Credible Signals in IPOs: Venture Capital Backing and Issuer Greenness

Thomas Gimbel

Dissertation written under the supervision of Professor Fátima Shuwaikh

Dissertation submitted in partial fulfilment of requirements for the MSc in Finance, at the Universidade Católica Portuguesa, 03.01.2026.

Abstract

This thesis examines whether VC-backing and issuer greenness are associated with lower underpricing compared to non-VC-backed and non-green offerings and whether their joint presence is associated with particularly low underpricing. It uses a global sample of IPOs from 2010 to 2024 and estimates OLS regressions to assess the association of VC-backing and greenness with underpricing and, to provide a more holistic picture, on 60-day and 365-day offer-to-market buy-and-hold returns. The analysis employs a set of firm-, deal-, and market-level controls and year fixed effects. To assess the interaction between VC-backing and greenness, the analysis evaluates model-implied predicted outcomes for the four groups defined by VC-backing and greenness and conducts pairwise comparisons of these predictions. The robustness design changes the non-green benchmark by introducing a brown classification, evaluates stability across market regimes using a split around the Paris Agreement period, and implements a placebo analysis. The results show that VC-backing is associated with materially higher underpricing. Issuer greenness is not statistically significantly associated with underpricing in the full sample, while post-Paris Agreement estimates indicate substantially lower 60-day and 365-day offer-to-market returns for green issuers. The interaction tests show that VC-backed green IPOs are not associated with lower underpricing: their predicted first-day underpricing exceeds that of both non-VC benchmark groups and is statistically indistinguishable from VC-backed non-green IPOs, with differences concentrated after 2016.

Title: Credible Signals in IPOs: Venture Capital Backing and Issuer Greenness

Author: Thomas Gimbel

Keywords: Initial Public Offering, Underpricing, Venture Capital, Greenness, Sustainability, Information Asymmetry, Certification

Resumo

Esta dissertação avalia se o apoio de capital de risco (VC) e a "verdura" do emitente se associam a menor subavaliação (underpricing) e se, em conjunto, implicam subavaliação especialmente baixa. Usa uma amostra global de IPOs (2010-2024). Estima regressões OLS para a subavaliação e para retornos buy-and-hold do preço de oferta ao mercado a 60 e 365 dias, com controlos ao nível da empresa, da operação e do mercado, e efeitos fixos anuais. A interação é testada por previsões do modelo para os quatro grupos definidos por VC e "verdura" e por comparações par a par. A robustez altera o referencial não verde introduzindo uma classificação "castanha", avalia a estabilidade por regimes de mercado com uma divisão em torno do Acordo de Paris e inclui uma análise placebo. Os resultados indicam que o apoio de VC se associa a subavaliação mais elevada. A "verdura" não se associa significativamente à subavaliação na amostra total; no pós-Acordo de Paris, estimativas apontam para retornos a 60 e 365 dias mais baixos em emitentes verdes. Nos testes de interação, IPOs verdes com VC não exibem menor subavaliação: a previsão do primeiro dia excede ambos os grupos sem VC e é indistinguível de IPOs não verdes com VC, com diferenças concentradas após 2016.

Título: Sinais credíveis em IPOs: apoio de capital de risco e sustentabilidade do emissor

Autor: Thomas Gimbel

Palavras-chave: Oferta Pública Inicial, Subvalorização, Capital de Risco, Ecologia, Sustentabilidade, Assimetria de Informação, Certificação

Acknowledgements

This thesis marks the completion of my studies. I would like to take the opportunity to thank all the people who have supported and guided me throughout this journey.

First and foremost, I would like to express my sincere gratitude to my family, who have been with me every step of the way. I am especially grateful to my parents, who not only made this degree possible but also provided me with an environment that enabled me to learn and grow. My mother always encouraged me to keep going and had my back at all times, while my father was invariably the first person I could turn to for academic advice.

Beyond that, I owe special gratitude to my longstanding friends and my brother, who always pushed me in the best ways, encouraging me to keep striving, challenging my thinking, and being the ones I studied, learned, and grew with. Their support and the memories we created have made my entire academic journey unforgettable. Of course, I also want to thank the friends I have made during my studies at Católica Lisbon School of Business & Economics, who made my time there far more enjoyable and contributed significantly to a truly special year in Lisbon. I would also like to thank my girlfriend, who was by my side throughout the months of writing this thesis, for supporting me in countless ways: giving me the space to focus, believing in me, encouraging me, and offering calm, thoughtful advice whenever I needed it most.

Finally, I would like to express my gratitude to my supervisor, Fátima Shuwaikh, for her support and the feedback I have received throughout the process of writing this thesis. I am truly grateful for the time and effort she dedicated to providing me with guidance. Furthermore, I want to thank the school's faculty and staff for providing me with an education that opens the doors to a promising future.

To all those who were part of this journey – near or far, directly or indirectly – thank you!

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IPO	Initial public offering
VC	Venture capital
TRBC	The Refinitiv Business Classification
SPAC	Special purpose acquisition company
OLS	Ordinary least squares
ESG	Environmental, social, and governance
SDG	Sustainable development goals
ADR	American depository receipt
REIT	Real estate investment trust
EPS	Earnings per share
ROA	Return on assets
EBITDA	Earnings before interest, taxes, depreciation, and amortization
VIF	Variance inflation factor

1. Introduction

In 1822, the Scottish adventurer Gregor MacGregor promoted the country of Poyais, a purported Central American polity that he invented and marketed to investors as a legitimate, economically promising sovereign state. Against the backdrop of a strong London market for Latin American foreign loans, he placed a Poyais loan, publicly framed as financing the territory's development. He held a decisive informational advantage over London investors: verification was inherently difficult for them, transatlantic information traveled slowly, the recognition of new American polities remained loosely defined, and the London foreign-loan market had few formal rules for screening new securities. He exploited this advantage to raise capital on the basis of claims investors could not credibly validate ex-ante (Clavel, 2021).
However, even under modern disclosure regimes, information asymmetries can still impact the issuance of new securities. In 2019, Luckin Coffee, a Chinese coffee chain, went public. After being celebrated as China's challenger to Starbucks, the firm was quickly confronted with questions about the soundness of its reported finances, which is why it had to file its audited annual statements to the Securities and Exchange Commission. Instead of filing the documents on time, the company released a report in April 2020 in which it admits that it has fabricated earnings worth around USD 310 million in 2019, which led to its delisting in June 2020 (Peng et al., 2022).

Both examples illustrate that, at the time capital is raised, investors may not be able to fully verify relevant information behind the security being issued. A natural setting in which this problem becomes particularly relevant is the market for initial public offerings (IPOs), the process by which a company sells its shares to the public for the first time (Berk & DeMarzo, 2023, p. 878).
In an IPO, the offer price is set before secondary-market trading reveals how a broad set of market participants values the shares. In practice, the inputs used to determine this offer price, such as issuer disclosures, underwriter valuations, and bookbuilding feedback, do not necessarily coincide with the market's valuation once trading begins. For this reason, IPOs often exhibit significant price jumps on the first trading day.
Berk and DeMarzo (2023, p. 886), for example, report that in the U.S. alone, the average first-day return of new offerings between 1960 and 2021 was over 17% and that other countries showed even higher returns for different time horizons. This phenomenon that new offerings exhibit a positive return on the first trading day is generally referred to as underpricing and is

calculated as the percentage change from the IPO offer price to the stock's first closing market price (Ritter, 2011).

Although underpricing may appear disadvantageous for issuers since it implies forgone proceeds because "money is left on the table", it is often interpreted as a compensation for investors for unusually high valuation uncertainty at the time the offer price is set, when publicly verifiable information is limited and residual information risks cannot be fully ruled out (Ljungqvist, 2007). Therefore, market participants place particular weight on credible, observable signals that help assess firm value before trading begins.

Building on prior work, this master's thesis focuses on two of these signals that may help investors to assess firm value under IPO-related uncertainty. The first is whether the issuer is venture capital (VC)-backed at the time of the offering. In addition to providing capital, VCs also provide expertise to firms, actively advise and monitor portfolio firms as well as managerial actions (Eldar & Grennan, 2024). In an IPO context, VC involvement therefore can credibly certify firm quality prior to listing (Megginson & Weiss, 1991). As a result, VC-backing may serve as third-party certification that helps market participants assess the issuing firm's quality.
Moreover, Kim et al. (2025) argue that, if credibly observable, greenness can reveal additional information about future cash flows and risk and thereby reduce pre-issuance uncertainty. Therefore, the second signal considers the issuer's environmental profile, which this thesis refers to as corporate "greenness" that is defined using Refinitiv Business Classifications (TRBCs) on the activity level.

While previous work has examined VC-backing and greenness largely in isolation, evidence on their joint association with IPO pricing remains limited. Therefore, this thesis aims to fill that gap by jointly analyzing VC-backing, issuer greenness, and their interplay in IPO underpricing. Specifically, this work addresses the following research questions:

Are VC-backing and issuer greenness, two observable pre-issuance signals, associated with lower underpricing, and is their joint presence associated with particularly low underpricing, relative to IPOs that exhibit only one or neither of these characteristics?

Using a global IPO sample from 2010 to 2024, this thesis estimates ordinary least squares (OLS) regressions for first-day underpricing and, to provide a more holistic picture, 60-day and 365-day offer-to-market profiles with a comprehensive set of firm-, deal-, and market-level controls.

It makes three contributions. First, it contributes to the IPO underpricing literature by examining how two observable pre-issuance signals, VC-backing and greenness, are jointly associated with first-day underpricing (Ljungqvist, 2007). Second, it contributes to the VC literature by evaluating whether VC involvement is associated with systematically different pricing outcomes, addressing competing views of VC certification versus reputation-driven incentives (Gompers, 1996; Megginson & Weiss, 1991). Third, it contributes to greenness-related IPO underpricing research by constructing an IPO-date TRBC-based greenness proxy and examining its association with underpricing, avoiding ex-post sustainability outcomes and potentially inconsistent ESG ratings (Berg et al., 2022; Jourde & Stalla-Bourdillon, 2024).

The remainder of this thesis is structured as follows. It first reviews the existing literature to give the theoretical and empirical background on IPO underpricing, with particular emphasis on the roles of VC-backing and issuer greenness. Based on this literature review, the three hypotheses are derived. It then outlines the applied methodology, describing the sample construction, variable definitions, and empirical strategy. Next, it presents the baseline results and evaluates their robustness using alternative specifications, a sample split, and by conducting a placebo analysis. The discussion chapter subsequently interprets the findings, relates it to the existing literature, and addresses the study's limitations. The thesis ends with the conclusion, which summarizes the main findings and outlines implications for future research.

2. Literature review and hypotheses

This section is structured in three parts. It first introduces different theoretical explanations for IPO underpricing, with particular emphasis on information asymmetries. It then synthesizes the empirical evidence on the relation between VC-backing and underpricing, before turning to the literature on issuer greenness and underpricing. The section concludes by translating these insights into testable hypotheses.

2.1. Theoretical explanations for IPO underpricing

Over the years, several theories have been suggested that aim to explain IPO underpricing. In general, these theories can be classified into four broad categories (Ljungqvist, 2007). The first category covers institutional explanations that emphasize legal, tax, and market-structure aspects (see Ibbotson, 1975; Ruud, 1993; Rydqvist, 1997; Tiniç, 1988).

The second category contains ownership-and-control explanations that view underpricing as a tool to influence post-IPO ownership structures (see Brennan & Franks, 1997; Grossman & Hart, 1980; Shleifer & Vishny, 1986; Stoughton & Zechner, 1998).

The third category consists of behavioral explanations that emphasize how investor behavior and issuer perceptions shape IPO underpricing (see Loughran & Ritter, 2002; Welch, 1992).

The fourth category, which is the one that is central to this thesis, focuses on asymmetric information models. In general, the explanations within this category presume that some market participants are better informed than others. Rock's (1986) winner's curse model, which is one of the best-known asymmetric information models, introduces this situation to an IPO context and assumes that some investors have superior information about an IPO's prospects. In the model, these investors can identify overpriced issues, whereas other investors cannot. Informed investors participate only in underpriced offerings and avoid the overpriced ones. Consequently, this imposes a winner's curse on uninformed investors: they receive large allocations in overpriced IPOs and are rationed in underpriced ones. Without a discount, the expected payoff of the uninformed investors would be negative. Therefore, the offer price must be set below the expected aftermarket price to keep them in the market. Consequently, underpricing can be regarded a compensation for this informational disadvantage of uninformed investors (Ljungqvist, 2007; Rock, 1986).

Rock's (1986) model illustrates that when IPO investors start from different information sets, less informed investors face a winner's curse and issuers may underprice to keep broad demand

in the market. This makes every observable and credible quality signal relevant, which closes this information gap and thereby reduces the need for underpricing. As already stated above, two such potential signals, namely VC-backing and greenness, are the subject of this thesis and are discussed in more detail below.

2.2. Underpricing of VC-backed IPOs

When trying to understand how VC-backing may affect IPO underpricing, it is useful to first consider the role of underwriters as financial intermediaries in new issues. Here, Booth and Smith (1986) argue that underwriters certify that offer prices are consistent with insiders' private information by putting their reputation at stake. However, complete certification would require discovering all adverse inside information, which can be difficult or costly. Therefore, issuing at a lower offer price can substitute for direct certification and protects the underwriter against a reputational loss, should unfavorable private information emerge after the issue. In this framework, the degree of underpricing is inversely related to the completeness of certification (Booth & Smith, 1986).

This certification logic can be extended to VCs, who can act as third-party certifiers as well. One of the first studies in this field is the one by Megginson and Weiss (1991). The authors use a matched sample of VC-backed and non-VC-backed offerings from 1983 to 1987 to test whether VC involvement can certify issuer quality in IPOs. Their results reveal that VC-backed IPOs show significantly lower underpricing than matched non-VC offerings, amounting to 4.8 percentage points less underpricing on average, consistent with a certification role of VCs. The authors argue that VCs are repeatedly active in capital markets and have strong incentives to maintain their reputation among underwriters and investors. This incentive, together with the fact that VCs often are major shareholders prior to the IPO and typically retain substantial holdings at and after the offer, can make their involvement a credible signal of issuer quality and reduce information asymmetries that otherwise would contribute to underpricing (Megginson & Weiss, 1991).

Over time, a growing body of research has produced findings consistent with the predictions of this so-called venture capital certification hypothesis. Belghitar and Dixon (2012), for example, examine IPOs in the UK between 1992 and 1996 and find that VC involvement is associated with lower underpricing: mean initial market-adjusted returns of VC-backed offerings are 2.95 percentage points lower than the returns of comparable non-VC IPOs. Consistent with the certification hypothesis, the authors interpret this finding as evidence that VCs act as certifiers

that reduce information asymmetry at the offering and thereby reduce underpricing. Moreover, the paper assesses the offerings' long-run returns against sized-matched benchmarks and find that both VC-backed and non-VC-backed IPOs underperform and that VC-backing does not deliver superior long-term performance (Belghitar & Dixon, 2012).

Other papers further develop the certification hypothesis. Chahine and Filatotchev (2008) show for the French IPO market between 1996 and 2002 that offerings backed by VCs affiliated with the lead underwriter exhibit substantially lower underpricing by 23.6 percentage points relative to non-affiliated VC-backed IPOs. This finding refines the certification mechanism, as it suggests that certification is strongest when the VC is affiliated with the lead underwriter and can therefore credibly reduce information asymmetry and valuation uncertainty, leading to lower IPO underpricing (Chahine & Filatotchev, 2008).
Arikawa and Imad'eddine (2010) develop these findings even further. They show for the Japanese market that affiliation between the VC and the lead underwriter reduces underpricing only when the VC invests its own capital directly in the issuer, but not when it invests via limited-partnership funds. This suggests that certification is effective only when the VC's own wealth is sufficiently exposed (Arikawa & Imad'eddine, 2010).

