



## **ESG RISK IN TIMES OF COVID-19**

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*We analyze whether investors take risks related to environmental, social and governance (ESG) factors into account during crises. For this purpose, we estimate the effect of the new ESG risk labelling - introduced by Morningstar at the end of 2019 - on investment fund flows during the outbreak of Covid-19. We find that, especially since market collapsed in late February 2020, investors have exhibited a preference for low-ESG-risk funds possibly because these were seen as offering some hedge against further market downturns.*

During the last decade, sustainability has been increasingly valued by financial investors, with money flowing massively into assets with high Environmental, Social and Governance (ESG) standing. While sustainability does not have a direct connections with firms' fundamentals, the literature identifies two main possible reasons why investors may prefer sustainable assets: one is about non-pecuniary motives, the other is that they may believe sustainability guarantees better risk-adjusted returns (Hartzmark and Sussman 2019). Both stories seem plausible, as the ESG scores generally reflected firms' "virtue" in internalizing the common objective of sustainable development. However, since mid-2019, ESG providers have started to produce ESG *risk* scores, measuring firms' exposure to ESG-related risks, in the place of the old ESG scores, which have since been abandoned.<sup>2</sup> As the new scores have substituted the old ones as sustainability benchmarks, a high-ESG flag should now indicate low risk arising from environmental, social and governance factors.

This change of perspective in the ESG scores – from indicators of sustainability virtue to measures of internal vulnerability – can be useful to shed light on whether investors consider the ESG label as an indicator of market performance. We take up this question analyzing investment flows into mutual funds during the initial phase of the Covid-19 crisis, in which risky asset markets crashed and economic uncertainty skyrocketed. Using the new ESG risk scores, we study whether investors' reaction to such a negative shock is partly explained by ESG risk considerations. This exercise aims at providing insights on the following questions: is the ESG risk perceived by investors? If it is so, is the risk perception symmetric (high scores matter as much as low ones) and is the ESG risk still considered after the most acute phase of a crisis? And which one of the three components of ESG drives it?

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<sup>2</sup> The switch by Morningstar to ESG risk scores has begun in November 2019.

We find that ESG risk has been significantly taken into account during the Covid-19 crisis. Since the financial market crash started in late February 2020, investors have especially demanded low-ESG risk funds and, surprisingly, particularly those with low environmental (instead of social or governance) risk. This is true after controlling for non ESG-related compositional effects, such as the funds' relative exposure to firms in sectors (such as fossil fuel production) and/or regions hit hardest by the crisis, as well as funds' exposure to larger companies that are generally more resilient to shocks.

Our result is interesting for three reasons. First, it is the first one dealing specifically with ESG risk, because no other analyses have investigated the importance of these new indicators, as far as we know. Second, it informs on the potential of ESG preferences as a driver of portfolio choices during crises, which is still an open question in the literature: while there is evidence of a preference for sustainable assets even during the great financial crisis (Nofsinger and Varma 2014), the latter occurred when the market trend of sustainable investment was only in its infancy. Third, it re-opens the debate on the use of ESG scores within a risk-return strategy: during the Covid-19 crisis low-ESG risk funds happened to perform significantly better than high-risk ones, contrary to past evidence gathered with the old ESG scores.

### *Data and method*

The outbreak of Covid-19 generated a major turmoil in financial markets: between 20 February and 23 March 2020 the MSCI World equity index lost around 34% of its value and the “fear gauge” VIX skyrocketed reaching its historical peak. After massive interventions by governments and central banks around the world, stock markets recovered more than half of the previous loss amid still high implied volatility.

