PRICING DEMOCRACY

THE ROLE OF PRIVATE EQUITY AND VENTURE CAPITAL IN GLOBAL IPOS

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Abstract:

This paper examines how democratic institutions shape IPO pricing efficiency and whether private financial sponsors can mitigate institutional weaknesses. Using a global sample of 27,141 IPOs from 1990 to 2025, we document that firms going public in less democratic countries experience higher underpricing. Our coefficient of -0.39 indicates that a one standard deviation increase in democracy reduces first-day returns by approximately 9.2 percentage points. We identify information asymmetry as the underlying channel, weaker democracies exhibit higher government media censorship, which heightens uncertainty at issuance. Private equity and venture capital ownership partially offsets this effect, reducing the democracy-related underpricing by about a quarter of the full effect. Overall, the results show that democratic quality and private sponsorship jointly shape IPO pricing, and that sophisticated private investors can partly substitute for formal institutional safeguards when democratic institutions are weak.

Keywords:

Democracy, IPO underpricing, Information asymmetry, Venture Capital, Private Equity

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1 Introduction

We examine whether weaker democratic institutions increase initial public offering (IPO) underpricing and whether Private Equity (PE) and Venture Capital (VC) ownership can mitigate this effect. While much research has established how institutional quality affects country-level outcomes, less is known about how democracy shapes corporate-level outcomes or whether potential adverse effects can be mitigated. In this paper, we examine this question in the context of IPO underpricing. The findings suggest that firms going public in less democratic countries experience higher underpricing, approximately 9.2 percentage points for every one standard deviation (0.2341) decrease in democracy. Our findings indicate that more democratic institutions foster an environment characterized by lower information asymmetry (proxied by reduced government media censorship efforts), and through this channel, they reduce IPO underpricing. We further find that introducing Private Equity or Venture Capital ownership reduces this democracy-related gap by a quarter of the effect, indicating that sophisticated private investors partially substitute for weak institutional quality. This provides new perspective on how Private Equity and Venture Capital ownership serve as a mechanism for reducing risk premiums and the cost of going public in less democratic environments.

The topic is timely because of two main developments. First, global democratic backsliding has intensified. Leading indices such as the Economist Intelligence Unit's democracy index, reported in February 2025, the lowest global democracy score in decades (Economist Intelligence Unit, 2024). V-Dem reports similar patterns and highlights broad declines in democratic quality, including increased polarization, weaker checks and balances, and a deteriorating rule of law. These trends affect both emerging markets and advanced economies, including the United States, which is the world's largest IPO market (V-Dem Institute, 2025). Second, the scale and scope of Private Capital have expanded significantly. PE and VC ownership have grown in assets, deal counts, and influence over governance practices in the pre-IPO phase, shaping disclosure, board professionalization, and incentive structures (McKinsey & Company (2025); Campbell and Frye, 2009).

In this paper, we examine how these two developments influence the persistent market anomaly of IPO underpricing (first-day returns), which has important implications for both firms seeking to raise capital and investors allocating funds. Ljungqvist (2007) categorizes explanations for IPO underpricing into four main categories; asymmetric information, institutional, control, and behavioral theories. Previous literature highlight information asymmetry as the dominant explanation for underpricing. Central to this framework is Rock (1986), who argues that uninformed investors face a winner's curse, receiving full allocations mostly in bad deals, and therefore require underpricing as a condition for participation. Beatty and Ritter (1986) formalized this link between ex ante uncertainty and underpricing, showing that higher information asymmetry increases the degree of price discounting at issuance.

Our research builds on Duong et al. (2022), who show that lower levels of democracy are associated with higher information asymmetry and, through that channel, increase IPO underpricing. We extend their work in two main ways. First, we seek to confirm the previously identified relationship between democracy and first-day returns by utilizing a broader sample, a longer time period, and different datasets. To ensure robustness and control for potential endogeneity, we employ both an OLS regression and an instrumental variable (IV) regression, using regional waves of democracy from Acemoglu et al. (2019) as an instrument. The OLS specification, controlling for IPO, firm, and country characteristics, estimates that firms going public in less democratic countries experience higher IPO underpricing, with a coefficient of –0.39 in the full model. The instrumental variable result corroborates this relationship.

Second, we examine how Private Capital ownership through certification reduces information asymmetry and moderates the relationship between democracy and IPO underpricing. Our methodology

involves interacting the financial sponsor dummy variables with the democracy index, using IPO underpricing as the dependent variable. Our findings indicate that Private Equity or Venture Capital ownership mitigates this democracy-related underpricing penalty by approximately 9.1 percentage points, which corresponds to roughly one quarter of the full democracy effect. This suggests that sophisticated private investors partially substitute for weak institutional quality. We find that the magnitude of this moderating effect exceeds that of having a Big four auditor, although it is smaller than the reduction associated with disclosing the intended use of IPO proceeds. When separating Private Capital, the positive interaction coefficients show that both VC and PE ownership reduce the penalty (VC: 5.8 percentage points; PE: 7.0 percentage points), but only the VC effect is statistically significant at the 10% level. Taken together, the evidence demonstrates that financial sponsors, and particularly Venture Capital investors, help counteract the information frictions that amplify IPO underpricing in less democratic environments.

These findings reveal that democratic quality plays a role in shaping IPO pricing efficiency through its effect on information asymmetry. At the same time, PE and VC ownership can offset a share of the adverse impact associated with weak democratic institutions. As global democratic backsliding intensifies and Private Capital involvement continues to rise, this relationship becomes more relevant. Our results suggest that the erosion of democratic quality translates into a higher cost of going public for issuing firms, and the presence of sophisticated private financial sponsors can help reduce these increased costs.

1.1 Literature review

This paper bridges two strands of literature, the influence of institutional quality on IPO outcomes and the certification role of Private Equity and Venture Capital, by examining whether financial sponsorship mitigates the impact of weaker democratic institutions on first-day IPO returns.

One important contextual factor influencing IPO pricing outcomes is the level of democracy within a country. Prior research shows that democratic institutions shape the information environment in financial markets. For example, Delis et al. (2020) find that democratization reduces loan spreads by improving transparency and investor protection, both of which lower information asymmetry. Information asymmetry is a central determinant of IPO underpricing, as highlighted by Ljungqvist (2007) and by the argument of Beatty and Ritter (1986) that higher ex ante uncertainty leads to larger first-day returns. Consistent with this logic, existing studies document that lower levels of democracy are associated with greater information asymmetry and, consequently, higher IPO underpricing. The link between democracy and IPO underpricing has however received limited direct examination. The most comprehensive study to date is Duong et al. (2022), who show that firms in less democratic countries experience higher underpricing. Our study contributes to this literature by testing whether this relationship holds in a broader cross-country setting, over a longer time horizon, and using different datasets. We also extend their work by examining the role of Private Equity and Venture Capital investors, and whether their involvement can mitigate the underpricing effects associated with weaker democratic institutions.