While the certification hypothesis is typically framed around the issuance event, it is important to mention that subsequent evidence suggests that VC involvement can extend even beyond the listing date. Iliev and Lowry (2020) document that approximately 15% of VC-backed companies recieve additional capital from VCs within five years after going public. The authors interpret this finding as an efficient response to ongoing information asymmetries among newly public firms which would otherwise limit firms' ability to make value-adding investments (Iliev & Lowry, 2020). Overall, this evidence reinforces the view that VCs can retain a comparative information advantage even after the IPO, which strengthens the economic plausibility of VC-backing as a credible pre-issuance signal.

Another important theory that aims to explain the influence of VC-backing on IPO underpricing is the grandstanding hypothesis introduced by Gompers (1996). It states that especially young VCs with less established reputations have strong incentives to generate visible short-term performance signals to build reputation and raise subsequent funds. One way of generating such signals is to take younger firms public earlier than would otherwise be optimal. As the value of these firms is harder to estimate, since there is less information about them at the time of listing,

they bear more uncertainty, which in turn raises the expected degree of underpricing (Gompers, 1996).

Lee and Wahal (2004) provide empirical support that is consistent with the grandstanding hypothesis. They use a U.S. sample from 1980 to 2000 and show that VC-backed IPOs exhibit greater underpricing than comparable non-VC-backed ones after accounting for endogeneity in the receipt of venture funding. They then document that IPO underpricing predicts larger subsequent fundraising outcomes. Importantly, the association between underpricing and subsequent fundraising declines with VC reputation, wherefore it is weaker for more established VCs. Therefore, these findings are consistent with reputation-building incentives being most salient among less established VCs, which is the central aspect of the grandstanding hypothesis (Lee & Wahal, 2004).

Overall, the previous evidence does not imply a uniform effect of VC-backing on underpricing. Beyond findings of lower or higher underpricing, some studies document no measurable impact. Elston and Yang (2010), for example, find no statistically significant difference in underpricing between VC- and non-VC-backed IPOs in Germany, and attribute this result to the relatively late and limited development of the domestic VC market.

The literature therefore points to opposing forces. Certification predicts lower underpricing, whereas grandstanding can imply the opposite, and some settings yield null effects. To provide a baseline prediction, this thesis follows the certification logic and tests the following hypothesis:

Hypothesis 1:
VC-backed IPOs exhibit lower underpricing and thereby lower first-day returns than non-VC-backed IPOs.

2.3. Underpricing of green IPOs

A second issuer characteristic that may affect IPO underpricing is firms' environmental profile or their "greenness". Conceptually, greenness can reduce information asymmetries at the IPO if it conveys additional, value-relevant information, for example, about a firm's technologies, cost structure, and regulatory exposure. However, it can be difficult to distinguish between green and non-green businesses in practice. There often exist notable differences in the environmental, social, and governance (ESG) ratings from different providers: agencies differ

in the categories they cover, in how they measure the same underlying issues, and in how they aggregate category assessments into a single overall score (Berg et al., 2022). Moreover, potential conflicts of interest arising from commercial ties between rating agencies and rated companies may further skew classifications (Tang et al., 2025). Therefore, the literature adopts alternative proxies, which are heterogeneous across studies and therefore limit their comparability.

Despite these methodological divergences, several papers document that green IPOs tend to be less underpriced than comparable non-green offerings. For example, Wang et al. (2022) study Chinese A-share IPOs from 1996 to 2018 and classify an issuer as green when it remains a constituent of any CSI Green Stock Index at the end of the sample period and when its industry classification has been unchanged since 2007. They find that green IPOs are still underpriced but exhibit higher pricing efficiency and lower deliberate underpricing than non-green ones. Specifically, they show that in their matched sample, deliberate underpricing is lower by 31.94 percentage points for green IPOs. The authors attribute these findings to investors' increasing environmental awareness and improved disclosure of green characteristics, which reduce pre-issuance uncertainty and allows offer prices to track intrinsic value more closely (Wang et al., 2022).

Using Chinese IPOs between 2019 and 2023, Meng et al. (2024) define greenness by the presence of green patents granted before listing. They document materially lower IPO underpricing for green innovators, with first-day returns being 10.7 percentage points lower in their fully controlled specification. The authors argue that especially inventive patents act as a credible quality signal, which mitigates information asymmetries and induces higher institutional bid prices during bookbuilding, thereby raising offer prices and reducing first-day returns (Meng et al., 2024).

Evidence from other markets broadly points in the same direction but is less conclusive. For European energy IPOs, Anderloni and Tanda (2017) find lower first-day underpricing for alternative-energy issuers, with a difference of about 6.2 percentage points relative to traditional or nuclear issuers. However, this difference is not statistically significant at the one-week horizon or when controlling for market conditions (Anderloni & Tanda, 2017).

Kim et al. (2025) study U.S. IPOs during the COVID-19 pandemic. They use the g-score of Pástor et al. (2022), which is constructed from MSCI ESG data and reported at the MSCI industry level. Kim et al. (2025) then map these industry-level g-scores to the firm-level, using

each issuer's MSCI industry assignment to obtain a firm-level greenness proxy at issuance. The authors also consider changes in environmental concern in their analysis, which they proxy with the month-to-month change in aggregate climate change coverage across the top five U.S. newspapers as reported by the Media and Climate Change Observatory. They find that green issuers are 18.11 percentage points less underpriced than brown issuers, and that increases in environmental concerns reduce brown IPOs' first-day returns and shift demand toward greener issuers. The authors interpret these findings through the additional information that is revealed by green companies. They argue that ESG scores contain value-relevant information, as they, for example, disclose firms' proximity to climate risks. Moreover, firms with ESG scores get more analyst attention and usually are associated with higher-quality disclosures, whereby information asymmetries are lowered and underpricing is reduced (Kim et al., 2025).

While much of the green IPO literature documents lower initial returns for green issuers, sustainability can also attract investor attention and enhance demand, which may translate into larger first-day price jumps. Consistent with this view, Economidou et al. (2023), who examine a U.S. sample of 1,856 IPOs, document that companies for which there exists ESG performance information before the issuance exhibit 17 percentage points higher mean first-day returns than firms that do not have such information prior to their IPO. The authors attribute this finding to a positive market response to the visibility of ESG performance information prior to listing. This is consistent with ESG-rated issuers' adoption of agency-cost-reducing practices, their stronger post-IPO equity-financing outcomes, and a more sophisticated investor base compared to ESG-unrated peers (Economidou et al., 2023).

Lastly, Chan and Walter (2014), who identify green firms through membership in green indices and exchange-traded funds, find no significant short-run underpricing differences between green and matched non-green issuers. However, their analysis reveals that greenness is associated with stronger long-run returns (Chan & Walter, 2014).

Overall, prior research on green IPOs provides mixed evidence. Many studies report lower initial returns for green issuers, consistent with green attributes acting as additional information signals that reduce pre-issuance uncertainty and improve pricing efficiency. At the same time, other evidence suggests that greenness does not necessarily translate into statistically distinguishable short-run underpricing once issuer and market characteristics are accounted for. Importantly, more recent work points to settings in which sustainability-related information is

associated with higher underpricing. Consistent with the majority of this literature, the second hypothesis is formulated.

Hypothesis 2:
Green IPOs exhibit lower underpricing and thereby lower first-day returns than non-green IPOs.

2.4. Underpricing of VC-backed green IPOs

While no research could be identified that explicitly examines the joint impact of VC-backing and greenness on underpricing, some sustainability-oriented studies include VC-backing in their analysis. The study of Economidou et al. (2023), for example, which was discussed above, controls for VC involvement in the underpricing regressions. A paper that more directly highlights how sustainability-related information interacts with ex-ante uncertainty, using VC-backing as one proxy, is Boulton (2024). It uses the United Nations Sustainable Development Goals (SDGs) to construct a country-level SDG progress measure to proxy sustainable development and documents that IPO underpricing is lower in countries that are closer to achieving the SDGs. The author uses VC-backing as a proxy for ex-ante uncertainty. In cross-sectional tests, the negative SDG-underpricing relation is attenuated for IPOs with lower ex-ante uncertainty, including VC-backed offerings, consistent with the idea that SDG progress is most informative for IPOs lacking other certifying intermediaries (Boulton, 2024).

Overall, these insights suggests that sustainability-related information can affect IPO pricing particularly when ex-ante uncertainty is high, but it does not speak to whether an issuer's own environmental positioning and VC involvement jointly shape underpricing. This thesis therefore treats VC-backing and greenness as two observable, pre-IPO signals that could operate as complementary certification mechanisms as they relate to different dimensions of issuer quality: VC-backing primarily certifies issuer fundamentals through VCs' screening and monitoring activities and their repeated interactions with underwriters and investors, while greenness provides additional value-relevant information, for example through higher quality disclosures or details about exposure to climate risks. When a green issuer is also backed by a VC, investors observe both the environmental signal and the VC's willingness to expose its own capital and reputation to downside risk. This joint signal should reduce uncertainty more strongly than either characteristic alone and therefore be associated with the lowest degree of underpricing.

Hypothesis 3:
Green IPOs that are VC-backed exhibit the lowest underpricing and thereby the lowest first-day returns.

3. Data and methodology

3.1. Data selection

The data used in this thesis were obtained from SDC Platinum in LSEG Workspace. The final cross-sectional dataset contains a global sample of common stock IPOs from January 2010 through December 2024. First-day closing prices are available for all observations. The sample includes only completed IPOs with finalized terms and issuers that are making their first public listing. Following standard IPO sample screens in Loughran and Ritter (2004), best-effort offers are excluded, since they are typically very small. Furthermore, American Depository Receipts (ADRs), closed-end funds, Real Estate Investment Trusts (REITs), banks and savings-and-loans, as well as partnership offerings are excluded to only focus on operating-company IPOs (Loughran & Ritter, 2004). Consistent with Brailsford et al. (2000), unit offerings are excluded, as they bundle common shares with warrants or other securities, making their valuation more complex and therefore not comparable to common stock initial public offerings. For related comparability reasons, SPAC IPOs are excluded as well.

3.2. Variables

Consistent with the previously introduced underpricing definition of Ritter (2011), underpricing is measured by the first-day return, calculated as the percentage change from the offer price to the first-day closing price and used as the main dependent variable in the empirical analysis. To limit the impact of extreme positive observations and still preserve the full sample, the first-day returns are winsorized at the 99th percentile of the distribution, while the natural lower bound at -100.0% is left unchanged.

To complement this short-term underpricing measure, the analysis also considers two supplementary post-IPO performance indicators, namely the 60-day and the 365-day returns, as alternative dependent variables. To construct these variables, stock prices 60 and 365 days after the IPO date are obtained from SDC, which reports the closing price on the primary exchange and, if the scheduled day falls on a holiday or non-trading day, automatically uses the next available trading day within a five-day window. The 60-day and 365-day returns are then defined as buy-and-hold returns from the offer price to the closing price on the 60th and 365th

day after the IPO. Analogous to the first-day return, these longer-horizon returns are winsorized at the 99th percentile of their empirical distributions, while the natural lower bound at -100.0% is preserved.

To differentiate between VC-backed and non-VC-backed IPOs, the corresponding flag from SDC is used. The final dummy variable is one for VC-backed IPOs and zero for non-VC-backed ones. However, for 703 observations, the VC flags are missing, wherefore these IPOs are excluded from the final dataset.

As already noted, distinguishing green from non-green firms is challenging. Some studies classify firms ex post using green-index membership measured at the end of the sample (e.g., Wang et al., 2022), while others proxy greenness with ESG ratings (e.g., Pástor et al., 2022). This thesis finds neither approach ideal for IPO underpricing analysis. This is because index membership is determined after the offering (e.g., MSCI, 2025) and thus not observable at the IPO date, and firm-level ESG ratings are rarely available for new issuers (Reber et al., 2022). Therefore, these classification approaches use information that is not necessarily available at the IPO date and therefore cannot be observed by investors at this date. To ensure reliance only on information available at issuance, this thesis adopts an industry-based classification, since industries are easily observable for investors at the IPO. Therefore, issuers are assigned to industries using the Refinitiv Business Classification (TRBC) on the activity level, retrieved from SDC Platinum.

To infer greenness, this work follows the TRBC activity-level mapping proposed by Jourde and Stalla-Bourdillon (2024), which assigns firms to green, brown, and neutral categories based on their business activities. This thesis adopts the authors' baseline lists as well as their proposed extensions. Green activities include renewables and alternative or renewable electric utilities, and further encompass paper and forest products, electric vehicles, and environmental services. Brown activities include coal and oil-and-gas-related businesses, fossil-fuel electric utilities, natural gas utilities, and additionally cover metals and mining, construction materials, non-electric automobile and truck manufacturers, and selected transportation services (Jourde & Stalla-Bourdillon, 2024). The complete list of TRBC activities classified as green or brown and used in this thesis is shown in Table 1 in the appendix. Based on this mapping, two dummy variables are constructed. The first one, green, equals one if the issuer is classified as green and zero otherwise, while the second one, brown, equals one if the issuer is classified as brown and zero otherwise. Issuers in neither category are classified as neutral and form the omitted reference group in the regressions.

This thesis considers three types of controls encompassing firm-specific, deal-specific, and market-specific variables.

The first firm-level controls are the company's age and its size. Because both variables are strictly positive and right-skewed, the natural logarithm is applied to each. Age is measured in years as the difference between the IPO date and the founding date. More mature firms are better known and attract more reputable underwriters, which reduces information asymmetry, as noted by Anderloni and Tanda (2017) and consistent with the grandstanding hypothesis (Gompers, 1996). Size is measured as total assets before the offering in millions of USD. Larger firms are found to exhibit lower underpricing because risk and information opacity are lower, as argued by Ellul and Pagano (2006). Wang et al. (2022) treat historic accounting information as informative about a firm's value. Motivated by this, issuer profitability is proxied by pre-IPO earnings per share (EPS), which is directly retrieved from SDC as the EPS for the twelve-months period prior to the listing, and return on assets (ROA), whereby both measures are winsorized to the 1st and 99th percentile due to extreme observations that could skew results. For the scope of this thesis, ROA is measured as pre-IPO EBITDA divided by pre-IPO total assets, where pre-IPO EBITDA is defined in SDC as earnings before interest, taxes, depreciation, and amortization for the latest 12-month period prior to the offering, and pre-IPO total assets refers to the issuer's pre-offering balance sheet total assets. Both input variables are reported in millions USD.

The second group comprises deal-specific controls. Here, auditor reputation is included as Megginson and Weiss (1991) note that firms hire auditors to certify prospectus information, which helps resolve information asymmetries and thereby lowers underpricing. The reputation is measured by the Big4 dummy, which equals one when the issuer's auditor at the IPO is Deloitte, Ernst & Young or EY, KPMG, or PricewaterhouseCoopers or PwC, and zero otherwise. The second control variable in this group considers the issue size. In this thesis, issue size is proxied by Refinitiv's proceeds amount in millions of USD, which measures total IPO transaction proceeds aggregated across all tranches and markets and, for common stock offerings, is computed as the sum of shares offered multiplied by the tranche offer price. As this variable naturally is strictly positive and right-skewed, the natural logarithm is applied. The proxy is motivated by Wang et al. (2022), who argue that the deal size not only reflects the scale of the transaction, but also reflects underwriters' and investors' judgements of current market conditions. While Wang et al. (2022) operationalize deal size as the number of shares offered, the same intuition applies to the total proceeds as an alternative size-based measure of the offering. The third variable is the share overhang, which measures the extent to which pre-

IPO shareholders retain ownership relative to the number of shares sold in the offering, indicating how much of the firm remains in the hands of original owners compared to the free float. In this thesis, this variable is defined as the number of shares retained by pre-IPO shareholders relative to the number of shares sold in the IPO. Retained shares are obtained as the difference between shares outstanding after the offer and shares offered, where both share counts are aggregated across all markets. Shares outstanding after the offer is taken from the prospectus when available and otherwise from the first post-IPO quarterly or annual report in Worldscope. Observations with negative overhang are treated as missing, and the variable is transformed using the natural logarithm as it is strictly positive and strongly right-skewed. The variable is motivated by Bradley and Jordan (2002), who use share overhang as one explanatory variable and show that IPOs with higher overhang are significantly more underpriced. They argue that only the shares sold in the IPO are actually underpriced so that, as a larger fraction of shares is retained, the dilution cost per retained share falls, making greater underpricing more likely for high-overhang issuers (Bradley & Jordan, 2002).

