From ESG Performance to Sustainable Business Exposure: ESG Pillars, SDG-Related Revenue and Market Valuation among 3,000 Global Firms

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ABSTRACT

Environmental, social, and governance (ESG) investing has become a mainstream component of institutional decision-making, yet most empirical studies test the relationship between ESG performance and firm valuation by pooling the entire cross-section of rated firms, from laggards to leaders, and by relying on a single composite ESG score. This study instead examined whether the composition of ESG performance across its three pillars, together with a firm's exposure to Sustainable Development Goal (SDG)-related revenue, is associated with market valuation specifically among firms at the upper end of the global ESG distribution, where composite scores are compressed and any residual variation in valuation must originate from something other than the aggregate score. A cross-sectional sample of the 3,000 highest Bloomberg-ESG-scored firms worldwide, drawn from a global universe of 11,643 rated firms and spanning 56 stock exchanges, was analyzed using ordinary least squares regression with exchange-group fixed effects and cluster-robust standard errors. Two valuation multiples were modeled in parallel: price-to-earnings, an earnings-based multiple, and price-to-sales, a revenue-based multiple. The composite ESG score was negatively associated with price-to-earnings but positively associated with price-to-sales, a sign reversal driven primarily by the Social and Environmental pillars; the Governance pillar was not independently significant in either specification. Net SDG-aligned revenue exposure was not significantly associated with either valuation measure, and its interaction with composite ESG performance was also not significant, indicating that this real-economy exposure measure does not yet carry incremental valuation-relevant information within the ESG-elite segment. These findings indicate that, once a sample is restricted to the top of the global ESG distribution, valuation is shaped more by the pillar-level composition of ESG performance and by the specific valuation multiple examined than by the aggregate ESG score in isolation, with implications for how investors, corporate sustainability strategy, and future ESG-valuation research interpret composite ESG ratings.

Keywords: ESG pillars; SDG-related revenue; market valuation; price-to-earnings; price-to-sales; ESG-elite firms

INTRODUCTION

Background of the Study

Environmental, social, and governance (ESG) considerations have moved from a peripheral corporate-responsibility concern to a mainstream input in investment decision-making. This shift is consistent with stakeholder theory, which holds that a firm's obligations extend beyond shareholders to the broader set of parties affected by its conduct, and that attending to these interests can itself be value-relevant (Freeman, 1984). This view stands in contrast to the shareholder-primacy perspective, under which a firm's principal responsibility is to maximize returns to its shareholders (Friedman, 1970), and the tension between these two perspectives underlies much of the continuing debate over whether, and how, ESG conduct should be expected to affect firm valuation. Amel-Zadeh and Serafeim (2018) find that relevance to investment performance, more than ethical considerations, is the primary reason mainstream investors incorporate ESG information into valuation and portfolio decisions. This shift has been accompanied by a large empirical literature testing

whether ESG performance is associated with corporate financial performance and market valuation. The most comprehensive synthesis to date, Friede et al.'s (2015) second-order meta-analysis of over 2,000 primary studies, reports that roughly 90% of studies find a non-negative ESG–corporate financial performance relationship, establishing what is widely termed the "ESG business case."

However, this business case rests on a composite ESG score that aggregates dozens of heterogeneous environmental, social, and governance indicators using rating-agency-specific weighting schemes. Berg et al. (2022) show that ESG ratings issued by major providers for the same firms diverge substantially, with differences in measurement methodology, rather than differences in scope or weighting, accounting for the majority of the divergence. This finding implies that the composite ESG score may obscure more than it reveals: two firms with identical composite scores can have very different underlying pillar profiles, and if markets price the substance of ESG conduct rather than the label, then a firm's pillar-level composition, not its aggregate level, should be the more informative predictor of valuation. Consistent with this, Khan et al. (2016) find that only sustainability performance on industry-material issues predicts stock returns, while performance on immaterial issues does not; this is direct evidence that ESG components are not uniformly priced by the market.

A parallel literature has begun to examine the pillar-level decomposition of ESG scores against firm value. Lopez-de-Silanes et al. (2024) show that institutional investors' revealed preferences for the three ESG pillars diverge in direction and magnitude, with one pillar exhibiting a negative relationship with ownership even as the aggregate ESG score is preferred. Similarly, Govindan et al. (2021) and Bissoondoyal-Bheenick et al. (2023) decompose ESG scores in valuation-relevant regressions and find that pillar-level effects differ from the composite. Most of this decomposition literature, however, pools firms across the full ESG-score distribution, from laggards to leaders, and tests the pillars against a single valuation measure, most often Tobin's Q, return on assets, or an enterprise-value multiple (e.g., Cheng et al., 2024; Shaikh, 2021).

Separately, and largely disconnected from the ESG-scores literature, capital markets have increasingly used firms' revenue exposure to the United Nations Sustainable Development Goals (SDGs) as a real-economy, activity-based measure of sustainability alignment, distinct from a disclosure-based rating. Moro-Visconti et al. (2020) discuss SDG alignment as a driver of market valuation in financial-technology business models, but firm-level, cross-sectional evidence linking a quantified net SDG-aligned revenue exposure to standard valuation multiples remains scarce, and has not, to the authors' knowledge, been tested jointly with ESG pillar composition.