We base our analysis on Morningstar data on equity mutual funds, where market gyrations caused substantial inflows and outflows. We consider fund flows into the global equity large cap category, which includes companies with the largest capitalization. Our key variable of interest is the Morningstar sustainability risk classification (Morningstar “globes”) going from 1 (high ESG risk) to 5 (low ESG risk). Globes are based on the company-level ESG risk classification by Sustainalytics and reflect the share of funds' exposure to ESG-related risks that is judged as unmanaged.<sup>3</sup> Our investigation of the determinants of fund flows is conducted throughout the 15 weeks that followed 20 January 2020 – the day in which human-to-human transmission of Covid-19 was confirmed – and it is divided into three 5-week sub-periods:

- *Pre-crash*: from 20 January to 21 February, i.e. when the US markets were still growing amid mounting evidence on the spread of the virus.
- *Crash*: from 24 February to 27 March, encompassing the stock market collapse and the spike in economic uncertainty concurrent with WHO's assessment of covid-19 as a pandemic.
- *Recovery*: from 30 March to 1 May, which corresponds to the partial recovery in global equity markets.

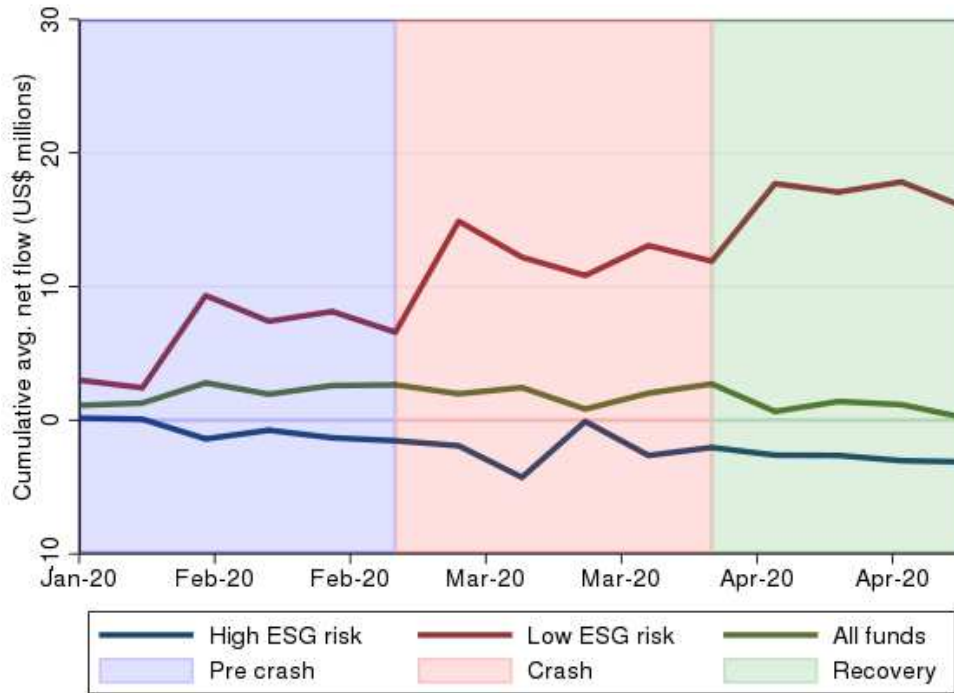
The analysis of the sub-periods can be particularly informative: an ESG-risk effect may have appeared before the crash or been fueled by uncertainty and market sell-offs; the after-panic phase

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<sup>3</sup> The advent of ESG risk scores is linked to the debate on the materiality of ESG issues for firm's performance pioneered by Khan et al (2016). Sustainalytics defines ESG exposure at company level as the degree to which companies are exposed to ESG-related issues, and the ESG risk as the unmanaged share of this exposure. For details on how Sustainalytics ESG risk scores and Morningstar globes are constructed, see Sustainalytics (2019) and Morningstar (2019), respectively.

can shed light on whether risk considerations remain relevant even when the financial (but not economic) outlook seemed to be improving. Figure 1 shows the dynamics of cumulated flows for the average fund in our sample (covering around 2200 funds) as well as for the average 1-globe and 5-globe funds. The evidence shows that, in general, flows into equity large cap funds remained always positive (green line), as highly capitalized firms are considered as a safe haven in case of shocks. Within this category, a stark difference appears between low-ESG risk funds (red line), which experienced increasing inflows even during the market collapse phase (light red shaded area), and high-ESG risk funds (blue line) that suffered continued outflows since the beginning of the crisis.