The last group of variables controls for general market influences. It includes two variables that both rely on daily returns of the price index of the FTSE All-World Index in USD, which is used to proxy the global market. The first one is the index's return over the 30 trading days prior to the IPO. It is motivated by Hanley (1993), who finds a positive relationship between IPO underpricing and market return. The second one is the index's volatility, measured as the standard deviation of daily returns over the 30 trading days prior to the IPO without annualization. This control is motivated by Paudyal et al. (1998), who document that higher market volatility at the time of pricing is associated with significantly higher initial excess returns, since issuers set offer prices more conservatively in volatile markets.

To ensure comparability across specifications, the empirical analysis is conducted on a sample for which underpricing, VC status, the green-brown-neutral classification, and all firm-, deal-, and market-specific control variables are simultaneously available. Accordingly, all IPOs with missing information on any of these variables are excluded. As the analysis uses three different dependent variables, the estimation samples vary: the underpricing sample serves as the baseline and comprises 8,642 observations. The 60-day return sample and the 365-day return sample further restrict the baseline sample to observations with available post-IPO price data at the respective horizons. Therefore, the 60-day return sample has 8,283 observations and the 365-day return sample includes 7,966 IPOs.

3.3. Estimation approach

The empirical analysis of this thesis uses linear regression models that are estimated using ordinary least squares with heteroskedasticity-robust standard errors. As already noted above, the empirical tests employ three distinct dependent variables: first-day underpricing, 60-day post-IPO returns, and 365-day post-IPO returns. This setting can capture both the immediate pricing effect at the offering and the subsequent offer-to-market performance over different horizons. Using multiple return horizons is important because the mechanisms emphasized in the hypotheses may manifest differently at issuance than in the post-IPO trading period.
Accordingly, the dependent variable is indexed by the return horizon $h \in \{0, 60, 365\}$, where $h = 0$ denotes first-day underpricing, and $h = 60$ and $h = 365$ denote the corresponding post-IPO performances. All estimating equations are specified in terms of $Y_{i,h}$ and are estimated separately for each horizon h, which implies three outcome-specific samples driven by the availability of post-IPO return data.
To ensure a one-to-one mapping between hypotheses and empirical results, this thesis specifies one estimating equation per hypothesis. All regressions include year fixed effects to account for unobserved time-varying factors that affect all IPOs issued in the same calendar year.

To test Hypothesis 1, the following specification is estimated for each horizon h:

$$Y_{i,h} = \alpha_h + \beta_{VC,h} VC_i + F_i' \delta_h + D_i' \theta_h + M_i' \lambda_h + T_i' \pi_h + \varepsilon_{i,h} \quad (1)$$

Here, $Y_{i,h}$ denotes IPO i's performance measure at horizon h. VC_i is an indicator that equals one if the issuer is VC-backed and zero otherwise. F_i is a vector of firm-specific controls that consists of the control variables described above, including the company's size ($\ln(\text{FirmSize}_i)$) and age ($\ln(\text{FirmAge}_i)$), as well as EPS (EPSWin_i) and ROA (ROAWin_i) as the two profitability measures. D_i is a vector of deal-specific controls and includes the Big4 dummy (Big4_i), the issue size ($\ln(\text{IssueSize}_i)$), as well as the share overhang ($\ln(\text{ShareOverhang}_i)$). The vector M_i comprises the market-specific controls, namely the return of the FTSE All-World Index over the 30 trading days prior to the IPO (MarketReturn_i), as well as the volatility of the index's daily returns over the 30 trading days prior to the IPO ($\text{MarketVolatility}_i$). T_i includes the year fixed effects and denotes a vector of year dummy variables for the IPO year. Lastly, $\varepsilon_{i,h}$ captures the error term.

Building on the VC specification, Hypothesis 2 extends the model by replacing the VC indicator with the issuer's greenness classification, captured by Green_i, while keeping the same set of controls and year fixed effects:

$$Y_{i,h} = \alpha_h + \beta_{G,h}\text{Green}_i + F_i'\delta_h + D_i'\theta_h + M_i'\lambda_h + T_i'\pi_h + \varepsilon_{i,h} \quad (2)$$

To test Hypothesis 3, the specification is augmented with the interaction term between VC-backing and greenness to allow the association between VC-backing and IPO performance to differ across green and non-green issuers:

$$Y_{i,h} = \alpha_h + \beta_{VC,h}VC_i + \beta_{G,h}\text{Green}_i + \beta_{VC\times G,h}(VC_i \times \text{Green}_i) + F_i'\delta_h + D_i'\theta_h + M_i'\lambda_h + T_i'\pi_h + \varepsilon_{i,h} \quad (3)$$

However, to test Hypothesis 3, it is not sufficient to consider the coefficient of the interaction term of Equation (3) alone. This coefficient only captures whether the VC effect differs between green and non-green IPOs and therefore allows no conclusion about whether VC-backed green IPOs exhibit the lowest underpricing. Accordingly, Hypothesis 3 is tested by comparing the model-implied predicted outcomes for each of the four issuer types defined by VC-backing and greenness.

Let $v \in \{0, 1\}$ denote the VC status ($v = 1$ for VC-backed issuers and $v = 0$ otherwise) and let $g \in \{0, 1\}$ denote greenness ($g = 1$ for green issuers and $g = 0$ otherwise). Let $\mu_{vg,h}$ denote the model-implied adjusted prediction for group (v, g) at horizon $h \in \{0, 60, 365\}$. The prediction is defined as the sample average of fitted values from Equation (3) obtained after setting $VC_i = v$ and $\text{Green}_i = g$ for all observations, while keeping the remaining regressors and the year dummies at their observed values. Hypothesis 3 implies that the predicted underpricing for VC-backed green issuers is lower than that of each of the three remaining groups:

$$\mu_{11,0} - \mu_{10,0} < 0 \qquad \mu_{11,0} - \mu_{01,0} < 0 \qquad \mu_{11,0} - \mu_{00,0} < 0$$

Using Equation (3), these contrasts correspond to the following linear combinations of estimated coefficients:

$$\mu_{11,0} - \mu_{10,0} = \beta_{G,0} + \beta_{VC\times G,0} \quad (4a)$$

$$\mu_{11,0} - \mu_{01,0} = \beta_{VC,0} + \beta_{VC\times G,0} \quad (4b)$$

$$\mu_{11,0} - \mu_{00,0} = \beta_{VC,0} + \beta_{G,0} + \beta_{VC\times G,0} \quad (4c)$$

The final comparisons are then implemented using post-estimation marginal means and targeted pairwise contrasts. After estimating Equation (3) separately for each horizon $h \in \{0, 60, 365\}$,

the model-implied predicted outcomes $\widehat{\mu_{vg,h}}$ for the four $(\mathrm{VC}, \mathrm{Green})$ groups are computed using post-estimation predictive margins, averaging over the empirical distribution of the control variables and year fixed effects in the estimation sample. To evaluate Hypothesis 3, the three targeted differences $\widehat{\mu_{11,0}} - \widehat{\mu_{10,0}}$, $\widehat{\mu_{11,0}} - \widehat{\mu_{01,0}}$, and $\widehat{\mu_{11,0}} - \widehat{\mu_{00,0}}$ are tested using post-estimation pairwise contrasts of predictive margins.

Finally, although the three hypotheses are directional, statistical inference throughout this thesis is based on two-sided tests. Concretely, reported p-values refer to two-sided t-tests of the null that the relevant coefficient, or for Hypothesis 3, the relevant pairwise contrast equals zero. This choice is motivated by the mixed prior evidence and competing theoretical mechanisms, particularly for VC-backing but also for issuer greenness. Therefore, economically meaningful effects could arise in either direction and the sign and magnitude of the estimated coefficients and contrasts are interpreted relative to the directional predictions from the three hypotheses. Accordingly, a hypothesis is considered supported only if the estimated effect is statistically different from zero at least at the 5% significance level and has the predicted sign, while statistically significant estimates of the opposite sign are interpreted as evidence against the directional hypothesis. The next chapter presents the estimation results and assesses the extent to which they are supported by the data.

4. Empirical results

4.1. Descriptive statistics and correlation matrix

To provide context for the subsequent regression analysis, this section summarizes the key characteristics of the samples and variables used in the empirical tests. Table 2 in the appendix shows the descriptive statistics for the three dependent variables used in the three samples. As already stated above, the number of observations differs in the three samples. The underpricing sample includes 8,642 offerings, the 60-day return sample contains 8,283 observations, and the 365-day return sample includes 7,966 IPOs. This decline for longer-horizon measures reflects the limited availability of post-IPO price data for some issues. Overall, the 60-day return sample shows the highest average winsorized returns of 0.69, while winsorized underpricing and 365-day returns are quite similar with 0.46 and 0.45, respectively.

While Table 2 documents the distribution of the dependent variables, Table 3 in the appendix shifts the focus to the baseline underpricing sample. It shows the descriptive statistics for this

sample as well as for its VC-backed and green subsamples. This underpricing dataset comprises 8,642 issues, of which 2,873 are VC-backed and 202 are classified as green.
For the full underpricing sample, the mean of the winsorized first-day returns is 0.46 with a median of 0.26. This implies an average underpricing of 46% and suggests that initial returns are skewed to the right. The standard deviation of 0.85 and the range from -0.98 to 5.71 point to considerable cross-sectional dispersion, consistent with a right-tailed distribution that includes a small number of high first-day returns. However, VC-backed IPOs exhibit even higher average underpricing with mean first-day returns of 0.60 and a median of 0.43. By contrast, green IPOs display average first-day returns of 0.44 and a median of 0.26, which is very similar to the overall sample.

When comparing issuer characteristics across the main underpricing sample and its VC-backed and green subsamples, clear systematic patterns emerge. As displayed in Table 3, VC-backed and green IPOs tend to be larger and marginally older at the time of listing than the average issuer. Profitability is generally low in the full underpricing sample but heterogeneous across its subsamples: compared to the average IPO, green issuers are slightly more profitable before the IPO, whereas VC-backed firms are, on average, less profitable on both EPS and ROA measures.
Deal characteristics differ across subsamples as well. Relative to the full underpricing sample, VC-backed IPOs are associated with larger mean issue sizes and higher average share overhang, showing that pre-IPO shareholders keep a greater ownership stake compared with the shares sold in the offering. Green IPOs are very close to the full underpricing sample averages in these two variables.
By contrast, market conditions at the time of listing are very similar across groups: the means and dispersions of the market return and market volatility variables are almost identical for the full, VC-backed, and green underpricing samples.

Table 4 in the appendix complements these insights by showing yearly descriptive statistics for the main variables of the underpricing sample over the 2010 to 2024 period. The number of IPOs per year ranges from 238 in 2013 to 1,265 in 2021. Between 2010 and 2019, the average winsorized first-day returns vary between 0.19 and 0.42. However, in more recent years, they increase significantly: the average underpricing peaks at 0.84 in 2020 and stays high at 0.73 in 2021. Despite the decline in mean first-day returns to 0.37 in 2022, they stay above pre-2020 levels in 2023 and 2024, at 0.52 and 0.61, respectively, although the number of issues falls back to 500 and 346 IPOs. These patterns show that there is significant time-series variation in both

underpricing and issuance activity during the sample period, in addition to the strong cross-sectional dispersion in initial returns reported above.

By contrast, issuer and deal characteristics show less pronounced time-series variation. While profitability at the time of listing is typically low with only slight fluctuations over time, the average firm size and age remain in a relatively narrow range as well. However, average issue sizes tend to be larger in years with higher IPO activity and underpricing, especially in 2020 and 2021, which are the years with the highest IPO activity and elevated underpricing. Mean share overhang is slightly higher in the later part of the sample, consistent with pre-IPO shareholders retaining a larger fraction of shares in more recent years. Simultaneously, market returns and volatility vary only moderately across years.

Overall, the insights from Table 4 suggest that the main sources of time-series variation in the sample are underpricing and issuance activity rather than systematic shifts in issuer fundamentals, deal characteristics, or market conditions.

To complement the descriptive statistics, this thesis examines the correlation structure of the explanatory variables and tests for multicollinearity. These diagnostics are necessary to ensure that the estimated effects of VC-backing and greenness are not driven by strongly collinear controls. Table 5 in the appendix reports correlation matrices for the continuous regressors, presented separately for the underpricing sample, the 60-day return sample, as well as the 365-day return sample. The dummy variables are not reported in Table 5, as simple Pearson correlations are less informative for binary variables. Their potential contribution to multicollinearity is instead assessed using variance inflation factors (VIFs), which can be seen in Table 6 in the appendix. To capture the full set of regressors considered in the empirical analysis, the VIFs are computed based on the most saturated specification in Equation (3), which includes VC_i, Green_i, the interaction term $\mathrm{VC}_i \times \mathrm{Green}_i$, and all firm-, deal-, and market-level controls.

Panel a) of Table 5 shows that the correlations between underpricing and the controls are statistically significant for most variables. Underpricing is positively correlated with firm age, EPS, ROA, share overhang and market returns, while it is negatively correlated with issue size. It shows no significant association with firm size and market volatility.
Among the regressors, the strongest correlations arise between firm size and issue size, followed by the correlation between EPS and ROA. Economically, however, these results are intuitive: larger firms tend to have larger offerings and more profitable firms naturally exhibit

both higher EPS and ROA. Although the correlation between firm size and issue size is relatively strong, the remaining pairwise correlations are moderate in magnitude.

Panels b) and c) of Table 5 largely mirror this dependence structure because they rely on the same set of controls and variable constructions but are computed on the subsets of IPOs with available 60-day or 365-day post-IPO price data. Regarding the dependent variables, 60-day returns correlate most strongly with firm age, whereas 365-day returns correlate most strongly with ROA. However, both correlations remain modest. Overall, Panels b) and c) do not reveal additional correlation patterns that would raise concerns about multicollinearity: the strongest correlations among controls remain those between firm size and issue size and between EPS and ROA.

The VIF test in Table 6 confirms the absence of severe multicollinearity across all three samples. The largest VIFs are observed in the underpricing sample, where firm size and issue size display values of 3.15 and 2.92, respectively, whereas all other regressors exhibit values closer to one. The average VIF in all samples remains low and around 1.5. Following the rule of thumb by Gujarati and Porter (2009, p. 340), VIF values above 10 are typically interpreted as indicating serious multicollinearity. Taken together, these diagnostics suggest that the set of explanatory variables can be retained in its entirety and that the coefficients reported in the subsequent regression analysis can be interpreted without concerns about destabilizing multicollinearity.

4.2. Regression results

This subchapter presents the main regression results, which are organized to mirror the three hypotheses. It first documents the association between underpricing and VC-backing, then evaluates issuer greenness, and finally assesses whether the two signals interact in IPO pricing.

4.2.1. VC-backing IPO pricing outcomes

Table 7 in the appendix reports the OLS estimates of Equation (1) using winsorized first-day underpricing, winsorized 60-day post-IPO returns, and winsorized 365-day post-IPO returns as dependent variables. All specifications include the full set of firm-, deal-, and market-specific control variables as well as year fixed effects.

Across all three horizons, the VC dummy's coefficient is positive and statistically significant at the 1% level. VC-backing is associated with 25.37 percentage points higher first-day

underpricing relative to non-VC IPOs. This remains positive in the aftermarket as well, with VC-backing being associated with 44.45 percentage points higher 60-day returns and 22.19 percentage points higher 365-day returns. As already noted above, the corresponding estimation samples comprise 8,642 IPOs for underpricing, 8,283 IPOs for 60-day returns, and 7,966 IPOs for 365-day returns.

In economic terms, these effects are large, as they correspond to roughly 55% of the sample mean underpricing, about 64% of the sample mean 60-day return, and about 49% of the sample mean 365-day return.

Overall, these baseline estimates contradict Hypothesis 1, as they indicate higher, not lower, underpricing for VC-backed issuers. The economic interpretation of this pattern is discussed in chapter 6.2. below.

