

ESG Ratings and Underpricing on Emerging Markets: Case of European IPOs between 2014 and 2023

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ARTICLE INFO	ABSTRACT
Article History	Purpose: Given the increasing salience of Environmental, Social, and Governance (ESG) criteria in investment decisions, this study investigates the extent to which pre-Initial Public Offering (IPO) ESG ratings function as a mechanism to reduce information asymmetry and, consequently, influence the phenomenon of IPO underpricing. The analysis is focused on a sample of IPOs within developed and emerging European markets.
Received 17.02.2026	Design/methodology/approach: An Ordinary Least Squares (OLS) regression analysis is employed to empirically examine the relationship between the RepRisk rating (as a proxy for corporate sustainability performance) and the Initial Return (IR) as the measure for underpricing. The sample comprises 1,927 European IPOs executed between 2014 and 2023. Model robustness is ensured through the inclusion of control variables covering firm, offer, and market characteristics.
Accepted 29.03.2026	Findings: The results demonstrate a conditional influence of the ESG rating on underpricing. For the overall sample, no significant effect of the RepRisk rating on underpricing was identified. However, a sub-analysis of rated companies during the period prior to the COVID-19 pandemic (2014-2019) revealed a statistically significant negative relationship between the ESG rating and underpricing. This finding supports the hypothesis that higher ESG transparency mitigates information asymmetry. Conversely, for IPOs originating from European emerging markets, no significant influence of the ESG rating could be established.
JEL Classifications G11, Q56	Research limitations/implications: The findings suggest that the role of ESG ratings in alleviating IPO underpricing is highly dependent on the observation period and the specific submarket. The assumption that ESG activities universally contribute to greater market certainty during times of crisis could not be confirmed. Future research should address the heterogeneity of European regulatory frameworks and incorporate ratings from multiple agencies to enhance the generalizability of these conclusions.
	Originality/value: This study makes a novel contribution to the literature by explicitly linking pre-IPO Environmental, Social, and Governance (ESG) ratings to the underpricing of Initial Public Offerings (IPOs) in both developed and emerging European markets. While prior research has examined the role of ESG in post-IPO performance and firm valuation, few studies have investigated its function as a signal to mitigate information asymmetry during the IPO process. By employing RepRisk ratings as a proxy for corporate sustainability performance, this research provides a unique empirical examination of how ESG considerations can influence initial investor perceptions and pricing outcomes.
	The study's value lies in its dual contribution to theory and practice. Theoretically, it extends the signaling and information asymmetry frameworks by incorporating ESG metrics as a credible pre-IPO signal to investors. Practically, the findings offer actionable insights for issuers, underwriters, and policymakers on how sustainability practices and ESG disclosure can shape investor behavior and potentially reduce the cost of capital associated with IPOs. Additionally, the inclusion of both developed and emerging European markets provides a comparative perspective, enhancing the generalizability of the results

Keywords:

ESG, Underpricing,
European Markets, IPO,
Emerging Markets

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1. Introduction

The contemporary socioeconomic landscape is profoundly shaped by major social and geopolitical challenges, including escalating social inequality, advancing climate change, and persistent political conflicts. This context has engendered a heightened sense of uncertainty, particularly among younger demographics, leading to a notable shift in consumer behavior and, consequently, a growing demand for sustainable products (Boluda-Verdú et al., 2022). This paradigm shift has also extended to financial markets, evidenced by a significant increase in the supply of sustainable investment products in recent years (Driessen, 2021). As a result, the strategic integration of sustainability into corporate business models has assumed a pivotal role for investors, directly influencing their capital allocation decisions (Sciarelli et al., 2021).

For investors, the acquisition of reliable information on ESG criteria during an IPO remains a challenge. The limited availability of credible data sources hinders a thorough due diligence process and comprehensive risk assessment prior to a company's public debut (Ilhan et al., 2023). In addition to voluntary disclosures of ESG data within IPO prospectuses, ESG ratings serve as a critical mechanism for evaluating a company's sustainability efforts. These ratings, issued by a variety of agencies, can be commissioned by companies themselves to voluntarily communicate ESG-related information. While ESG ratings aim to provide an objective assessment of corporate sustainability, achieving complete neutrality in scoring is not attainable (Jámbor & Zanócz, 2023). Discrepancies between ratings from different agencies are common, often stemming from variations in the weighting and importance assigned to specific sustainability factors (Escrig-Olmedo et al., 2019).

The increasing importance of ESG ratings and sustainability strategies has begun to fundamentally reshape investor decision-making, concurrently with a significant rise in academic and scientific interest in these subjects. This evolution has prompted a reevaluation of established economic concepts, such as market efficiency and regulatory mechanisms (Friede et al., 2015). Investors now systematically incorporate ESG criteria into their investment strategies, either to divest from companies that do not align with their sustainability values or to actively seek out firms with superior ESG performance that are congruent with their financial objectives (Nakajima et al., 2021). In the specific context of IPO pricing, at least three distinct mechanisms through which ESG ratings may influence underpricing can be identified. First, ESG ratings may function as a signal of lower ex ante uncertainty: a strong sustainability profile reduces the informational gap between issuer and investor, thereby narrowing the underpricing discount required to compensate uninformed investors (Rock, 1986). Second, ESG performance may serve as a marker of overall firm quality, with high-rated firms being perceived as better governed and more resilient, attracting a broader and more confident investor base. Third, ESG ratings may operate as a reputational or regulatory signal whose relevance varies systematically across market types: in developed markets with mature ESG infrastructure, ratings are more credible and widely understood, whereas in emerging markets with less developed regulatory frameworks and lower investor familiarity with ESG metrics, the same signal may carry less weight. These three mechanisms generate distinct empirical predictions and help explain why the ESG effect on underpricing is found to be conditional on market context and observation period.