Our research also contributes to the extensive literature examining how Private Capital influences IPO underpricing (e.g., Megginson and Weiss, 1991; Loughran and Ritter, 2004; Duong et al., 2022; Lee and Wahal, 2004; Barry et al., 1990). Prior studies have generally found that Private Capital ownership is associated with lower IPO underpricing by reducing information asymmetry. For example, Megginson and Weiss (1991) argue that VC firms have strong incentives to convey all relevant information of

their backed firms as they are a repeat player in the IPO market and thus have a strong incentive to establish a trustworthy relationship with investors. Barry et al. (1990) argue that VC backers helps the firm produce more reliable information by participating in boards, monitoring, and implementing better governance practices. However, other researchers argue that Private Capital backing has the opposite effect on underpricing, namely increasing it. For instance, Lee and Wahal (2004) find that VC ownership can lead to higher underpricing as particularly smaller VC firms accept leaving money on the table to demonstrate IPO capability and attract future funds. We extend this line of research by exploring how Private Capital interacts with the level of democracy to influence IPO underpricing. Furthermore, we distinguish between Private Equity and Venture Capital ownership, comparing their respective impacts. Through this approach, our study provides new insights into how institutional and ownership structures jointly shape IPO outcomes across different political and economic contexts.

2 Data and methodology

2.1 Data gathering

The construction of our dataset draws on several complementary sources. Measures of institutional democracy, including our main democracy index, are obtained from V-Dem, which provides annual country-level indicators of political institutions. Country-level economic and market development variables are taken from the World Bank's World Development Indicators.

IPO-level information is sourced from the New Issues database in SDC Platinum and covers the period from 1990 to October 2025. The start year of 1990 is chosen for two reasons. First, the availability of key control variables is limited prior to this period. Second, as noted by Kaplan and Strömberg (2009), a major wave of Private Equity transactions peaked in 1988; beginning the sample in 1990 allows exits from these investments to be captured. To ensure comparability with prior IPO studies (Boulton et al., 2010; Espenlaub et al., 2020; Duong et al., 2022; Chen et al., 2020), we exclude observations such as exchange-traded funds, depository receipts, rights offerings, spin-offs, private placements, closed-end funds, real estate investment trusts, limited partnerships, and warrants. We also drop all countries with fewer than five IPOs over the sample period to avoid generating unreliable country-level estimates.

Market return data are obtained from Datastream using broad market indices. Our instrumental variable, regional waves of democratization, is constructed by Acemoglu et al. (2019) and merged into our dataset based on country and year.

The final dataset contains 27,141 IPOs from 57 countries over a 36-year period. Consistent with Duong et al. (2022), democracy measures are matched to the primary exchange on which each IPO is listed, as this captures the institutional environment governing disclosure, regulation, and pricing at the time of issuance.

2.2 Sample characteristics

	Observations	Mean	Std. Dev.	10%	Median	90%
IPO underpricing	27141	0.254100	0.488100	-0.075600	0.092100	0.790400
Democracy	27141	0.627800	0.306400	0.084000	0.822000	0.886000
Offer size	27141	3.330700	2.035300	0.785600	3.552500	5.723000
Profitability	17641	0.012800	0.884200	-0.090800	0.000000	0.176800
Leverage	17958	0.148300	0.235900	0.000000	0.069300	0.405000
IPO age	18662	2.173900	1.115800	0.693100	2.397900	3.465700
Carveout	27141	0.186000	0.389100	0.000000	0.000000	1.000000
IPO Commitment	27141	0.766300	0.423200	0.000000	1.000000	1.000000
Bookbuilding	27141	0.609400	0.487900	0.000000	1.000000	1.000000
Shares issued	27140	16.432100	2.090200	14.066200	16.629100	18.890700
Top underwriter	27141	0.543700	0.498100	0.000000	1.000000	1.000000
Big four	27141	0.312200	0.463400	0.000000	0.000000	1.000000
PE/VC back	27141	0.222400	0.415900	0.000000	0.000000	1.000000
IPO activity	17359	0.049700	0.034600	0.013400	0.036600	0.104100
Market return	25390	0.032500	0.105500	-0.086500	0.031300	0.151500
GDP per capita	18801	9.722000	1.169700	7.836000	10.249900	10.871800
GDP per capita growth	18801	3.305700	3.288700	0.429400	2.586500	8.230500
Market size	17134	98.016300	43.982700	46.266400	98.037500	146.423300
Market liquidity	17292	88.377900	59.800700	23.201800	78.622400	163.187900

Table 1: Sample characteristics

Table 1 reports descriptive statistics for the variables used in our analysis. Average (median) IPO underpricing in the sample is 0.2541 (0.0921). The democracy index shows an average (median) value of 0.6278 (0.8220). IPOs in our dataset have an average offer size of 28 million ($e^{3.33}$) USD, while issuer characteristics such as profitability and leverage average 0.0128 and 0.1483, respectively. The median firm age at listing is approximately 8.8 ($e^{2.17}$) years. Regarding deal structure, 18.6 % of IPOs involve an equity carve-out, 76.6% include a commitment clause, and 60.9% use bookbuilding. Roughly 31% of offerings are audited by a Big four firm, and 22% are backed by PE/VC players.

This table summarizes the key variables used in the empirical analysis. The final sample contains 27,141 observations across 57 countries between 1990 and 2025. Further definitions and data sources for each variable are documented in Table 7 in our appendix section.