4.2.2. Issuer greenness and IPO pricing outcomes

Table 8 in the appendix replaces the VC indicator with the greenness dummy, as shown in Equation (2), while retaining the same set of controls and year fixed effects. The estimated coefficient of Green is negative across all three horizons. Issuer greenness is estimated to be associated with 4.56 percentage points lower first-day underpricing relative to non-green issuers, and with 9.93 percentage points lower 365-day returns. However, both estimates are statistically indistinguishable from zero. For the 60-day return sample, issuer greenness is estimated to be associated with 12.92 percentage points lower 60-day buy-and-hold returns relative to non-green issuers. This estimate is only marginally significant at the 10% level.

In terms of magnitude, the estimated differences correspond to roughly 10% of the sample mean underpricing, about 19% of the sample mean 60-day return, and about 22% of the sample mean 365-day return.

Taken together, the baseline estimates are directionally consistent with Hypothesis 2 but do not provide statistically significant evidence that greenness is associated with lower underpricing. The economic interpretation of this is discussed in chapter 6.3. below.

4.2.3. Interaction effect of VC-backing and greenness on IPO pricing outcomes

Building on these baseline specifications, Equation (3) introduces an interaction term between VC-backing and issuer greenness, while retaining the same set of controls and year fixed effects as in Equations (1) and (2). Table 9 in the appendix shows the corresponding OLS estimates. However, testing Hypothesis 3 requires comparing the model-implied predicted outcomes

across the four issuer groups defined by VC-backing and greenness. Table 10 reports these predictive margins and targeted contrasts, computed after estimating Equation (3) as described above. For first-day underpricing, the predicted outcomes are 0.3815 for non-VC non-green issuers, 0.3372 for non-VC green issuers, 0.6359 for VC non-green issuers, and 0.5685 for VC-backed green issuers. Relative to VC-backed green issuers, the contrasts imply 18.71 percentage points higher predicted underpricing compared to non-VC non-green issuers, and 23.13 percentage points higher underpricing compared to non-VC green issuers, both statistically significant at the 5% level. The 6.73 percentage point difference relative to VC-backed non-green issuers is statistically indistinguishable from zero.

A comparable pattern emerges for 60-day returns. Relative to VC-backed green issuers, the contrasts imply 24.17 percentage points higher predicted returns compared to non-VC non-green issuers, marginally significant at the 10% level, and 35.20 percentage points higher predicted returns compared to non-VC green issuers, significant at the 5% level. The remaining 20.56 percentage point difference relative to VC-backed non-green issuers is statistically insignificant.

For 365-day returns, the contrasts relative to the two non-VC groups are statistically indistinguishable from zero, whereas within VC-backed issuers, greenness is associated with 31.01 percentage points lower predicted 365-day returns relative to non-green issuers, significant at the 5% level.

Overall, the model-implied comparisons do not support Hypothesis 3 for first-day underpricing, as VC-backed green IPOs are not associated with lower predicted underpricing than the other issuer groups in the targeted contrasts. The economic interpretation of this is discussed in chapter 6.4. below.

5. Robustness checks

This chapter assesses whether the baseline associations are stable across three complementary checks: a more granular classification of non-green issuers, a sample split around the Paris Agreement, and a placebo outcome measured well before listing. The goal is to evaluate whether the main patterns for VC-backing, greenness, and their interaction persist when definitions or timing are changed. Furthermore, it aims to show that the specifications do not mechanically yield VC- or greenness-related differences in a setting where no such relation should arise.

5.1. Alternative classification: issuer brownness

In the baseline specifications, green issuers are contrasted with a pooled non-green benchmark. To ensure that the previous results are not sensitive to treating non-green offerings as homogenous, this subsection introduces the brownness dummy that separates green, brown, and neutral issues. This dummy is added to the greenness specification and to the interaction specification. In addition, the VC specification is re-estimated with both green and brown dummies to ensure that the VC association is not a result of different issuer-type compositions across VC-backed and non-VC-backed IPOs.

Table 11 in the appendix shows that including the green and brown dummies leaves the VC estimates essentially unchanged across all three horizons: VC-backing remains associated with higher first-day underpricing and higher post-IPO returns, with statistical significance at the 1% level in each sample. This suggests that the estimated VC-backing effect is not driven by differences in issuer types.

Table 12 in the appendix indicates that adding the brown dummy does not change the inference for Hypothesis 2: the green coefficient remains negative but is statistically insignificant at the 5% level for first-day underpricing and 365-day returns, and only marginally significant at the 10% level for 60-day returns. However, refining the non-green benchmark shows economically meaningful heterogeneity within non-green issuers. The results from Table 12 show that brown offerings are associated with 9.73 percentage points lower first-day returns than neutral issuers, which is significant at the 1% level. Brown offerings are also associated with 9.56 percentage points lower 365-day returns, significant at the 5% level. The 60-day estimate also is negative but not statistically distinguishable from zero.

Finally, Tables 13 and 14 in the appendix show that the interaction-based group comparisons are stable once brownness is controlled for. In particular, VC-backed green IPOs remain associated with higher predicted underpricing than both non-VC groups. The estimated differences amount to 18.19 and 23.19 percentage points and are both statistically significant at the 5% level. For 60-day returns, the contrast relative to non-VC non-green issuers is 24.11 percentage points and only marginally significant at the 10% level, whereas the contrast relative to non-VC green issuers is 35.20 percentage points and is statistically significant at the 5% level. For 365-day returns, the contrasts relative to the two non-VC groups are statistically insignificant at the 5% level. The within-VC comparison indicates 31.26 percentage points lower predicted 365-day returns for VC-backed green issuers relative to VC-backed non-green issuers, with statistical significance at the 5% level.

Overall, including the brownness dummy does not alter the conclusions for Hypothesis 1 to 3, as the key coefficients and pairwise comparisons remain qualitatively unchanged compared to the baseline specifications presented earlier. At the same time, however, the brownness results highlight that the non-green category is economically heterogeneous, with brown issuers exhibiting meaningfully lower first-day underpricing and, to a lesser extent, weaker long-run performance than neutral firms.

5.2. Sample split: Paris Agreement

The second robustness check assesses whether the estimated associations differ across time by splitting the sample based on the IPO year into offerings before 2016 and IPOs in 2016 or later. The split is motivated by the Paris Agreement, which was adopted on December 12th 2015 and entered into force on November 4th 2016 (United Nations Treaty Collection, n.d.). It is a prominent milestone in global climate policy, in which the parties of the United Nations Framework Convention on Climate Change collectively decide to overcome climate change (Wang et al., 2022). As the split is based on IPO year, it serves as a regime proxy rather than an event-time design.
Within each subsample, Equation (1)-(3) are re-estimated using the same set of firm-, deal-, and market-level controls and year fixed effects as in the baseline. The Tables 15 to 18 in the appendix report the corresponding results in separate pre- and post-2016 panels.

Table 15 in the appendix shows that the VC coefficient remains positive and statistically significant on the 1% level in both subsamples for first-day underpricing, 60-day returns, and 365-day returns. In each case, the estimated VC association is smaller in the pre-Paris Agreement subsample and larger in the post-Paris Agreement one, relative to the baseline estimates from Table 7.

Table 16 in the appendix shows that the green coefficient is regime-dependent for offer-to-market returns: before 2016, greenness is statistically indistinguishable from zero across all three horizons, whereas after 2016, it remains insignificant for first-day underpricing but is associated with 24.89 percentage points lower 60-day returns and 24.46 percentage points lower 365-day returns, both significant at the 1% level.

Regarding Hypothesis 3, the Tables 17 and 18 in the appendix show that for first-day underpricing, there is no evidence in either subsample that VC-backed green issuers exhibit the lowest predicted underpricing. In the pre-2016 subsample, the interaction-based group contrasts

are uniformly statistically insignificant, suggesting that any differentiation across the four issuer groups is weak in this earlier period. In the post-2016 subsample, VC-backed green IPOs are instead predicted to be 23.81 percentage points more underpriced than non-VC non-green issuers and 35.07 percentage points more underpriced than non-VC green issuers. Both differences are statistically significant at the 5% level. The difference relative to VC-backed non-green issuers remains statistically indistinguishable from zero.

For the 60-day returns, the pre-2016 subsample provides very limited evidence of group differences. VC-backed green IPOs are predicted to earn 36.84 percentage points higher 60-day returns than non-VC non-green issuers, with statistical significance at the 5% level. The remaining pre-2016 contrasts for both 60-day returns and 365-day returns are statistically indistinguishable from zero. In the post-2016 subsample, VC-backed green IPOs earn 38.31 percentage points lower predicted 60-day returns than VC-backed non-green IPOs, with statistical significance at the 5% level. Relative to non-VC green IPOs, they earn 33.42 percentage points higher predicted 60-day returns, which is only marginally significant at the 10% level. VC-backed green offerings also earn 46.97 percentage points lower predicted 365-day returns than VC-backed non-green IPOs, with statistical significance at the 1% level. The remaining pairwise differences are statistically indistinguishable from zero.

Overall, the IPO year split does not change the inference for Hypothesis 1. For Hypothesis 2, the split confirms the absence of statistically significant greenness differences in first-day underpricing in both subsamples. However, the analysis reveals that the offer-to-market returns in the post-2016 sample are substantially lower for green issuers. For Hypothesis 3, interaction-based underpricing differences are largely insignificant before 2016 but become statistically significant in the post-2016 subsample in a direction that runs against the hypothesis, implying that the full-sample rejection is concentrated in the later period.

5.3. Placebo analysis

To further assess the robustness of the results, a placebo analysis as a falsification check is implemented. In such an analysis, the primary specification is repeated after replacing the dependent variable with a pseudo-outcome, which by construction cannot be affected by the treatment, wherefore the true value of the estimated coefficients is zero. The analysis aims to assess whether the estimates are close to zero in this pseudo-setting (Athey & Imbens, 2017).

To implement the placebo analysis, the dependent variables in Equations (1)-(3) are replaced with a new market-based pseudo-outcome, which is measured well before the IPO and therefore

should be unrelated to issuer characteristics at the time of listing. Specifically, the placebo-outcome is constructed as the 30-trading-day return of the FTSE All-World Index in USD measured from the 180th to the 151st trading day before the IPO date. The placebo regressions then replicate the baseline specifications without further modifications and contain the same set of firm-, deal-, and market-level controls and year fixed effects. The regressions are estimated separately on the underpricing, 60-day return, and 365-day return samples to mirror the baseline sample definitions.

The Tables 19-22 show that the placebo outcome exhibits no statistically significant association with VC-backing, issuer greenness, or their interaction in any of the three samples: the estimated coefficients are economically close to zero and statistically indistinguishable from zero. Consistent with this, Table 22 shows that the pairwise contrasts between the four VC-greenness issuer groups are also statistically insignificant.

Overall, the placebo analysis indicates that the baseline specifications do not mechanically generate VC- or greenness-related differences when applied to the pseudo-outcome. As this outcome should be unaffected by issuer characteristics at the time of listing, the absence of significant placebo effects supports the interpretation that the baseline results are unlikely to be driven by model misspecifications.

6. Interpretation and discussion

This chapter aims to discuss and interpret the empirical findings. It situates the documented patterns within the IPO underpricing literature and evaluates each hypothesis in turn, guided by a brief section that clarifies the limitations and the scope of interpretation.

6.1. Limitations and scope of interpretation

One aspect which can be found in all baseline specifications, is that the explanatory power of the models is modest. For example, the VC specification in Table 7 yields R-squared values of 0.0972 for first-day underpricing, 0.1691 for 60-day returns, and 0.1119 for 365-day returns, with similarly sized values in the greenness and interaction specifications. It is important to mention that stock returns contain substantial idiosyncratic variation that is not captured by observable firm-, deal-, or market-controls. Accordingly, low R-squared values are common in cross-sectional regressions in the social sciences and are not, by themselves, evidence against the model. They rather indicate that predictive power is limited and that a large part of the

variation in the dependent variables is explained by unobserved factors (Wooldridge, 2016, pp. 35, 180, 335). Consequently, the empirical models should not be interpreted as issuer-level forecasting tools and any inference is framed in terms of conditional mean differences associated with VC-backing, issuer greenness, and their interaction.

This distinction is particularly relevant for Hypothesis 3 which is assessed using predictive outcomes. However, these predicted outcomes are model-implied, covariate-adjusted group means obtained from post-estimation margins. They summarize fitted values implied by Equation (3) after assigning VC status and greenness to the four issuer types while averaging over the observed distribution of the remaining regressors and year fixed effects. They therefore represent adjusted in-sample expectations rather than claims of high predictive accuracy for individual IPOs.

Several features of the study design further motivate a cautious interpretation of effect magnitudes. First, the estimates remain associational, since VC-backing and greenness are not randomly assigned, and residual selection into issuer types, industries, and markets may not be fully absorbed by the controls and year fixed effects. Therefore, the coefficients capture conditional associations and should not be read as causal effects. Second, the 60-day and 365-day variables are defined as buy-and-hold offer-to-market returns and therefore embed first-day returns. For this reason, they should not be interpreted as clean evidence of superior or inferior aftermarket performance. Third, the industry-activity-based greenness proxy, while observable at the IPO date, necessarily compresses within-activity heterogeneity into a binary indicator and captures activity orientation rather than realized environmental performance, such as emissions intensity or the share of green revenue. Additionally, the number of green IPOs in the sample is relatively small, which reduces statistical power, especially in the interaction specifications, and implies that imprecise estimates and statistically indistinguishable contrasts need not rule out economically meaningful differences.

To assess whether the documented results are sensitive to specification and estimation choices, the analysis complements model fit with diagnostics: multicollinearity is unlikely to inflate the standard errors, since the VIFs remain low across all samples, as discussed above. In addition, the placebo analysis yields no systematic VC- or greenness-related estimates in a setting where the effect is expected to be close to zero, supporting that the main findings are not driven by mechanical specification issues. Against this background, the discussion below focuses on the direction, magnitude, and statistical precision of the estimated associations, as well as on the model-implied group contrasts used to evaluate the three hypotheses.

6.2. VC-backing

Hypothesis 1 posits that VC-backed IPOs exhibit lower underpricing than non-VC-backed offerings, as VC involvement serves as a third-party certification that reduces information asymmetries at issuance. Empirically, the results point in the opposite direction. Conditional on the full set of controls and year fixed effects, VC-backed IPOs are associated with 25.37 percentage points (Table 7) higher winsorized first-day returns. This pattern survives the robustness checks, so Hypothesis 1 is rejected in the global 2010-2024 sample.

Relative to the existing literature presented above, this positive association contrasts with the venture capital certification hypothesis. Early evidence such as Megginson and Weiss (1991) report lower underpricing for VC-backed IPOs and subsequent studies for specific markets have produced similar findings consistent with this hypothesis (e.g., Arikawa & Imad'eddine, 2010; Belghitar & Dixon, 2012; Chahine & Filatotchev, 2008). By contrast, the positive VC association documented in this thesis is more aligned with Gompers' (1996) grandstanding hypothesis, under which reputation-building incentives generate higher underpricing. Taken together, the literature explicitly points to opposing forces and heterogeneity across settings, and the present results suggest that forces associated with higher initial returns dominate in this international sample.

Several interpretations are consistent with this pattern. First, the VC dummy could capture selection into issues that remain difficult to value at the offer stage even after conditioning on the applied control variables. VC-backed issuers may tilt toward firms with higher intangible-asset dependence, less proven business models, or industries with greater uncertainty about future growth. In such settings, underpricing can remain high as the offer price may incorporate a larger discount to compensate investors for valuation risk.

A second interpretation that is consistent with the results could be incentive-driven underpricing. If visible first-day price increases are valuable to VCs as they support reputation, facilitate subsequent exits, or improve future fundraising, then higher underpricing would not be the failure of certification. Instead, it could be an equilibrium outcome, which aligns IPO pricing with the objectives of powerful pre-IPO stakeholders.