In the context of emerging markets, ESG exerts a particularly profound influence. Here, enhanced ESG performance is not merely perceived as a risk mitigation strategy but as a catalyst for economic and social development. Investments that adhere to ESG principles can contribute to elevating local standards in environmental protection, labor rights, and corporate governance. For firms from these markets, robust ESG disclosure can build trust among international investors, potentially lowering their cost of capital and improving access to global markets. A positive ESG track record can therefore serve as a signal of corporate quality, attracting investors who might otherwise be deterred by perceived higher risks (Huang, 2021).

In the specific context of IPOs, ESG factors and ratings play a vital role in shaping corporate communication strategies throughout the offering process, thereby ensuring that investors receive relevant data for informed decision-making (Zumente & Lāce, 2021). Transparent and effective communication is paramount for both the success of an IPO and the long-term strength of the company's capital structure. The phenomenon of IPO underpricing—defined as the setting of an initial share price below the intrinsic market value—is often indicative of information inefficiencies and asymmetries within financial markets (Rock, 1986). While short-term fluctuations are common, the persistent valuation gap between offering prices and subsequent market values is a widely documented trend across global stock exchanges (Rehkugler & Schenek, 2001). This observation suggests a potential correlation between the level of ESG information disclosed and the magnitude of IPO underpricing.

This study aims to empirically analyze the influence of pre-IPO ESG ratings and to investigate the relationship between the publication of this information and the underpricing effect. Furthermore, the analysis will **examine differences between developed and emerging markets in Europe.**

2. Research Hypothesis

To evaluate the hypothesized effects on the dependent variable, the study employs an Ordinary Least Squares (OLS) regression, a method well-suited for the analysis of IPO-related data. The linear regression framework is utilized to investigate the relationship between the dependent and independent variables. A dedicated section of the analysis further concentrates on the subsample of firms with an ESG rating and the relationship between the ESG score and underpricing:

$$H1: IR_{ad} = \alpha + ESG_{rating} + \ln(\text{Assets}) + \ln(\text{revenues}) + \ln(\text{offer price}) + \ln(\text{age}) + VC_{dummy} + UW_{ranking}$$

For this model, the analysis places particular emphasis on rated firms as well as European companies operating in emerging markets.

3. Methodology and Data

This study examines the influence of ESG ratings on IPO underpricing drawing on a sample of IPOs from the European capital market. The sample includes IPOs between 2014 and 2023. The Refinitiv Eikon database from the London Stock Exchange Group (LSEG) was used to obtain the primary data. This database contains essential information on IPO offer prices and closing prices, issue date, economic sectors, issuing bank, use of venture capital and financial metrics.

Firms that did not successfully complete their IPOs or failed to disclose financial ratios were removed from the dataset, as these ratios are essential for constructing and analyzing the control variables. In order to ensure comparability between the various IPOs in different countries, the respective national currencies were converted into euros on the reporting dates.

To ensure that the ESG rating employed in this study remains objective and free from potential bias associated with company self-reporting, ratings from the RepRisk ESG database were utilized. RepRisk focuses primarily on ESG-related risks, drawing exclusively on external and publicly available information. The database employs machine learning tools to systematically collect data on a daily basis, which is then transformed into a quantifiable score—the RepRisk Index (RRI). This score determines the RepRisk Rating (RRR), ranging from AAA to D, thereby enabling comparability and benchmarking across firms.

Daily ESG ratings for the period 2014 to 2023 were obtained for all ISINs contained in the Refinitiv Eikon dataset through the Wharton Research Data Services (WRDS) platform.

3.1 Variables

3.1.1 Dependent Variable

The dependent variable of this study is IPO underpricing, measured by the initial return (IR). The principal independent variable is the pre-IPO ESG rating, operationalised via the RepRisk rating. ESG disclosure is not treated as a separate dependent variable in this model; rather, the RepRisk rating serves as an objective, externally sourced proxy for a firm's sustainability transparency, thereby capturing the information-reducing function of ESG disclosure within a single composite measure.

Alongside voluntary ESG information disclosure, underpricing is examined as a dependent variable, serving as a proxy for the degree of uncertainty. The assessment of underpricing, as well as the associated opportunity costs for issuers, necessitates a quantitative framework in which the initial return (IR) functions as the primary measure. The initial return is calculated as follows:

$$IR = \frac{(P_{o,t} - E_i)}{E_i}$$

3.1.2 Independent Variables

The assigned values are not arbitrary but reflect two established principles from the credit rating and ESG literature. First, the upper range of the scale (AAA = 0.9 to BBB = 0.6) is spaced at equal intervals of 0.1, consistent with the assumption that incremental improvements in high ESG performance carry roughly symmetric informational value for investors. Second, the lower end of the scale is deliberately compressed (B = 0.3, CCC = 0.2, CC = 0.1, C = 0.001), reflecting the well-documented asymmetry in reputational and financial risk: a deterioration into sub-investment-grade ESG territory is associated with disproportionately severe consequences for firm reputation, investor confidence, and access to capital (Cantor & Packer, 1996). This non-linear treatment of the lower tail is analogous to approaches used in the sovereign and corporate credit rating literature, where the distance between low-grade categories is understood to carry greater risk weight than equivalent steps at the top of the scale. The value of 0.001 assigned to the lowest rating category (C) — rather than 0.0 — preserves the distinction between a rated firm at the bottom of the scale and an unrated firm, for which a score of 0.0 is reserved. It is acknowledged that this transformation imposes quasi-cardinal assumptions on an inherently ordinal variable; the chosen scaling is therefore

presented as a theoretically motivated approximation rather than a precise measurement, and its implications for the interpretation of regression coefficients should be borne in mind when reading the results.

