

## RESEARCH ARTICLE

# Freshen up before going public: Do environmental, social, and governance factors affect firms' appearance during the initial public offering?

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## Abstract

Going public (or initial public offering IPO) is a corporate strategic decision for value enhancement. Underpricing is a phenomenon related to going public and has been studied from a purely financial perspective. In this paper, we investigate whether underpricing incorporates sustainability performance pre-IPO by establishing an original linkage between underpricing and ESG factors before the firm's listing on stock markets. Using informational asymmetries and quality signaling frameworks, we track the journey of going public by Italian Small Medium Enterprises (SMEs) from 2009 to 2017 and show how sustainability issues are incorporated into the IPO underpricing. We demonstrate that underpricing is strongly related to financial and sustainability variables only in the year just before the IPO, indicating better informational efficiency, quality signaling, and image-improving practice. The post-IPO stock return is less correlated with the firm's financial and ESG variables, suggesting that markets can incorporate such information into stock returns in the long run. This paper provides novel insights by delivering an original linkage between a firm's public listing attributes and sustainability performance, offering a temporal tracking of the SMEs before and after the IPO, emphasizing the role of sustainability in the IPO process.

## KEYWORDS

ESG rating, financial indicators, going public, post-IPO performance, SMEs, underpricing

## 1 | INTRODUCTION AND RATIONALE

Firms try to cope with the new paradigm for doing business by improving their sustainability performance and image, which stems from demand, supply, and regulations. Firms follow voluntary or mandatory business sustainability practices and reporting according to

their operating context. Corporate governance models have also been changing to enhance the assurance of ESG<sup>1</sup> integration in the business models as a strategic value creation approach. In this regard, managers are under pressure from stakeholders to ensure that their companies are operating sustainably and incorporate ESG issues in their practices to shape a new corporate identity (Al-Shaer & Zaman, 2018; Amran et al., 2014; Dutta et al., 2012; Jizi, 2017).

**Abbreviations:** AR, abnormal return; BoD, board of directors; CAPEX, capital expenditure; EBITDA, earnings before interest, tax, depreciation, and amortization; EPS, earnings per share; ESG, environmental, social, and governance; IPOs, initial public offerings; NFP, net financial position; PEG, price earnings to growth ratio; SMEs, small and medium enterprises.

<sup>1</sup>In this paper, we treat ESG and sustainability as the same thing; therefore, they can be used interchangeably.

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Consequently, corporate ESG risks are becoming integral to enterprise risk management discussed at executive levels and represent risks and opportunities simultaneously. That is, companies need to strategically analyze their ESG positions and create a competitive advantage by dedicating special resources accordingly, thus enhancing reputation and value creation (Arena et al., 2018; Yadav et al., 2016). Financially wise, value is enhanced by improving reputation, which affects the firm's net cash flows (the idiosyncratic risk channel), or by lowering the systematic financial risk, which affects the cost of capital (market risk channel). As companies become aware of the various risks and opportunities related to sustainability issues, they start to pay more attention to sustainability practices and reporting and expand the responsibility of the entities in charge of corporate governance to address stakeholder expectations (Birkey et al., 2016; Darnall et al., 2009; de Villiers et al., 2011; Moroney et al., 2012; Simnett et al., 2009; Simnett et al., 2009). Studies on the impact of sustainability performance on a firm's performance show mixed results (Al Abri et al., 2017; Al-Shaer & Zaman, 2016, 2018; Provasi & Harasheh, 2021).

On the other hand, companies choose to be traded for the first time on financial markets as a strategic decision for different reasons at a particular stage in their business life. One of the dominant attributes of the initial public offering (IPO) is the underpricing phenomenon, which is the percentage decrease in the stock price in its first-day trading after the listing (Pagano et al., 1998; J. Ritter, 1984). Going public literature is well developed in finance; theories offer divergent theories and hypotheses trying to explain the decision of going public and other attributes related to it, such as underpricing and post-IPO stock performance. IPO decision theories vary from raising equity capital to fuel growth, windows of opportunities, quality signaling, ownership and liquidity, and publicity (Bradley et al., 2003; Brau et al., 2003; Chemmanur et al., 2005; Pagano et al., 1998; Zingales, 1995).

Previous studies treat this issue from an exclusive financial perspective. As for underpricing, perhaps information asymmetry (Beatty & Ritter, 1986; Rock, 1986) and signaling (Hong Teoh et al., 1998; Welch, 1989) theories are the most remarkable explanations for this phenomenon. Our contribution is integrating sustainability performance into underpricing explanations. We link the IPO attributes (underpricing and post-IPO stock performance) to ESG performance. In particular, we investigate whether firms improve their ESG performance before going public, how the potential improvement is linked to the underpricing, and whether the sustainability performance is incorporated in the stock return post-IPO.

Our theoretical framework is based on two underpricing explanations. In asymmetric information theory, the improved flow of information (ESG-related in our case) to external stakeholders before the IPO reduces asymmetries. It enhances the investment decision, thus lowering underpricing and the cost of going public. In positive quality signaling and image improving theories, as firms become closer to the IPO, they try to improve their ESG performance pre-IPO as a signal of quality and image enhancing practices to minimize the underpricing and cost of going public. Moreover, we also adopt the divergence of opinion hypothesis to explain the relationship between sustainability performance pre-IPO and post-IPO stock performance. As more

sustainability information is revealed to the market, informed and uninformed investors possess the same information; thus, sustainability becomes an integral part of market disclosure and would not affect the stock return. To our knowledge, this is the first study that investigates such a potential nexus. And we add to the ongoing literature on sustainability performance and finance IPO literature.

In this study, we integrate ESG factors as possible explanations for going public attributes (underpricing and post-IPO stock returns). We demonstrate two relevant findings; on the one hand, underpricing is negatively related to ESG rating pre-IPO, revealing the improved informational environment. Investors have enhanced quality information to better price the issues security, thus lowering underpricing. On the other hand, such a negative relationship is statistically significant only in the year before the IPO unveils the quality signaling and imaging-improving practices. The post-IPO stock return is less correlated with the firm's financial and ESG variables, suggesting that markets can incorporate financial and sustainability information into stock returns in the long run.