Three specific gaps in the literature motivate this study. First, empirical work relating ESG performance to valuation typically pools firms across the entire ESG-score distribution rather than isolating the upper tier, where composite scores are compressed and, if a relationship with valuation persists, its source must lie in composition. Ahmad et al. (2021) take a step in this direction with a high-versus-low ESG subsample of 351 UK firms, but no study to date restricts a globally diversified sample to the top of the worldwide ESG-scored universe. Second, where pillar-level decomposition has been undertaken (e.g., Lopez-de-Silanes et al., 2024), it has been tested against a single valuation or preference measure; whether pillar effects are consistent across earnings-based and revenue-based valuation multiples, or diverge depending on the multiple used, remains unexamined. Third, no study has jointly modeled ESG pillar composition and net SDG-aligned revenue exposure as independent predictors of market valuation, leaving open whether a firm's real-economy sustainability exposure is priced separately from, or is redundant with, its disclosure-based ESG score.

Rationale and Contribution of the Study

Testing whether ESG composition and SDG-revenue exposure matter for valuation specifically among the highest-ESG-scored firms globally provides a stronger test of whether markets price ESG substance than pooling the full distribution, where a positive ESG–valuation association could simply reflect markets rewarding firms for moving off a low base. If the composite score is compressed among elite performers, yet valuation still varies systematically with the underlying pillar mix or with real-economy SDG exposure, this constitutes more direct evidence that investors look beyond the label. Accordingly, this study asks: does the

composition of ESG performance and exposure to SDG-related revenue matter for market valuation among firms at the upper end of the global ESG distribution?

The study contributes to the literature in three ways. First, it restricts the sample to the top 3,000 firms in Bloomberg's global ESG-scored universe (of 11,643 firms covered), spanning 56 exchanges, providing the first globally diversified test of ESG–valuation relationships within the elite tier. Second, it models both an earnings-based (price-to-earnings) and a revenue-based (price-to-sales) valuation multiple in parallel, allowing pillar-composition effects that a single-multiple design would mask to surface. Third, it introduces net SDG-aligned revenue percentage as an independent, real-economy exposure variable alongside ESG pillar scores, testing whether the two are complementary, redundant, or conditional on one another.

LITERATURE REVIEW

ESG Performance and Firm Valuation: The Composite-Score Perspective

The dominant strand of the ESG–valuation literature treats ESG performance as a single composite score and relates it to firm-level financial or market performance. Friede et al.'s (2015) meta-analysis remains the most authoritative evidence base, aggregating over 2,000 primary studies and reporting a predominantly non-negative relationship between ESG and corporate financial performance across regions and time periods. At the level of individual studies, Shaikh (2021) finds a positive association between composite ESG scores and firm performance using an international sample, and Bissoondoyal-Bheenick et al. (2023) show that this relationship is moderated by firm size and media visibility, using panel data across G20 countries. Cheng et al. (2024) extend this to a market-valuation setting, finding that ESG-related information disclosure and performance are positively associated with enterprise-value multiples in the Chinese market. Collectively, this literature supports the existence of an ESG premium, but treats ESG as a unidimensional construct and does not ask whether the premium accrues uniformly across governance, social, and environmental performance, or is driven disproportionately by one dimension.

Decomposing ESG: Pillar-Level Evidence

A smaller but growing literature disaggregates the composite score into its three constituent pillars. Govindan et al. (2021) test both the composite CSR/ESG score and its three sub-dimensions against firm value in the logistics sector and find that governance-related drivers carry disproportionate value-relevance relative to environmental and social sub-scores. Lopez-de-Silanes et al. (2024) provide the most direct precedent for the present study's design: examining institutional investors' portfolio weightings against the three individual ESG components, they find that investor preference for one pillar is negative even as the aggregate ESG score is positively associated with institutional ownership; this is direct evidence that composite-level findings can mask offsetting or divergent pillar-level effects. This sign-divergence result is central to the present study's premise that composition, not level, is the more informative construct once a sample is restricted to high-ESG firms.

Measurement Divergence and the Composition Problem in ESG Scores

The reliability of the composite ESG score itself has been questioned on measurement grounds. Berg et al. (2022) analyze ratings from six major agencies for the same set of firms and find substantial divergence, decomposing it into contributions from scope (38%), measurement (56%), and weighting (6%) differences, with measurement divergence linked to a "rater effect" in which an agency's overall view of a firm colors its scoring of individual categories. This measurement instability provides a methodological rationale for examining pillar-level scores rather than relying solely on a single composite figure, since composite scores computed under different weighting schemes are not directly comparable across raters, whereas the underlying pillar scores, as reported by a single provider, are directly interpretable. Complementing this, Khan et al. (2016) show, using materiality classifications from the Sustainability Accounting Standards Board, that firms with superior performance on industry-material sustainability issues significantly outperform on both stock returns and future accounting performance, while performance on immaterial issues shows no such effect. Applied to the present context, this implies that the environmental, social, and governance pillars are unlikely

to be equally material, and hence equally priced, across the sample, further motivating pillar-level rather than composite-level analysis.

Investor Use of ESG Information and the ESG-Leaders Segment

Survey evidence supports the premise that investors treat ESG information as financially material rather than purely ethical. Amel-Zadeh and Serafeim (2018), surveying mainstream global investment organizations, find that relevance to investment performance is the most frequently cited motivation for ESG integration, ahead of client demand or ethical considerations, though a lack of standardized reporting is identified as a major impediment to its use. This is consistent with a market that attempts to price ESG substance but faces measurement noise, reinforcing the value of examining more granular, pillar-level and revenue-based indicators. At the same time, Lee and Raschke (2023) caution that stakeholder legitimacy concerns can create incentives for "greenwashing," meaning that a favorable ESG score does not guarantee substantive underlying performance; this is a concern that is arguably more acute among the highest-scoring firms, who face the greatest scrutiny and the strongest incentive to manage perception. Ahmad et al. (2021), examining static and dynamic panel models of FTSE350 UK firms, further show that the ESG–financial performance relationship differs between high- and low-ESG subsamples, providing the closest existing precedent for isolating an ESG-elite tier, albeit at national rather than global scale.

