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Do financial analysts care about ESG? [☆]

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ABSTRACT

This article studies whether financial analysts value Environmental, Social and Governance (ESG) criteria when issuing target prices. Raw results show that analysts issue lower target prices to firms with high ESG scores. We show that this relationship is, in fact, driven both by the existing size bias in ESG data and by the industry-level structure of ESG scores. When controlling for these elements, we actually find that financial analysts are more optimistic about firms that have high E, S, and G scores. Notably, the effect is more pronounced for the environmental (E) score, with a one standard deviation change associated with a 2.09 percentage point increase in the analysts' target prices implied returns.

1. Introduction

The European Commission's Action Plan on sustainable finance,¹ initially published in 2018, emphasized that “by providing advice, investment firms [...] can play a central role in reorienting the financial system towards sustainability”. As such, financial analysts are expected to participate in making finance more sustainable.

While a large body of literature has emerged in the last few years about how investors incorporate ESG criteria (Environment, Social and Governance) in their investment decisions, it is unclear whether financial analysts use such information in their analyses and forecasts. If ESG criteria significantly impact corporate financial performance (Friede et al., 2015), analysts should integrate this extra-financial information into their valuation models.

To date, most studies have explored the relationship between ESG and analysts' coverage, but the influence of ESG scores on analysts' forecasts has remained largely unexamined.² To the best of our knowledge, prior studies (Chang et al., 2014; Ioannou and Serafeim, 2015; Luo et al., 2015) focus on stock recommendations.³ The limited number of studies on the topic may indicate that there are no relationship between ESG and analysts' outputs. Indeed, recent survey and interview-based studies indicate that analysts either do not perceive ESG considerations as important or believe that ESG disclosures lack reliability (Campbell and Slack, 2011; Krasodomska and Cho, 2017; Slack and Tsalavoutas, 2018; Abhayawansa et al., 2019). The problem with these studies is that

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¹ European Commission, (2018), “Action Plan: Financing Sustainable Growth”, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097>.

² Articles focus both on the importance of ESG/CSR for analyst coverage and on the impact of analyst coverage on corporate policies (Jo, 2003; Hong and Kacperczyk, 2009; Jo and Harjoto, 2011; Cormier and Magnan, 2014; Dai and Kong, 2016; Dhaliwal et al., 2011; Zhang et al., 2015; Gao et al., 2016; Harjoto and Jo, 2013; Jo and Harjoto, 2014; Liu et al., 2014; Harjoto and Jo, 2015; Iatridis, 2015; Adhikari, 2016; Qian et al., 2019; Naqvi et al., 2021; Hu et al., 2021; Lei et al., 2022; Jing et al., 2022; Yang et al., 2023). See Hinze and Sump (2019) for a review.

³ A contemporaneous paper by Bolognesi and Burchi (2023) uses target prices in the context of ESG. However, their work focus on firms' ESG disclosure rather than firms' ESG performance.

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they focus on small samples and cannot be generalized to the population of financial analysts. In contrast, Fieseler (2011) and Luo et al. (2015) find, in their interviews, that financial analysts express a growing interest for ESG concerns.

Our paper investigates whether financial analysts issue higher target prices for firms that have high E, S and G scores. Our analysis concentrates on analysts' target prices because they offer comprehensive insights. Target prices are easily interpretable by professionals and individual investors alike and provide clear expectations of analysts. Research by Brav and Lehavy (2003) and Asquith et al. (2005) suggests that target prices offer additional information to investors beyond earnings forecasts and recommendations.

Our initial univariate tests suggest that financial analysts penalize firms with high E, S and G scores. However, previous studies have evidenced the existence of a strong and positive link between ESG scores and firm size (Drempetic et al., 2020; Gregory, 2022; Dobrick et al., 2023). In addition, research on financial analysts' target prices has shown that financial analysts tend to issue higher target prices for smaller firms (Bilinski et al., 2013; Roger et al., 2018; Bradshaw et al., 2019). Therefore, we add a number of control variables, following Roger et al. (2018) and Dechow and You (2020), known to influence target price implied returns. Moreover, we account for the fact that Refinitiv ESG ratings are not absolute ratings but are instead assessed relatively within each industry group. Once the determinants of target prices implied returns and the ESG ratings have been correctly accounted for, we actually find the opposite result: financial analysts issue higher target prices for firms with high E, S and G scores.