We focus on companies listed on AIM<sup>2</sup>-Italia, a market dedicated to small and medium-sized Italian companies with high growth potential regulated and managed by Borsa Italiana. Furthermore, Studying listed SMEs offers advantages to our study. Private SMEs can be considered a black box regarding information availability and disclosure. Conversely, publicly traded SMEs are often viewed as of higher quality due to the substantial transparency in equity markets. SMEs must pass specific standards set by financial markets and regulatory authorities to disclose more information as publicly traded SMEs. SMEs play a crucial role in knowledge spillover, technology transfer, and fostering innovations; such features contribute to a higher degree of informational asymmetry than large firms. Such features motivated us to study SMEs during the IPOs, focusing on information asymmetries and compliance.

The paper is divided into five sections; section two is dedicated to the related literature, section three discusses the methodology, section four deals with analysis and discussion, and finally, conclusions and implications are provided in section five.

## 2 | RELATED LITERATURE AND HYPOTHESES

Conventionally, a key benefit of going public has been the access to significant capital proceeds compared to the private markets. In their managerial survey, Brau and Fawcett (2006) found that the "need for capital to support growth" is one of the main reasons for going public. Public capital markets offer several advantages to listed firms and their investors, such as liquidity (Bodnaruk et al., 2008; Pagano et al., 1998), a currency for mergers and acquisitions (Celikyurt et al., 2010), and employee compensation flexibility. Founders considering a public offering must trade off such benefits against the loss of control (Brau & Fawcett, 2006) and other direct and indirect costs of

<sup>2</sup>AIM stands for "Mercato Alternativo del Capitale," is a multilateral trading facility (Multilateral Trading Facility or MTF) dedicated to small and medium-sized Italian companies with high growth potential regulated and managed by Borsa Italiana.

going public—including one-time listing costs as well as the ongoing costs of compliance (Aghamolla & Thakor, 2022; Farre-Mensa, 2017), takeover risk (Zingales, 1995), and short-term pressures and other agency problems (Asker et al., 2015; Bernstein, 2015). Moreover, the IPO activity has been declining since peaking in 1996 (Doidge et al., 2013, 2017; Ewens & Farre-Mensa, 2020; Gao et al., 2013). While this decline has garnered considerable attention in the academic and policy arena, its drivers and consequences remain open for research and discussion.

In this regard, capital markets and the academic literature have documented two relevant phenomena or attributes related to the IPO: underpricing (or initial return) and post-IPO stock performance (underperformance).

Underpricing can be defined as the percentage difference between the IPO price and the first-day trading price; it is the passage from the listing period to the secondary market trading. Underpricing is usually considered an opportunity cost of going public “money left on table” since the issuing firm could have issued the stock at a higher price collecting more proceeds from the IPO. Ibbotson and Jaffe (1975) conceive the IPO as a “leave a good taste” hypothesis.

Recent reviews have documented the possible explanations of the IPO underpricing phenomenon in the financial economics literature (Derrien & Womack, 2003; A Ljungqvist, 2007; Ritter, 2003; Ritter & Welch, 2002). Most explanations emphasize several institutional imperfections relating to asymmetric information, most notably concerning the ex-ante uncertainty of the issuer's intrinsic value (Beatty & Ritter, 1986; Brau & Fawcett, 2006; Füllbrunn et al., 2020).

Literature has also attributed IPO underpricing to issuer-specific factors, issue characteristics, market conditions, and the macroeconomic environment. As documented by Brau and Fawcett (2006) and Füllbrunn et al. (2020), we discuss the IPO underpricing explanations in a nonexhaustive manner.

Perhaps the most prominent rationale for underpricing is the asymmetric information explanation. In their experimental study, Brau and Fawcett (2006) find that some managers attribute most underpricing to market uncertainty and the lack of perfect information. From one angle, the information disparity between the underwriter and the issuer. Baron (1982) and Baron and Holmstrom (1980) claim that underwriters can obtain superior market knowledge and underprice the issue to create a tasty flavor for some institutional clients.

From a second angle, asymmetric information between issuers and potential investors might cause underpricing. According to Beatty and Ritter (1986), investors are uncertain about the true value; therefore, a discrepancy occurs between the offer price and the market due to valuation bias. Similarly, Benveniste and Spindt (1989), Benveniste and Wilhelm (1990), and Spatt and Srivastava (1991) show that underpricing rewards sophisticated investors for revealing relevant information during the book-building process used to value the issue accurately. Asymmetric information extends to asymmetries between informed and uninformed investors in which uninformed investors must be compensated in the form of underpricing for participating in the IPO (Rock, 1986). Drake and Vetsuypens (1993), Hughes and Thakor (1992), and Tinic (1988) argue that underpricing is better than overpricing, serving as a shield against possible future litigation from investors.

Moreover, underpricing is related to marketing and publicity. On one side, Welch (1992) proposed the cascade effect among investors that accelerates the demand for the issue. Habib and Ljungqvist (2001) claim that underpricing could substitute the marketing expense. Demers and Lewellen (2003) affirm that underpricing calls attention in the secondary markets. Boehmer and Fishe (2001) show that underpricing and secondary market stock liquidity are positively related.

Another explanation is related to the ownership base after the IPO. Some authors argue that underpricing facilitates creating a large base of investors, which enhances the market liquidity of the newly public firm (Booth & Chua, 1996). In contrast, Brennan and Franks (1997) suggest that underpricing affects the owners' base for different reasons, such as entrenching management. Stoughton and Zechner (1998) argue that underpricing creates active investor groups that can increase monitoring.

Another stream of research attests that underpricing might be used as a favoritism tool and to facilitate certain practices. Griffith (2004) and Maynard (2001) show that underpricing permits spinning—enriching executives of prospective investment bank clients. Aggarwal (2003), Fishe (2002), and Krigman et al. (1999) suggest that underpricing might lead to flipping by favored investors. Ljungqvist and Wilhelm (2003) assert that underpricing increases the wealth of family and friends through specialized share programs. Additionally, Hao (2007) and Liu and Ritter (2010) reveal some corruption issues related to the allocation rule in the IPO.