Table 1: ESG Ratings – Value

Rating Score	Value
AAA	0.9
AA	0.8
A	0.7
BBB	0.6
BB	0.5
B	0.3
CCC	0.2
CC	0.1
C	0.001
Not rated	0.0

3.1.3 Control variables

The control variables are classified into three categories: firm characteristics, offer characteristics, and market characteristics.

Firm characteristics include proxies for company size, such as revenues, which are expected to influence investor decision-making. Larger firms are generally perceived as less risky, implying that companies with higher revenues should exhibit lower levels of underpricing (Leone et al., 2007). Total assets are included as an additional size-related proxy, as they, too, can mitigate informational asymmetries and thereby reduce uncertainty. Firm age—measured as the difference between the founding year and the IPO year—is also incorporated. Older firms typically provide more extensive financial histories and greater publicly available information, which diminishes ex-ante uncertainty and, consequently, IPO underpricing (Engelen & van Essen, 2010).

Market characteristics are captured by factors such as venture capital (VC) involvement. IPOs backed by VC investors often exhibit higher underpricing relative to those without such backing, potentially reflecting the elevated perceived risk associated with VC-financed firms (Lowry & Schwert, 2004). Similarly, listings on the NASDAQ are frequently associated with greater underpricing, as the exchange is characterized by smaller, younger, and more technology-oriented firms (Corwin, 2003).

Offer characteristics include the reputation of the bookrunner responsible for managing the IPO process. Issuers engaging highly reputable underwriters generally experience lower underpricing, as the credibility of a prestigious bookrunner conveys reliability and trustworthiness to investors. In this study, underwriter reputation is operationalized using Ritter’s underwriter ranking, scaled from 0 to 9.1, with particular emphasis placed on the lead underwriter identified in the dataset.

Source: (Author’s construct, 2019)

3.2 Descriptive statistics

For the period from 2014 to 2023, 1,927 observations of IPOs were made for which data on the aforementioned variables were available. Of the total number of observations, 198 companies can be classified as emerging markets. Based on the classification of the International Monetary Fund (IMF), the following countries were classified as emerging markets: Bulgaria, Czech Republic, Greece, Hungary, Poland, Romania, Russia, Turkey, and Ukraine. The Czech Republic and Greece were included in this grouping even though they are now considered emerged markets. The distribution of IPOs is roughly the same across the observation period, with 2021 being an outlier. Figure 1 shows the stagnant to slightly negative trend in the number of IPOs per year.

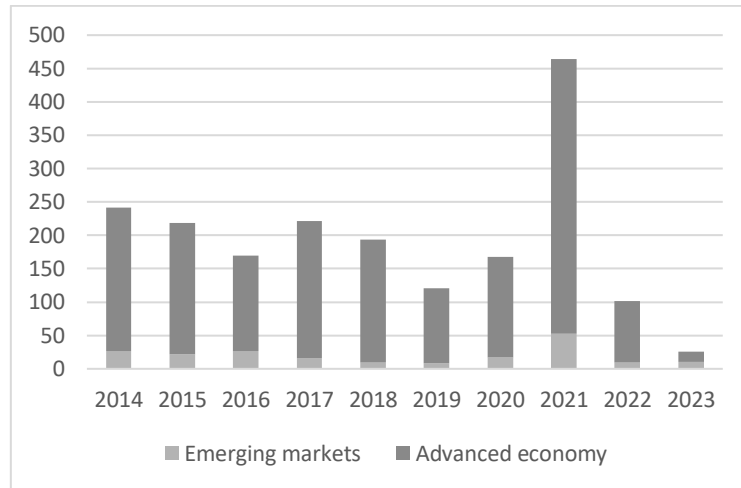


Figure 1: European IPOs between 2014 and 2023

The proportion of IPOs from emerging markets plays a minor role in the overall picture (10.28%). The distribution remains relatively constant over time. Between 2017 and 2019, the rate fell from 15.88% to 7.24%, 4.64%, and 6.61%. The distribution peaked in 2023, although only 26 IPOs were observed in total.

If only observations with a RepRisk rating are taken into account, the number of observations drops to 427. This corresponds to 22.16% of the total sample. The relative share of IPOs from emerging markets remains roughly the same on average (9.37%). The overall trend, including the 2021 outlier, mirrors the pattern observed in Figure 1. The relative share of rated IPOs falls from an initial 30.58% in 2014 to a low of 9.80% in 2022. A stable level of approximately 19% can be seen in the years 2017–2019. Subsequently, the relative share of IPOs with a RepRisk rating falls annually (Figure 2).

