.029	0.024	0.020	0.031	0.039
Momentum	0.065	0.497	−0.177	0.058	0.265
Idiosyncratic risk	0.029	0.017	0.005	0.012	0.026

Note(s): ^aTo guarantee availability of data on this key control variable our sample is restricted to the period that ends on the 15th of April 2021

4. Analysis and empirical findings

We regress ESG scores (columns 1 of Tables 3 and 4) and individual pillar scores (columns 2 for environmental performance, 3 for social and 4 for governance) against institutional investor holdings in the sample's companies' shareholder base to test the impact of ESG factors in risk hedging decisions during the two periods of observation. We add dummy variables to account for industries and control for the firm's factor loadings, following the Fama and French three-factor model in addition to momentum, extracting data on factor returns from Kenneth French's website. Our empirical findings are reported in Tables 3 and 4 that respectively represent our 2008 financial crisis subset and the ongoing pandemic.

Our analysis produced a series of interesting findings regarding the two periods of crisis examined. More specifically, we find a significant role played by the overall ESG performance of firms on the positions that institutional investors took in the face of rising risk contexts, confirming our hypothesis that ESG can function as a buffer that nurtures patience and trust in the equity market. What is more intriguing in this first line of analysis is also the increased significance level between the financial crisis of 2008 and the pandemic period, further

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Institutional equity holdings	(1)	(2)	(3)	(4)
ESG score	0.077* (0.021)	–	–	–
E score	–	0.188 (0.056)	–	–
S score	–	–	0.041* (0.009)	–
G score	–	–	–	0.101** (0.063)
Lagged one-month returns	0.021 (0.020)	0.021 (0.019)	0.018 (0.14)	0.030 (0.023)
Lagged 11-month returns	0.053** (0.031)	0.046*** (0.051)	0.049** (0.029)	0.050*** (0.047)
Market cap (log)	0.004 (0.007)	0.012 (0.006)	0.008 (0.007)	0.011 (0.008)
Book-to market ratio	–0.138 (0.022)	–0.122 (0.018)	0.209 (0.028)	0.093 (0.019)
Long-term debt	–0.295** (0.067)	–0.303** (0.064)	–0.299** (0.059)	–0.284** (0.077)
Short-term debt	–0.436 (0.088)	–0.408 (0.099)	–0.399 (0.076)	–0.444 (0.090)
Cash Holdings	0.202*** (0.331)	0.189** (0.411)	0.228*** (0.316)	0.301*** (0.379)
Profitability	0.700* (0.189)	0.583* (0.124)	0.687* (0.099)	0.703* (0.122)
Momentum	–0.109** (0.069)	–0.137* (0.082)	–0.175* (0.084)	–0.166* (0.065)
Idiosyncratic risk	–0.999*** (0.655)	–0.881*** (0.654)	–0.878*** (0.661)	–0.770*** (0.653)
Industry controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
Factor loadings	Yes	Yes	Yes	Yes
N	1.994	1.994	1.994	1.994
Adj.R ²	0.400	0.350	0.393	0.399

Table 3.

Regression estimates for the period June 2006 to December 2009

Note(s): The control variables and returns are winsorized at the 1st and 99th percentiles. Heteroskedasticity-consistent standard errors are presented in parentheses. ***, ** and * indicate that the parameter estimate is significantly different from zero at the 1, 5 and 10% level, respectively

Institutional equity holdings	(1)	(2)	(3)	(4)
ESG score	0.101** (0.033)	–	–	–
E score	–	0.765** (0.129)	–	–
S score	–	–	0.207** (0.011)	–
G score	–	–	–	0.088 (0.041)
Lagged one-month returns	0.014* (0.039)	0.058** (0.034)	0.042** (0.029)	0.047* (0.033)
Lagged 11-month returns	0.028** (0.128)	0.108*** (0.080)	0.105** (0.065)	0.022** (0.075)
Market cap (log)	0.121 (0.012)	0.044 (0.016)	0.033 (0.014)	0.056 (0.033)
Book-to market ratio	0.234 (0.140)	–0.992 (0.105)	0.113 (0.044)	0.464 (0.066)
Long-term debt	–0.501* (0.229)	–0.127* (0.110)	–0.315** (0.322)	–0.155** (0.161)
Short-term debt	–0.099 (0.022)	–0.077 (0.016)	–0.106 (0.051)	–0.177 (0.053)
Cash Holdings	0.105** (0.188)	0.099*** (0.368)	0.173*** (0.199)	0.241*** (0.131)
Profitability	0.223 (0.067)	0.355 (0.088)	0.555 (0.194)	0.533 (0.200)
Momentum	–0.290 (0.019)	–0.195 (0.032)	–0.201 (0.021)	–0.309 (0.123)
Idiosyncratic risk	–0.669*** (0.090)	–0.786** (0.533)	–0.733*** (0.460)	–0.691*** (0.552)
Industry controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
Factor loadings	Yes	Yes	Yes	Yes
N	1.628	1.628	1.628	1.628
Adj.R ²	0.577	0.512	0.498	0.504