Overall, our article makes an important contribution to both the literature on financial analysts and the one on ESG ratings. First, we document that financial analysts do care about ESG scores. Second, we show that ESG ratings should be used carefully. Relying on ESG ratings "as is" may lead to flawed empirical findings and interpretations. In short, the size bias and industry-level structure of ESG ratings necessitate a nuanced interpretation of these ratings. It is likely that the mixed results in the literature on the relationship between Corporate Financial Performance (CPF) and ESG performance, as well as the longstanding debate, stem from an inadequate utilization of ESG ratings.

2. Data

Our sample comes from the Institutional Brokers Estimate System (I/B/E/S) and consists in target prices issued on U.S. stocks. We use the unadjusted forecasts from the unadjusted detail history dataset to avoid the retroactive stock split rounding effect, (Baber and Kang, 2002; Payne and Thomas, 2003). Target prices data is then merged with the Center for Research in Security Prices (CRSP) and the Compustat database to obtain split-adjusting factors and other information (market capitalization, volume of trading, ...). ESG scores come from Refinitiv ESG (formerly Asset 4). We consider the Environment, the Social and the Government pillars separately. Refinitiv assess E, S and G scores by using relative percentile ranking at the industry group level. As a result, E,S, and G scores can take values between 0 and 100.⁴

Our sample period spans from 2015 to 2020. While ESG scores can be found as early as 2003, the availability of such data remains low until recently. Fig. 1 provides the evolution of the number of firms with at least one target price (in black) compared to the subset of firms with both a target price and an outstanding ESG score (in light blue). The proportion of firms covered by analysts that have an outstanding ESG score is about 7% in 2003. This proportion increases gradually to reach nearly 59% in 2020. The increase in coverage, however, is not regular. We observe a sharp increase in 2015 with the number of firms with an ESG score jumping from 620 to 989, which motivates our choice of sample period.⁵

3. Results

3.1. Univariate analysis

To provide a first overview of the link between ESG criteria and analysts' expectations, we first plot the evolution over time of target prices' implied return with respect to the level of ESG scores. Target price implied returns are defined as the ratio of the target price (at the issue date) divided by the current stock price, minus 1. We have

$$IR_{i,j,t} = \frac{TP_{i,j,t}}{S_{i,j,t}} - 1 \quad (1)$$

where $TP_{i,j,t}$ is the target price issued by analyst i on stock j in period t , $S_{i,j,t}$ is the stock price on the day analyst i publishes her target price.

We sort stocks on terciles of E scores (respectively S, and G) for each quarter between 2015 and 2020. We then compute the average implied return obtained from target prices for each tercile and each quarter. Panel A of Fig. 2 shows the results for terciles of E score. Panel B (respectively Panel C) does so for terciles of S score (G score). Looking at these preliminary results, it would seem that financial analysts incorporate E, S and G factors into their target prices since, overall, implied returns tend to be higher for stocks with low E, S and G scores. There are, however, potential confounding factors. Size, for instance, could be driving the relationship between ESG scores and implied returns. Indeed, large firms tend to exhibit greater ESG scores (Drempetic et al., 2020; Gregory, 2022; Dobrick et al., 2023). In parallel, results from previous studies (Bilinski et al., 2013; Roger et al., 2018; Bradshaw

⁴ https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf

⁵ In addition, it is also likely that there is a size bias in ESG scores disclosure. Thus, low ESG coverage would tilt the sample towards large firms.