A third possible interpretation builds on IPO price formation in bookbuilding. VCs are likely to maintain close relations with investors. Consequently, it could be that VC-backing increases investor attention and may coincide with stronger institutional participation, whereby underwriters may observe stronger demand during bookbuilding. Hanley (1993) explains that

underwriters gather non-binding demand indications from investors and set the final offer price higher when demand is stronger than expected. When demand is so high that it exceeds the available shares, allocations are rationed and the underwriter cannot fully compensate investors for revealing their willingness to pay through the allocation alone, which is why the offer price does not fully incorporate the demand information revealed during bookbuilding. Instead, the offer price is partially adjusted so that early investors retain an expected gain through first-day underpricing (Hanley, 1993). Importantly, this mechanism is not inconsistent with certification, because certification can increase demand and, under partial adjustment, translate into more underpricing.

6.3. Issuer greenness

This subsection discusses the evidence related to issuer greenness. Hypothesis 2 posits that green IPOs are expected to exhibit lower underpricing than non-green offerings, as greenness could act as an additional quality signal that reduces information asymmetries at issuance. Empirically, the evidence does not provide robust support for this prediction. In the baseline greenness specification (Equation (2); Table 8), the green coefficient is negative but statistically indistinguishable from zero for first-day underpricing and 365-day returns, and only marginally significant at the 10% level for 60-day returns. Refining the non-green benchmark by introducing the brown dummy does not alter this inference for underpricing (Table 12). Splitting the sample around the Paris Agreement yields the same conclusion for first-day underpricing in both subsamples, while after 2016, green issuers exhibit substantially lower 60-day and 365-day offer-to-market buy-and-hold returns measured from the offer price, both statistically significant at the 1% level (Table 16).

In relation to prior work, the absence of robust underpricing differences contrasts with studies that document materially lower underpricing for green issuers and interpret greenness as value-relevant information (e.g., Meng et al., 2024; Wang et al., 2022). At the same time, the finding aligns with work that finds no robust short-term underpricing differences, once firm and market characteristics are accounted for (e.g., Chan & Walter, 2014), suggesting that the effects of greenness are heterogeneous and sensitive to setting and measurement.

Three interpretations can reconcile the documented pattern. First, the activity-based TRBC classification is well suited to an IPO setting as it relies on information observable at issuance, but it necessarily compresses within-activity heterogeneity in firms' environmental profiles into a binary indicator. Therefore, it might not be granular enough to pick up underpricing

differences. Combined with a relatively small number of green IPOs in the underpricing sample, this can weaken the estimates toward zero once the full set of controls and year fixed effects is included.

Second, the benchmark category matters. The baseline green coefficient is estimated relative to a pooled non-green group that combines economically distinct issuer types and is not homogeneous. The brownness results show that brown issuers differ materially from neutral ones, implying that the baseline green estimate captures an average comparison against a mixture rather than against a single, clearly defined counterfactual group, which could dilute both magnitude and precision of the estimates.

Third, the post-2016 return pattern is consistent with a discount-rate or preference-based valuation channel rather than with a pure information-asymmetry channel. If investor preferences for sustainability became more salient after 2016, greenness could be priced through lower required returns and higher offer valuations, which may translate into lower offer-to-market return profiles even in the absence of a detectable first-day underpricing difference. This interpretation is especially relevant as the 60-day and 365-day measures are defined from the offer price and therefore embed the issuance-day pricing component. A clean separation between first-day underpricing and subsequent drift would require decomposing offer-to-market returns into the first-day component and post-first-day returns.

6.4. The joint signal of VC-backing and greenness

This last subsection discusses whether VC-backing and greenness jointly shape IPO pricing. Hypothesis 3 posits that green offerings that are VC-backed should exhibit the lowest degree of underpricing, since VC involvement can certify issuer fundamentals while greenness could provide additional value-relevant information, for example related to regulatory exposure and disclosure quality. Empirically, the interaction results do not support this prediction. In the baseline analysis VC-backed green IPOs exhibit predicted first-day returns that are 18.71 percentage points higher than those of non-VC non-green IPOs and 23.13 percentage points higher than those of non-VC green IPOs, with both differences statistically significant at the 5% level. In contrast, the difference relative to VC-backed non-green IPOs is negative but statistically indistinguishable from zero (Equation (3); Tables 9, 10). This evidence therefore rejects Hypothesis 3.

In relation to the literature, these findings provide evidence on a joint VC and greenness grouping in a global setting where interaction tests remain relatively scarce. While prior work

largely studies VC-backing and sustainability-related information in the context of IPO underpricing separately, the present results indicate that the joint presence of the two signals does not translate into an additive reduction in first-day underpricing in the used sample. More broadly, the interaction results suggest a clear association: greenness is not associated with an additional first-day pricing effect once a certifying intermediary is already present. In particular, the underpricing difference between VC-backed green and VC-backed non-green IPOs is statistically indistinguishable from zero, whereas VC-backed green IPOs exhibit significantly higher first-day returns than both non-VC groups. This pattern would be consistent with sustainability-oriented IPO evidence suggesting that sustainability information is most pricing-relevant when alternative certification channels are weaker or absent.

Different interpretations fit this pattern. First, the evidence is consistent with signal substitutability. VC involvement may already act as a strong observable IPO characteristic so that greenness may have limited additional informational content conditional on VC-backing. This mechanism naturally reconciles the pattern that the contrasts against non-VC issuers are economically large, while the difference between VC-backed green and VC-backed non-green IPOs is statistically indistinguishable from zero for first-day underpricing. Therefore, the results would be consistent with the idea that sustainability related information can matter for IPO pricing, but primarily when intermediaries are not observed and when greenness adds incremental information beyond what investors can infer from intermediary involvement.

A second interpretation builds on demand and the partial-adjustment channel that was already discussed above for Hypothesis 1. If the joint presence of VC-backing and greenness is associated with an increase in investor attention and institutional demand, which would be consistent with the finding that the differences for underpricing are only statically significant after the Paris Agreement, then underwriters may only partially adjust the offer price to unexpectedly strong demand. When allocations are then rationed, investors can retain an expected gain through first-day underpricing.

A third interpretation is selection into issuer types that remain difficult to value at the offering stage. The earlier results show that VC-backed IPOs are associated with substantially higher underpricing in this dataset, consistent with the VC indicator capturing non-random selection into issuer characteristics that are imperfectly measured by the included controls. If VC-backed green issuers are drawn disproportionately from business models with higher intangible-asset intensity, technology dependence, or valuation uncertainty linked to regulation and transition risks, the positive VC-related component may dominate any incremental uncertainty reduction

from greenness. Under this interpretation, the joint signal is observed precisely in offerings where residual uncertainty remains high, which rationalize why VC-backed green IPOs do not display the lowest underpricing.

7. Conclusion

The objective of this thesis was to examine whether VC-backing and issuer greenness are associated with lower underpricing and whether their joint presence is associated with particularly low underpricing relative to IPOs that exhibit only one or neither of these characteristics.

To address these questions, this thesis used a global sample of 8,642 IPOs between 2010 and 2024, of which 2,873 are VC-backed and 202 are classified as green based on TRBC activity-level information. Using OLS regressions and employing a comprehensive set of firm-, deal-, and market-level controls and year fixed effects, the empirical design relates IPO outcomes to VC-backing, and issuer greenness. Besides first-day underpricing, it also considered 60-day and 365-day buy-and-hold offer-to-market returns to provide a more holistic picture by capturing post-IPO pricing profiles. For the interaction between VC-backing and greenness, the analysis evaluates model-implied predicted outcomes for the four groups defined by VC-backing and greenness and conducts pairwise comparisons of these predictions. The robustness design changes the non-green benchmark by introducing a brown classification, evaluates stability across market regimes using a split around the Paris Agreement period, and implements a placebo analysis.

Overall, the results do not support the prediction that VC-backing is associated with lower underpricing. Instead, VC-backed IPOs are associated with higher underpricing in the full 2010 to 2024 sample, and this pattern remains present across the applied robustness checks. Evidence for greenness is weaker. Green IPOs are not statistically significantly associated with lower underpricing compared to non-green ones, while the estimates for post-IPO offer-to-market returns indicate that, especially after the Paris Agreement, green offerings are associated with substantially lower 60-day and 365-day buy-and-hold returns measured from the offer price. Finally, the interaction results show that green VC-backed IPOs are not associated with lower underpricing. Instead, the model-implied group contrasts indicate that VC-backed green IPOs exhibit significantly higher predicted first-day underpricing than both non-VC benchmark groups, while their predicted underpricing is statistically indistinguishable from that of VC-backed non-green IPOs. This conclusion is corroborated by the robustness checks, with the interaction-related differences remaining qualitatively similar across alternative classification benchmarks and being most pronounced in the post-Paris Agreement subsample.

Taken together, the results are robust across the implemented checks and, for the interaction, are concentrated in the post-Paris Agreement subsample, but they remain conditional

associations that may reflect multiple underlying channels and cross-market composition. Therefore, future research could sharpen identification and resolve heterogeneity in both VC involvement and issuer greenness. A first approach could be to separate certification from selection and institutional environment more clearly. The discussion emphasizes that VC-backing and greenness are not randomly assigned and that residual selection into issuer types or markets may not be fully absorbed by controls and year fixed effects. Extending the empirical design with richer fixed effects and within-markets comparisons, for example, at the country or exchange level, would help to assess whether the estimated VC- and greenness-related associations persist, or whether they are driven by cross-market composition.

A second opportunity for future research could be the refinement of the measurement of VC involvement. The evidence and the interpretations in the discussion are consistent with opposing mechanisms, including selection into harder-to-value firms and incentive-driven underpricing aligned with reputation-building motives. A binary VC indicator necessarily averages across heterogeneous investors and deal structures. Future work could account for VC reputation and experience, syndicate composition, investor type, and ties to underwriters, which would allow sharper tests of whether the associations are concentrated among settings in which grandstanding incentives are plausibly more salient or among settings consistent with stronger certification.

Lastly, further research could refine the measurement on both the outcome and the greenness dimension. Because 60-day and 365-day offer-to-market returns mechanically include the first-day component, future work could decompose pricing profiles into first-day underpricing and post-first-day returns or use abnormal returns. For greenness, while the TRBC activity proxy is ex ante observable, it collapses within-activity variation into a binary indicator, and the small number of green IPOs limits power, particularly for interaction tests. Future research could therefore complement activity classifications with more granular IPO-date information that captures greenness intensity, such as green revenue shares or prospectus-based commitments, and reassess whether greenness-related associations with underpricing are more precisely estimated under finer measurement.

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Appendix

Table 1: TRBC activity-based green/brown mapping

a) Green TRBC business activities

Business sector	Industry	Business activity	TRBC ID
Renewable Energy	Equipment & Services	All	50201010
Renewable Energy	Renewable Fuels	All	50201020
Utilities	Electric Utilities	Power Charging Stations	5910101014
Utilities	Electric Utilities	Alternative Electric Utilities	5910101020
Utilities	Electric Utilities	Hydroelectric & Tidal Utilities	5910101021
Utilities	Electric Utilities	Solar Electric Utilities	5910101022
Utilities	Electric Utilities	Wind Electric Utilities	5910101023
Utilities	Electric Utilities	Biomass & Waste to Energy	5910101024
Utilities	Electric Utilities	Geothermal Electric Utilities	5910101025
Utilities	Independent Power Producers	Renewable IPPs	5910102012
Applied Resources	Forest & Wood Products	All	51301010
Applied Resources	Paper Products	All	51301020
Automobiles & Auto Parts	Auto & Truck Manufacturers	Electric (Alternative) Vehicles	5310101014
Industrial & Comm Services	Environmental Serv. & Equipment	All	52203010

b) Brown TRBC business activities

Business sector	Industry	Business activity	TRBC ID
Fossil Fuels	Coal	All	50101010
Fossil Fuels	Integrated Oil & Gas	All	50102010
Fossil Fuels	Oil & Gas Explo. and Production	All	50102020
Fossil Fuels	Oil & Gas Refin. and Marketing	All	50102030
Fossil Fuels	Oil & Gas Drilling	All	50103010
Fossil Fuels	Oil Related Serv. and Equipment	All	50103020
Fossil Fuels	Oil & Gas Transport. Services	All	50103030
Utilities	Electric Utilities	Fossil Fuel Electric Utilities	5910101012

Utilities	Independent Power Producers	Fossil Fuel IPPs	5910102011
Utilities	Natural Gas Utilities	All	59102010
Mineral Resources	Precious Metals & Minerals	All	51201010
Mineral Resources	Iron & Steel	All	51201020
Mineral Resources	Aluminum	All	51201030
Mineral Resources	Specialty Mining & Metals	All	51201050
Mineral Resources	Diversified Mining	All	51201080
Mineral Resources	Construction Materials	All	51202010
Automobiles	Auto & Truck Manufacturers	All (without Electric Vehicles)	53101010
Transportation	Air Freight & others	Air Freight	5240501012
Transportation	Ground Freight & Logistics	Freight Trucking	5240503012
Transportation	Airlines	All	52406010

Table 1 shows the TRBC activity-level mapping into green and brown categories following Jourde and Stalla-Bourdillon (2024, pp. 25–28), based on their Appendix Tables 4 and 5.

Table 2: Descriptive statistics for dependent variables

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max
UnderpricingWin	8,642	0.46	0.26	0.85	-0.98	5.71
Return60Win	8,283	0.69	0.24	1.33	-1.00	7.41
Return365Win	7,966	0.45	0.08	1.26	-1.00	6.74

Table 2 shows the descriptive statistics for the dependent variables used in the empirical analysis. The number of observations differs across variables due to the availability of post-IPO price data.

Table 3: Descriptive statistics for the underpricing sample

a) Full Sample

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	8,642	0.46	0.26	0.85	-0.98	5.71
LNFirmSize	8,642	4.19	4.34	1.89	-6.63	13.46
LNFirmAge	8,642	2.29	2.49	1.06	-4.50	4.78
EPSWin	8,642	-0.04	0.02	1.01	-7.15	3.19
ROAWin	8,642	0.03	0.07	0.30	-1.78	0.51
LNIssueSize	8,642	3.72	4.01	1.63	-2.67	10.15
LNShareOverhang	8,642	1.11	1.10	1.45	-19.70	6.07

MarketReturn	8,642	0.01	0.02	0.05	-0.33	0.19
MarketVolatility	8,642	0.01	0.01	0.00	0.00	0.04

b) VC-backed IPOs (VC=1)

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	2,873	0.60	0.43	0.92	-0.96	5.71
LNFirmSize	2,873	4.46	4.54	1.34	-1.20	10.10
LNFirmAge	2,873	2.41	2.49	0.71	-2.84	4.66
EPSWin	2,873	-0.22	0.02	1.28	-7.15	3.19
ROAWin	2,873	-0.01	0.00	0.30	-1.78	0.51
LNIssueSize	2,873	4.17	4.32	1.26	-0.68	9.68
LNShareOverhang	2,873	1.26	1.10	0.71	-7.82	4.47
MarketReturn	2,873	0.01	0.02	0.05	-0.33	0.19
MarketVolatility	2,873	0.01	0.01	0.00	0.00	0.04

c) Green IPOs (Green=1)

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	202	0.44	0.26	0.75	-0.36	5.71
LNFirmSize	202	4.56	4.72	1.73	-0.92	9.34
LNFirmAge	202	2.37	2.54	1.00	-1.81	4.64
EPSWin	202	0.08	0.03	0.87	-7.15	3.19
ROAWin	202	0.08	0.10	0.19	-1.78	0.51
LNIssueSize	202	3.73	4.07	1.68	-0.62	7.56
LNShareOverhang	202	1.09	1.10	1.12	-8.92	3.66
MarketReturn	202	0.01	0.02	0.05	-0.30	0.13
MarketVolatility	202	0.01	0.01	0.00	0.00	0.04

Table 3 shows descriptive statistics for the main variables used in the baseline underpricing regressions for the full sample and for subsamples of VC-backed and green IPOs.