Table 4.

Regression estimates for the period June 2018 to April 2021

Note(s): The control variables and returns are winsorized at the 1st and 99th percentiles. Heteroskedasticity-consistent standard errors are presented in parentheses. ***, ** and * indicate that the parameter estimate is significantly different from zero at the 1, 5 and 10% level, respectively

boosted by a rising real economic impact (coefficient). These results come in line with previous research that indicates ESG as a mitigation mechanism. As a matter of fact, [Lins et al. \(2017\)](#) highlight superior returns and abnormal returns during the pure crisis period from August 2008 to March 2009, while [Diaz et al. \(2020\)](#) and [Fiordelisi et al. \(2021\)](#) confirm such tendency during the pandemic (contingent on institutional settings for the latter researchers' study). [Chintrakarn et al. \(2021\)](#) provide additional support in their study on board independence and CSR investments during times of crisis, confirming the instrumental role of ESG practices as risk mitigation tools to respond in shocks that affect the stock and the company. The risk management hypothesis that backs our type of findings is also reported by [Godfrey et al. \(2009\)](#), who test the insurance-like effect of ESG performance in cases of negative and extreme events.

Proceeding with the individual pillar scores, we encounter some surprising and valuable findings. In particular, we find evidence of the significant role of the social and governance performance of firms during the 2008 crisis but no such role for environmental scores. Differently, institutional investors appear more affected by the social and environmental dimensions of risk factors, with governance presenting no significant impact on shareholding changes. Our findings are partially confirmed in research that connects superior governance to smoothed performance during crisis ([Lins et al., 2013](#); [Nguyen et al., 2015](#)), but only for the 2008 financial crisis. In a similar manner, governance and environmental factors have been found to be more material for institutional investors ([Park and Jang, 2021](#)), while social performance is documented to present the highest inter-sectorial variance in terms of transparency and investor appreciation. Nevertheless, literature has not reached consensus on the individual pillar effects and, in fact, different findings that confirm the relevance of the social dimension are found in [Aouadi and Marsat's \(2018\)](#) and [De Franco's \(2020\)](#) studies of ESG controversies and their impact on firm value. Further support for our findings in social performance is provided by [Albuquerque et al. \(2020\)](#), who investigated the early stages of the pandemic crisis and the role of ESG amidst market turbulence.

We attribute this difference of weighing in ESG pillars that institutional present during the two crises to the different settings that characterized the latter. We are dealing with a global risk landscape and consequently risks that affect idiosyncratic and systemic risk, which has vastly shifted between the two periods of observation ([World Economic Forum–Global Risks Report, 2008, 2009, 2021](#)). Considering the risk management context of this study's focus on ESG, it is to be expected that material risks -financial and ESG-that eventually end up in hedging strategies and valuations alter as well. As noted in the definition of the Global Reporting Initiative (GRI), materiality is entity-specific; therefore, what is material can differ for each industry and amongst individual companies. However, identifying what is material in terms of ESG for an individual company without any reference is a highly complex and controversial task ([Lo, 2010](#)). Contextualizing materiality in times of crisis, the Great Financial Crisis of 2008 was, as discussed earlier in this paper, an endogenous shock with a moderately paced spillover dynamic compared to the exogenous pandemic crisis. Moreover, the two events presented profoundly different critical points for corporations and investors alike. While the 2008 meltdown was deeply founded in a trust shortage ([Sapienza and Zingales, 2012](#)) and corporate excess, the pandemic brought to the surface a completely new set of considerations that touched fields of practices and relative risks that were only vaguely considered, coinciding with various simultaneous social trends that seeped into the economic sphere (Black Lives Matter, Me Too are only two of them). It is evident that, while the first would highlight risk factors that are well connected with corporate governance, the second presents a strong social character (health and safety, employment contracts and employee rights, training programs that proved fundamental for transitioning into the new modes of business and, ultimately, for many changing career paths). The aforementioned considerations assume further weight in our reasoning once we