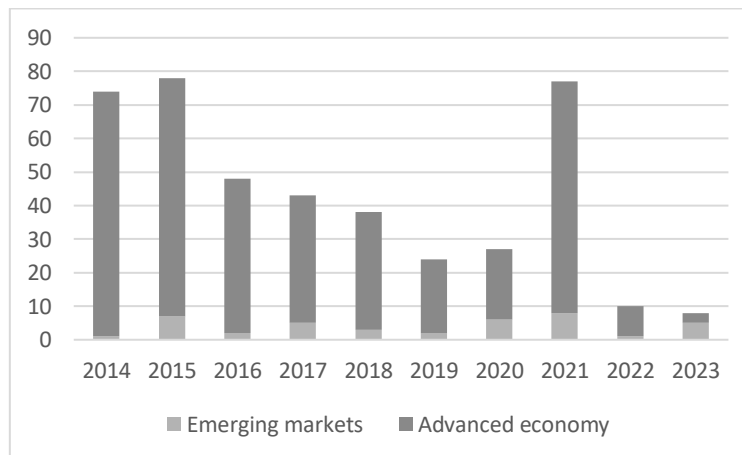


Figure 2: European IPOs with RepRisk Rating between 2014 and 2023

Table 2 shows a summary of the descriptive statistics for the total sample, grouped into the following subcategories: ESG rating, transaction characteristics, and firm and market characteristics. The average underpricing of the total sample is 23.4%, with average assets per IPO amounting to €1,498,969 million and revenues amounting to €364,842 million. Furthermore, the average bookrunner ranking is 2.764, which indicates that a large proportion of the sample has no rating, as the rating scale ranges from 0 to 9.1. This may be due to the high proportion of European bookrunners who have no rating in Ritter's underwriting ranking. The proportion of companies supported by venture capital is low at 3.27% compared to other capital markets (e.g., the US 28.3%) (Zasepa, 2025). The average age of the companies is 20 years at the time of their respective IPOs. Approximately 21.07% of the companies have a RepRisk rating at the time of their IPO, with an average rating of 17.25%.

Table 2: Summary statistics: European IPOs between 2014 and 2023

	n	Mean	sd	IQR	Min	p25	Median	p75	Max
ESG rating characteristics									
Rating before IPO	1927	0.1725	0.3331	0.0000	0.0000	0.0000	0.0000	0.0000	0.9000
Rating before IPO (dummy)	1927	0.2107	0.4079	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Transaction characteristics									
Total Assets	1927	1,498.969	13,129.207	203.913	-	7.478	37.118	211.391	412,863.073
Total Revenues	1927	364.842	1,743.789	122.165	-407.456	0.718	17.734	122.884	41,810.467
Underpricing	1927	0.234	5.090	0.193	- 1.000 -	0.027	0.032	0.166	167.323
Offer Price	1927	7.526	12.128	7.852	0.010	1.508	3.802	9.360	240.000
Bookrunner.ranking	1927	2.764	3.076	3.000	1.001	1.001	1.001	4.001	9.001
Firm and market characteristics									
Company age	1927	20	28	17	1	6	12	23	441
Venture Capital Dummy	1927	0.0327	0.1779	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

If only companies that received a RepRisk rating during the observation period at the time of their IPO are considered, the number of observations drops to 427. The average rating of these companies is 0.77, which is between the scores A and AA. Compared to the overall sample, the average assets and revenues are significantly higher at EUR 5,121.547 million and EUR 985.737 million, respectively, indicating more established companies. This is supported by the higher average age of 28 years compared to 20 years. Underpricing is slightly higher at 25.1%, but at a similar level to the overall sample. The bookrunner ranking is slightly higher at 4.25, which also indicates more established companies, as they work with well-known bookrunners. As in the overall sample, venture capital also plays a rather minor role at 5.15%. A summary of this data can be found in Table 3.

Table 3: Summary statistics: European IPOs RepRisk rated between 2014 and 2023

	n	Mean	sd	IQR	Min	p25	Median	p75	Max
ESG rating characteristics									
Rating before IPO	427	0.7785	0.1694	0.2000	0.1000	0.7000	0.9000	0.9000	0.9000
Rating before IPO (dummy)	427	0.9508	0.2165	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000
Transaction characteristics									
Total Assets	427	5,121.547	26,808.509	1,731.812	-	77.206	439.856	1,809.017	412,863.073
Total Revenues	427	985.737	2,435.231	819.014	-	35.450	215.900	854.464	18,446.285
Underpricing	427	0.251	5.045	0.157	- 1.000 -	0.025	0.023	0.132	103.944
Offer Price	427	11.313	17.700	11.059	0.013	2.791	5.800	13.850	240.000
Bookrunner.ranking	427	4.253	3.696	7.375	1.001	1.001	1.001	8.376	9.001
Firm and market characteristics									
Company age	427	28	34	30	1	8	16	38	250
Venture Capital Dummy	427	0.0515	0.2213	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

Table 4 below shows the distribution of ratings. In addition to the distribution of the total sample, the distribution for IPOs in emerging markets is also shown. In principle, a similar proportion of companies are rated in both segments (approx. 20%), but the distribution differs between segments. The total number shows a high concentration in the AAA range (11.11%), while among companies from emerging markets, the highest concentration is in the B rating level (5.05%), which was to be expected.