Finally, a less common explanation that falls under the behavioral theory was introduced by Loughran and Ritter (2002); it suggests issuers and existing founders are unexpectedly happy with the amount they raise in the IPO (personal wealth), and they care less about underpricing. Accordingly, the prospect theory suggests that they are not significantly concerned with underpricing; hence it exists. Still, the results are not consistent among countries and insufficient to explain the causes of underpricing. And that the drivers of underpricing are many and vary according to specific factors of the issuer, the IPO, and the economy (Katti & Phani, 2016).

Another aspect of asymmetric information is the signaling theory, which is an important component of IPO research. Signals can be positive or negative; Barry et al. (1990) argue that underpricing serves as a strong signal or certification that the firm going public is a good firm. Hong Teoh et al. (1998) suggest that a history of solid earnings signals future strong performance. Experimental findings on positive signaling (Brau & Fawcett, 2006) show that the most relevant positive signal is a strong history of earnings; past success is viewed as the best indicator of future returns. This may promote window dressing designed to make a company's past performance look as good as possible (Hong Teoh et al., 1998). Certification is also perceived as a robust positive signal.

After reviewing the underpricing-related literature, we conclude that asymmetric information theories are prevalently used to explain the underpricing phenomenon. The underpricing phenomenon is relevant as its presence signals inefficient markets with the inadequate flow of information. Perhaps, the most relevant is the information asymmetry between issuers and investors, between issuers and investment banks (agency conflict), and between informed and uninformed investors.

In the same regard, recent years have witnessed a mounting interest in nonfinancial information, especially ESG-related, contributing to the informational asymmetries in the business and financial environment given the challenges in assuring the quality of ESG-related information. Publicly traded firms in Europe must publish sustainability-related information according to the EU directive on Non-Financial reporting (2014/95/EU)<sup>3</sup> that entered into force in 2017, establishing a new mandatory compliance regime to disclose nonfinancial information. Therefore, it is in the interest of the firm going public to improve the quality of information disclosed to the stakeholders as part of the new compliance regime and as a factor of attractiveness for external users (Al-Shaer & Zaman, 2018; Harasheh & Provasi, 2022). Accordingly, asymmetric information and positive signaling theories are adopted to formulate our hypothesis. The improved flow of sustainability-related information to external stakeholders before the IPO reduces asymmetries. It enhances the investment decision, thus lowering underpricing and the cost of going public. In positive quality signaling, as firms become closer to the IPO, they try to improve their ESG performance pre-IPO as a signal of quality and window-dressing practices to minimize the underpricing and cost of going public. Thus, Hypothesis 1 is formulated as follows:

**Hypothesis 1.** IPO underpricing is negatively related to a firm's ESG performance pre-IPO.

The phenomenon of post-IPO financial underperformance implies a decline in price yields in the periods following the IPO. Also, in this case, underperformance is linked to the absence of efficient markets. If the investor had complete and correct information about the price of the share and the company's performance after the initial investment, the investor would not have invested if they knew of the future slowdown. The large body of literature on post-IPO performance provides inconclusive results, and the empirical evidence is still conflicting.

In summary, the literature explains long-term underperformance according to three views: behavioral theories, methodological problems of measuring returns, and theories of underperformance in the short term (Perera & Kulendran, 2016).

The divergence of opinions hypothesis (Miller, 1977) is attributed to behavioral theories, according to which price and yield drop as information become available over time, aligning optimistic and pessimistic views. The impresario hypothesis (Aggarwal & Rivoli, 1990) states that the IPO market is a subject of fads and investment bankers exploit it by discounting the price to create high demand. Therefore, it is possible to deduce that there will be a negative relationship between long-run performance and underpricing in the long run. Lastly, the windows opportunity (Ritter, 1991) states when the IPO market is in a "hot" period, the firm goes public, but when the "hot" period ends, the pricing change, and the market price goes down.

<sup>3</sup>Currently, EU rules on nonfinancial reporting apply to large public-interest companies with more than 500 employees. However, On April 21, 2021, the Commission adopted a proposal for a Corporate Sustainability Reporting Directive (CSRD), which would amend the existing reporting requirements to include all companies listed on regulated markets (except listed microenterprises).

Short-run theories of underpricing can be used to explain long-run performance. Signaling theories, low equity retention rate, and season equity offering can explain underpricing as a signal of good quality. Thus, there would be a positive relationship between underpricing and long-run performance. Conversely, the negative correlation with the long-run performance is explained as a mechanism of imitating promising enterprises with bad ones, where nonquality firms bear high imitation costs (Welch, 1989).

The Agency cost theory is also considered to explain the long-run underperformance; the separation of ownership and control in the IPO time increases agency costs, leading to decreased performance. The ownership retention rate measures the degree of separation between ownership and control.

A final factor to consider is uncertainty; according to the *uncertainty theory* (Perera & Kulendran, 2016), it is possible to explain underperformance by controlling long-term returns with variables such as the age of the firm, the size of the issue, the size of the firm, the offer price, the market value.

Given this background, we will adopt the first explanation—the divergence of opinions. We extend the divergence of opinions to explain the relationship between sustainability performance pre-IPO and post-IPO stock performance; as firms become publicly traded, they become subject to strict compliance and oversight scrutiny concerning financial and nonfinancial performance. In this regard, firms attempt to satisfy stakeholders' informational needs to create strategic value. As more sustainability information is revealed to the market, several categories of investors would possess the same knowledge; thus, sustainability information becomes incorporated in the market price and would not affect market stock performance. Thus, Hypothesis 2 is formulated as follows:

**Hypothesis 2.** There is no relationship exists between post-IPO stock return and a firm's ESG performance pre-IPO.

### 3 | DATA, METHODS, AND MODELS

We focus on SMEs currently traded on the FTSE AIM ITALIA index, which comprises 125 firms. We studied 39 companies that went public and survived from 2009 to 2017 with data availability during the study period. Financial companies were excluded from the sample due to different characteristics and compliance paths.

SMEs traditionally constitute the backbone of the Italian and European industrial systems. SMEs account for 82% of the employment share in Italy (more than the European average) and constitute 92% of the companies operating in the area. The Turnover attributed to SMEs is € 886 billion (38% of GDP), while the added value and credits received amount respectively to € 212 billion (12.6% GDP) and € 223 billion (Prometeia, 2019).