consider what has previously been discussed in this research regarding controversies in times of crisis. As a matter of fact, while ESG positive considerations have generated little consensus among academics and professionals due to discrepancies in operationalization and a difficulty to quantify many of the risks that fall under the ESG umbrella, the same does not apply to ESG controversies. When it comes to the latter, we refer to corporate scandals and crises of specific nature that see firms negatively involved in information and news that reach investors and other stakeholders. In this last case, reactions and the role of ESG as a safety cushion has been debated in a much more limited manner. This becomes even more pronounced in the cases of market shocks, where the previous weakness to measure risks, especially of a black swan character, seizes to exist once the risk is materialized. Materiality is not a new topic for ESG studies, although it remains a vastly unexplored field. [Consolandi *et al.* \(2020\)](#), in fact, corroborate in their study of financial materiality and intensity of ESG materiality precisely this reasoning; ESG is dynamic in the market and the impact of overall and pillar scores are not a linear and universal panacea, neither during crisis nor during ordinary operations.

5. Conclusions and limitations

This research focuses on the long-debated role of ESG considerations in asset allocation and risk management in crisis. To such an end, we assess how institutional investors adapt their equity positions in companies that, in the absence of any ESG framework, would present the traits to be fully or partially divested of. Due to the function of ESG as a risk mitigating mechanism, positive capital and a resilience signal, as well as the substantially different nature of the two crises, we confront investor behavior during the pandemic with that demonstrated during the Great Financial Crisis of 2008.

We find evidence that in a context plagued by a lack of trust (2008) or panic due to high uncertainty and lack of past experience (2020), investment managers adapt their frameworks to account for ESG extra-financial information. This corroborates our initial hypothesis regarding the way ESG performance weighs in risk considerations, as well as its signaling power to the market. Our work enhances past literature with evidence of sustainable preferences for investors that are not marketed as such outside of times of turbulence. We highlight, especially through our findings as early as the 2008 meltdown, that ESG considerations are to be considered pre-financial and not extra- or non-financial information, as they provide a wide and robust indicator of the evolution and sensitivity of corporate performance and risk profile. Our findings confirm that investment funds factored sustainability in their positioning during both crises, highlighting how ESG-integrated decision making proves to be a successful downturn hedge tool.

We are confident this line of findings generates a series of important implications for various market actors. For asset managers, evidence promotes sustainability as key for efficient risk management and outperforming traditional benchmarks, raising the question of ESG alphas in portfolios. For academics, we bring evidence of solid risk management potential in ESG, an area that has been only limitedly covered in existing literature that mainly focuses on SRI or investment performance, as well as give space to the examination of ESG assets as alternative safe havens in times of systemic risk crisis. The latter presents great potential for exploration, especially once we extricate research from the traditional equity markets and into new financial instruments that have the traits necessary to distance themselves from the market's indexes, a basic premise of safe havens.

Furthermore, there are many specifics to be explored regarding the real dynamics of the relationships unveiled in our work; the correlations among ESG pillars in terms of overall risk valuation, but mainly the temporal dynamic of materiality would suggest new valuable implications for firms. We know that investing in ESG means significant financial, human

and time investments for corporations, it is not corollary to uncover whether ESG becomes a survival mechanism through rainy days or the underlying practices that capture attention during specific crises develop a long-term significance for the market. Additionally, it remains to be uncovered, particularly in the current state of lack of standardization in disclosure and metrics, which ESG practices prove material, the channels of transmission and their real impact. Last but not least, points that are debatable in our research may prove a stepping stone for interesting novel studies. More specifically, we have not considered the interaction between ESG practices and government or supra-national intervention, which had a key role in both crises. Finally, active shareholders and their practices may be analyzed as the inverse of the current study to produce helpful insights on the alternative to traditional invest-divest mechanism for institutional equity investors.

Notes

1. Refinitiv ESG company scores methodology https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf.
2. Market response to the first 100 days of global response to the pandemics, following WHO definitions: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.

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Corresponding author

Anastasia Giakoumelou can be contacted at: ana.giakoumelou@unive.it