SDG-Aligned Revenue Exposure and Firm Valuation

Evidence directly linking SDG-related revenue exposure to firm valuation is markedly thinner than the ESG-score literature. Moro-Visconti et al. (2020) discuss SDG alignment conceptually as a value driver in financial-technology business models, arguing that scalability and sustainability orientation jointly shape market valuation, but do not quantify SDG-aligned revenue as a firm-level regressor against standard valuation multiples. A systematic Scopus search combining SDG-revenue and valuation terms returned no study modeling a quantified net SDG-aligned revenue percentage as an independent predictor of market multiples across a large, cross-country firm sample. This is a notable absence: revenue-based SDG exposure is, in principle, a "harder," less discretionary measure of sustainability substance than a disclosure-based ESG score, since it reflects the composition of a firm's actual sales rather than its reporting practices. Whether it is priced by markets, independently of or in addition to ESG scores, is therefore an open empirical question that the present study addresses directly.

Synthesis and Positioning of the Present Study

Taken together, the literature establishes that (a) a positive ESG–valuation association is well documented at the level of the composite score (Friede et al., 2015; Shaikh, 2021), (b) pillar-level decomposition can reveal effects, including sign reversals, that the composite score conceals (Lopez-de-Silanes et al., 2024; Govindan et al., 2021), (c) the composite score itself carries non-trivial measurement noise that a pillar-level approach can partially circumvent (Berg et al., 2022; Khan et al., 2016), and (d) real-economy SDG-revenue exposure remains almost entirely unexamined as a valuation determinant. However, no study combines these threads by restricting the sample to the upper tier of the global ESG distribution, testing pillar composition against more than one valuation multiple in parallel, and incorporating SDG-aligned revenue exposure alongside ESG pillar scores. This study addresses that combined gap.

METHODOLOGY

Research Design

A cross-sectional, quantitative research design was employed to examine whether ESG pillar composition and SDG-related revenue exposure are associated with market valuation among firms at the upper end of the global ESG distribution. Given that the sampling frame reflects a single point-in-time screening, the design does not incorporate a time dimension.

Sample and Data Source

Data were retrieved from the Bloomberg Terminal Equity Screening (EQS) function in the first week of September 2026. The screening universe was restricted to the 3,000 highest-ranked securities globally, ordered in descending order by Bloomberg ESG Score (BESG ESG Score), out of a total global ESG-scored universe of 11,643 securities; the 3,000-security cap reflects a limit imposed by the Bloomberg screening interface. Accordingly, the sample represents the upper segment of the Bloomberg ESG-scored universe, a scope condition that was treated as central to the study's design. Firm-level fields extracted for each security included the BESG Environmental, Social, and Governance Pillar Scores, the BESG ESG Score (composite), the MSCI ESG Rating, the Total Net SDG Impact – Revenue Percentage, market capitalization, closing price, price-to-earnings ratio, year-to-date total return, trailing-twelve-month revenue, and trailing-twelve-month earnings per share.

Sample Selection Procedure

To ensure the sample-construction process is transparent and reproducible, three aspects of the extraction are documented here in addition to the retrieval details given above. First, missing data were minimal for most extracted fields: below 1% for the ESG pillar scores, the composite ESG score, the SDG revenue percentage, market capitalization, and trailing-twelve-month revenue. Missingness was higher for earnings per share and, consequently, for the price-to-earnings ratio (12.7% missing), because Bloomberg does not report a price-to-earnings ratio for loss-making firms; these observations were retained in the price-to-sales models and excluded only from the price-to-earnings models through listwise deletion, consistent with standard practice for undefined valuation multiples. The MSCI ESG Rating field was missing for 63.8% of the sample and was therefore excluded from the primary specifications, as already noted.

Second, ties at the 3,000-firm threshold were examined directly. Twelve firms in the retrieved sample share the exact composite ESG score of the lowest-ranked (3,000th) firm. Because Bloomberg's screening interface returns only the requested maximum number of securities, it cannot be determined from the extracted data whether additional firms with this same score exist immediately beyond the cutoff; any such tie-breaking was resolved internally by Bloomberg's screening algorithm and was not controlled by the authors. This is reported here as a transparent boundary of the extraction method.

Third, because firms ranked below 3,000 were never returned by the screening query, no firm-level data are available for excluded securities, and their characteristics cannot be described from this dataset. The 3,000-firm sample is accordingly best understood as the observable upper segment of the global ESG-scored universe.

Table 1 defines the role, measurement, and Bloomberg source field for each variable used in the analysis.