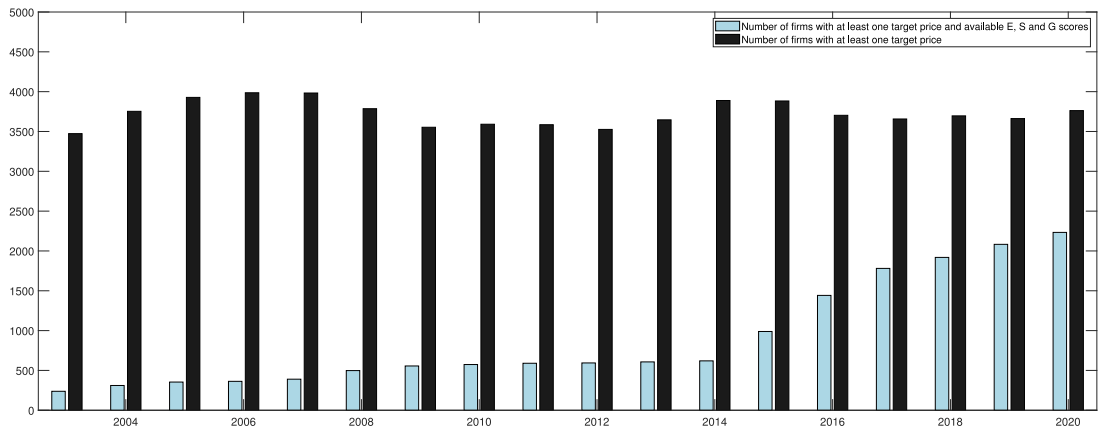


Fig. 1. Descriptive statistics: Availability of E, S and G scores. This figure presents the evolution over time of the number of firms with at least one target price compared to the number of firm with at least on target price and available E, S and G scores.