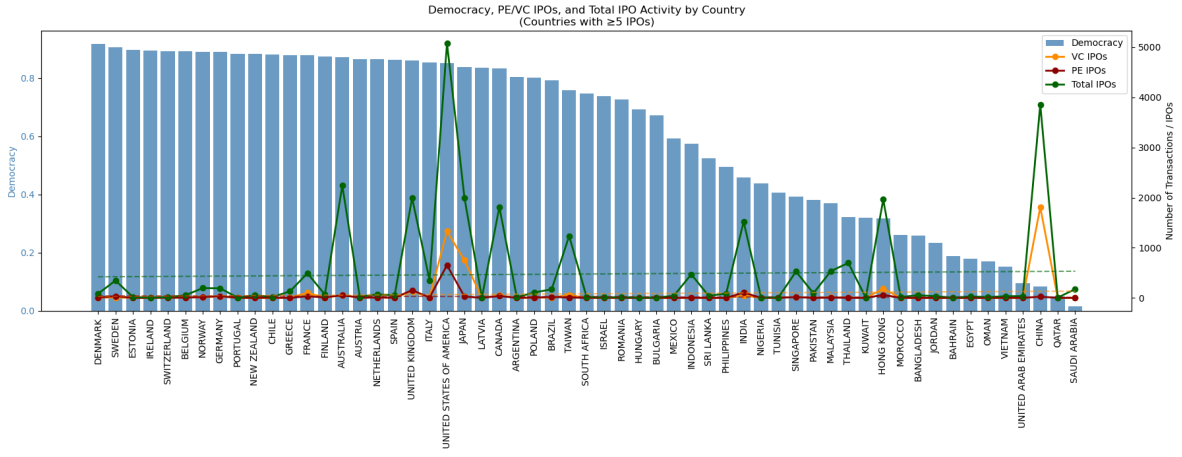


Figure 1: Average democracy levels and IPO activity by country

Figure 1 reports democracy scores together with the number of VC-backed, PE-backed, and total IPOs for all countries with at least five IPOs in the sample. Countries are ordered from left to right by decreasing levels of democracy. Most IPO activity takes place in highly democratic countries such as the United States, Australia, and the United Kingdom. However, the country with the second-highest number of IPOs lies at the opposite end of the democracy spectrum, China. This makes China an important case in our dataset, since it accounts for a large share of all IPOs occurring in less democratic environments. China not only represents the majority of VC- and PE-backed IPOs among less democratic countries, but it also ranks among the most active markets globally for VC-backed deals.

When comparing VC- and PE-backed IPOs, it is evident that VC-backed issuances are more common overall. The figure also shows that global PE-backed IPO activity is heavily concentrated in the United States (48%), with relatively few PE-backed offerings occurring in less democratic regions.

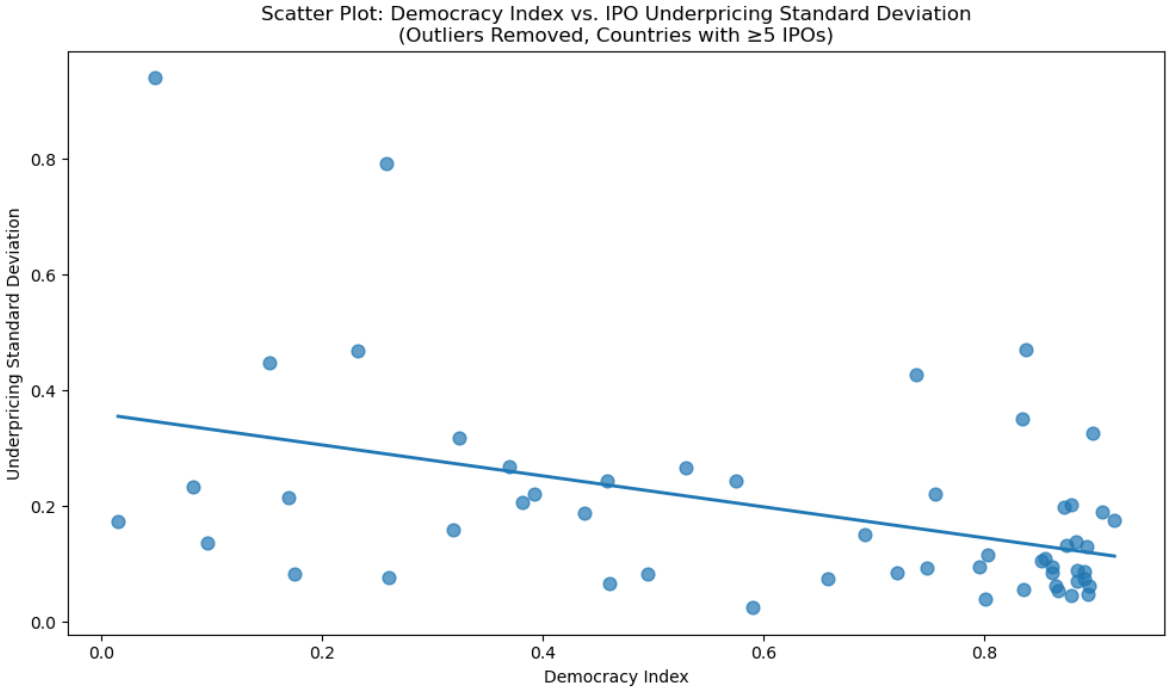


Figure 2: Underpricing volatility and democracy

Figure 2 plots the relationship between democracy and the standard deviation of IPO underpricing across countries. The fitted regression line reveals a negative association between high democracy and IPO underpricing volatility. Markets with low democracy scores display some of the highest underpricing volatility, reflecting less predictable pricing environments. In contrast, countries characterized by more developed institutional frameworks show lower variability in underpricing.

2.3 Variable definitions

Our dependent variable in all regressions is IPO first-day return (IPO underpricing). Consistent with prior literature (Ellul and Pagano, 2006; Chen et al., 2020; Duong et al., 2022; Boulton et al., 2010), we measure IPO underpricing as the percentage difference between the first-day closing price and the

offer price, scaled by the offer price. Formally, IPO underpricing is calculated as:

$$\text{IPO underpricing} = \frac{\text{First-day Closing Price} - \text{Offer Price}}{\text{Offer Price}} \tag{1}$$

To measure democracy, we employ V-Dem's Electoral Democracy Index. The index captures the extent to which the ideal of electoral democracy is achieved in practice. It is constructed as the average of two components: (i) the weighted average of five sub-indices (freedom of association, clean elections, freedom of expression, elected officials, and suffrage), and (ii) the five-way multiplicative interaction of these same components. The resulting index ranges from 0 to 1, with higher values indicating a greater level of democracy. Our approach is conceptually similar to that of Duong et al. (2022), who rely on Polity V's Institutionalized Democracy measure. Both indicators aim to capture the quality of democratic institutions and the extent of citizen participation rights, although the V-Dem index offers a more granular assessment of electoral processes and civil liberties.

To mitigate the possibility that the democracy variable captures variation from otherwise omitted factors, we include a comprehensive set of country-level, firm-level, and IPO-related control variables. This approach ensures the stability of our estimates and aligns with prior empirical literature (Ellul and Pagano, 2006; Chen et al., 2020; Espenlaub et al., 2020; Duong et al., 2022; Boulton et al., 2010).

Specifically for country-level control variables, we include *GDP per capita*, measured as the natural logarithm of the country's gross domestic product per capita in the year of the IPO listing, and *GDP per capita growth*, defined as the annual change in GDP per capita. We further control for *IPO activity*, calculated as the ratio of the number of IPOs issued in a given year to the total number of firms listed in that country, and *Market return*, which represents the country-specific value-weighted index return over the three months preceding the offering. Finally, we include *Market size*, measured as the ratio of the annual total market capitalization of stocks traded to GDP, and *Market liquidity*, measured as the ratio of the annual total value of stocks traded to GDP. These variables are controlled for since institutional quality is strongly correlated with economic development (Acemoglu et al., 2019) and accounting for these controls hence ensures that the democracy coefficient is not simply capturing differences in pricing based on a country's economic strength.