Figure 1: Cumulative average net inflows



To shed light on the determinants of these flows, we run a pooled regression of cumulated flows on ESG risk ratings. We include as main regressors a dummy equal to 1 if the fund is categorized with 5 globes (and 0 otherwise) and another one constructed in the same way for funds with 1 globe, as prior evidence suggests that investors value mostly extreme outcomes discarding the rest (Hartzmark 2015 and Feenberg et al 2017; in the ESG literature, Amman et al. 2019 and Hartzmark and Sussman 2019).<sup>4</sup> As a key control, we consider Morningstar ratings (the “stars”), a proxy for funds’ risk- and cost-adjusted return that has shown to be critical to explain fund flows (Ben David et al. 2019, among others): in the intention of providers, the globes should capture an additional risk dimension that is not priced in the stars. The empirical estimate is made at weekly frequency with the following specification:

$$Cumulated\ Flow_{it} = (SRI = 1)_i + (SRI = 5)_i + Morn.\ Rating_i + X_{it} + \mu + \varepsilon_{it}$$

where SRI=1 and SRI=5 are the 1- and 5-globe dummies (high and low ESG risk, respectively), *Morn. rating* is the 5-star risk-adjusted performance classification, X is the set of controls including

<sup>4</sup> In a robustness check, we re-run our estimates by including the entire 1-to-5 indicator variable for ESG risk instead of the 1- and 5-globe dummies finding similar results (available upon request).

funds' characteristics (e.g. size, fund age,...) as well as geographical and industrial sector exposures;  $\mu$  is a constant term and  $\varepsilon_{it}$  is the error term.<sup>5</sup> Among control variables, we also include the Low-Carbon Designation (LCD), a 0-1 dummy for funds classified by Morningstar as having low carbon risk and low fossil-fuel involvement – i.e. low climate transition risk – that has been found to be important by Ceccarelli et al. (2020).<sup>6</sup>

### Results

Results for the full sample and the three subsamples are reported in Table 2, which only shows standardized beta coefficients and t-statistics for globes and stars to save space.<sup>7</sup> Credit ratings are highly significant throughout the sample period, with no particular differences across the three phases. Concerning ESG risk, two results stand out: first, the latter has been significantly considered by fund investors in all of the three phases and second, the low-risk dummy became more important than the high-risk in the crash and even more in the recovery phases, suggesting that investors flew into low-ESG risk funds. Among the other control variables, exposure to the energy sector and the LCD dummy are never significant

Table 2: Main results

	Full sample	Pre crash	Crash	Recovery
High ESG risk	-0.004 (-1.175)	-0.010** (-2.115)	-0.009* (-1.758)	-0.000 (-0.025)
Low ESG risk	0.016*** (3.568)	0.014* (1.826)	0.016** (2.315)	0.019** (2.546)
Morning. rating	0.031*** (5.350)	0.055*** (5.633)	0.041*** (4.676)	0.035*** (3.514)
<i>N</i>	33094	10724	10732	11638
<i>R</i> <sup>2</sup>	0.196	0.195	0.251	0.226

Note: Beta coefficients with t-statistics in parentheses. All regressors are standardized in mean and variance. Results for the other control variables are omitted.

We further investigate which of the three components of the ESG risk drives this result, as many commentators argued that the pandemic has been a wake-up call for the importance of non-environmental factors like human capital management, mainly embedded in the “S” and “G” parts

<sup>5</sup> As Morningstar globes are provided with a delay, sometimes even longer than one month, we construct our globes and stars using the snapshot that was available to investors at the beginning of our estimation period.