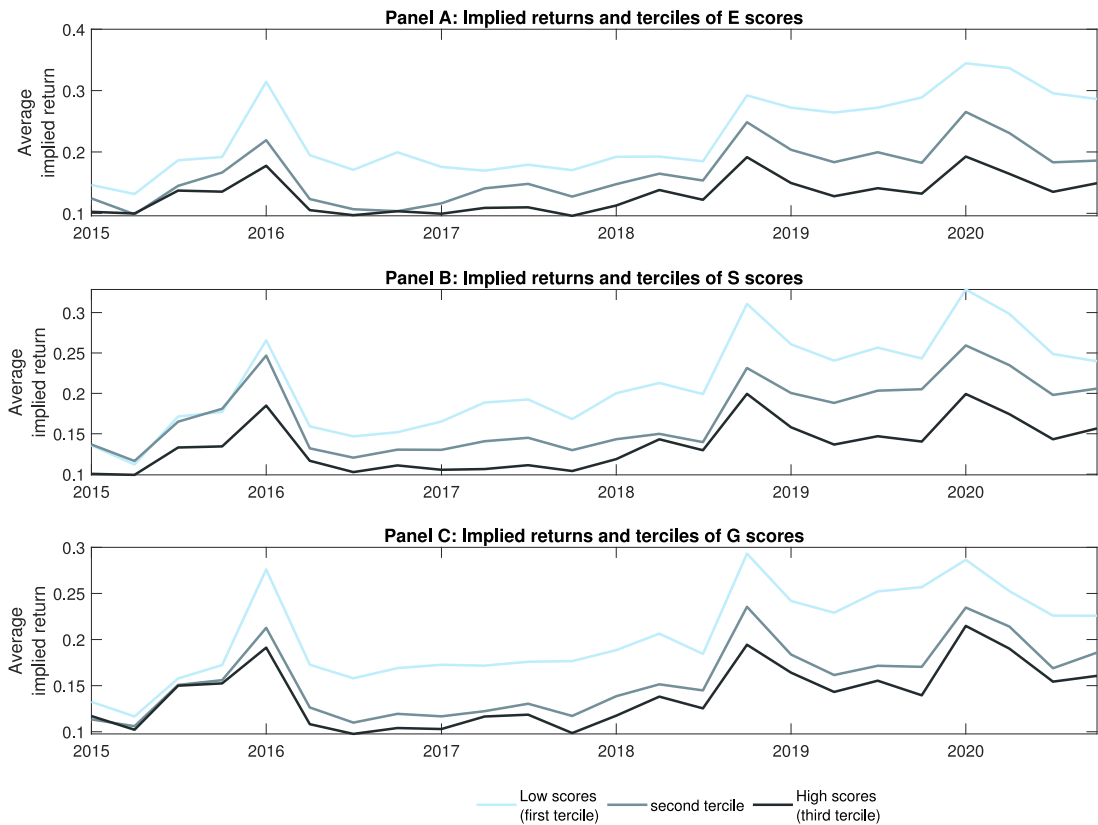


Fig. 2. Univariate results: Implied returns and terciles of E, S and G scores. This figure presents average target price implied returns, calculated on a quarterly basis, for the three tercile categories of E, S and G scores (respectively, Panel A, Panel B and Panel C).

et al., 2019) indicate that financial analysts issue lower target prices for larger firms. As a consequence, the pattern observed in Fig. 2 may be driven by a size-effect or by another confounding factor. In addition, Refinitiv ESG ratings are built at the industry group level, which means that the ESG ratings of a given firm cannot be compared directly with ESG ratings from other industry groups but only relatively to the ESG ratings of firms that belong to the same industry group.

Table 1
Multivariate results: Impact of ESG on implied returns.

	Implied return	Implied return	Implied return
E score	0.0008*** (2.82)		
S score		0.0006*** (3.32)	
G score			0.0004*** (4.19)
Beta	-0.0125 (-0.80)	-0.0139 (-0.84)	-0.0168* (-1.90)
Market capitalization	-0.0469*** (-4.36)	-0.0435*** (-4.74)	-0.0402*** (-15.08)
Book to market	0.0369*** (3.86)	0.0400*** (4.52)	0.0417*** (6.49)
Institutional holding	-0.0719** (-2.07)	-0.0787** (-2.13)	-0.0821*** (-7.01)
Leverage	0.0319* (1.92)	0.0334** (2.06)	0.0360*** (3.22)
External financing	0.1290*** (3.71)	0.1287*** (3.66)	0.1285*** (6.81)
Idiosyncratic volatility	0.1078** (2.58)	0.1084** (2.60)	0.1104*** (2.62)
Dividend yield	-0.9670*** (-4.17)	-0.8980*** (-3.86)	-0.8887*** (-5.88)
Volume	0.0269*** (3.54)	0.0276*** (3.41)	0.0271*** (6.81)
Number of observations	9,175	9,175	9,175
R ²	0.487	0.484	0.484

*** Indicate statistical significance at the 1%.

** Indicate statistical significance at the 5%.

* Indicate statistical significance at the 10%.

We use the following Ordinary Least Squares (OLS) model.

$$IR_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 Beta_{i,t} + \beta_3 Market\ capitalization_{i,t} + \beta_4 Book\ to\ market_{i,t} + \beta_5 Institutional\ holding_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 External\ financing_{i,t} + \beta_8 Idiosyncratic\ volatility_{i,t} + \beta_9 Dividend\ yield_{i,t} + \beta_{10} Volume\ of\ trading_{i,t} + \gamma_k IFE_i^k + \epsilon_{i,t}$$

The variables in the regressions are defined in Section 3.2. In the two first regressions, standard errors are clustered at the industry-group level, using Refinitiv industry group classification. The third regression uses robust standard errors. *t*-statistics are in parentheses.

3.2. Multivariate analysis

To account for these different elements, we run multivariate regressions. Following Dechow and You (2020), who investigate the determinants of implied returns, we consider both risk factors and variables that proxy for analyst job-related incentives. The selected risk factors are the firm size, the market beta, the book-to-market ratio, the leverage and the idiosyncratic risk. Analyst job-related incentives includes trading volume (which refer to analysts' incentives to encourage trading; see Jackson, 2005; Groyberg et al., 2011), external financing (which relates to analysts' incentives for optimism for firms raising financing; see Lin and McNichols, 1998; Dechow et al., 1999; Bradshaw et al., 2006) and institutional holdings (to capture analysts' incentives to build a positive reputation with institutional investors). We also take into account the dividend yield since it mechanically influences implied returns (Brav et al., 2005; Roger et al., 2018).