Our selection of firm-level control variables that may influence IPO underpricing follows (Ellul and Pagano, 2006; Çolak et al., 2017; Chen et al., 2020; Duong et al., 2022). *Offer size* is measured as the natural logarithm of total proceeds raised by the IPO firm. *Profitability* is defined as earnings before interest expenses, taxes, depreciation and amortization (EBITDA) divided by total assets, capturing the firm's operating performance. To account for the issuing firm's capital structure, we include *Leverage*, calculated as the ratio of the firm's total debt to assets. *IPO age* is measured as the natural logarithm of one plus the number of years between the firm's founding and the IPO year, controlling for firm maturity. These variables are included to control for differences in the type and characteristics of firms going public.

Additionally, we include several variables that control for the deal structure and issuance mechanism. The variable *Carveout* is a dummy equal to one if the IPO firm is carved out from a publicly listed parent company, and zero otherwise. *IPO commitment* and *Bookbuilding* are indicator variables equal to one if the underwriter purchases securities from the issuer for resale to the public, or if the IPO is conducted through a bookbuilding process, respectively. *Shares issued* is measured as the natural logarithm of the total number of shares offered in the IPO. Including these variables helps account for structural differences in how public offerings are conducted, ensuring that variation in deal design does not confound the estimated effect of democracy.

Lastly, to account for the reputation of the financial intermediaries involved in the IPO process, we include indicators for *Top underwriter*, *Big four*, and *PE/VC back*. These dummy variables take the value one if the IPO is underwritten by a top-quartile underwriter (ranked by IPO proceeds), audited by a Big four accounting firm, or backed by a Venture Capital or Private Equity investor, respectively, and zero otherwise. Prior research shows that reputable underwriters, high-quality auditors, and financial sponsors provide a certification effect that reduces information asymmetry and thereby influences pricing outcomes. To isolate the independent effect of democracy on IPO underpricing, we therefore control for these certification mechanisms.

2.4 Empirical methodology

2.4.1 Relationship between IPO underpricing and democracy

First, this paper seeks to confirm the previously identified relationship between democracy and IPO underpricing. This is done in two stages. First, through an OLS regression with the dependent variable IPO underpricing and the independent variable democracy, controlling for IPO, firm-and country-level variables.

$$\begin{aligned}\text{IPO underpricing}_j = \alpha &+ \beta_1 \text{ Democracy}_j + \beta_2 \text{ Offer size}_j + \beta_3 \text{ Profitability}_j \\ &+ \beta_4 \text{ Leverage}_j + \beta_5 \text{ IPO age}_j \\ &+ \beta_6 \text{ Carveout}_j + \beta_7 \text{ IPO commitment}_j + \beta_8 \text{ Bookbuilding}_j \\ &+ \beta_9 \text{ Shares issued}_j + \beta_{10} \text{Top underwriter}_j + \beta_{11} \text{ Big four}_j \\ &+ \beta_{12} \text{ PE/VC back}_j + \beta_{13} \text{ IPO activity}_j + \beta_{14} \text{ Market return}_j \\ &+ \beta_{15} \text{ GDP per capita}_j + \beta_{16} \text{ GDP per capita growth}_j + \beta_{17} \text{ Market size}_j \\ &+ \beta_{18} \text{ Market liquidity}_j + \sum FE + \epsilon_j \end{aligned} \tag{2}$$

In equation (2) subscript j denotes the IPO firm; $\sum FE$ accommodates country, industry, and year fixed effects; and ϵ reflects the model's residual term. We estimate the model using pooled ordinary least squares (OLS), with standard errors adjusted for heteroskedasticity and clustered at the country level. The model is estimated in three iterations, sequentially adding control variables to test the robustness of the core result.

To ensure the robustness of an identified relationship, an instrumental variable regression following the methodology of Duong et al. (2022) is conducted to verify that the result is not driven by an omitted variable that is correlated with democracy and also affects IPO underpricing. An example of such a concern is reverse causality. Large increases in IPO underpricing may prompt governments to introduce regulatory reforms aimed at reducing information asymmetry, for example by tightening disclosure requirements or adjusting listing rules. Such interventions can influence elements of institutional democracy scores, meaning that underpricing may also affect measured democratic quality. This feedback creates a risk of biased OLS estimates.

To mitigate this, we implement an instrumental variable strategy that leverages exogenous variation in democracy and reduces the influence of omitted variable bias. The instrument of choice is regional waves of democratization constructed by Acemoglu et al. (2019), measured as the average change in democracy among other countries in the same region and initial regime group, excluding the country itself. This metric captures the documented tendency for regime changes, such as the Arab Spring or authoritarian transitions in 1970s Latin America, to occur through regional waves. An

instrumental variable must satisfy two conditions. The first is the relevance condition, which requires the instrument to be correlated with the endogenous regressor, in this case democracy, and this will be evaluated in the first stage regression. The second is the exclusion restriction, which requires that regional waves of democratization affect IPO underpricing only through their influence on a country's level of democracy and not through any alternative channel. This presumption cannot be tested for, but is plausible as existing evidence suggests that these regional waves are not explained by regional economic trends (Acemoglu et al., 2019). Previous research instead suggests that the underlying mechanism is informational and political diffusion, whereby protests, demands for democracy, and broader dissatisfaction spread across borders in regions where countries share historical experiences, political cultures, and informational networks (Lohmann, 1994; Kuran, 1989). By isolating the variation created by the regional waves, our IV strategy ensures that idiosyncratic, endogenous political changes do not bias our estimates. However, given that the instrumental variable data are not available for the full sample period and all countries, we also present the OLS regression results using the same constrained sample for direct comparison.

2.4.2 Democracy and the information asymmetry channel in IPO underpricing

Our argument that democracy affects IPO underpricing is grounded in the link between democratic institutions and transparency (Hollyer et al., 2011; Delis et al., 2020). Democratic systems strengthen the flow of credible information, thereby reducing the information asymmetry between investors and issuing firms at the time of an offering. Duong et al. (2022) highlight two central channels through which democracy shapes the information environment: greater press freedom and lower earnings opacity, the latter reflecting more investor-oriented regulatory frameworks. Both channels reduce ex ante uncertainty and influence the pricing of IPOs. Building on these insights, we examine whether variation in democratic quality translates into differences in information asymmetry and whether this, in turn, helps explain cross-country differences in IPO underpricing.