<sup>6</sup> Other fund-specific controls are: time fixed effects, lagged net flows, lagged cumulated fund returns computed since the beginning of the sample (weekly frequency); the exposure share of the fund across 11 industrial sectors and countries aggregated into 5 macro-regions - Austral-Asia, Europe, North America, Latin America, Africa (monthly frequency); fund age, fund size, the percentage of cash over fund's total assets (proxy of funds' liquidity), a dummy for ETF funds, a dummy for funds restricted to retail investors, funds domicile (fixed effects).

<sup>7</sup> Standardized coefficients report the effect on the dependent variable of one-standard deviation increase in regressors.

(JPMorgan, 2020, among others). Morningstar provides separate E, S, G risk scores but no 1-5 globes, so we constructed a proxy for each of them to be used in a robustness regression in place of the 1- and 5-globe dummies.<sup>8</sup> Results, displayed in Table 3, show that the environmental risk factor is the main driver of investors' sustainability preferences: while before the crash investors considered both high and low environmental risk, subsequently their attention has focused much more on low-environmental risk funds (coefficients of low-ESG risk dummy more than doubled). The "S" component is generally not significant, and the governance risk exposure shows up only at the full sample level, with funds at low governance risk positively affecting inflows. This result is somewhat surprising – considering that the environmental component is the least related to the Covid-19 shock – and suggests that investors still regards the ESG label mainly as an indicator of environmental (and maybe climate) risk.<sup>9</sup>

Table 3: Results with E, S and G dummies

	Full sample	Pre crash	Crash	Recovery
Envir. high risk	-0.004 (-1.086)	-0.017** (-2.444)	-0.011 (-1.630)	-0.000 (-0.062)
Envir. low risk	0.018*** (4.953)	0.010** (2.266)	0.018*** (3.080)	0.024*** (4.087)
Social high risk	-0.001 (-0.291)	0.007 (1.128)	0.004 (0.627)	-0.004 (-0.723)
Social low risk	-0.009* (-1.827)	0.001 (0.157)	-0.011 (-1.368)	-0.011 (-1.343)
Govern. high risk	0.006 (1.158)	0.001 (0.135)	-0.000 (-0.052)	0.011 (1.352)
Govern. low risk	0.010** (2.214)	0.001 (0.245)	0.011 (1.543)	0.012 (1.542)
Morning. rating	0.032*** (5.511)	0.056*** (5.766)	0.042*** (4.806)	0.035*** (3.621)
<i>N</i>	33094	10724	10732	11638
<i>R</i> <sup>2</sup>	0.196	0.195	0.251	0.226

Note: Beta coefficients with t-statistics in parentheses. All regressors are standardized in mean and variance. Results for the other control variables are omitted.

Did attention to ESG risk pay off? Figure 2 displays the average cumulative return of all funds in the sample (green line) as well as those of funds with one and five globes. On average, all of the three categories have recorded negative returns since the inception of the crisis, but those with low-ESG risk scored better than the risky ones by about 7 percentage points. This evidence contrasts estimates made over preceding periods and with the old ESG scores showing that high-score funds did not make higher returns, which led to conclude that ESG and profitability are not interlinked. To

<sup>8</sup> Globes for E, S and G risk factors are made by ordering the risk scores within the equity large cap category and by adopting the same criteria used for the ESG risk index to define globe classes.

<sup>9</sup> Significant results on the E component may explain why the LCD dummy is not significant: it is possible that since the advent of the new ESG risk scores investors caring of climate risks started to look at them for this purpose and stopped monitoring the LCD dummy.

investigate this return difference further, we run a t-test on average returns throughout our sample. Results, reported in Table 4, reveal that returns have been statistically different, with the difference widening during the recovery phase.