Table 1

Variable Measurement

Variable	Role	Measurement	Source field
Price-to-Earnings (P/E)	Dependent (Model 1–2)	Reported P/E ratio, winsorized at the 1st and 99th percentiles	Bloomberg P/E
Price-to-Sales (P/S)	Dependent (Model 3–4)	Market capitalization divided by trailing-twelve-month revenue, winsorized at the 1st and 99th percentiles	Computed (Market Cap / Revenue T12M)
ESG Score	Independent (composite specification)	Composite BESG ESG Score (0–10 scale)	Bloomberg ESG Scr
Governance,	Independent	BESG pillar sub-scores (0–10 scale each)	Bloomberg

Social, Environmental Pillar Scores	(pillar specification)		Gov/Soc/Env Scr
SDG Revenue Exposure	Independent	Total Net SDG Impact – Revenue Percentage, winsorized at the 1st and 99th percentiles	Bloomberg TOT Net SDG Imp Rev Pct
Firm Size	Control	Natural logarithm of trailing-twelve-month revenue, winsorized at the 1st and 99th percentiles	Computed (ln Revenue T12M)
Loss-Making Status	Control (P/E models only)	Dummy variable equal to 1 if trailing-twelve-month EPS was negative, 0 otherwise	Computed from Bloomberg EPS T12M
Exchange/Country Group	Fixed effect	Categorical grouping derived from the exchange code embedded in each security's Bloomberg ticker; exchanges with fewer than 10 constituent firms were pooled into a residual "Other" category	Derived from Bloomberg Ticker

The control variables in Table 1 were selected on theoretical grounds established in the ESG-valuation literature already reviewed above. Firm size, operationalized as the natural logarithm of revenue, is included because larger and more mature firms are consistently shown to trade at different valuation multiples than smaller firms, independent of ESG performance (e.g., Ahmad et al., 2021; Govindan et al., 2021); omitting it would risk attributing a size effect to ESG composition. The loss-making dummy is included in the price-to-earnings specifications because a firm's earnings sign mechanically determines whether a price-to-earnings ratio is defined and economically interpretable, making profitability status a necessary control wherever this multiple is the dependent variable. Exchange-group fixed effects serve as the study's country-level control, absorbing unobserved national, regulatory, and currency-related heterogeneity, as detailed under Estimation Technique below.

Model Specification

Four base models were estimated. The composite-score specifications were:

Model 1:

$$PE_i = \beta_0 + \beta_1 ESG_i + \beta_2 SDG_i + \beta_3 \ln(Revenue)_i + \beta_4 LossDummy_i + \Sigma Exchange\ FE + \varepsilon_i$$

Model 3:

$$PS_i = \beta_0 + \beta_1 ESG_i + \beta_2 SDG_i + \beta_3 \ln(Revenue)_i + \Sigma Exchange\ FE + \varepsilon_i$$

The pillar-decomposed specifications replaced the composite ESG term with its three constituent pillars:

Model 2:

$$PE_i = \beta_0 + \beta_1 Gov_i + \beta_2 Soc_i + \beta_3 Env_i + \beta_4 SDG_i + \beta_5 \ln(Revenue)_i + \beta_6 LossDummy_i + \Sigma Exchange\ FE + \varepsilon_i$$

Model 4:

$$PS_i = \beta_0 + \beta_1 Gov_i + \beta_2 Soc_i + \beta_3 Env_i + \beta_4 SDG_i + \beta_5 \ln(Revenue)_i + \Sigma Exchange\ FE + \varepsilon_i$$

An additional pair of models introduced an ESG × SDG interaction term to test whether the valuation effect of SDG revenue exposure was conditional on the level of composite ESG performance:

Model 5:

$$PE_i = \beta_0 + \beta_1 ESG_i + \beta_2 SDG_i + \beta_3 (ESG_i \times SDG_i) + \beta_4 \ln(Revenue)_i + \beta_5 LossDummy_i + \Sigma Exchange\ FE + \varepsilon_i$$

Model 6:

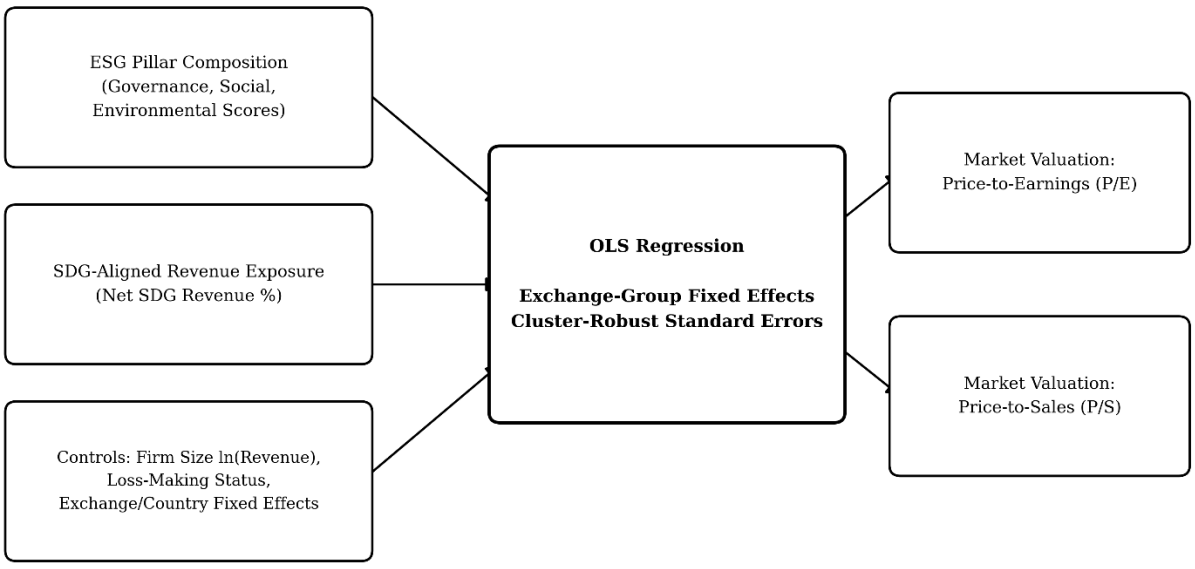
$$PS_i = \beta_0 + \beta_1 ESG_i + \beta_2 SDG_i + \beta_3 (ESG_i \times SDG_i) + \beta_4 \ln(Revenue)_i + \Sigma Exchange\ FE + \varepsilon_i$$

where:

- *PE_i and PS_i are the price-to-earnings and price-to-sales ratios (winsorized) for firm i*
- *β_0 is the intercept term*
- *β_1 … β_6 are the estimated coefficients on their respective predictors*
- *ESG_i is the composite Bloomberg ESG score for firm i*
- *Gov_i, Soc_i, Env_i are the Governance, Social, and Environmental pillar scores for firm i*
- *SDG_i is the net SDG-aligned revenue percentage for firm i (winsorized)*
- *$\ln(Revenue)_i$ is the natural logarithm of trailing-twelve-month revenue for firm i (winsorized)*
- *$LossDummy_i$ equals 1 if firm i reported negative trailing-twelve-month EPS, and 0 otherwise*
- *$(ESG_i \times SDG_i)$ is the interaction term between composite ESG performance and SDG revenue exposure*
- *ΣExchange FE denotes the vector of exchange-group fixed effects*
- *ε_i is the idiosyncratic error term for firm i*

Figure 1 summarizes the conceptual research framework linking the two independent-variable blocks, the controls and fixed effects, and the two market-valuation outcomes modeled in this study.

Figure 1
Conceptual Research Framework



Estimation Technique

All models were estimated using ordinary least squares with exchange-group fixed effects, implemented via the fixest package in R. Standard errors were clustered by exchange group to account for within-country correlation in residuals arising from shared regulatory, currency, and macroeconomic conditions. Fixed effects were included both to control for unobserved country-level heterogeneity and to address a data-scale property specific to this sample: market capitalization, revenue, price, and earnings per share were reported in local currency rather than a standardized currency, such that raw cross-country comparisons of these variables in

levels would not be meaningful. Because the exchange-group fixed effects absorb country-level scale differences, and because the two dependent variables (P/E, P/S) are constructed as within-firm ratios that are currency-invariant by construction, the specification was considered robust to this data characteristic.

Data Limitations

Three limitations of the data were noted. First, the MSCI ESG Rating field was populated for only approximately 36% of the sample and was therefore not included in the primary specifications; it was reserved for a robustness check on the covered subsample. Second, the design was cross-sectional, reflecting a single Bloomberg screening snapshot; the direction of causality between ESG composition and valuation could not be established, and the findings should be interpreted as associational. Third, because the sample was restricted to the upper tier of the Bloomberg ESG-scored universe by design, the findings pertain to the ESG-elite segment of global firms and should not be generalized to the full cross-section of ESG-rated firms. Fourth, the extracted fields did not include industry (GICS sector) classification, leverage, or growth-opportunity measures; consequently, industry fixed effects and these additional firm-level controls could not be estimated in the present specifications, and the exchange-group fixed effects reported throughout should be understood as a country-level, not an industry-level, control. Extending the Bloomberg extraction to include these fields is a natural next step for future revisions of this research line.

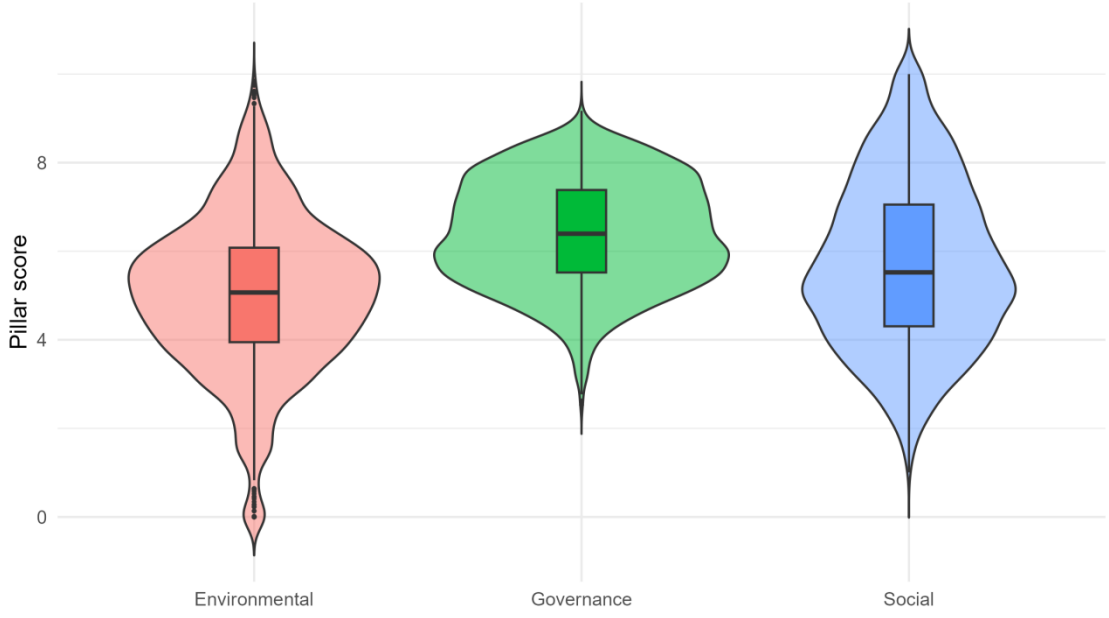
RESULTS AND DISCUSSION

Estimation Sample and Model Fit

After listwise deletion of missing values, the price-to-earnings (P/E) models were estimated on 2,610 firms and the price-to-sales (P/S) models on 2,986 firms, out of an initial screened sample of 3,003 securities. All models included exchange-group fixed effects (35 groups) with standard errors clustered by exchange group. Explanatory power was modest for the P/E models (R^2 = 0.071–0.072) and considerably stronger for the P/S models (R^2 = 0.314–0.317), summarized in Table 2.