We use the following Ordinary Least Squares (OLS) model⁶:

$$IR_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 Beta_{i,t} + \beta_3 Market\ capitalization_{i,t} + \beta_4 Book\ to\ market_{i,t} + \beta_5 Institutional\ holding_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 External\ financing_{i,t} + \beta_8 Idiosyncratic\ volatility_{i,t} + \beta_9 Dividend\ yield_{i,t} + \beta_{10} Volume\ of\ trading_{i,t} + \gamma_k IFE_i^k + \epsilon_{i,t} \quad (2)$$

where $IR_{i,t}$ is the average return implied by target prices issued on stock i during year t and $ESG_{i,t}$ is the Environment score (respectively Social score or Governance score) for firm i and year t , $Beta_{i,t}$ is obtained by regressing monthly stock returns on market returns over the previous five years, $Market\ capitalization_{i,t}$ is the logarithm of the market capitalization of firm i at the end of year $t - 1$, $Book\ to\ market_{i,t}$ is the ratio of the book value to the market value of common equity for firm i as of the end of the previous fiscal year, $Institutional\ holding_{i,t}$ is the proportion of shares outstanding held by institutional investors at the end of year

⁶ Using Weighted Least Squares with market capitalization as weights does not modify the results.

$t - 1$, $Leverage_{i,t}$ is the ratio of total debt to total assets calculated at the end of year $t - 1$, $External\ financing_{i,t}$ is calculated as the amount of external financing scaled by assets (as in Bradshaw et al., 2006), $Idiosyncratic\ volatility_{i,t}$ is calculated as the standard deviation of the residual of the regression of monthly stock returns on market returns over the previous 5 years, $Dividend\ yield_{i,t}$ is the ratio of the annual dividend to the stock price at the end of year $t - 1$, and $Volume\ of\ trading_{i,t}$ is the dollar trading volume (in billions) calculated over the previous year. Finally, IFE_i^k are industry-group fixed effects (a dummy for each industry k to which firm i belongs).⁷ We add industry-group fixed effects since analysts typically specialize by industry, and because Refinitiv adopts a percentile rank scoring methodology within industry groups for the E and S scores. Indeed, for a given firm, the E and S scores are obtained by comparing the behavior of the firm to its peers. The resulting scores are thus not comparable across industries. For instance, the greenest firm in the *Coal* industry group will have a much better E score than the average green firm in the *Renewable Energy* industry group. The industry fixed-effects allow us to capture the differences in implied returns within industry groups while discarding differences across industry groups. In addition, as a consequence of the relative nature of the E and S scores, we decide to cluster standard errors at the industry group level. The G score being defined at the country level, we do not cluster standard errors in the third regression.

Table 1 presents the results of the regressions.⁸ These results are in sharp contrast with the ones obtained in the univariate analysis. Indeed, while in the previous analysis, the E, S and G scores had a negative impact on implied returns, the multivariate analysis shows the opposite. The coefficients of the E, S and G scores are positive and highly significant. In addition to being statistically significant, the ESG scores are also economically relevant. The E score, with an associated coefficient of 0.0008, has the most sizable impact on implied returns. The standard deviation over the 2015–2020 period for the E score is 26.12. Thus a one standard deviation change in the E score implies an increase of 2.09 percentage points in implied returns. Corresponding figures for S and G scores are 1.23 and 0.89 percentage points. Regarding controls, we find the same signs than Dechow and You (2020) for all variables except beta (which is not significant in our regressions). However, it is likely that the inclusion of industry group fixed effects influences the sign and significance of the beta variable.

4. Conclusion

Overall, our results indicate that financial analysts care for ESG and incorporate these criteria in their analyses. The ESG score with the most impact on implied returns is the one related to the environment, which is not surprising given the increased focus on the topic over the last years. In addition to this empirical contribution, our article also highlights the importance of carefully controlling for firm characteristics and industry group effects when studying ESG ratings.

CRedit authorship contribution statement

Tristan Roger: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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⁷ We define industries with the industry group classification used by Refinitiv for constructing their ESG scores.

⁸ The sample characteristics led us to work on the 2015–2020 sample. However, results are similar when working on a longer time period.

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