Table 4: Distribution RepRisk Rating

Rating Score	Europe		Emerging Markets Europe	
	n	in %	n	in %
AAA	214	11.11%	1	0.51%
AA	78	4.05%	7	3.54%
A	59	3.06%	3	1.52%
BBB	33	1.71%	3	1.52%
BB	22	1.14%	8	4.04%
B	13	0.67%	10	5.05%
CCC	6	0.31%	6	3.03%
CC	2	0.10%	2	1.01%
C	0	0.00%	0	0.00%
not rated	1500	77.84%	158	79.80%

If the focus is placed solely on the subsample of IPOs from emerging markets, a significantly higher underpricing of 4.5.3% on average can be observed (Table 5). Furthermore, due to other market conditions, assets and revenues are on average lower than IPOs from other European markets. VC participation is similar to the overall sample (4.04%), while companies from emerging markets are slightly younger on average at 18 years.

Table 5: Summary statistics: European IPOs RepRisk Rating between 2014 and 2023 - Emerging Markets

	n	Mean	sd	IQR	Min	p25	Median	p75	Max
ESG rating characteristics									
Rating before IPO	198	0.0949	0.2163	0.0000	0.0000	0.0000	0.0000	0.0000	0.9000
Rating before IPO (dummy)	198	0.1111	0.3151	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Transaction characteristics									
Total Assets	198	626.274	2,637.475	173.458	-	14.600	48.622	188.058	22,764.118
Total Revenues	198	432.692	2,197.064	100.811	-407.456	6.232	27.961	107.043	27,064.290
Underpricing	198	0.453	7.406	0.205	- 1.000	- 0.035	0.024	0.170	103.944
Offer Price	198	5.034	6.980	6.223	0.013	0.898	2.088	7.121	51.139
Bookrunner.ranking	198	2.010	2.586	-	1.001	1.001	1.001	1.001	9.001
Firm and market characteristics									
Company age	198	18	14	15	1	9	16	24	71
Venture Capital Dummy	198	0.0404	0.1974	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

If the observations are broken down by economic sector as shown in Table 6, different conclusions can be drawn regarding underpricing. This is particularly pronounced in the real estate and utilities sectors. At the same time, these sectors account for a large proportion of IPOs in emerging markets. Another notable feature is that companies in the consumer cyclicals, energy, basic materials, and consumer non-cyclicals sectors have a higher ESG rating (> 25.0%) than other sectors. Since the available liquidity on capital markets in emerging markets can be limited, a modification of underpricing was made (Donadelli & Prospero, 2012). In order to make a statement about the short-term effect of underpricing in these specific capital markets, underpricing was determined using the average closing price of the 30 days following the IPO. The table below shows that this can lead to different statements about underpricing. For example, underpricing in the utilities sector falls from 2.23 to 1.41. In order to make a complete statement about the underpricing effect in emerging markets, both underpricing and modified underpricing are taken into account in the regression analysis.

Table 6: Summary statistics: European IPOs by economic Sector between 2014 and 2023

Economic Sector	n	Rating before IPO	Rating before IPO (dummy)	Total Assets	Total Revenues	Underpricing
Academic & Educational Services	8	0.1125		0.1250	47.971	-0.0522
Basic Materials	101	0.2396		0.2871	933.819	0.1404
Consumer Cyclicals	296	0.2601		0.3209	774.830	0.0323
Consumer Non-Cyclicals	90	0.2267		0.2667	515.851	0.0993
Energy	62	0.2903		0.3226	1,451.484	0.0630
Financials	265	0.1940		0.2491	6,100.844	-0.0074
Government Activity	5	0.0000		0.0000	3.083	0.0384
Healthcare	271	0.0923		0.1107	214.078	0.6594
Industrials	336	0.1780		0.2232	1,577.376	-0.0170
Institutions, Associations & Organizations	1	0.0000		0.0000	0.089	0.1095
Real Estate	64	0.1453		0.1719	725.134	1.5594
Technology	381	0.1066		0.1260	337.628	0.0993
Utilities	47	0.1234		0.1489	1,026.539	2.2324

Economic Sector	Underpricing (modified)	Offer Price	Bookrunner.ranking	Company age	Venture Capital Dummy	Emerging Market
Academic & Educational Services	-0.0522	4.8075	1.0010	18.25	0.0000	0 (0%)
Basic Materials	0.0698	5.3333	2.7270	30.47	0.0000	21 (20.79%)
Consumer Cyclicals	0.0226	7.9505	3.0623	26.83	0.0709	25 (8.45%)
Consumer Non-Cyclicals	0.0504	6.3639	2.1410	38.80	0.0333	16 (17.78%)
Energy	-0.0235	7.1782	2.8432	9.85	0.0161	8 (12.9%)
Financials	0.0619	7.8988	3.7354	16.12	0.0151	22 (8.3%)
Government Activity	0.0384	2.2940	1.6010	15.60	0.0000	0 (0%)
Healthcare	0.6546	8.8835	3.1001	12.63	0.0517	16 (5.9%)
Industrials	0.0113	8.4583	2.4202	26.20	0.0208	36 (10.71%)
Institutions, Associations & Organizations	0.1095	0.0546	1.0010	3.00	0.0000	0 (0%)
Real Estate	1.5144	6.8961	2.6485	17.22	0.0156	12 (18.75%)
Technology	0.0892	6.3297	2.2225	14.84	0.0289	29 (7.61%)
Utilities	1.4198	7.3920	2.0937	14.64	0.0213	13 (27.66%)

4. Results

The tables below present the results of the OLS regression analyses for the full European IPO sample (Table 7) and the subsample of rated firms (Table 8). Each table reports coefficient estimates, standard errors, and significance levels for all explanatory variables. The bivariate correlations are provided as supplementary context only and should not be interpreted as the primary evidence. Across both specifications, a strong negative and statistically significant relationship (at the 99% confidence level) is observed between the offer price and underpricing. This finding is

contrary to signaling theory, in which a higher offer price would be expected to convey positive information and reduce underpricing; instead, the negative coefficient suggests that higher-priced offerings are associated with lower initial returns, possibly reflecting selection effects among larger, more established issuers.