In Europe, SMEs make up 99.8% of total enterprises; they employ 66.6% of the workforce and represent 56.8% of added value,

**TABLE 1** Definition of variables

| Variable   | Symbol           | Description   |
|--|------------------|---|
| <i>Section A<sup>a</sup>: Variables of underpricing analysis (pre-IPO)</i> |                  |   |
| Underpricing   | UP               | % $\Delta$ in price between placement price and 1st-day trading           |
| Ebitda Margin  | Ebitda           | Ebitda on total revenue. A measure of profitability                       |
| ROE  | ROE              | A measure of overall management performance                               |
| ROS  | ROS              | A measure of sales efficiency   |
| Size   | Ln_Size          | Revenue Log as a proxy of the dimension                                   |
| Growth   | Ln_Growth        | Log of Total Revenue ( $\Delta\%$ ) as a measure of growth                |
| Capital Expenditures   | Capex            | A financial measure of capital expenditure                                |
| Debt on Equity   | D/E              | A proxy for financial risk  |
| Liquidity Ratio  | CA/CL            | Current assets over current liabilities                                   |
| Debt Financing   | D/A              | A proxy for financial equilibrium/distress (debt/assets)                  |
| Net Financial Position   | NFP              | Debt less liquid assets as a proxy for financial equilibrium/distress     |
| Cash Flow  | CF               | A measure of the liquidity produced by operations                         |
| Female on board  | fBoD             | A corporate governance proxy  |
| ESG performance  | ESG              | A proxy for sustainability performance                                    |
| Sector   | D_sector         | A dummy variable for the sector   |
| Region   | D_region         | A dummy variable for the region   |
| <i>Section B<sup>b</sup>: Variables of the post-IPO performance</i>        |                  |   |
| Abnormal Return  | AR               | Stock returns, including dividend yields – index return                   |
| Underpricing   | UP               | % $\Delta$ in price between placement price and 1st-day trading           |
| Earning per share  | EPS              | Total earnings to outstanding share                                       |
| Age  | AGE              | The years between incorporation and the IPO                               |
| IPO price  | IPO <sub>p</sub> | The price is established before the first trading day                     |
| Volume   | VOL              | The number of trades at the IPO as a proxy for liquidity & attractiveness |
| PEG ratio  | PEG              | Price on expected earnings as a proxy for expected growth                 |
| Size   | SIZE             | The logarithm of proceedings of the IPO as a proxy for the dimension      |
| Female on board  | fBoD             | A corporate governance proxy  |
| ESG performance  | ESG              | A proxy for sustainability performance                                    |
| IPO year Dummy   | IPOyear          | A dummy variable for the IPO year   |

<sup>a</sup>Variables in this analysis are taken before the year of going public ( $T_{-1}$ ,  $T_{-2}$ ,  $T_{-3}$ ) to investigate the impact of financial, sustainability, and governance variables on underpricing at the time of the IPO ( $T_0$ ).

<sup>b</sup>Variables in this analysis are taken at and after the year of going public ( $T_0$ ,  $T_{+1}$ ,  $T_{+2}$ ) to test whether financial, sustainability, and governance variables can explain post-IPO stock performance.

surpassing large companies' contributions representing 43.2%. The difficulties in accessing alternative capital are mainly due to information asymmetries and cyclical and structural conditions of the financing markets (European Commission, 2021).

Internally generated cash flows and the use of equity financing by SMEs, with a reasonable reduction in bank financing and alternative financing, constitute an optimal mix for balanced and sustainable financing of SME growth. Such a financing mix allows more funds to invest in sustainability transition, reconcile their business models with recent technological trends, invest in research and development activities, and recover the productivity gap with the European and global competitors. Alternatively, SMEs can also benefit from going public vehicle and lower transaction costs.

The data was extracted from AIDA.<sup>4</sup> Table 1 provides more detail and a brief description of the variables.

In this study, we track the journey of going public (before and after the listing) by modeling underpricing at the time of the IPO according to financial and sustainability variables in the 3 years before the IPO. We also relate financial and sustainability variables to post-IPO stock returns ( $T_0$ ,  $T_{+1}$ , and  $T_{+2}$ ) to investigate whether pre-IPO-specific factors affect post-IPO stock returns.

Moreover, sustainability regulations are unlike in every region and sector (more or less stringent); therefore, controlling for the

<sup>4</sup>AIDA (Analisi Informatizzata delle Aziende Italiane) – Bureau Van Dijk (Update 287 - Software Version 103.00 Data Update 23/12/2020 (n° 28,704)).

**TABLE 2** Sector and regional distribution of companies

| Region         | Service | Industrial | ICT | Total |
|----------------|---------|------------|-----|-------|
| Lombardia      | 9       | 4          | 2   | 15    |
| Emilia Romagna | 2       | 4          | 1   | 7     |
| Lazio          | 3       | 2          |     | 5     |
| Veneto         | 2       | 3          |     | 5     |
| Toscana        |         | 2          |     | 2     |
| Piemonte       | 1       | 1          |     | 2     |
| Marche         |         | 1          |     | 1     |
| Sardegna       | 1       |            |     | 1     |
| Umbria         |         | 1          |     | 1     |
| Total          | 18      | 18         | 3   | 39    |

region and the sector where the company belongs allows us to differentiate such fixed effects. Table 2 demonstrates the sectorial and regional distribution of the firms.

### 3.1 | Modeling underpricing

Financial, sustainability, and governance variables of the selected SMEs are used as determinants of underpricing. Underpricing is a time-invariant variable. Financial and sustainability variables are time-variant firm-specific attributes, and they are collected 3 years before the firm's listing ( $T_{-1}$ ,  $T_{-2}$ ,  $T_{-3}$ ). The originality of this paper is that we introduce sustainability and governance variables as potential determinants of IPO underpricing, motivated by asymmetric information theory and window-dressing view. More accurate information is revealed before the IPO leads to better pricing of the issue and, thus, lower underpricing. According to image-improving and window-dressing, firms attempt to improve their financial and sustainability status to enhance the public image and to be ready for compliance as a publicly traded company. Both explanations can be derived from compliance anticipation in which SMEs going public expect more compliance and public oversight to ensure stakeholder's value.