Table 4: Descriptive statistics for the baseline regression sample by IPO year

a) 2010

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	535	0.32	0.17	0.53	-0.84	5.71
LNFirmSize	535	4.45	4.35	1.50	-1.20	12.73
LNFirmAge	535	2.16	2.29	1.04	-2.15	4.68
EPSWin	535	0.04	0.01	1.01	-7.15	3.19
ROAWin	535	0.11	0.10	0.14	-0.66	0.51
LNIssueSize	535	4.11	4.45	1.49	-1.40	9.31

LNShareOverhang	535	1.12	1.10	1.10	-11.04	6.07
MarketReturn	535	0.01	0.02	0.06	-0.15	0.12
MarketVolatility	535	0.01	0.01	0.00	0.01	0.02

b) 2011

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	578	0.19	0.10	0.39	-0.73	5.71
LNFirmSize	578	4.16	4.15	1.67	-2.30	11.33
LNFirmAge	578	2.04	2.30	1.15	-2.28	4.54
EPSWin	578	0.07	0.01	0.87	-7.15	3.19
ROAWin	578	0.09	0.09	0.22	-1.78	0.51
LNIssueSize	578	3.74	4.05	1.53	0.04	9.21
LNShareOverhang	578	1.12	1.10	1.16	-16.68	4.03
MarketReturn	578	0.00	0.01	0.05	-0.15	0.12
MarketVolatility	578	0.01	0.01	0.01	0.00	0.02

c) 2012

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	387	0.25	0.11	0.48	-0.60	5.71
LNFirmSize	387	4.18	4.07	1.86	-2.30	10.26
LNFirmAge	387	2.02	2.23	1.09	-2.25	4.58
EPSWin	387	-0.10	0.00	1.22	-7.15	3.19
ROAWin	387	0.07	0.00	0.24	-1.78	0.51
LNIssueSize	387	3.49	3.86	1.61	-2.31	9.68
LNShareOverhang	387	1.12	1.10	1.57	-14.56	5.75
MarketReturn	387	0.01	0.02	0.05	-0.10	0.10
MarketVolatility	387	0.01	0.01	0.00	0.01	0.01

d) 2013

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	238	0.31	0.15	0.61	-0.50	5.37
LNFirmSize	238	4.45	4.12	1.91	-1.20	9.50
LNFirmAge	238	2.00	2.30	1.34	-3.81	4.52
EPSWin	238	-0.35	0.01	1.99	-7.15	3.19
ROAWin	238	0.01	0.06	0.37	-1.78	0.51
LNIssueSize	238	3.60	3.68	1.69	-0.30	8.54
LNShareOverhang	238	1.08	1.28	2.17	-19.70	6.04
MarketReturn	238	0.02	0.03	0.03	-0.08	0.09
MarketVolatility	238	0.01	0.01	0.00	0.00	0.01

e) 2014

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	556	0.31	0.14	0.63	-0.94	5.71
LNFirmSize	556	4.44	4.42	1.97	-2.30	9.55
LNFirmAge	556	1.99	2.32	1.27	-4.50	4.64
EPSWin	556	-0.28	0.01	1.46	-7.15	3.19
ROAWin	556	-0.03	0.05	0.38	-1.78	0.51
LNIssueSize	556	3.96	4.12	1.47	-0.61	8.03
LNShareOverhang	556	0.75	1.10	2.20	-18.24	3.43
MarketReturn	556	0.01	0.01	0.03	-0.09	0.09
MarketVolatility	556	0.00	0.00	0.00	0.00	0.01

f) 2015

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	642	0.39	0.29	0.76	-0.50	5.71
LNFirmSize	642	4.29	4.32	1.88	-2.30	13.46
LNFirmAge	642	2.23	2.46	1.12	-2.94	4.65
EPSWin	642	-0.18	0.03	1.46	-7.15	3.19
ROAWin	642	0.00	0.07	0.35	-1.78	0.51
LNIssueSize	642	3.64	3.78	1.55	-1.21	8.39
LNShareOverhang	642	1.12	1.10	0.95	-12.43	2.87
MarketReturn	642	0.00	0.00	0.03	-0.11	0.09
MarketVolatility	642	0.01	0.01	0.00	0.00	0.01

g) 2016

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	447	0.36	0.42	0.56	-0.82	5.71
LNFirmSize	447	4.18	4.28	1.76	-2.30	10.08
LNFirmAge	447	2.43	2.64	1.01	-3.00	4.49
EPSWin	447	0.01	0.03	1.00	-7.15	3.19
ROAWin	447	0.04	0.03	0.26	-1.78	0.51
LNIssueSize	447	3.45	3.63	1.50	-1.30	7.86
LNShareOverhang	447	1.10	1.10	1.33	-17.37	4.73
MarketReturn	447	0.01	0.00	0.04	-0.11	0.11
MarketVolatility	447	0.01	0.01	0.00	0.00	0.01

h) 2017

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
UnderpricingWin	698	0.38	0.44	0.57	-0.95	5.71

LNFirmSize	698	4.11	4.27	1.89	-2.30	10.13
LNFirmAge	698	2.43	2.61	0.94	-2.84	4.70
EPSWin	698	0.07	0.04	0.78	-7.15	3.19
ROAWin	698	0.07	0.08	0.20	-1.78	0.51
LNIssueSize	698	3.48	3.71	1.56	-2.03	8.13
LNShareOverhang	698	0.95	1.10	1.48	-16.52	4.67
MarketReturn	698	0.02	0.02	0.01	0.00	0.05
MarketVolatility	698	0.00	0.00	0.00	0.00	0.00

i) 2018

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	445	0.39	0.17	0.80	-0.88	5.71
LNFirmSize	445	3.73	3.75	1.96	-2.30	10.81
LNFirmAge	445	2.35	2.54	1.11	-2.15	4.74
EPSWin	445	-0.04	0.02	1.09	-7.15	3.19
ROAWin	445	0.02	0.08	0.34	-1.78	0.51
LNIssueSize	445	3.07	2.89	1.77	-0.72	9.96
LNShareOverhang	445	1.12	1.10	1.61	-15.20	5.28
MarketReturn	445	-0.01	-0.01	0.04	-0.10	0.08
MarketVolatility	445	0.01	0.01	0.00	0.00	0.01

j) 2019

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	535	0.42	0.24	0.67	-0.83	5.71
LNFirmSize	535	4.20	4.27	1.81	-1.89	12.86
LNFirmAge	535	2.38	2.54	1.02	-2.63	4.53
EPSWin	535	-0.05	0.01	0.88	-7.15	3.19
ROAWin	535	0.03	0.03	0.31	-1.78	0.51
LNIssueSize	535	3.62	3.99	1.61	-1.42	10.15
LNShareOverhang	535	0.61	1.10	3.05	-19.25	5.43
MarketReturn	535	0.02	0.03	0.03	-0.06	0.11
MarketVolatility	535	0.01	0.01	0.00	0.00	0.01

k) 2020

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	811	0.84	0.45	1.11	-0.96	5.71
LNFirmSize	811	4.28	4.52	1.77	-2.30	10.19
LNFirmAge	811	2.39	2.57	0.93	-3.32	4.66
EPSWin	811	-0.05	0.02	0.76	-7.15	2.56
ROAWin	811	0.01	0.00	0.30	-1.78	0.51

LNIssueSize	811	4.00	4.26	1.57	-1.64	8.39
LNShareOverhang	811	1.20	1.10	0.95	-9.89	3.98
MarketReturn	811	0.04	0.05	0.08	-0.33	0.19
MarketVolatility	811	0.01	0.01	0.01	0.00	0.04

l) 2021

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	1,265	0.73	0.32	1.19	-0.98	5.71
LNFirmSize	1,265	4.26	4.61	2.05	-2.30	10.07
LNFirmAge	1,265	2.29	2.57	1.11	-3.32	4.78
EPSWin	1,265	-0.06	0.03	0.81	-7.15	3.19
ROAWin	1,265	-0.01	0.00	0.34	-1.78	0.51
LNIssueSize	1,265	4.12	4.32	1.61	-2.67	9.39
LNShareOverhang	1,265	1.23	1.10	0.85	-7.82	5.19
MarketReturn	1,265	0.02	0.02	0.03	-0.04	0.08
MarketVolatility	1,265	0.01	0.01	0.00	0.00	0.01

m) 2022

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	659	0.37	0.21	0.77	-0.96	5.71
LNFirmSize	659	4.09	4.57	2.09	-2.30	13.24
LNFirmAge	659	2.38	2.59	0.88	-2.36	4.20
EPSWin	659	0.07	0.05	0.48	-5.78	3.19
ROAWin	659	0.04	0.05	0.29	-1.78	0.51
LNIssueSize	659	3.83	4.34	1.72	-1.29	7.91
LNShareOverhang	659	1.30	1.10	0.74	-2.15	5.86
MarketReturn	659	-0.02	-0.03	0.06	-0.15	0.13
MarketVolatility	659	0.01	0.01	0.00	0.01	0.02

n) 2023

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	500	0.52	0.28	0.96	-0.89	5.71
LNFirmSize	500	4.11	4.48	1.98	-6.63	10.48
LNFirmAge	500	2.47	2.60	0.86	-0.73	4.55
EPSWin	500	0.10	0.05	0.61	-7.15	3.19
ROAWin	500	0.07	0.11	0.27	-1.78	0.51
LNIssueSize	500	3.56	3.81	1.68	-1.66	8.24
LNShareOverhang	500	1.33	1.10	0.95	-11.11	4.64
MarketReturn	500	0.01	0.02	0.04	-0.08	0.10

MarketVolatility	500	0.01	0.01	0.00	0.00	0.01

o) 2024

Variable	**Obs.**	**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
UnderpricingWin	346	0.61	0.26	1.12	-0.54	5.71
LNFirmSize	346	3.76	3.77	1.94	-1.99	9.92
LNFirmAge	346	2.56	2.67	0.83	-1.40	4.65
EPSWin	346	0.09	0.03	0.66	-6.62	3.19
ROAWin	346	0.07	0.12	0.22	-1.38	0.51
LNIssueSize	346	3.01	2.78	1.67	-0.41	7.93
LNShareOverhang	346	1.40	1.27	0.77	-5.06	3.95
MarketReturn	346	0.02	0.03	0.02	-0.05	0.09
MarketVolatility	346	0.01	0.01	0.00	0.00	0.01

Table 4 reports yearly descriptive statistics for the main variables used in the baseline underpricing regressions. Years refer to the IPO year.

Table 5: Correlation matrix

a) Underpricing sample

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
UnderpricingWin (1)	1.0000								
LNFirmSize (2)	-0.0183 (0.0897)	1.0000							
LNFirmAge (3)	0.0946* (0.0000)	0.1993* (0.0000)	1.0000						
EPSWin (4)	0.0516* (0.0000)	0.0851* (0.0000)	0.0977* (0.0000)	1.0000					
ROAWin (5)	0.0587* (0.0000)	0.2153* (0.0000)	0.1430* (0.0000)	0.4433* (0.0000)	1.0000				
LNIssueSize (6)	-0.0587* (0.0000)	0.7694* (0.0000)	0.0649* (0.0000)	-0.0422* (0.0001)	0.0308* (0.0042)	1.0000			
LNShareOverhang (7)	0.0553* (0.0000)	0.1331* (0.0000)	0.0973* (0.0000)	0.0151 (0.1597)	-0.0181 (0.0924)	-0.0028 (0.7939)	1.0000		
MarketReturn (8)	0.0976* (0.0000)	0.0296* (0.0060)	0.0169 (0.1162)	-0.0236* (0.0284)	-0.0190 (0.0770)	0.0526* (0.0000)	-0.0289* (0.0072)	1.0000	
MarketVolatility (9)	-0.0125 (0.2459)	0.0011 (0.9216)	-0.0156 (0.1467)	0.0270* (0.0122)	0.0144 (0.1818)	0.0131 (0.2217)	0.0610* (0.0000)	-0.3381* (0.0000)	1.0000

b) 60-day return sample

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Return60Win (1)	1.0000								
LNFirmSize (2)	0.0378* (0.0006)	1.0000							
LNFirmAge (3)	0.0954* (0.0000)	0.1867* (0.0000)	1.0000						
EPSWin (4)	0.0486* (0.0000)	0.0880* (0.0000)	0.0977* (0.0000)	1.0000					

ROAWin (5)	0.0628* (0.0000)	0.2152* (0.0000)	0.1407* (0.0000)	0.4483* (0.0000)	1.0000				
LNIssueSize (6)	-0.0390* (0.0004)	0.7664* (0.0000)	0.0510* (0.0000)	-0.0427* (0.0001)	0.0285* (0.0094)	1.0000			
LNShareOverhang (7)	0.0351* (0.0014)	0.1310* (0.0000)	0.0916* (0.0000)	0.0157 (0.1535)	-0.0206 (0.0613)	-0.0022 (0.8430)	1.0000		
MarketReturn (8)	0.0512* (0.0000)	0.0235* (0.0327)	0.0134 (0.2228)	-0.0230* (0.0362)	-0.0193 (0.0796)	0.0475* (0.0000)	-0.0312* (0.0046)	1.0000	
MarketVolatility (9)	-0.0552* (0.0000)	0.0002 (0.9867)	-0.0160 (0.1460)	0.0282* (0.0102)	0.0159 (0.1481)	0.0143 (0.1917)	0.0607* (0.0000)	-0.3375* (0.0000)	1.0000

c) 365-day sample

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Return365Win (1)	1.0000								
LNFirmSize (2)	0.0258* (0.0215)	1.0000							
LNFirmAge (3)	0.0723* (0.0000)	0.1770* (0.0000)	1.0000						
EPSWin (4)	0.0471* (0.0000)	0.0931* (0.0000)	0.0989* (0.0000)	1.0000					
ROAWin (5)	0.0744* (0.0000)	0.2196* (0.0000)	0.1392* (0.0000)	0.4477* (0.0000)	1.0000				
LNIssueSize (6)	-0.0665* (0.0000)	0.7611* (0.0000)	0.0431* (0.0001)	-0.0370* (0.0009)	0.0344* (0.0022)	1.0000			
LNShareOverhang (7)	0.0355* (0.0015)	0.1327* (0.0000)	0.0964* (0.0000)	0.0137 (0.2202)	-0.0213 (0.0568)	-0.0017 (0.8766)	1.0000		
MarketReturn (8)	0.0237* (0.0342)	0.0275* (0.0142)	0.0127 (0.2587)	-0.0209 (0.0625)	-0.0182 (0.1047)	0.0522* (0.0000)	-0.0305* (0.0065)	1.0000	
MarketVolatility (9)	-0.0347* (0.0020)	-0.0049 (0.6611)	-0.0103 (0.3576)	0.0272* (0.0151)	0.0162 (0.1478)	0.0062 (0.5780)	0.0656* (0.0000)	-0.3375* (0.0000)	1.0000

Table 5 shows Pearson correlation coefficients for the main continuous variables used in the empirical analysis, reported separately for (a) the underpricing sample, (b) the 60-day return sample, and (c) the 365-day return sample, with p-values in parentheses. * Indicates a 5% significance level.

Table 6: VIF tests

Sample	**(1)** **Underpricing**	**(2)** **60-day return**	**(3)** **365-day return**
VC	1.10	1.10	1.10
Green	1.50	1.51	1.53
VC × Green	1.52	1.54	1.56
LNFirmSize	3.15	3.11	3.03
LNFirmAge	1.09	1.09	1.08
EPSWin	1.27	1.27	1.27
ROAWin	1.35	1.36	1.36
Big4	1.06	1.07	1.07
LNIssueSize	2.92	2.89	2.83
LNShareOverhang	1.07	1.07	1.07
MarketReturn	1.14	1.14	1.14
MarketVolatility	1.14	1.14	1.14
Average	**1.53**	**1.52**	**1.51**

Table 6 shows VIFs for the explanatory variables, calculated separately for the underpricing, 60-day return, and 365-day return samples. VIFs are computed for the non-fixed-effect regressors, including VC, Green, and VC × Green as well as all firm-, deal-, and market-level controls.