We examine the press freedom mechanism using the V-Dem measure *Government media censorship effort* as a proxy for information asymmetry. This index captures the extent to which governments restrict or censor print and broadcast media, thereby providing an assessment of how freely information circulates within a country. A more restrictive media environment limits the availability and credibility of public information, heightening the asymmetry between investors and issuing firms. We therefore use this measure to test whether countries with greater informational openness exhibit lower IPO underpricing through reduced ex ante uncertainty. Our empirical strategy proceeds in two steps. First, we regress this proxy on our democracy index to establish the relationship between electoral democracy and information flow. Second, we re-estimate Equation 2 and replace the democracy index with the information asymmetry proxy. These results provide evidence on whether democracy affects IPO underpricing through the information asymmetry channel.

2.4.3 How Private Capital Ownership affects the relationship between IPO underpricing and democracy

To examine whether Private Capital ownership and other certifications reducing information asymmetry moderate the relationship between electoral democracy and IPO first-day returns, we estimate a series of OLS regressions with interaction terms, using the same set of control variables as in the full baseline specification. This approach follows the methodology employed by Duong et al. (2022) to test the moderating effects.

Building on the certification hypothesis by (Megginson and Weiss, 1991), we argue that Private Capital investors can help mitigate the information asymmetry between corporate insiders and outside investors, by credibly signaling that an IPO's offer price reflects relevant information. This lowers information asymmetry in a similar way to how having been audited by a high-quality auditor (Menon and Williams, 1991) and disclosing the intended use of the issued capital can reduce uncertainty regarding the IPO (Leone et al., 2007).

Thus, to test these moderating channels, we interact democracy with indicators for Big four auditing, disclosure of proceeds, and financial-sponsor backing. We then decompose the latter category into Venture Capital and Private Equity to allow separate estimation of their respective interaction effects. These specifications allow us to assess whether the effect of democracy on first-day IPO returns varies with the presence of different certifying mechanisms.

3 Results

Table 2: Democracy and IPO underpricing

	Model 1	Model 2	Model 3 (Country FE)	Model 1 (M3 Sample)	Model 2 (M3 Sample)
Democracy	-0.3859**	-0.5333***	-0.3922*	-0.3665**	-0.5323***
	(0.1653)	(0.1048)	(0.2341)	(0.1703)	(0.1042)
Big four		0.0220	0.0230**		0.0200
		(0.0347)	(0.0092)		(0.0176)
Offer size		-0.0379***	-0.0732***		-0.0515***
		(0.0139)	(0.0202)		(0.0136)
Profitability		-0.0004	-0.0014		0.0001
		(0.0033)	(0.0036)		(0.0036)
Leverage		-0.0562	-0.0657		-0.0373
		(0.0354)	(0.0727)		(0.0879)
IPO age		0.0001	-0.0181		-0.0066
		(0.0079)	(0.0179)		(0.0121)
Carveout		-0.0509***	-0.0513*		-0.0561*
		(0.0174)	(0.0280)		(0.0332)
IPO commitment		0.0084	-0.0109		0.0614
		(0.0356)	(0.0270)		(0.0396)
Bookbuilding		-0.0147	-0.0308		0.0014
		(0.0530)	(0.0291)		(0.0663)
Shares issued		-0.0422***	-0.0062		-0.0444***
		(0.0153)	(0.0301)		(0.0116)
Top underwriter		0.1258***	0.0234		0.1139***
		(0.0336)	(0.0162)		(0.0247)
PE/VC back		0.0602***	-0.0025		0.0221
		(0.0218)	(0.0070)		(0.0186)
GDP per capita			0.0000		
			(0.0000)		
GDP per capita growth			0.0362***		
			(0.0123)		
Market size			0.0036***		
			(0.0014)		
Market liquidity			0.0005*		
			(0.0002)		
IPO activity			-3.7243***		
			(0.5661)		
Market return			0.1412		
			(0.0948)		
Country FE	No	No	Yes	No	No
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.0939	0.1907	0.2944	0.1428	0.2171
R-squared Adj.	0.0924	0.1871	0.2851	0.1380	0.2116
N	27,141	12,965	7,974	7,974	7,974

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

The five regressions in Table 2 show a negative and statistically significant relationship between democracy and first-day returns at the 10% level. Because the full dataset does not contain all variables required for the Model 3 specification, we also estimate Models 1 and 2 on the restricted sample. The coefficients remain similar, which indicates that the findings are driven by the model specification rather than differences in sample composition. Overall, the results are consistent with prior research and suggest that higher levels of institutional democracy are associated with lower IPO underpricing.

In our sample of IPOs from 1990 to 2025, we estimate several OLS specifications based on the empirical model in Equation 2. Model 1 excludes all firm-level, deal-level, and macroeconomic controls, but includes year and industry fixed effects. Using the full sample, the results show that a one-unit increase in the democracy index, moving from a fully autocratic to a fully democratic environment, is associated with roughly a 39 percentage point reduction in first-day returns. When the same specification is estimated on the restricted sample used for Model 3, the coefficient remains similar at approximately –0.37.

Model 2, which adds firm-level and deal-level controls, generates a coefficient of higher magnitude, -0.53, using both the full and restricted samples. However, the relationship is still significant at the 10% level in the same direction.

Model 3, which further includes macroeconomic variables and country fixed effects, confirms that the negative association persists even after accounting for unobserved cross-country heterogeneity, with a statistically significant coefficient at the 10% level of -0.39. This means that a one standard deviation increase in democracy (0.2341) results in an average reduction of IPO underpricing of 9.2 percentage points. Together, these results suggest that higher levels of institutional democracy are consistently associated with lower IPO underpricing.

The democracy coefficient in Table 2 differs across the three model specifications, but remains similar when the same specification is estimated on the two different samples.

Table 3: IV estimate of the effect of democracy on IPO underpricing and corresponding OLS estimate

Panel A: IV regression

	Stage 1: Democracy		**Stage 2: Underpricing**	
Variable	Coeff.	t-stat	Coeff.	t-stat
Regional democratization (demreg)	0.8489***	10.43	–	–
Fitted democracy	–	–	-0.6459***	-2.99
Offer size	-0.0182*	-1.93	-0.0133	-0.61
Profitability	0.0009	0.96	-0.0034	-1.39
Leverage	0.0073	0.43	-0.0393	-0.97
IPO age	0.0123*	1.65	-0.0214*	-1.85
Carveout	0.0374*	1.68	-0.0564	-0.90
IPO commitment	-0.0242	-1.37	0.0777**	2.17
Bookbuilding	0.0289	1.36	-0.0669	-1.38
Shares issued	0.0111	1.49	-0.0438***	-3.65
Top underwriter	-0.0537***	-2.95	0.1048***	2.75
Big four	0.0453*	1.72	-0.1257***	-3.28
PE/VC Back	-0.0082*	-1.87	0.0383	1.09
IPO activity	-0.6010	-1.61	-1.5886**	-2.26
Market return	0.0446**	2.36	0.4698***	5.76
Year FE	Yes		Yes	
Industry FE	Yes		Yes	
First-stage F-statistic (demreg)	108.88			
Observations	3092		3092	
Adjusted R^2	0.8985		0.2044	

Panel B: OLS regression (same sample and controls)

Variable	**Coefficient**	**t-stat**
Democracy	-0.6793***	-18.63
Observations	3092	

Notes: Panel A shows the two-stage least squares (2SLS) regression using regional democratization as an instrument for democracy. Panel B reports the OLS coefficient on democracy using the same sample and control variables as the IV second stage. Standard errors are robust and clustered at the country level. * p< 0.1, ** p< 0.05, *** p< 0.01.