This analysis applies the cross-sectional OLS without a panel to capture the variables' time differences before the IPO. Underpricing is calculated as follows:

$$UP = \frac{P_x - P_{ipo}}{P_{ipo}}$$

where  $P_x$  is the closing price in the aftermarket, and  $P_{ipo}$  is the offer price.

The model is set to incorporate the financial, sustainability, and governance variables for the 3 years before the IPO. Underpricing, in this case, is time-invariant and modeled according to the explanatory time-variant variables for each of the 3 years before the IPO to capture the yearly relevance in influencing underpricing. The variables are described in Table 1 (Section A).

$$UP_t = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t-n} + \sum_{f=1}^F \gamma_s FIN_{i,t-n} + \delta_1 D_{sector} + \delta_2 D_{region} + \varepsilon_t$$

$$UP_t = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t-2} + \sum_{f=1}^F \gamma_s FIN_{i,t-2} + \delta_1 D_{sector} + \delta_2 D_{region} + \varepsilon_t$$

$$UP_t = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t-3} + \sum_{f=1}^F \gamma_s FIN_{i,t-3} + \delta_1 D_{sector} + \delta_2 D_{region} + \varepsilon_t$$

where  $UP_t$  is the underpricing at the IPO,  $ESG$  represents sustainability and governance variables,  $FIN$  represents a set of corporate financial variables for the 3 years before the IPO, and  $D_{sector}$  and  $D_{region}$  are the sector and region dummies. Sustainability performance is the sustainability rating that ranges from 1 to 9 extracted manually from Standard Ethics company, and other sources of sustainability rating were used when the data is missing. The rating is made up of 10 elements (Sustainability, Independence, Systemic Approach, Credibility, Standard, Competitive, Reputational, Comparability, ESG Risks, and Transparency) that capture the ethical and responsible performance of the company. The percentage of females on BoD is taken as a proxy for governance, manually collected from annual reports. These variables appear relevant in explaining financial performance (Al-Shaer & Zaman, 2016; Harasheh & Provasi, 2022; Provasi & Harasheh, 2021).

### 3.2 | Modeling post-IPO stock return

Motivated by the divergence of opinions explanation, as more sustainability information is fed into the market, informed/uninformed and optimistic/pessimistic investors possess similar knowledge of the firm's stock; thus, sustainability information becomes incorporated into the regular market disclosure and would not affect the stock returns. The post-IPO performance analysis aims to monitor the stock's performance in the 3 years following the IPO. Consistent with the literature, we measure the stock performance using the Abnormal Return over the Benchmark Index FTSE AIM Italia.

The variables are described in Table 1 (Section B). Abnormal Return (AR), earning per share (EPS), the PEG ratio (Price to earnings growth ratio), females on board ( $BoD_f$ ), and sustainability rating (ESG) are time-variant. The remaining variables are time-invariant at the IPO year (underpricing, age, IPO price, the volume of IPO trading, and offer size). We included underpricing to verify whether companies with higher underpricing perform better in the long run. EPS and the PEG ratio give information on the income available for shareholders and the stock's growth expectations.

The abnormal return is  $AR = TR - Index Return$ .

$TR$  is the Total Return calculated as follows:

$$TR = \frac{(P_t - P_{t-1}) + D}{P_{t-1}}$$

$P_t$  is the current closing value,  $P_{t-1}$  is the previous closing value, and  $D$  is the dividend paid.

The econometric models used in the post-IPO analysis are configured in the following way:

$$AR_{t0} = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t} + \sum_{d=1}^D \delta_d DEAL_i + \sum_{f=1}^F \gamma_s FIN_{i,t} + \omega D_{IPOyear} + \varepsilon_t$$

$$AR_{t+1} = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t} + \sum_{d=1}^D \delta_d DEAL_i + \sum_{f=1}^F \gamma_s FIN_{i,t} + \omega D_{IPOyear} + \varepsilon_t$$

$$AR_{t+2} = \alpha + \sum_{n=1}^N \beta_n ESG_{i,t} + \sum_{d=1}^D \delta_d DEAL_i + \sum_{f=1}^F \gamma_s FIN_{i,t} + \omega D_{IPOyear} + \varepsilon_t$$

In this case, the time-variant AR is modeled against a set of financial, governance and sustainability variables. *ESG* variables are time-variant and include sustainability rating (*ESG*) and the percentage of females on BoDs (*fBoD*). *Deal* variables are time-invariant at the IPO and include *UP* (underpricing), *IPO<sub>p</sub>* (issue price), *VOL* (number of trades), *SIZE* (amount of IPO proceeds). *FIN* are time-variant financial variables, including *EPS* (earning per share) and *PEG* (price-earning to growth). And finally, the dummy variable of the IPO year (*IPO<sub>Year</sub>*).

### 3.3 | Descriptive statistics

Table 3 shows the descriptive statistics for the variables used in the underpricing models. Underpricing is highly volatile, with an average of 87%, much higher than the standard range for large firms of 20–

30% documented in other studies (Ritter, 1991). On average, the sample left 87€ on the Table for every € 100 equity offered (potential opportunity cost of going public). However, after eliminating two firms with extreme underpricing levels, 746% and 2054%, the sample's average underpricing declined to 7.1%. This is lower than the standard average for mature firms, which means that investors in the secondary market have low expectations for those small companies. They question their ability to guarantee sustainable growth rates, at least in the near future.

Variables with high variations are Capex, growth, and ROE. The three variables are highly related since growth can be determined by the magnitude of ROE and the re-investment rate. Cash flow is also improving as we approach the IPO as an attractive factor. In the governance element, represented by the percentage of females on the BoD, the average female representation is about 30%, consistent with the minimum gender quotas established by the Golfo-Mosca Act in Italy. At this stage, it is difficult to judge the improvement in gender representation since years are not chronologically ordered; they are relatively ordered according to the IPO year. The sustainability rating averages 6.3 out of 9 in the 3 years before the IPO.