Table 7: Regression results – Effect of VC-backing

Dependent Variables	(1) UnderpricingWin	(2) Return60Win	(3) Return365Win
VC	0.2537***	0.4445***	0.2219***
	(0.0212)	(0.0321)	(0.0302)
LNFirmSize	0.0358***	0.1328***	0.1154***
	(0.0080)	(0.0123)	(0.0126)
LNFirmAge	0.0395***	0.0320***	0.0172
	(0.0066)	(0.0110)	(0.0120)
EPSWin	0.0212***	0.0331***	0.0163
	(0.0082)	(0.0102)	(0.0118)
ROAWin	0.1728***	0.1949***	0.2507***
	(0.0306)	(0.0424)	(0.0468)
Big4	-0.1175***	-0.5264***	-0.3594***
	(0.0183)	(0.0285)	(0.0294)
LNIssueSize	-0.0932***	-0.1808***	-0.1698***
	(0.0100)	(0.0148)	(0.0151)
LNShareOverhang	0.0126*	0.0054	0.0192*
	(0.0067)	(0.0104)	(0.0109)
MarketReturn	1.2111***	0.9830***	-0.0363
	(0.2005)	(0.3057)	(0.3162)
MarketVolatility	-2.6874	10.4586*	5.4613
	(2.8309)	(5.5562)	(5.3289)
Constant	0.4087***	0.2415***	0.1410*
	(0.0482)	(0.0763)	(0.0813)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0972	0.1691	0.1119
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 7 shows OLS regression results on the effect of VC-backing on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 8: Regression results – Effect of greenness

Dependent Variables	(1) UnderpricingWin	(2) Return60Win	(3) Return365Win
Green	-0.0456	-0.1292*	-0.0993
	(0.0512)	(0.0744)	(0.0806)
LNFirmSize	0.0265***	0.1166***	0.1070***
	(0.0080)	(0.0122)	(0.0125)
LNFirmAge	0.0501***	0.0503***	0.0264**

	(0.0067)	(0.0111)	(0.0120)
EPSWin	0.0105	0.0148	0.0073
	(0.0079)	(0.0101)	(0.0119)
ROAWin	0.1564***	0.1639***	0.2354***
	(0.0307)	(0.0422)	(0.0468)
Big4	-0.1261***	-0.5439***	-0.3682***
	(0.0185)	(0.0289)	(0.0295)
LNIssueSize	-0.0708***	-0.1421***	-0.1504***
	(0.0098)	(0.0144)	(0.0148)
LNShareOverhang	0.0208***	0.0201*	0.0265**
	(0.0068)	(0.0105)	(0.0109)
MarketReturn	1.2443***	1.0378***	0.0045
	(0.2001)	(0.3056)	(0.3142)
MarketVolatility	-0.6078	14.2095**	7.3679
	(2.8193)	(5.5421)	(5.2919)
Constant	0.3718***	0.1808**	0.1131
	(0.0479)	(0.0757)	(0.0809)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0796	0.1470	0.1057
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 8 shows OLS regression results on the effect of greenness on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 9: Regression results – Interaction effect of VC-backing and greenness

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
VC	0.2544***	0.4473***	0.2294***
	(0.0215)	(0.0325)	(0.0306)
Green	-0.0443	-0.1103	0.0029
	(0.0655)	(0.0911)	(0.0995)
VC × Green	-0.0231	-0.0953	-0.3129*
	(0.1019)	(0.1561)	(0.1696)
LNFirmSize	0.0362***	0.1339***	0.1164***
	(0.0080)	(0.0123)	(0.0126)
LNFirmAge	0.0395***	0.0320***	0.0172
	(0.0066)	(0.0110)	(0.0120)
EPSWin	0.0212***	0.0331***	0.0163
	(0.0082)	(0.0102)	(0.0119)
ROAWin	0.1728***	0.1949***	0.2510***

	(0.0307)	(0.0424)	(0.0468)
Big4	-0.1181***	-0.5280***	-0.3608***
	(0.0183)	(0.0285)	(0.0295)
LNIssueSize	-0.0935***	-0.1818***	-0.1704***
	(0.0100)	(0.0149)	(0.0151)
LNShareOverhang	0.0125*	0.0051	0.0191*
	(0.0067)	(0.0104)	(0.0109)
MarketReturn	1.2130***	0.9910***	-0.0194
	(0.2007)	(0.3059)	(0.3164)
MarketVolatility	-2.7178	10.3555*	5.4717
	(2.8318)	(5.5511)	(5.3168)
Constant	0.4105***	0.2463***	0.1418*
	(0.0483)	(0.0764)	(0.0813)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0973	0.1694	0.1124
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 9 shows OLS regression results on the interaction effect of VC-backing and greenness on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 10: Predictive margins and contrasts for VC-backing and greenness

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
a) Predictive margins from Equation (3)			
G1: Non-VC × Non-Green	0.3815***	0.5460***	0.3763***
	(0.0104)	(0.0161)	(0.0159)
G2: Non-VC × Green	0.3372***	0.4357***	0.3791***
	(0.0647)	(0.0898)	(0.0982)
G3: VC × Non-Green	0.6359***	0.9933***	0.6056***
	(0.0181)	(0.0272)	(0.0257)
G4: VC × Green	0.5685***	0.7877***	0.2956**
	(0.0760)	(0.1239)	(0.1350)
b) Contrasts (reference group: VC × Green)			
G4-G1	0.1871**	0.2417*	-0.0807
	(0.0770)	(0.1251)	(0.1359)
G4-G2	0.2313**	0.3520**	-0.0836
	(0.1004)	(0.1536)	(0.1671)

G4-G3	-0.0673 (0.0777)	-0.2056 (0.1263)	-0.3101** (0.1372)
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 10 shows the predictive margins and pairwise contrasts for the four VC-greenness issuer groups, implied by Equation (3) for winsorized first-day underpricing, 60-day returns, and 365-day returns. Margins and contrasts are computed after estimating Equation (3) with the full set of controls and year fixed effects.

Table 11: Robustness check: Brown dummy – Effect of VC-backing

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
VC	0.2512*** (0.0213)	0.4447*** (0.0322)	0.2195*** (0.0303)
Green	-0.0565 (0.0507)	-0.1430* (0.0739)	-0.1098 (0.0812)
Brown	-0.0620** (0.0293)	-0.0073 (0.0514)	-0.0633 (0.0484)
LNFirmSize	0.0367*** (0.0080)	0.1339*** (0.0122)	0.1166*** (0.0126)
LNFirmAge	0.0384*** (0.0066)	0.0319*** (0.0111)	0.0162 (0.0120)
EPSWin	0.0214*** (0.0082)	0.0332*** (0.0102)	0.0165 (0.0118)
ROAWin	0.1725*** (0.0307)	0.1948*** (0.0424)	0.2507*** (0.0468)
Big4	-0.1192*** (0.0183)	-0.5281*** (0.0285)	-0.3618*** (0.0295)
LNIssueSize	-0.0942*** (0.0100)	-0.1818*** (0.0148)	-0.1709*** (0.0151)
LNShareOverhang	0.0121* (0.0067)	0.0051 (0.0105)	0.0187* (0.0109)
MarketReturn	1.2100*** (0.2003)	0.9867*** (0.3056)	-0.0311 (0.3161)
MarketVolatility	-2.6461 (2.8323)	10.3438* (5.5538)	5.4761 (5.3223)
Constant	0.4207*** (0.0484)	0.2483*** (0.0768)	0.1537* (0.0816)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0976	0.1694	0.1122
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 11 shows OLS regression results on the effect of VC-backing on IPO performance. The specifications include the brownness dummy as an additional control variable to further split the group of the non-green issuers. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 12: Robustness check: Brown dummy – Effect of greenness

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
Green	-0.0530 (0.0512)	-0.1347* (0.0745)	-0.1065 (0.0807)
Brown	-0.0973*** (0.0293)	-0.0737 (0.0515)	-0.0956** (0.0483)
LNFirmSize	0.0274*** (0.0080)	0.1173*** (0.0122)	0.1078*** (0.0125)
LNFirmAge	0.0484*** (0.0067)	0.0490*** (0.0111)	0.0248** (0.0120)
EPSWin	0.0109 (0.0079)	0.0151 (0.0101)	0.0076 (0.0119)
ROAWin	0.1561*** (0.0308)	0.1640*** (0.0423)	0.2360*** (0.0468)
Big4	-0.1278*** (0.0185)	-0.5452*** (0.0289)	-0.3699*** (0.0295)
LNIssueSize	-0.0722*** (0.0098)	-0.1431*** (0.0144)	-0.1515*** (0.0148)
LNShareOverhang	0.0201*** (0.0068)	0.0195* (0.0105)	0.0258** (0.0109)
MarketReturn	1.2409*** (0.1998)	1.0361*** (0.3054)	0.0032 (0.3141)
MarketVolatility	-0.5244 (2.8194)	14.2837** (5.5374)	7.4299 (5.2879)
Constant	0.3881*** (0.0480)	0.1923** (0.0763)	0.1279 (0.0812)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0804	0.1472	0.1061
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 12 shows OLS regression results on the effect of greenness on IPO performance. The specifications include the brownness dummy as an additional control variable to further split the group of the non-green issuers. The dependent variables are winsorized first-day

underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 13: Robustness check: Brown dummy – Interaction effect of VC-backing and greenness

Dependent Variables	(1) UnderpricingWin	(2) Return60Win	(3) Return365Win
VC	0.2517***	0.4469***	0.2266***
	(0.0216)	(0.0327)	(0.0307)
Green	-0.0499	-0.1110	-0.0028
	(0.0655)	(0.0912)	(0.0996)
VC × Green	-0.0198	-0.0949	-0.3098*
	(0.1019)	(0.1561)	(0.1696)
Brown	-0.0619**	-0.0069	-0.0619
	(0.0293)	(0.0514)	(0.0484)
LNFirmSize	0.0367***	0.1340***	0.1168***
	(0.0080)	(0.0123)	(0.0126)
LNFirmAge	0.0385***	0.0319***	0.0163
	(0.0066)	(0.0111)	(0.0120)
EPSWin	0.0214***	0.0332***	0.0163
	(0.0082)	(0.0102)	(0.0119)
ROAWin	0.1725***	0.1949***	0.2512***
	(0.0307)	(0.0424)	(0.0468)
Big4	-0.1192***	-0.5281***	-0.3620***
	(0.0183)	(0.0285)	(0.0295)
LNIssueSize	-0.0942***	-0.1818***	-0.1709***
	(0.0100)	(0.0149)	(0.0151)
LNShareOverhang	0.0121*	0.0051	0.0188*
	(0.0067)	(0.0105)	(0.0109)
MarketReturn	1.2110***	0.9909***	-0.0200
	(0.2006)	(0.3059)	(0.3163)
MarketVolatility	-2.6434	10.3651*	5.5349
	(2.8329)	(5.5526)	(5.3149)
Constant	0.4206***	0.2473***	0.1511*
	(0.0484)	(0.0768)	(0.0815)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0976	0.1694	0.1125
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 13 shows OLS regression results on the interaction effect of VC-backing and greenness on IPO performance. The specifications include the brownness dummy as an additional control

variable to further split the group of the non-green issuers. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 14: Robustness check: Brown dummy – Predictive margins and contrasts for VC-backing and greenness

Dependent Variables	(1) UnderpricingWin	(2) Return60Win	(3) Return365Win
a) Predictive margins from Equation (3) (Brown dummy included)			
G1: Non-VC × Non-Green	0.3825***	0.5462***	0.3773***
	(0.0105)	(0.0161)	(0.0160)
G2: Non-VC × Green	0.3325***	0.4352***	0.3745***
	(0.0646)	(0.0899)	(0.0983)
G3: VC × Non-Green	0.6342***	0.9931***	0.6039***
	(0.0181)	(0.0273)	(0.0257)
G4: VC × Green	0.5644***	0.7872***	0.2913**
	(0.0760)	(0.1240)	(0.1350)
b) Contrasts (reference group: VC × Green)			
G4-G1	0.1819**	0.2411*	-0.0860
	(0.0771)	(0.1252)	(0.1359)
G4-G2	0.2319**	0.3520**	-0.0832
	(0.1003)	(0.1536)	(0.1671)
G4-G3	-0.0698	-0.2059	-0.3126**
	(0.0777)	(0.1264)	(0.1372)
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 14 shows the predictive margins and pairwise contrasts for the four VC-greenness issuer groups, implied by Equation (3) when additionally controlling for issuer brownness. The table reports results for winsorized first-day underpricing, 60-day returns, and 365-day returns, based on specifications with the full set of controls and year fixed effects.

Table 15: Robustness check: Paris Agreement – Effect of VC-backing

Dependent Variables	(1) UnderpricingWin	(2) Return60Win	(3) Return365Win
a) Before 2016 (Year < 2016)			
VC	0.0860***	0.2647***	0.1463***
	(0.0235)	(0.0476)	(0.0477)
LNFirmSize	-0.0080	0.0829***	0.0907***
	(0.0096)	(0.0168)	(0.0198)
LNFirmAge	0.0256***	0.0591***	0.0410**
	(0.0088)	(0.0133)	(0.0163)

EPSWin	-0.0023 (0.0115)	0.0188* (0.0112)	0.0196 (0.0152)
ROAWin	0.1928*** (0.0377)	0.2072*** (0.0566)	0.1760** (0.0733)
Big4	-0.0374 (0.0239)	-0.4972*** (0.0430)	-0.3253*** (0.0458)
LNIssueSize	-0.0789*** (0.0124)	-0.1487*** (0.0210)	-0.1478*** (0.0231)
LNShareOverhang	-0.0035 (0.0137)	-0.0178 (0.0202)	-0.0051 (0.0203)
MarketReturn	0.4775** (0.2379)	0.1520 (0.3490)	-0.1112 (0.4383)
MarketVolatility	1.0182 (3.6251)	-14.0639*** (5.3177)	-1.6636 (6.4762)
Constant	0.5794*** (0.0642)	0.5799*** (0.0944)	0.2227** (0.1107)
Year Fixed Effects	Yes	Yes	Yes
Observations	2,936	2,889	2,851
R-squared	0.0723	0.1873	0.1287
b) After 2016 (Year ≥ 2016)			
VC	0.3266*** (0.0299)	0.5243*** (0.0424)	0.2537*** (0.0391)
LNFirmSize	0.0488*** (0.0113)	0.1573*** (0.0169)	0.1285*** (0.0166)
LNFirmAge	0.0542*** (0.0095)	0.0115 (0.0168)	-0.0017 (0.0172)
EPSWin	0.0556*** (0.0112)	0.0552*** (0.0189)	0.0189 (0.0188)
ROAWin	0.1486*** (0.0422)	0.1790*** (0.0586)	0.2914*** (0.0621)
Big4	-0.1587*** (0.0255)	-0.5261*** (0.0379)	-0.3701*** (0.0387)
LNIssueSize	-0.0978*** (0.0141)	-0.2042*** (0.0203)	-0.1847*** (0.0200)
LNShareOverhang	0.0203*** (0.0063)	0.0209** (0.0106)	0.0354*** (0.0114)
MarketReturn	1.5035*** (0.2763)	1.3817*** (0.4272)	-0.0171 (0.4233)
MarketVolatility	-5.1395 (3.7260)	21.0941*** (7.4237)	8.6489 (7.0759)
Constant	0.2956*** (0.0537)	1.4944*** (0.1245)	0.9750*** (0.1038)
Year Fixed Effects	Yes	Yes	Yes
Observations	5,706	5,394	5,115
R-squared	0.0922	0.1567	0.1017

	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 15 shows OLS regression results on the effect of VC-backing on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). Panel a) reports estimates for IPOs issued before 2016, i.e., prior to the Paris Agreement regime, while Panel b) reports estimates for IPOs issued in 2016 or later, i.e., in the post-Paris Agreement period. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 16: Robustness check: Paris Agreement – Effect of greenness