The instrumental-variable analysis conducted to deal with potential endogeneity concerns confirms a negative relationship between democracy and first-day IPO returns. Using a two-stage least squares (IV-2SLS) specification with regional democratization from Acemoglu et al. (2019) as an instrument, the coefficient on democracy remains negative and significant at the 10% confidence-level (β = –0.65; t = –2.99), as shown in Table 3. This strengthens the conclusion that lower democratic quality increases IPO underpricing.

To assess whether differences between the OLS and IV estimates are driven by instrumentation or by changes in sample composition, we re-estimate the OLS specification on the same restricted sample used in the IV analysis. The resulting coefficient on democracy (-0.6793) is close in magnitude to the corresponding IV estimate (-0.6459). This similarity suggests that omitted variable bias is unlikely to be a driver of the baseline OLS results.

The estimated effect is larger in magnitude when compared to the baseline OLS regressions (Table 2). The explanation lies in the reduced sample coverage in the instrumented specification, which includes fewer countries (39 compared to 57) and only extends to 2010, matching the temporal scope of the Acemoglu et al. (2019) dataset. This temporal restriction is particularly relevant given that China, which plays an important role in our study, underwent major regulatory and institutional

changes after 2010, a period analyzed further in the discussion section. Nonetheless, the direction and significance of the coefficient remain consistent across both OLS and IV identification strategies, reinforcing the conclusion that more democratic institutions are associated with lower first-day returns.

Table 4: Relationship between Democracy, Media censorship, and IPO underpricing

Dependent variable:	**Media censorship**	**IPO underpricing**
Democracy	5.1231***	
	(0.0126)	
Media censorship		-0.0330*
		(0.0174)
Big four		0.0244*
		(0.0145)
Offer size		-0.0730***
		(0.0056)
Profitability		-0.0023
		(0.0418)
Leverage		-0.0864**
		(0.0343)
IPO age		-0.0217***
		(0.0058)
Carveout		-0.0555***
		(0.0161)
IPO commitment		-0.0039
		(0.0170)
Bookbuilding		-0.0612***
		(0.0157)
Shares issued		-0.0075
		(0.0057)
Top underwriter		0.0257*
		(0.0140)
PE/VC back		0.0003
		(0.0139)
IPO activity		-3.6056***
		(0.2368)
Market return		0.2069***
		(0.0524)
GDP per capita		-0.0000
		(0.0000)
Market size		0.0042***
		(0.0004)
Market liquidity		-0.0001
		(0.0002)
Country FE	No	Yes
Industry FE	No	Yes
Year FE	Yes	Yes
R-squared	0.8824	0.2828
R-squared Adj.	0.8822	0.2743
Adj. R2	0.882	0.274
N	28844	7974

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

The results in Table 4 suggest that democracy affects IPO underpricing via the information asymmetry channel. The regressions show that, consistent with previous studies, higher electoral democracy scores are associated with lower government media censorship efforts (our proxy for information asymmetry). Furthermore, we find that lower information asymmetry is associated with lower IPO underpricing. This is reflected in the negative coefficient on media censorship, meaning that higher censorship (lower scores) corresponds to higher underpricing, while more open information environments (higher scores) correspond to lower underpricing.

Table 5: Moderating effects of certification mechanisms on the relationship between democracy and IPO underpricing

	Big Four	Proceed Use	PE/VC Back	PE Only	VC Only
Democracy	-0.4003*	-0.4008*	-0.3995*	-0.3971*	-0.3923*
	(0.2323)	(0.2306)	(0.2345)	(0.2356)	(0.2327)
Democracy × Big four	0.0383				
	(0.0311)				
Democracy × Proceed use		0.1769***			
		(0.0361)			
Democracy × PE/VC back			0.0907***		
			(0.0217)		
Democracy × PE only				0.0697	
				(0.0583)	
Democracy × VC only					0.0584*
					(0.0316)
Big four	0.0006	0.0203**	0.0211**	0.0215**	0.0227**
	(0.0177)	(0.0092)	(0.0090)	(0.0091)	(0.0091)
Proceed use		-0.1442***			
		(0.0399)			
PE/VC back	-0.0027	0.0021	-0.0411*		
	(0.0070)	(0.0074)	(0.0239)		
PE only				0.0288	
				(0.0365)	
VC only					-0.0398
					(0.0256)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.2945	0.2967	0.2950	0.2950	0.2948
Adj. R^2	0.2851	0.2873	0.2856	0.2856	0.2854
N	7,974	7,974	7,974	7,974	7,974

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

Table 5 shows that financial-sponsor ownership and other certification mechanisms can weaken the negative relationship between democracy and IPO underpricing. Economically the regression suggests

financial sponsors (PE or VC) offset roughly 9.1 percentage points of the underpricing associated with low democracy, about one-quarter of the baseline democracy effect.

Across the five specifications, all interaction terms capturing certification effects are positive, however not all are significant at the 10% confidence-level. Thus not all can be confirmed to reduce the negative relationship between democracy and first-day returns.

Among the non-ownership certifiers, the coefficient for Big four auditors is positive but insignificant, while the coefficient for disclosing the use of IPO proceeds is the largest in magnitude (0.177) and statistically significant, suggesting that enhanced disclosure plays an important role in reducing the negative association between democracy and first-day returns.

Turning to Private Capital ownership, the effect of having either a PE or VC sponsor shows a significant effect with a coefficient of 0.0907. Regressions four and five separate the certification channel into VC-only and PE-only backing. Both interaction terms have positive coefficients, 0.058 for VC-only and 0.070 for PE-only, indicating that both investor type mitigates the democracy–underpricing relationship. However, only the VC interaction is statistically significant at the 10% significance level.

4 Discussion

As shown in the results section, democracy has a negative and statistically significant effect on IPO underpricing across all specifications. The magnitude of the coefficient increases from Model 1 to Model 2 once IPO-related controls are added, and then decreases in Model 3 when macro-controls and country fixed effects are introduced. This pattern indicates that democracy is correlated with several determinants of underpricing, making these controls essential for isolating the independent effect of democratic institutions. Despite changes in magnitude, the estimated coefficient remains negative and statistically significant at the 10% level throughout, underscoring the robustness of the relationship.