As for the post-IPO analysis, Table 4 presents the descriptive statistics of the variables. The abnormal return shows a decline, from 13% in the IPO year to –6.6% in the second year. The volatility also decreases, reflecting the risk–return trade-off and the information spillover. EPS and PEG are improving. PEG demonstrates high volatility as a valuation multiple, reflecting a readjustment of the valuation on the companies' growth expectations due to increased available information to market participants. Varying trends are also noticed in the governance and sustainability indicators.

**TABLE 3** Descriptive statistics of underpricing analysis (pre-IPO)

| Variable | T <sub>-1</sub> |      |       | T <sub>-2</sub> |      |       | T <sub>-3</sub> |      |       |
|----------|-----------------|------|-------|-----------------|------|-------|-----------------|------|-------|
|          | Mean            | CV   | S.D.  | Mean            | CV   | S.D.  | Mean            | CV   | S.D.  |
| UP       | 86.68           | 4.2  | 3.66  | 86.68           | 4.2  | 3.66  | 86.68           | 4.22 | 3.66  |
| Ebitda   | 18.29           | 1.1  | 0.18  | 16.3            | 1    | 0.17  | 11              | 1.91 | 0.21  |
| ROE      | 12.22           | 2.9  | 35.3  | 19.4            | 1.7  | 32.2  | 14.3            | 2.78 | 39.7  |
| ROS      | 8.27            | 2    | 16.2  | 8.63            | 1.1  | 9.34  | 8.09            | 1.42 | 11.5  |
| Size     | 3.97            | 0.2  | 0.9   | 4.01            | 0.2  | 0.61  | 3.79            | 0.24 | 0.93  |
| Growth   | 2.43            | 3.4  | 0.08  | 3.45            | 1.9  | 0.07  | –0.21           | 71   | 0.15  |
| Capex    | 1949            | 4.9  | 9,517 | 586             | 1.8  | 1,012 | 516             | 4.13 | 2,134 |
| D/E      | 1.88            | 2.2  | 4.18  | 1.17            | 1.3  | 1.47  | 2.18            | 1.47 | 3.21  |
| CA/CL    | 1.09            | 0.6  | 0.65  | 1.22            | 0.7  | 0.85  | 1.14            | 0.58 | 0.66  |
| D/A      | 0.665           | 0.3  | 0.21  | 0.69            | 0.3  | 0.2   | 0.738           | 0.26 | 0.19  |
| NFP      | 4,323           | 2.1  | 9,032 | 4,414           | 1.8  | 7,959 | 4,081           | 1.77 | 7,260 |
| CF       | 3,031           | 2.2  | 6,543 | 1,772           | 1.3  | 2,299 | 1,315           | 2.17 | 2,858 |
| fBoD     | 0.35            | 0.51 | 0.18  | 0.25            | 0.76 | 0.19  | 0.30            | 0.57 | 0.17  |
| ESG      | 6.65            | 0.19 | 1.26  | 5.88            | 0.22 | 1.32  | 6.32            | 0.19 | 1.17  |

Note: Underpricing, Ebitda Margin, ROE, ROS, Growth, and Debt ratio are expressed in %. Size is the log of revenues. Debt on Equity, Liquidity Ratio is expressed in times ("x") Capex, NFP, and Cash flow in thousands of euros. CV = coefficient of variation.

**TABLE 4** Descriptive statistics for post-IPO performance

| Variable  | IPO <sub>t</sub> |      |         | IPO <sub>t+1</sub> |      |         | IPO <sub>t+2</sub> |       |         |
|-----------|------------------|------|---------|--------------------|------|---------|--------------------|-------|---------|
|           | Mean             | CV   | S.D.    | Mean               | CV   | S.D.    | Mean               | CV    | S.D.    |
| AR        | 13               | 5.59 | 75      | 5.4                | 10   | 55      | -6.57              | -7.46 | 49,05   |
| EPS       | 0.41             | 2.12 | 0.88    | 4.4                | 2.6  | 11.5    | 4.4                | 3.404 | 15      |
| Age       | 22               | 0.9  | 20      | 22                 | 0.9  | 20      | 22                 | 0.9   | 20      |
| IPO price | 6.44             | 1.07 | 6.89    | 6.44               | 1.07 | 6.89    | 6.44               | 1.07  | 6.89    |
| VOL       | 182,684          | 1.77 | 320,582 | 182,684            | 1.77 | 320,582 | 182,684            | 1.77  | 320,582 |
| PEG       | -1.61            | 5.2  | 8.41    | -0.43              | 9.04 | 3.95    | -0.518             | 7.866 | 4.08    |
| SIZE      | 3.96             | 0.22 | 0.89    | 3.96               | 0.22 | 0.89    | 3.96               | 0.22  | 0.89    |
| fBoD      | 0.42             | 0.43 | 0.18    | 0.36               | 0.52 | 0.19    | 0.39               | 0.44  | 0.17    |
| ESG       | 6.66             | 0.18 | 1.22    | 6.60               | 0.17 | 1.15    | 6.67               | 0.20  | 1.32    |

Note: PEG is a multiple ("x"). EPS, Placement Prices are expressed in the unit of euro. Age in years. Abnormal return is in %. Size in the log of revenues and Volume in the unit. CV = coefficient of variation.

| Dependent variable: Underpricing | $\beta$ (IPO <sub>t-1</sub> ) | $\beta$ (IPO <sub>t-2</sub> ) | $\beta$ (IPO <sub>t-3</sub> ) |
|----------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Ebitda margin                    | 33.3646***                    | -20.0057*                     | 2.3191                        |
| ROE                              | 0.0363                        | -0.0943*                      | -0.0305                       |
| ROS                              | -0.3645***                    | 0.4172                        | 0.0234                        |
| Ln_Size                          | 7.81492***                    | -0.7728                       | 0.6468                        |
| Ln_Growth                        | -21.4969***                   | -15.4986                      | 4.0383                        |
| Capex                            | 0.00081**                     | -0.0021                       | 6.91E-05                      |
| D/E                              | -0.23995                      | -1.2128                       | -0.1639                       |
| CA/CL                            | -3.38938**                    | -1.4081                       | -1.6134                       |
| D/A                              | -23.5535***                   | 25.8439***                    | 7.2303                        |
| NFP                              | -0.0001                       | -9.63E-05                     | -0.0002                       |
| CF                               | -0.0015***                    | 0.0011                        | 0.0005                        |
| fBoD                             | -0.4712**                     | -0.5410*                      | 0.2751                        |
| ESG                              | -0.2132**                     | -0.0921                       | 0.1024                        |
| Sector dummy                     | Yes                           | Yes                           | Yes                           |
| Region dummy                     | Yes                           | Yes                           | Yes                           |
| R <sup>2</sup>                   | 0.8820                        | 0.5532                        | 0.2898                        |

**TABLE 5** Underpricing analysis

Note: Underpricing is time-invariant and modeled against explanatory time-variant variables for the 3 years before the IPO to capture the time relevance in influencing underpricing.