Dependent Variables	**(1) UnderpricingWin**	**(2) Return60Win**	**(3) Return365Win**
a) Before 2016 (Year < 2016)			
Green	0.0554 (0.0843)	0.0640 (0.1297)	0.1122 (0.1524)
LNFirmSize	-0.0141 (0.0095)	0.0643*** (0.0162)	0.0797*** (0.0190)
LNFirmAge	0.0309*** (0.0087)	0.0750*** (0.0132)	0.0496*** (0.0164)
EPSWin	-0.0055 (0.0112)	0.0089 (0.0112)	0.0145 (0.0153)
ROAWin	0.1840*** (0.0379)	0.1784*** (0.0575)	0.1606** (0.0740)
Big4	-0.0355 (0.0240)	-0.4922*** (0.0432)	-0.3216*** (0.0458)
LNIssueSize	-0.0710*** (0.0121)	-0.1248*** (0.0201)	-0.1342*** (0.0221)
LNShareOverhang	-0.0007 (0.0138)	-0.0094 (0.0201)	-0.0003 (0.0203)
MarketReturn	0.4732** (0.2378)	0.1580 (0.3481)	-0.1144 (0.4370)
MarketVolatility	1.4047 (3.6046)	-12.8252** (5.2533)	-0.9965 (6.4003)
Constant	0.5754*** (0.0641)	0.5715*** (0.0943)	0.2182** (0.1104)
Year Fixed Effects	Yes	Yes	Yes
Observations	2,936	2,889	2,851
R-squared	0.0684	0.1771	0.1257
b) After 2016 (Year ≥ 2016)			
Green	-0.1053 (0.0641)	-0.2489*** (0.0899)	-0.2446*** (0.0882)

LNFirmSize	0.0429*** (0.0115)	0.1482*** (0.0171)	0.1248*** (0.0167)
LNFirmAge	0.0623*** (0.0096)	0.0238 (0.0171)	0.0045 (0.0173)
EPSWin	0.0438*** (0.0106)	0.0380** (0.0184)	0.0107 (0.0189)
ROAWin	0.1352*** (0.0423)	0.1543*** (0.0578)	0.2796*** (0.0615)
Big4	-0.1796*** (0.0259)	-0.5646*** (0.0385)	-0.3903*** (0.0387)
LNIssueSize	-0.0707*** (0.0138)	-0.1613*** (0.0199)	-0.1647*** (0.0199)
LNShareOverhang	0.0308*** (0.0067)	0.0381*** (0.0108)	0.0434*** (0.0114)
MarketReturn	1.5396*** (0.2755)	1.4255*** (0.4277)	0.0182 (0.4204)
MarketVolatility	-2.0237 (3.7151)	26.1848*** (7.3519)	11.1682 (7.0075)
Constant	0.2914*** (0.0541)	1.4946*** (0.1265)	0.9770*** (0.1043)
Year Fixed Effects	Yes	Yes	Yes
Observations	5,706	5,394	5,115
R-squared	0.0688	0.1297	0.0949
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 16 shows OLS regression results on the effect of greenness on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). Panel a) reports estimates for IPOs issued before 2016, i.e., prior to the Paris Agreement regime, while Panel b) reports estimates for IPOs issued in 2016 or later, i.e., in the post-Paris Agreement period. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 17: Robustness check: Paris Agreement – Interaction effect of VC-backing and greenness

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
a) Before 2016 (Year < 2016)			
VC	0.0882*** (0.0239)	0.2619*** (0.0484)	0.1524*** (0.0482)
Green	0.0860 (0.1290)	0.0125 (0.1727)	0.1997 (0.1835)

VC × Green	-0.0985 (0.1446)	0.0940 (0.2563)	-0.2606 (0.3262)
LNFirmSize	-0.0081 (0.0096)	0.0827*** (0.0168)	0.0905*** (0.0197)
LNFirmAge	0.0255*** (0.0088)	0.0592*** (0.0133)	0.0409** (0.0163)
EPSWin	-0.0023 (0.0115)	0.0188* (0.0112)	0.0195 (0.0151)
ROAWin	0.1939*** (0.0376)	0.2068*** (0.0566)	0.1784** (0.0731)
Big4	-0.0371 (0.0239)	-0.4969*** (0.0430)	-0.3247*** (0.0458)
LNIssueSize	-0.0787*** (0.0123)	-0.1487*** (0.0210)	-0.1473*** (0.0230)
LNShareOverhang	-0.0032 (0.0138)	-0.0178 (0.0202)	-0.0046 (0.0203)
MarketReturn	0.4711** (0.2379)	0.1426 (0.3496)	-0.1243 (0.4394)
MarketVolatility	1.0882 (3.6181)	-14.0758* (5.3091)	-1.5076 (6.4740)
Constant	0.5764*** (0.0641)	0.5799*** (0.0943)	0.2153* (0.1106)
Year Fixed Effects	Yes	Yes	Yes
Observations	2,936	2,889	2,851
R-squared	0.0726	0.1874	0.1292
b) After 2016 (Year ≥ 2016)			
VC	0.3260*** (0.0303)	0.5287*** (0.0430)	0.2609*** (0.0396)
Green	-0.1126 (0.0733)	-0.1885* (0.1047)	-0.1319 (0.1131)
VC × Green	0.0246 (0.1394)	-0.1945 (0.1955)	-0.3377* (0.1748)
LNFirmSize	0.0498*** (0.0114)	0.1598*** (0.0169)	0.1311*** (0.0167)
LNFirmAge	0.0540*** (0.0095)	0.0116 (0.0168)	-0.0014 (0.0172)
EPSWin	0.0560*** (0.0112)	0.0563*** (0.0190)	0.0200 (0.0189)
ROAWin	0.1487*** (0.0422)	0.1785*** (0.0586)	0.2901*** (0.0621)
Big4	-0.1603*** (0.0255)	-0.5297*** (0.0380)	-0.3741*** (0.0387)
LNIssueSize	-0.0989*** (0.0141)	-0.2066*** (0.0203)	-0.1870*** (0.0201)

LNShareOverhang	0.0202*** (0.0063)	0.0205* (0.0106)	0.0349*** (0.0114)
MarketReturn	1.4960*** (0.2766)	1.3806*** (0.4275)	-0.0037 (0.4237)
MarketVolatility	-5.2147 (3.7286)	20.8636*** (7.4088)	8.5700 (7.0510)
Constant	0.2982*** (0.0538)	1.4972*** (0.1245)	0.9739*** (0.1038)
Year Fixed Effects	Yes	Yes	Yes
Observations	5,706	5,394	5,115
R-squared	0.0924	0.1575	0.1028
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 17 shows OLS regression results on the interaction effect of VC-backing and greenness on IPO performance. The dependent variables are winsorized first-day underpricing (1), winsorized 60-day returns (2), and winsorized 365-day returns (3). Panel a) reports estimates for IPOs issued before 2016, i.e., prior to the Paris Agreement regime, while Panel b) reports estimates for IPOs issued in 2016 or later, i.e., in the post-Paris Agreement period. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 18: Robustness check: Paris Agreement – Predictive margins and contrasts for VC-backing and greenness

Dependent Variables	**(1)** **UnderpricingWin**	**(2)** **Return60Win**	**(3)** **Return365Win**
a) Before 2016 (Year < 2016)			
1) Predictive margins from Equation (3)			
G1: Non-VC × Non-Green	0.2667*** (0.0134)	0.4143*** (0.0232)	0.2857*** (0.0229)
G2: Non-VC × Green	0.3527*** (0.1284)	0.4268** (0.1716)	0.4854*** (0.1824)
G3: VC × Non-Green	0.3548*** (0.0188)	0.6763*** (0.0404)	0.4381*** (0.0411)
G4: VC × Green	0.3423*** (0.0611)	0.7828*** (0.1846)	0.3772 (0.2665)
2) Contrasts (reference group: VC × Green)			
G4-G1	0.0757 (0.0617)	0.3684** (0.1855)	0.0915 (0.2671)
G4-G2	-0.0103 (0.1429)	0.3559 (0.2523)	-0.1082 (0.3228)
G4-G3	-0.0125 (0.0622)	0.1065 (0.1876)	-0.0609 (0.2690)

b) After 2016 (Year ≥ 2016)			
1) Predictive margins from Equation (3)			
G1: Non-VC × Non-Green	0.4446*** (0.0144)	0.6219*** (0.0216)	0.4303*** (0.0215)
G2: Non-VC × Green	0.3319*** (0.0718)	0.4333*** (0.1027)	0.2984*** (0.1110)
G3: VC × Non-Green	0.7706*** (0.0254)	1.1506*** (0.0356)	0.6912*** (0.0328)
G4: VC × Green	0.6826*** (0.1166)	0.7675*** (0.1623)	0.2215* (0.1303)
2) Contrasts (reference group: VC × Green)			
G4-G1	0.2381** (0.1182)	0.1457 (0.1644)	-0.2088 (0.1326)
G4-G2	0.3507** (0.1374)	0.3342* (0.1925)	-0.0769 (0.1714)
G4-G3	-0.0880 (0.1190)	-0.3831** (0.1657)	-0.4697*** (0.1338)
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

Table 18 shows the model-implied predictive margins and pairwise contrasts for the four issuer groups defined by VC-backing and greenness, based on Equation (3). Results are shown for winsorized first-day underpricing, winsorized 60-day returns, and winsorized 365-day returns. Panel a) presents estimates for IPOs issued before 2016, i.e., prior to the Paris Agreement regime, while Panel b) presents estimates for IPOs issued in 2016 or later, i.e., in the post-Paris Agreement period. All margins and contrasts are computed after estimating Equation (3) with the full set of control variables and year fixed effects.

Table 19: Robustness check: Placebo Analysis – Effect of VC-backing

Sample	**(1)** **Underpricing**	**(2)** **60-day return**	**(3)** **365-day return**
VC	0.0008 (0.0012)	0.0007 (0.0013)	0.0008 (0.0013)
LNFirmSize	-0.0001 (0.0005)	-0.0001 (0.0005)	0.0001 (0.0005)
LNFirmAge	0.0001 (0.0005)	0.0002 (0.0005)	0.0001 (0.0005)
EPSWin	-0.0003 (0.0005)	-0.0004 (0.0005)	-0.0002 (0.0005)
ROAWin	-0.0018 (0.0018)	-0.0022 (0.0019)	-0.0024 (0.0019)
Big4	0.0007 (0.0012)	0.0002 (0.0012)	0.0002 (0.0013)

LNIssueSize	0.0001 (0.0006)	0.0001 (0.0006)	-0.0000 (0.0006)
LNShareOverhang	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0004 (0.0003)
MarketReturn	0.1160*** (0.0145)	0.1097*** (0.0149)	0.1084*** (0.0152)
MarketVolatility	0.1147 (0.1679)	0.1075 (0.1711)	0.1146 (0.1736)
Constant	0.0158*** (0.0038)	0.0157*** (0.0039)	0.0156*** (0.0040)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0966	0.0993	0.0941
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 19 shows OLS regression results for the placebo analysis of VC-backing. The dependent variable is the placebo outcome, which is defined as the 30-trading-day return of the FTSE All-World USD price index in the window [-180, -151] trading days relative to the IPO date. Columns (1)-(3) replicate the baseline VC specification for the underpricing, 60-day return, and 365-day return estimation samples, wherefore only the sample restriction varies across columns. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 20: Robustness check: Placebo Analysis – Effect of greenness

Sample	**(1)** **Underpricing**	**(2)** **60-day return**	**(3)** **365-day return**
Green	-0.0008 (0.0040)	-0.0011 (0.0041)	-0.0021 (0.0044)
LNFirmSize	-0.0001 (0.0005)	-0.0001 (0.0005)	0.0000 (0.0005)
LNFirmAge	0.0001 (0.0005)	0.0002 (0.0005)	0.0001 (0.0005)
EPSWin	-0.0003 (0.0005)	-0.0005 (0.0005)	-0.0002 (0.0005)
ROAWin	-0.0018 (0.0018)	-0.0023 (0.0019)	-0.0025 (0.0019)
Big4	0.0006 (0.0012)	0.0001 (0.0012)	0.0002 (0.0013)
LNIssueSize	0.0001 (0.0006)	0.0002 (0.0006)	0.0000 (0.0006)
LNShareOverhang	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0003 (0.0003)

MarketReturn	0.1162*** (0.0145)	0.1098*** (0.0149)	0.1086*** (0.0152)
MarketVolatility	0.1210 (0.1680)	0.1131 (0.1711)	0.1206 (0.1736)
Constant	0.0157*** (0.0038)	0.0157*** (0.0039)	0.0156*** (0.0040)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0966	0.0993	0.0941
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 20 shows OLS regression results for the placebo analysis of greenness. The dependent variable is the placebo outcome, which is defined as the 30-trading-day return of the FTSE All-World USD price index in the window [-180, -151] trading days relative to the IPO date. Columns (1)-(3) replicate the baseline greenness specification for the underpricing, 60-day return, and 365-day return estimation samples, wherefore only the sample restriction varies across columns. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 21: Robustness check: Placebo Analysis – Interaction effect of VC-backing and greenness

Sample	**(1)** **Underpricing**	**(2)** **60-day return**	**(3)** **365-day return**
VC	0.0007 (0.0012)	0.0006 (0.0013)	0.0006 (0.0013)
Green	-0.0025 (0.0049)	-0.0028 (0.0051)	-0.0045 (0.0054)
VC × Green	0.0049 (0.0085)	0.0051 (0.0086)	0.0067 (0.0091)
LNFirmSize	-0.0001 (0.0005)	-0.0001 (0.0005)	0.0001 (0.0005)
LNFirmAge	0.0001 (0.0005)	0.0002 (0.0005)	0.0001 (0.0005)
EPSWin	-0.0003 (0.0005)	-0.0004 (0.0005)	-0.0002 (0.0005)
ROAWin	-0.0018 (0.0018)	-0.0022 (0.0019)	-0.0024 (0.0019)
Big4	0.0007 (0.0012)	0.0002 (0.0012)	0.0002 (0.0013)
LNIssueSize	0.0001 (0.0006)	0.0001 (0.0006)	-0.0000 (0.0006)

LNShareOverhang	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0004 (0.0003)
MarketReturn	0.1158*** (0.0145)	0.1095*** (0.0149)	0.1083*** (0.0152)
MarketVolatility	0.1134 (0.1678)	0.1054 (0.1710)	0.1123 (0.1735)
Constant	0.0159*** (0.0038)	0.0158*** (0.0039)	0.0158*** (0.0040)
Year Fixed Effects	Yes	Yes	Yes
Observations	8,642	8,283	7,966
R-squared	0.0967	0.0994	0.0942
	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Table 21 shows OLS regression results for the placebo analysis of the interaction between VC-backing and greenness. The dependent variable is the placebo outcome, which is defined as the 30-trading-day return of the FTSE All-World USD price index in the window [-180, -151] trading days relative to the IPO date. Columns (1)-(3) replicate the baseline interaction specification for the underpricing, 60-day return, and 365-day return estimation samples, wherefore only the sample restriction varies across columns. All specifications include the set of firm-, deal-, and market-level control variables shown in the table and year fixed effects.

Table 22: Robustness check: Placebo Analysis – Predictive margins and contrasts for VC-backing and greenness

Sample	**(1)** **Underpricing**	**(2)** **60-day return**	**(3)** **365-day return**
a) Predictive margins from Equation (3)			
G1: Non-VC × Non-Green	0.0126*** (0.0007)	0.0122*** (0.0007)	0.0119*** (0.0007)
G2: Non-VC × Green	0.0101** (0.0049)	0.0094* (0.0051)	0.0074 (0.0054)
G3: VC × Non-Green	0.0133*** (0.0010)	0.0129*** (0.0010)	0.0125*** (0.0010)
G4: VC × Green	0.0157** (0.0068)	0.0151** (0.0069)	0.0148** (0.0072)
b) Contrasts (reference group: VC × Green)			
G4-G1	0.0032 (0.0069)	0.0029 (0.0070)	0.0029 (0.0073)
G4-G2	0.0056 (0.0084)	0.0057 (0.0086)	0.0074 (0.0091)
G4-G3	0.0024 (0.0069)	0.0023 (0.0070)	0.0022 (0.0073)

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 22 shows the predictive margins and pairwise contrasts for four VC-greenness issuer groups implied by the placebo interaction specification. Margins and contrasts are computed after estimating the placebo interaction specification with the full set of controls and year fixed effects.