Table 7: OLS Regressions Results: European IPOs between 2014 and 2023

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.45106	0.28793	1.567	0.1174
Bookrunner.ranking	0.01703	0.04454	0.382	0.7022
ln_age	0.08394	0.24869	0.338	0.7358
ln_assets	0.30352	0.1715	1.77	0.0769
ln_offer.price	-1.27339	0.21484	-5.927	3.65E-09 ***
ln_revenues	-0.12908	0.16245	-0.795	0.427
Rating_value	-0.04336	0.38279	-0.113	0.9098
VC.Dummy	0.06025	0.65126	0.093	0.9263

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Table 8: OLS Regressions Results: European IPOs (rated) between 2014 and 2023

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.63105	1.40436	1.873	0.0617
Bookrunner.ranking	0.02038	0.0752	0.271	0.7865
ln_age	-0.16144	0.46579	-0.347	0.7291
ln_assets	0.46281	0.32782	1.412	0.1588
ln_offer.price	-2.54715	0.48498	-5.252	0.0000024 ***
ln_revenues	0.27642	0.28053	0.985	0.325
Rating_value	-2.71968	1.45251	-1.872	0.0618
VC.Dummy	-0.08601	1.07088	-0.08	0.936

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

No further significance can be identified in either sample with regard to the control variables. The situation is similar with the ESG rating. Neither in the rated sample nor in the overall sample does the RepRisk rating have an impact on underpricing. This is contrary to expectations, which would suggest that a positive ESG rating would have a negative impact on underpricing by reducing information asymmetries (Horn, 2023).

Since part of the period under review coincides with the COVID-19 pandemic and the conflict between Russia and Ukraine, a modified review horizon for the years 2014–2019 will be used in the following. Crises and other global events can have a significant impact on investor behavior and shift the parameters according to which trades are executed. Looking at the rated companies for the period 2014–2019 (Table 9), a strong significance can be observed between the offer price and underpricing, as in the previous regression analysis. There is a significant change with regard to the ESG rating: the influence of RepRisk ratings in a rated sample is statistically significant and negative at a confidence level of 99%. This is consistent with the assumption that the rating reduces information asymmetry and consequently reduces underpricing.

Table 9: OLS Regressions Results: European IPOs (rated) between 2014 and 2019

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	8.73002	2.36456	3.692	0.000265 ***
Bookrunner.ranking	0.03712	0.09824	0.378	0.705768
ln_age	-0.27578	0.62335	-0.442	0.658507
ln_assets	0.34533	0.43945	0.786	0.432599
ln_offer.price	-4.13865	0.68714	-6.023	5.05E-09 ***
ln_revenues	0.48659	0.38019	1.28	0.201593
Rating_value	-8.69642	2.3774	-3.658	0.000301 ***
VC.Dummy	-0.09394	1.23109	-0.076	0.939225

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

When the sample of emerging market IPOs is examined in isolation, the offer price remains, as in the full European sample, a significant variable (Table 10). The RepRisk rating has no significant influence on underpricing. No other significant variables can be identified.

Table 10: OLS Regressions Results: European IPOs (rated) from Emerging Markets between 2014 and 2023

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.6063	12.3128	0.212	0.8337
Bookrunner.ranking	-0.1823	0.7467	-0.244	0.80872
ln_age	-5.0636	7.241	-0.699	0.48942
ln_assets	-0.8392	4.5532	-0.184	0.85493
ln_offer.price	-12.5098	3.9346	-3.179	0.00327 **
ln_revenues	4.1268	3.7566	1.099	0.28017
Rating_value	8.888	12.2208	0.727	0.47234
VC.Dummy	2.6923	9.7043	0.277	0.78323

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

If we consider the modified underpricing, which was calculated using the average price of the first 30 trading days, Table 11 shows that the offer price is not significant when taking into account a medium-term effect. However, it should be noted that the 40 rated IPOs from emerging markets represent a small sample. For this reason, a shorter period is not considered, as the number of rated IPOs in this subset would fall to 20 for the period 2014–2019. The non-significant result for ESG ratings in the emerging-market subsample should therefore be interpreted with considerable caution. Given the limited number of rated observations, the analysis may lack sufficient statistical power to detect a true effect even if one exists. The absence of significance is thus consistent with two distinct interpretations: either ESG ratings genuinely do not reduce information asymmetry in emerging European capital markets, or the available data are insufficient to identify such an effect. These findings are best treated as suggestive rather than definitive, and future research with larger rated samples from emerging markets is needed before stronger conclusions can be drawn.

Table 11: OLS Regressions Results modified: European IPOs (rated) from Emerging Markets between 2014 and 2023

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.2682	14.8989	-0.018	0.9857
Bookrunner.ranking	-0.2234	0.9035	-0.247	0.8063
ln_age	-5.1526	8.7619	-0.588	0.5606
ln_assets	-1.4899	5.5096	-0.27	0.7886
ln_offer.price	8.5749	4.7609	1.801	0.0811 .
ln_revenues	4.9251	4.5456	1.083	0.2867
Rating_value	8.4222	14.7875	0.57	0.573
VC.Dummy	-15.8387	11.7425	-1.349	0.1869

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

4.1 Robustness check

To ensure the econometric validity of the estimated model, the core assumptions of regression analysis were rigorously examined. The diagnostic process focused on assessing autocorrelation, correct functional form, and multicollinearity.