$UP_t = \alpha + \sum_{i=1}^3 \beta_i ESG_{i,t-1} + \sum_{i=1}^3 \gamma_i FIN_{i,t-1} + \delta_1 D_{sector} + \delta_2 D_{region} + \varepsilon_t$ .  $UP_t$  is the underpricing at the IPO, ESG represents sustainability and governance variables, FIN represents a set of corporate financial variables, and  $D_{sector}$  and  $D_{region}$  are the sector and region dummies. The variables are described in Table 1 (Section A).

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

## 4 | ANALYSIS AND DISCUSSION

As shown in Table 5, the analysis is performed each year before the IPO. The diagnostic tests did not reveal heteroskedasticity and multicollinearity among the variables except in the sector and geographic dummies, which were omitted.

We notice that almost all variables have demonstrated stronger significance as firms move closer to the IPO year. A higher discount

could explain the positive relationship between the EBITDA margin and the underpricing as a signaling effect of a company's operating quality. The discount could also derive from companies' growth prospect, which is considered unsustainable and stabilizes over time by the market, configuring the IPO as an opportunity when profitability settles. In average terms, the preliminary analysis shows that the significance of the operating profitability grows as the IPO approaches, indicating that more profitable firms experience lower underpricing levels.



There is also a negative relationship between growth and underpricing, demonstrating how higher growth leads to a lower discount. The Capex-underpricing relationship is positive, and, in this case, the discount could be derived from the lack of information that new investors have on the company's investment projects.

The measures of the level of debt and its riskiness show a negative relationship with underpricing; this could be attributed to the Italian financial system's bank-centric structure: more debt held by banks could signal the quality of firms' operations until a certain level of debt. Cash flows have also become more significant in the year before the IPO, with a negative association with underpricing signaling positive prospects for its future profitability. The governance variable indicated by the percentage of female representation on the BoDs has increased significantly, negatively correlated with underpricing. This suggests that firms improve their governance structures before going public; thus, improving the female representation on the BoDs reduces underpricing. The improvement can be due to enhancing the firm's image (window-dressing) before bringing the firm to public trading or can be law compliance; the less represented gender has to be granted a minimum quota under the Golfo-Mosca Act in Italy. Finally, sustainability performance (ESG) is negatively correlated with underpricing only in the year before the IPO.

The strong negative association between underpricing and corporate sustainability and governance indicators is explained with references to our developed framework. According to the asymmetric information approach, firms tend to disclose more adequate financial and nonfinancial information before the IPO attempting to reduce asymmetries among various players, thus reducing speculative behavior incorporated in the underpricing at the IPO. Now, the fact that the significance is only in the year before the IPO brings Image-improving and window-dressing as another possible explanation. This explanation can also fall under the positive signaling hypothesis in which firms disclose positive financial, governance, and sustainability performance to show quality elegance, reducing informational discrepancies among the informed and uninformed, which leads to lower underpricing. However, it could signal earning (reporting) management to improve the image before the IPO. Such findings are not uncommon and consistent with previous literature; Barry et al. (1990), Brau and Fawcett (2006), and Hong Teoh et al. (1998) find that a history of solid earnings signals future strong performance. The most relevant positive signal is a strong history of earnings; past success is viewed as the best indicator of future returns, which may promote window dressing designed to make a company's past performance look as good as possible.

Finally, the compliance approach—which belongs to legitimacy theory—is another plausible approach to explain such findings regarding SMEs going public. Becoming public implies more compliance with social values and climate-related issues. SMEs are sometimes excluded from certain compliance aspects related to sustainability issues. The results show that SMEs behave as large companies in integrating ESG factors which might indicate awareness and/or compliance anticipation. Awareness implies that becoming a publicly traded

company raises the business consciousness towards sustainability issues. Anticipation means that SMEs anticipate the extension of regulatory coverage to include not only large companies but also listed SMEs. For example, the EU directive on nonfinancial reporting was amended in 2021, so listed SMEs are also required to disclose sustainability-related information.

The positive impact of sustainability performance reflects the importance of sustainability reporting as an emerging communication tool with stakeholders. Firms become more aware of their business impact on environmental, social, and governance aspects; firms tend to voluntarily comply with specific regulations even before going public, already anticipating the listing by the management. To sum up, besides the other motives for going public, improving a firm's financial, sustainability and governance indicators reduces the cost of going public by minimizing the underpricing (as a substantial opportunity cost for going public). These findings are consistent with those (Al-Shaer & Zaman, 2018; Harasheh & Provasi, 2022) in which it is in the interest of the firm going public to improve the quality of information disclosed to the stakeholders as part of the new compliance regime and as a factor of attractiveness for external users. Moreover, consistent with Birkey et al. (2016), Darnall et al. (2009), de Villiers et al. (2011), Moroney et al. (2012), Simnett et al. (2009), and Simnett et al. (2009), as companies become aware of the various risks and opportunities related to sustainability issues, they start to pay more attention to sustainability practices and reporting and expand the responsibility of the entities in charge of corporate governance to address stakeholder expectations.

Regarding the post-IPO analysis, Table 6 shows the cross-sectional analysis results on the sample of companies concerning the post-IPO stock performance. The goal is to monitor the shares' performance after the listing and complete the IPO journey pursued by SMEs by showing to what extent financial, governance, and sustainability indicators can determine the post-IPO stock return.