A particularly important finding is that this relationship persists, although with a slightly smaller magnitude, in Model 3 which includes country fixed effects. This aligns with the results of Duong et al. (2022) and indicates that the effect is not driven solely by cross-country institutional differences. Instead, it reflects within-country changes over time, suggesting that democratic quality influences IPO pricing through real, time-varying institutional mechanisms. Moreover, the inclusion of year fixed effects ensures that the estimated relationship is not simply capturing global time trends, such as a decline in IPO underpricing. By holding these common temporal patterns constant, the results more convincingly reflect variation in institutional quality rather than broader shifts in market efficiency or global economic conditions.

The instrumental-variable estimates reinforce this interpretation. The second-stage coefficient remains negative and statistically significant, which suggests that the OLS results are not driven by omitted variable bias. Taken together, the evidence points to a causal relationship in which stronger democratic institutions lead to lower IPO underpricing. This supports the idea that democracy influences the environment in which firms issue equity, rather than simply mirroring differences in broader macroeconomic conditions. Our findings therefore extend the results of Duong et al. (2022) by showing, with stronger identification and a larger cross-country sample, that institutional quality has a direct and economically meaningful effect on the cost of going public.

When examining whether democracy operates through the information asymmetry channel, we use government media censorship as a proxy for the openness of the information environment and test whether reductions in censorship translate into lower IPO underpricing. The results in Table 4 show two consistent patterns. First, more democratic countries exhibit lower levels of government media

censorship, indicating a freer flow of information. Second, higher media censorship is associated with higher IPO underpricing, which is consistent with the view that opaque informational environments generate greater ex ante uncertainty. Taken together, these findings support the interpretation that democracy affects IPO underpricing by reducing information asymmetry and improving the transparency investors face at the time of issuance.

The mechanism we identify aligns with the broader institutional literature, which finds that improvements in political and institutional quality reduce informational frictions in financial markets. For example, Delis et al. (2020) show that democratization enhances transparency and investor protection in credit markets, while Chen et al. (2020), demonstrate that cross-country variation in media freedom and coverage shapes informational frictions in global IPO markets. Our evidence extends the logic of these studies to equity issuance by showing that stronger democratic institutions reduce information asymmetry and, in turn, lower the first-day returns associated with ex ante uncertainty. This interpretation is also consistent with the findings of Duong et al. (2022), who document that democracy is linked to greater press freedom and lower earnings opacity. Both channels reduce informational uncertainty facing investors and therefore influence the magnitude of IPO underpricing.

These institutional effects have direct implications for IPO pricing under asymmetric information. Rock (1986) shows that uninformed investors face a winner's curse problem, which requires issuers to underprice their shares to attract broad participation. Beatty and Ritter (1986) extend this logic by demonstrating that the magnitude of underpricing increases with ex ante uncertainty, as greater uncertainty intensifies the information disadvantage of uninformed investors. By showing that democracy reduces this uncertainty, our results suggest that stronger institutional environments alleviate the informational frictions and thus the magnitude of underpricing.

The control variables in Table 2 also behave in ways that are broadly consistent with earlier IPO research. Offer size is negatively related to underpricing, matching the pattern documented in prior studies (Ljungqvist, 2007). Top underwriters exhibit a positive association with underpricing, echoing the findings of Loughran and Ritter (2004) that reputable intermediaries increasingly engaged in strategic underpricing to stimulate investor demand and strengthen aftermarket performance. We also observe meaningful relationships between underpricing and macroeconomic conditions, such as GDP per capita growth, market capitalization relative to GDP, and IPO activity, which is consistent with the patterns reported by Duong et al. (2022). Although these controls are not the primary focus of our analysis, their signs and significance align with established empirical results and help reinforce that the estimated democracy effect is not driven by atypical behavior in the covariates.

The evidence of the mitigation effect for financial sponsors shown in Table 5 is consistent with the certification and monitoring roles documented by Megginson and Weiss (1991) and further developed by Campbell and Frye (2009). These studies show that VC-backed firms adopt stronger governance practices, appoint higher quality boards, and provide more credible information during the listing process which reduce information asymmetry. In line with this mechanism, our results indicate that IPOs backed by PE or VC investors exhibit a weaker association between low democratic quality and elevated underpricing. More broadly, the evidence suggests that sophisticated financial sponsors can partially substitute for weaker institutional environments by mitigating the pricing discounts typically required in less democratic settings. This interpretation aligns with the institutional substitution mechanism documented by Duong et al. (2022). who find that VC backing attenuates the institutional disadvantages associated with low democratic quality.

It is important to emphasize that these findings are obtained while controlling for top underwriter reputation and Big four auditing, factors that are commonly associated with PE- and VC-backed

IPOs and have been shown in prior research to reduce information asymmetry. The fact that the moderating effect of financial sponsors persists even after accounting for these certifying mechanisms indicates that the mitigation we observe reflects the incremental governance and monitoring provided by PE/VC rather than simply the influence of these accompanying deal characteristics.

The magnitude of the moderating effects highlights differences across certification channels. Disclosure of IPO proceeds exhibits the largest moderating effect followed by financial sponsor certification. This suggests that transparency based mechanisms play a more prominent role in mitigating the pricing discount associated with weak democratic institutions. Economically, the proceeds disclosure channel offsets nearly half of the baseline democracy effect whereas PE/VC certification offsets roughly one-quarter, underscoring the first-order importance of transparency relative to investor based certification.

When comparing the baseline results with the moderating effects, it can be seen that on its own, PE or VC backing does not have a meaningful effect on underpricing. However, its influence is statistically significant once we consider the institutional environment. The baseline regression (Table 2) shows a negative but insignificant coefficient on the PE/VC indicator, yet the interaction with democracy is positive and statistically significant. A potential explanation is that by examining the interaction with democracy, we isolate the information asymmetry channel (Megginson and Weiss, 1991; Barry et al., 1990) from the overall effect, which also reflects factors such as grandstanding (Lee and Wahal, 2004) that is unlikely to be related to the level of democracy. By separating these components, our results provide evidence consistent with the certification hypothesis while acknowledging that other sponsor-related behaviors may coexist.

Although having either PE or VC backing show moderating patterns, the analyses reveal differences in their effectiveness, with VC playing the more prominent role. The VC interaction term is positive and significant, whereas the PE interaction term is positive but statistically insignificant, meaning that we cannot confirm that PE backing does shield firms from the pricing discount imposed by weak democratic institutions.