Figure 2

Distribution of ESG Pillar Scores Among Sample Firms



Distribution of ESG Pillar Scores Among Sample Firms (n = 3,000; Bloomberg BESG Pillar Scores, 0–10 scale)

As shown in Figure 2, the Governance, Social, and Environmental pillars display distinct distributional shapes even within this ESG-elite sample, confirming that firms at the top of the composite score distribution are not homogeneous in their underlying pillar composition, the premise motivating the pillar-level decomposition presented later in this section.

Table 2

Regression Results: ESG Composition, SDG Revenue Exposure, and Market Valuation

Variable	M1: P/E ~ ESG	M2: P/E ~ Pillars	M3: P/S ~ ESG	M4: P/S ~ Pillars
ESG (composite)	−1.730** (0.749)	n/a	1.310*** (0.459)	n/a
Governance	n/a	−0.662 (1.02)	n/a	0.247 (0.353)
Social	n/a	−0.842*** (0.305)	n/a	0.324** (0.121)
Environmental	n/a	0.053 (0.401)	n/a	0.824*** (0.259)
SDG Revenue %	−0.074 (0.056)	−0.072 (0.055)	−0.032 (0.036)	−0.029 (0.036)
ln(Revenue)	−2.750*** (0.713)	−2.820*** (0.744)	−3.120*** (1.12)	−3.180*** (1.13)
Loss-making dummy	29.0*** (9.52)	29.4*** (9.49)	n/a	n/a
Exchange fixed effects	Yes	Yes	Yes	Yes
Observations	2,610	2,610	2,986	2,986
R^2	0.071	0.072	0.314	0.317
Within R^2	0.030	0.030	0.156	0.161

*Note. Cluster-robust standard errors (by exchange group) in parentheses. *** p < .01, ** p < .05, * p < .10.*

ESG Composition and Earnings-Based Valuation (P/E)

The composite ESG score was negatively and significantly associated with P/E (β = −1.730, p < .05; Model 1), indicating that, within this ESG-elite sample, a higher aggregate ESG score was associated with a lower earnings multiple. Decomposing the composite score (Model 2) showed that this negative association was driven almost entirely by the Social pillar (β = −0.842, p < .01), while Governance (β = −0.662, n.s.) and Environmental (β = 0.053, n.s.) scores were not independently significant. This result runs counter to the general ESG business case documented by Friede et al. (2015) and points toward pillar-specific, rather than uniform, pricing of ESG conduct, consistent with the pillar-divergence evidence reported by Lopez-de-Silanes et al. (2024).

ESG Composition and Revenue-Based Valuation (P/S)

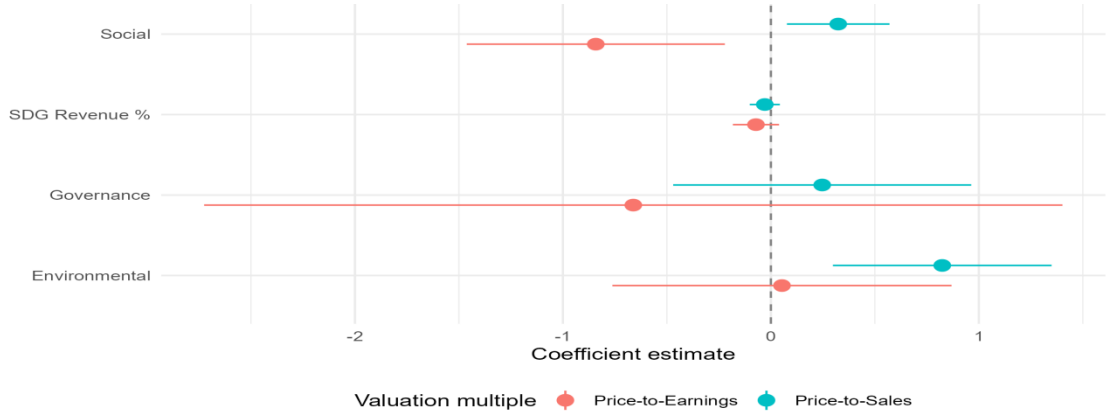
In contrast, the composite ESG score was positively and strongly associated with P/S (β = 1.310, p < .01; Model 3). The pillar decomposition (Model 4) showed this positive relationship was carried by the Environmental (β = 0.824, p < .01) and Social (β = 0.324, p < .05) pillars, while Governance was not significant (β = 0.247, n.s.). Firm size (ln Revenue) was a robust negative predictor across all four models (p < .01), consistent with a scale discount among large, mature firms in this elite tier.

The Composition Divergence: Reconciling the P/E and P/S Findings

The central empirical finding of this study is the sign reversal of the composite ESG coefficient across the two valuation multiples: negative for P/E, positive for P/S. The Social pillar is the one component significant in both models, and it too reverses sign (negative for P/E, positive for P/S).

Figure 3

ESG Pillar Effects on Price-to-Earnings vs. Price-to-Sales



ESG Pillar Effects (points = coefficient estimates from Models 2 and 4; bars = 95% confidence intervals).