Figure 2: Cumulative average return

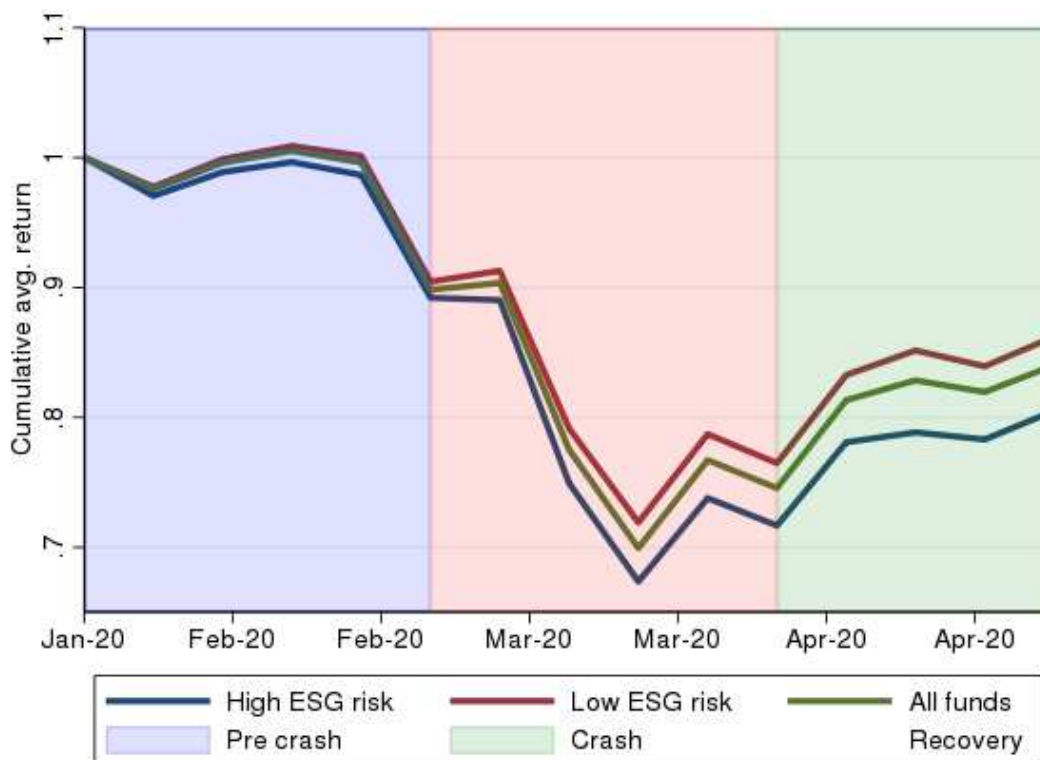


Table 4: t-test for sample mean difference

	Full sample	Pre crash	Crash	Recovery
<i>Low ESG risk – High ESG risk</i>	3.40*** (15.04)	0.88*** (21.41)	3.43*** (10.79)	5.43*** (44.20)
<i>N</i>	8070	2625	2618	2827

Note: H0 is that the average cumulative return is equal in funds with Low and High ESG risk (SRI=5 and SRI=1, respectively) against two-tails hypothesis H1 that is different. First row reports return differences (in percentage points) and second row the t-statistics.

### Conclusions

Our results show that low ESG risk positively affected inflows into equity funds during the Covid-19 crisis. The importance attached to environmental risk even when social and governance factors were under stress suggests that environmental preferences remain strong. The current analysis only deals with the ESG risk component and cannot shed light on which channel drives investors’ sustainability preference most; however, it confirms that sustainability is perceived as a valuable hedge in bad times. While a risk-return strategy based on the old ESG scores was judged as irrational

by the literature (because did not ensure better returns ex post), to the extent that the new scores really reflect some type of risk that is not priced in credit ratings, using ESG as a hedge could indeed be rational. At least within our sample, discriminating funds based on ESG risk happened to be a wise strategy because low-ESG risk funds performed better than their peers.

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