First, the presence of autocorrelation in the residuals was assessed using the Durbin-Watson (DW) test. The resulting DW values are close to the ideal value of 2.0, which strongly suggests the absence of significant serial correlation and thereby confirms the independence of the error terms.

Second, the structural integrity of the model's functional form was evaluated via the Ramsey RESET test. The calculated significance levels for this test are sufficiently high to retain the null hypothesis of correct model specification, effectively mitigating concerns regarding potential specification error.

Finally, multicollinearity among the explanatory variables was investigated using the Variance Inflation Factor (VIF). Given that all VIF values remain well below the commonly accepted critical threshold of 5 or 10, (Cleff, 2012) the existence of harmful multicollinearity within the current model can be definitively dismissed.

Collectively, these diagnostic results confirm the statistical robustness and validity of the estimated model.

5. Conclusion and Recommendations

This study investigated the influence of pre-IPO Environmental, Social, and Governance (ESG) ratings on the underpricing effect in initial public offerings (IPOs), specifically leveraging the RepRisk rating as an indicator. The central aim was to ascertain whether ESG ratings function as a mechanism to mitigate information asymmetry, thereby contributing an additional explanatory factor to the underpricing phenomenon. The empirical analysis focused on the both developed and emerging European IPO markets, selected due to their advanced stage of implementing and emphasizing ESG measures globally.

The empirical results exhibit substantial consistency with established academic literature, although certain control variables yielded outcomes contrary to initial expectations. Notably, the research offers partial support for the premise that enhanced transparency, facilitated by ESG ratings, leads to a reduction in information asymmetry. However, this study demonstrates this for the period prior to the COVID-19 pandemic for rated companies only. This is inconsistent with the argument that ESG activities make a positive contribution to market stability in times of crisis and close information gaps (Yoo et al., 2021). Furthermore, no significant influence of ESG ratings on IPOs in emerging markets could be identified. This is consistent with prior evidence reporting a similarly absent ESG effect in emerging market equity returns (Plastun et al., 2022).

The central contribution of this study is not a universal claim that ESG ratings reduce IPO underpricing, but rather the finding that their influence is conditional: it depends on the observation period, the specific submarket, and whether firms carry an externally assigned ESG rating. Concretely, a significant negative effect of the RepRisk rating on underpricing was identified for rated companies in the pre-COVID period (2014–2019), consistent with the hypothesis that ESG transparency reduces information asymmetry. This effect disappears for the full sample period and is not detectable for emerging-market IPOs, though the latter result is limited by a small rated subsample. This conditionality is the paper's primary empirical finding and should be foregrounded accordingly. For issuers and underwriters, the results suggest that investing in credible ESG ratings may contribute to more efficient IPO pricing in stable, developed market conditions, but that this benefit cannot be assumed to hold universally across market regimes or crisis periods. For policymakers, the findings highlight the importance of building ESG rating infrastructure and investor literacy in emerging markets as a precondition for ESG signals to become effective pricing inputs.

Several limitations constrain the conclusions that can be drawn from this study. First, the reliance on a single ESG rating agency (RepRisk) limits the generalizability of the findings; the ESG literature has documented substantial divergence across rating providers, and the conditional effect identified here may not replicate with alternative rating sources. Future research should incorporate ratings from multiple agencies and test whether the pre-COVID effect holds across different ESG measurement frameworks. Second, the exclusion of IPOs with incomplete financial data introduces a potential selection bias, as systematically less transparent firms are removed from the sample. Third, the very small number of rated IPOs in the emerging-market subsample (40 observations total) means that the non-significant result for this group should be treated as inconclusive rather than as evidence of no effect. Future studies should expand the emerging-market sample and, where possible, disaggregate the European market by country to account for the substantial regulatory heterogeneity that a pan-European treatment obscures. These country-level legal and institutional factors likely mediate the relationship between ESG ratings and underpricing in ways the present model cannot fully capture.

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Appendix

European IPOs between 2014 and 2023

Variance Inflation Factor (VIF)

	Bookrunner	Dummy.N	ln_age	ln_assets	ln_revenue	Pct...Rating	VC.Dummy
	1.0880	1.0735	1.0357	1.2752	1.2751	1.0212	1.0696
(Intercept)	1	-0.615	-0.132	-0.108	0.051	-0.778	0.028
Bookrunner.ranking	-0.615	1	0.179	0.015	-0.071	0.043	-0.208
Dummy.Nasdaq	-0.132	0.179	1	-0.103	0.06	-0.038	-0.087
ln_age	-0.219	0.015	-0.103	1	-0.027	0.107	-0.107
ln_assets	-0.108	0.022	0.084	-0.027	1	0.039	-0.066
ln_revenues	0.051	-0.071	0.06	0.015	-0.441	1	-0.013
Pct...Rating.before.IPO	-0.778	0.043	-0.038	0.107	0.039	0.031	1
VC.Dummy	0.028	-0.208	-0.087	-0.107	-0.066	-0.013	-0.047