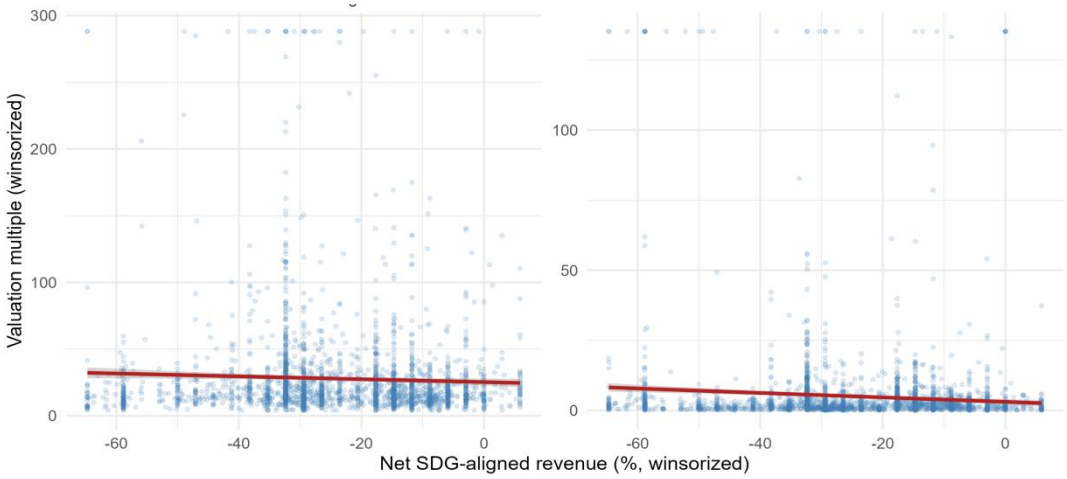
This pattern suggests that ESG-elite firms with stronger environmental and social performance command a premium on revenue-based valuation, consistent with markets rewarding top-line durability or growth expectations, while simultaneously trading at an earnings-multiple discount, consistent with near-term margin compression associated with sustainability investment. Considered against Berg et al.'s (2022) evidence that composite ESG scores conflate heterogeneous, differently weighted sub-components, this divergence illustrates concretely why a single composite score and a single valuation multiple are each, on their own, insufficient to characterize the ESG–valuation relationship: the relationship is multiple-dependent as well as pillar-dependent. As shown in Figure 3, the Social and Environmental pillars visibly cross the zero line in opposite directions across the two valuation multiples, while the Governance pillar's confidence interval spans zero in both models, a visual summary of the sign-divergence finding discussed above.

SDG Revenue Exposure and the Composition Interaction (H3 and H4)

Net SDG-aligned revenue exposure was not significantly associated with either valuation measure in any specification (Models 1–4, all $p > .10$). The interaction between composite ESG and SDG revenue exposure (Table 3) was also not significant in the P/E model ($\beta = 0.025$, $p = .655$) and only marginal in the P/S model ($\beta = 0.042$, $p = .243$, n.s.; the direct ESG effect within the interaction specification was itself only marginal, $\beta = 2.35$, $p = .058$).

Figure 4

Net SDG-Aligned Revenue Exposure and Valuation Multiples



Net SDG-Aligned Revenue Exposure and Valuation Multiples (winsorized; fitted line = unconditional OLS trend, shaded band = 95% CI).

Hypothesis H3 (SDG-revenue exposure is independently priced) is therefore not supported, and Hypothesis H4 (the SDG-revenue effect is conditional on ESG composition quality) is not supported either. Among firms already at the top of the global ESG distribution, a firm's real-economy exposure to SDG-aligned revenue streams does not appear to carry incremental valuation-relevant information beyond what is already captured by ESG pillar scores. As shown in Figure 4, the fitted trend lines for both price-to-earnings and price-to-sales are visually flat across the range of net SDG-aligned revenue exposure, consistent with the null coefficients reported above.

Table 3

ESG × SDG Revenue Interaction Models

Variable	M5: P/E interaction	M6: P/S interaction
ESG (composite)	−1.11 (1.14)	2.35* (1.24)
SDG Revenue %	−0.215 (0.349)	−0.268 (0.193)
ln(Revenue)	−2.750*** (0.713)	−3.120*** (1.12)
Loss-making dummy	28.9*** (9.51)	n/a
ESG × SDG Revenue %	0.025 (0.056)	0.042 (0.036)
Exchange fixed effects	Yes	Yes
Observations	2,610	2,986
R^2	0.072	0.315

*Note. Cluster-robust standard errors (by exchange group) in parentheses. *** p < .01, ** p < .05, * p < .10.*

Table 4 summarizes the outcome of the hypothesis tests set out in the Introduction.

Table 4

Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Aggregate ESG score has little marginal pricing power at the top of the distribution	Not supported: the composite score is significant in both P/E and P/S models, but with opposite signs
H2	Pillar composition matters more than the aggregate level	Supported: pillar decomposition reveals effects (Social, Environmental) masked by the composite score
H3	SDG-aligned revenue exposure is priced independently of ESG scores	Not supported: SDG revenue exposure is insignificant in all four base models
H4	The SDG-revenue effect is conditional on ESG composition quality	Not supported: the ESG × SDG interaction is insignificant in both valuation models

Robustness Checks: Alternative ESG-Elite Thresholds and Multicollinearity

Because the 3,000-firm cap reflects a limit of the Bloomberg screening interface rather than a theoretically derived threshold, the composite-score specifications (Models 1 and 3) were re-estimated on three narrower, nested ESG-elite subsamples drawn from the same rank-ordered sample: the top 10% (n = 1,164), top 20% (n = 2,329), and top 25% (n = 2,911) of Bloomberg's 11,643-firm global ESG-scored universe. Table 5 reports the coefficient on the composite ESG score for the price-to-earnings and price-to-sales models at each threshold, alongside the full 3,000-firm sample for comparison.