The results show a negative and significant relationship between the underpricing and the stock performance in the 3 years but significant in the year after the IPO. This evidence is inconsistent with the *signaling theory*, according to which underpricing is a tool to report the company's quality because a positive relationship with the stock performance would be expected.

Governance and sustainability indicators show weak significance in explaining the post-IPO stock return, which indicates that markets tend to be more efficient in pricing nonfinancial information in the long run. In this regard, and consistent with the divergence of opinions hypothesis, as more relevant sustainability-related information is disclosed—especially in a mandatory regime—different players in the market would obtain the same amount of information, and market prices would incorporate such new information. Thus, stock returns would be affected in the long run.

We also find no importance of the IPO year and the rest of the financial variables except for the IPO price in the year following the IPO.

| Dependent variable: Abnormal stock return | $\beta$ (IPO <sub>t</sub> ) | $\beta$ (IPO <sub>t+1</sub> ) | $\beta$ (IPO <sub>t+2</sub> ) |
|---|-----------------------------|-------------------------------|-------------------------------|
| UP  | -0.02895                    | -20.65**                      | -6.049                        |
| EPS                                       | -0.2738                     | 2.401                         | 4.091                         |
| Age                                       | 0.004816                    | -0.3908                       | 2.344                         |
| IPO price                                 | 0.001011                    | -5.609*                       | -5.232                        |
| VOL                                       | -1.06e-07                   | -0.00013                      | -2.52e-05                     |
| PEG                                       | -0.007466                   | 4.747                         | 18.31                         |
| SIZE                                      | 0.09316                     | 20.79                         | -73.57                        |
| fBoD                                      | 0.0327*                     | 0.0221                        | 0.0504                        |
| ESG                                       | 0.0064                      | 0.0120*                       | -0.0063                       |
| IPO <sub>year</sub> dummy                 | Yes                         | Yes                           | Yes                           |
| R <sup>2</sup>                            | 0.7071                      | 0.8104                        | 0.6102                        |

**TABLE 6** Post-IPO performance analysis

Note: The time-variant AR is modeled against financial, governance, and sustainability variables according to the following econometric model:  $AR_t = \alpha + \sum \beta_n ESG_{i,t} + \sum \delta_d DEAL_i + \sum \gamma_s FIN_{i,t} + \omega D_{IPO_{year}} + \varepsilon_t$ . ESG variables are time-variant and include sustainability rating (ESG) and the percentage of females on BoDs (fBoD). Deal variables are time-invariant at the IPO and include UP (underpricing), IPO<sub>p</sub> (issue price), VOL (number of trades), SIZE (amount of IPO proceeds). FIN are time-variant financial variables, including EPS (earning per share) and PEG (price-earning to growth). And finally, the dummy variable of the IPO year (IPOYear).

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

## 5 | CONCLUSIONS

Going public is considered a strategic business decision associated with various costs and value creation opportunities. Studying the decision to go public and its related phenomena and implications have a long-established history since the development of equity markets in the 20th century. The literature covers almost all countries with established equity markets ranging from developed to least developed. Also, all types of firms have been investigated. However, agreed conclusions have not yet been achieved, and findings may differ according to the market development, the period, and types of firms, large or SMEs. In the same regard, various theories (hypotheses) have been developed to explain the IPO decision, the underpricing, and the post-IPO stock performance. Again, no clear-cut explanation has been achieved. Previous studies have linked IPOs to financial and business factors. However, given the emergence and importance of ESG issues and the mandatory nonfinancial reporting in Europe, IPO-related attributes could be related to ESG factors through quality signaling, asymmetric information, and compliance channels.

In this paper, we track the going public journey for Italian SMEs, verifying the various theories related to the IPO. We study the underpricing and potential determinants, emphasizing board structure and sustainability indicators. And the post-IPO stock performance. The analysis is performed using regression analysis, paying attention to diagnostic statistics for the model's appropriateness. We demonstrate two relevant findings; on the one hand, underpricing is negatively related to ESG rating pre-IPO, revealing an improved informational environment and compliance anticipation by SMEs. Investors have enhanced quality information to better price the issues security, thus lowering underpricing. On the other hand, such a negative relationship is statistically significant only in the year just before the IPO unveils

the positive quality signaling and window-dressing practices. The post-IPO stock return is less correlated with the firm's financial and ESG variables, suggesting that markets can incorporate financial and sustainability information into stock returns in the long run.

In this regard, our findings have direct implications for the SMEs willing to go public and for market investors. SMEs are usually characterized by a higher degree of asymmetric information; thus, firms might forgo part of the IPO price to attract investors through underpricing. Since SMEs are less-known firms, improving the financial and sustainability records before going public is essential to give a serenity signal to the market. External equity financing could be a valuable source of funds to boost SMEs' future growth and innovation activity. Moreover, SMEs attempting to go public should anticipate compliance and oversight security, especially regarding sustainability-related mandatory reporting.

On the other hand, investors could view the listing of SMEs as an investment opportunity at the IPO. However, on average, investors should expect a decreasing stock performance post-IPO; thus, managing the investment horizon is essential. At the regulatory level, a platform for SMEs should be established to register all SMEs wishing to go public for some years before the IPO; this improves visibility and reduces informational asymmetries around the firm, obtaining better results at the IPO.

Ultimately, going public is an essential corporate strategic decision for value creation. The decision can—somehow—be considered irreversible since the de-listing is least likely. Firms can use the IPO to show the public the responsible practices the firm is adopting toward society and the environment. Such image-improving could enhance a firm's value through several value drivers, such as maximizing future cash flows or reducing the cost of capital, depending on the relationship to risk categories (systematic or idiosyncratic). However, firms

should be aware that going public is associated with additional costs, such as compliance with regulations that might affect future cash flows and competitiveness.

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## CONFLICT OF INTEREST

Authors have not received any type of funding to carry out this research. This research does not involve human and/or animal experiments or participation.

## DATA AVAILABILITY STATEMENT

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request. The data were extracted from the AIDA: (Analisi Informatizzata delle Aziende Italiane: Computerized Analysis of Italian Companies) – Bureau Van Dijk (Update 287 - Software Version 103.00 Data Update 23/12/2020 (n° 28,704)).

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