Durbin-Watson test

DW	p-value
2.0191	0.5675

RESET test

RESET	df1	df2	p-value
0.57517	14	343	0.8842

European rated IPOs between 2014 and 2023

Variance Inflation Factor (VIF)

	Bookrunner	Dummy.N	ln_age	ln_assets	ln_revenue	Pct...Rating	VC.Dummy
	1.3378	1.1439	2.0088	1.2434	1.6957	1.0857	1.0075
(Intercept)	1	0.013	-0.28	-0.365	-0.04	0.03	-0.893
Bookrunner.ranking	0.013	1	0.229	-0.256	-0.277	-0.06	-0.079
Dummy.Nasdaq	-0.28	0.229	1	-0.124	-0.169	-0.1	0.079
ln_age	-0.365	-0.256	-0.124	1	-0.15	-0.555	0.236
ln_assets	-0.04	-0.277	-0.169	-0.15	1	-0.006	-0.013
ln_revenues	0.03	-0.06	-0.1	-0.555	-0.006	1	-0.086
Pct...Rating.before.IPO	-0.893	-0.079	0.079	0.236	-0.013	-0.086	1
VC.Dummy	0.011	0.001	-0.01	0.034	-0.007	-0.067	-0.045

Durbin-Watson test

DW	p-value
2.0827	0.7543

RESET test

RESET	df1	df2	p-value
0.90717	7	412	0.5007

European rated IPOs between 2014 and 2019

Variance Inflation Factor (VIF)

	Bookrunner	Dummy.N	ln_age	ln_assets	ln_revenue	Pct...Rating	VC.Dummy	
	1.3892	1.1749	2.2793	1.3533	1.8510	1.0886	1.0102	
(Intercept)	1	0.015	-0.309	-0.348	0.11	0.032	-0.862	0.032
Bookrunner.ranking	0.015	1	0.237	-0.263	-0.255	-0.062	-0.108	-0.005
Dummy.Nasdaq	-0.309	0.237	1	-0.165	-0.165	-0.087	0.058	-0.006
ln_age	-0.348	-0.263	-0.165	1	-0.227	-0.575	0.226	0.013
ln_assets	0.11	-0.255	-0.165	-0.227	1	0.009	-0.145	-0.005
ln_revenues	0.032	-0.062	-0.087	-0.575	0.009	1	-0.081	-0.064
Pct...Rating.before.IPO	-0.862	-0.108	0.058	0.226	-0.145	-0.081	1	-0.058
VC.Dummy	0.032	-0.005	-0.006	0.013	-0.005	-0.064	-0.058	1

Durbin-Watson test

DW	p-value
2.0128	0.5368

RESET test

RESET	df1	df2	p-value
1.358	7	290	2.23E-01

European IPOs (rated) from Emerging Markets between 2014 and 2023

Variance Inflation Factor (VIF)

	Bookrunner	Dummy.N	ln_age	ln_assets	ln_revenue	Pct...Rating	VC.Dummy	
	1.1439	1.0953	2.3687	1.4287	2.4061	1.4412	1.1653	
(Intercept)	1	0.04	-0.676	-0.552	0.02	0.232	-0.351	0.124
Bookrunner.ranking	0.04	1	-0.006	-0.079	-0.141	-0.071	-0.186	0.085
Dummy.Nasdaq	-0.676	-0.006	1	0.169	-0.078	-0.245	0.019	-0.069
ln_age	-0.552	-0.079	0.169	1	0.201	-0.737	-0.037	0.044
ln_assets	0.02	-0.141	-0.078	0.201	1	-0.07	-0.402	-0.118
ln_revenues	0.232	-0.071	-0.245	-0.737	-0.07	1	-0.001	-0.105
Pct...Rating.before.IPO	-0.351	-0.186	0.019	-0.037	-0.402	-0.001	1	-0.238
VC.Dummy	0.124	0.085	-0.069	0.044	-0.118	-0.105	-0.238	1

Durbin-Watson test

DW	p-value
1.8327	0.2586

RESET test

RESET	df1	df2	p-value
6.5399	7	25	1.92E-04

European IPOs (rated) from Emerging Markets between 2014 and 2023 – modified Underpricing

Variance Inflation Factor (VIF)

	Bookrunner	Dummy.N	ln_age	ln_assets	ln_revenue	Pct...Rating	VC.Dummy	
	1.1439	1.0953	2.3687	1.4287	2.4061	1.4412	1.1653	
(Intercept)	1	0.04	-0.676	-0.552	0.02	0.232	-0.351	0.124
Bookrunner.ranking	0.04	1	-0.006	-0.079	-0.141	-0.071	-0.186	0.085
Dummy.Nasdaq	-0.676	-0.006	1	0.169	-0.078	-0.245	0.019	-0.069
ln_age	-0.552	-0.079	0.169	1	0.201	-0.737	-0.037	0.044
ln_assets	0.02	-0.141	-0.078	0.201	1	-0.07	-0.402	-0.118
ln_revenues	0.232	-0.071	-0.245	-0.737	-0.07	1	-0.001	-0.105
Pct...Rating.before.IPO	-0.351	-0.186	0.019	-0.037	-0.402	-0.001	1	-0.238
VC.Dummy	0.124	0.085	-0.069	0.044	-0.118	-0.105	-0.238	1

Durbin-Watson test

DW	p-value
1.8933	0.3268

RESET test

RESET	df1	df2	p-value
0.62701	7	25	7.29E-01

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