Table 5. ESG-Valuation Coefficients Across Alternative ESG-Elite Thresholds

Threshold	N (screened)	ESG -> P/E b (SE)	95% CI	N (P/E)	ESG -> P/S b (SE)	95% CI	N (P/S)
Top 10%	1,164	-1.542 (1.922)	[-5.310, 2.226]	1,020	1.320** (0.623)	[0.098, 2.542]	1,159
Top 20%	2,329	-2.472*** (0.878)	[-4.192, -0.751]	2,042	1.414*** (0.544)	[0.348, 2.481]	2,320
Top 25%	2,911	-1.615** (0.721)	[-3.028, -0.203]	2,533	1.306*** (0.437)	[0.450, 2.163]	2,900
Full sample (100%)	3,000	-1.738** (0.754)	[-3.215, -0.260]	2,611	1.306*** (0.461)	[0.402, 2.211]	2,986

*Note. *** p < .01, ** p < .05, * p < .10. Cluster-robust standard errors (by exchange group) in parentheses; coefficients and 95% confidence intervals correspond to the composite ESG term in the composite-score specifications (Models 1 and 3).*

As shown in Table 5, the sign reversal between price-to-earnings and price-to-sales is stable across every threshold examined: the composite ESG coefficient is consistently negative for price-to-earnings and consistently positive and significant for price-to-sales, from the narrowest 10% cutoff through the full 3,000-firm sample. The price-to-earnings coefficient loses statistical significance only at the narrowest, top 10% threshold (p = .423), where the smaller effective sample after listwise deletion (n = 1,020) reduces statistical power; its point estimate remains negative and of similar magnitude to the other thresholds. This pattern indicates that the study's central finding is not an artifact of the particular 3,000-firm cutoff imposed by the Bloomberg screening interface.

Multicollinearity among the pillar-specification regressors was also assessed using variance inflation factors (VIFs) computed on the full sample. VIFs were 1.13 for Governance, 1.29 for Social, 1.20 for Environmental, 1.01 for SDG revenue exposure, and 1.05 for firm size, all well below the conventional threshold of 5 used to flag problematic multicollinearity. This confirms that the pillar scores and SDG revenue exposure contribute distinct, non-redundant variation to the regressions, supporting the decomposition strategy motivating this study.

DISCUSSION

Taken together, the results indicate that, among the world's most highly ESG-rated firms, the composite ESG score is not a neutral or uninformative predictor of valuation, but nor is it a uniformly positive one: its sign and significance depend on which pillar and which valuation multiple are examined. This is consistent with, and extends, the pillar-divergence finding of Lopez-de-Silanes et al. (2024) from investor ownership preferences to realized market multiples, and provides an empirical illustration of the measurement heterogeneity that Berg et al. (2022) identify at the ratings-construction level. The null finding on SDG-revenue exposure is equally informative: it suggests that, at least among already-elite ESG performers, the market does not yet independently price real-economy sustainable-revenue exposure captured outside the standard ESG scoring framework, whether because the metric is not yet well understood by investors, is highly collinear with dimensions already reflected in ESG pillar scores among this sub-sample, or is not yet material to valuation in the way Khan et al. (2016) show industry-material ESG issues to be.

CONCLUSION

This study examined whether ESG pillar composition and SDG-related revenue exposure were associated with market valuation among the upper tier of the global ESG distribution, using a cross-sectional sample of 3,000 Bloomberg-ESG-scored firms spanning 56 exchanges. Three findings emerged. First, the composite ESG score was not a neutral predictor of valuation among ESG-elite firms: it was negatively associated with the price-to-earnings multiple and positively associated with the price-to-sales multiple, a sign reversal that a single-multiple design would not have revealed. Second, this divergence was traceable to specific pillars,

particularly the Social and Environmental dimensions, rather than to Governance, indicating that pillar-level composition, not aggregate score level, drove the relationship once the sample was restricted to already high-scoring firms. Third, net SDG-aligned revenue exposure was not independently priced, nor was its effect conditional on ESG composition quality, suggesting that this real-economy exposure measure does not yet carry incremental valuation-relevant information beyond standard ESG pillar scores, at least within the ESG-elite segment examined here.

These findings carry implications for both theory and practice. Theoretically, they extend the pillar-divergence evidence of Lopez-de-Silanes et al. (2024) from investor preferences to realized valuation multiples, and illustrate empirically the measurement heterogeneity that Berg et al. (2022) attribute to ESG rating construction. Practically, the results suggest that corporate sustainability strategy and investor relations communications should distinguish between the pillar and the valuation lens being targeted, since a strategy that improves Social or Environmental performance may raise revenue-based valuation while simultaneously compressing earnings-based multiples.

The study's cross-sectional design precludes causal inference, and the sample's restriction to the ESG-elite tier limits generalization to lower-rated firms; both were treated as natural boundary conditions of a design intended to isolate composition effects at score saturation. The Bloomberg screening cap of 3,000 securities further meant the sample, while globally diversified, did not cover the full 11,643-firm ESG-scored universe. Future research could extend this design longitudinally to test whether the price-to-earnings/price-to-sales divergence documented here persists over time, and could examine whether the null SDG-revenue finding replicates using alternative SDG-exposure taxonomies or in samples spanning the full ESG-score distribution rather than its upper tier alone.

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