Table 6: Comparison of VC and PE backed firms

Variable	**Difference (VC - PE)**	**p-value**
Panel A: Firm Characteristics		
IPO age	-0.080	0.721
Risky proceeds	0.124***	0.000
Offer size	-0.962***	0.000
Profitability	-0.064***	0.000
Leverage	-0.206***	0.000
Panel B: Sector Allocation		
Information Technology	0.076***	0.000

* p< 0.1, ** p< 0.05, *** p< 0.01

The difference in statistical significance between the moderating effects of Private Equity and Venture Capital ownership appears to partly reflect systematic differences in the types of firms these investors back. In brief, VC-backed firms exhibit characteristics that the literature associates with higher ex ante uncertainty and consequently higher first-day returns, consistent with the framework of Beatty and Ritter (1986), while PE-backed firms do not to the same extent. Table 6, summarizes these differences across firm characteristics, industry composition, and intended use of proceeds. Prior research links all of these features to greater uncertainty and higher underpricing, which helps explain why Venture Capital interacts more significantly with electoral democracy in our regressions.

One such characteristic is offer size, which is commonly linked to differences in ex ante uncertainty.

The coefficient is negatively related to underpricing in our sample, consistent with prior evidence (Ljungqvist 2007). Larger offerings are associated with lower first-day returns, and as seen in Table 6, PE-backed firms raise statistically significantly larger proceeds than VC-backed firms. However, it should be acknowledged that not all literature fully agrees on this interpretation. Habib and Ljungqvist (1998) argue that the negative relationship between offer size and underpricing reflects dilution effects rather than differences in ex ante uncertainty.

Although IPO age is commonly linked to uncertainty (Megginson and Weiss 1991; Ljungqvist and Wilhelm 2003), our baseline regressions in Table 2 show no significant effect of IPO age, and we find no statistically significant age difference between PE- and VC-backed issuers.

Industry composition provides additional support for the view that VC-backed firms face higher uncertainty. Sectors including software, computing, electronics, and medical equipment, are known to exhibit greater informational opacity and higher underpricing (Benveniste et al. 2003). Table 6 shows that VC-backed firms are disproportionately represented in our information technology category relative to PE-backed firms, consistent with this literature.

We also examine the intended use of IPO proceeds, as Ljungqvist and Wilhelm (2003) show that firms planning to fund operating expenses rather than investment or debt repayment exhibit higher ex ante uncertainty. Our constructed *Risky proceeds* indicator confirms this pattern, VC-backed firms are more than 12 percentage points more likely to list operating expenditures or similar purposes as their primary use of proceeds, a statistically significant difference.

While Table 6 shows statistically significant differences in profitability and leverage between VC-and PE-backed firms, there is limited evidence that these variables are directly linked to IPO underpricing, and therefore receive less emphasis in explaining the differential moderating effects.

Finally, differences in the geographic distribution of financial sponsor activity may further contribute to the observed asymmetry in statistical significance between PE and VC interaction effects. We observe fewer PE-backed IPOs overall and a substantial share of PE-backed offerings occurs in a single country, the United States (48%), as shown in Figure 1. By contrast, VC-backed IPO activity is more widely distributed across countries, including a notable presence in less democratic environments, with China playing an important role. This difference in geographic concentration may contribute to the stronger statistical significance observed for VC-backed firms relative to PE-backed firms.

4.1 The particular case of China

As brought up in Section 2.2 China represents a large share of our global IPO sample, so understanding the institutional features of its market is important for interpreting the results. The Chinese IPO market is unusual because it is highly regulated, pricing and first-day returns have been constrained by administrative rules, and our democracy index shows little variation over time. For these reasons, it is difficult to draw conclusions about the relationship between democracy and IPO underpricing using within-China variation. The cross-country comparison, however, provides a clearer pattern.

Figure 1 shows that China accounts for a disproportionate share of IPOs in our sample and represents most observations from less democratic countries. Figure 3 provides a closer look at this subset. Two features stand out. First, median underpricing in China is consistently far above the international median of 9.2% reported in Table 1. Second, IPO activity has increased steadily over time, with particularly rapid growth among PE- and VC-backed firms and a few years displaying pronounced spikes in issuance.

The regulatory history helps explain these patterns. Since the early 1990s, the China Securities Regulatory Commission (CSRC) has exercised tight and discretionary control over IPOs, effectively

determining if, when, and how a firm may go public. Pricing rules have repeatedly shifted between fixed-price issuances, auctions, hybrid mechanisms, price caps, and periods of complete suspension (Tian, 2011). One notable episode occurred in 2009, when the ChiNext exchange was launched with more flexible listing standards and book-building was incorporated into the pricing process. In the years that followed, the data show a sharp increase in IPO activity, particularly among PE- and VC-backed firms. Regulatory conditions continued to shift in the years that followed. In 2012, IPO approvals were temporarily suspended, which is visible in the data as the absence of any IPOs in 2013. When approvals resumed, the CSRC reintroduced price caps in 2014 and imposed a 44% limit on first-day returns (Zhou et al., 2021). These interventions are reflected in our sample by several years in which median underpricing remains unchanged. A more structural shift began recently. Registration-based issuance was piloted on the STAR Market in 2019 and extended to ChiNext in 2020. These platforms adopted disclosure-based reviews and removed pricing caps, allowing market forces to play a larger role in IPO allocation and pricing. Registration-based issuance was fully rolled out to all domestic exchanges in 2023, reducing the CSRC's direct control over pricing (Baker McKenzie; State Council Information Office of the People's Republic of China, 2023). No causal interpretation is possible, but the descriptive patterns show a noticeable increase in median underpricing after 2023.

In our democracy data, China's score remains relatively stable over the period, varying between 0.103 and 0.075, whereas the standard deviation for the full dataset is 0.31 as seen in Table 1. The largest period of change in our Chinese dataset occurred 2013-2016, but it is difficult to draw meaningful within-country inferences from this period because IPO approvals were halted and, once resumed, first-day return limits were imposed. Even so, the Chinese data remain informative for cross-country comparisons. China consistently ranks among the lowest in democracy scores and, at the same time, exhibits some of the highest median first-day returns in the sample, even during years when administrative rules suppressed underpricing.

The majority of Chinese IPOs in the sample appear after 2010, a distribution that affects our analysis in two ways. First, because the instrumental variable data ends in 2010, the majority of Chinese listings are excluded from the IV sample. Since China accounts for a vast share of IPOs in the non-democratic world, this exclusion shifts the composition of the IV sample relative to the OLS baseline. Second, this post-2010 period in China was the period characterized by binding regulatory limits on first-day returns. Because these regulations mechanically suppress underpricing, the OLS sample includes a large volume of observations where the dependent variable is capped. In contrast, the IV analysis does not contain these constrained observations. This compositional difference helps explain why the IV estimate is larger in magnitude and suggests that our baseline democracy coefficient is likely a conservative estimate, as the OLS results are attenuated by the regulatory price ceilings in China.

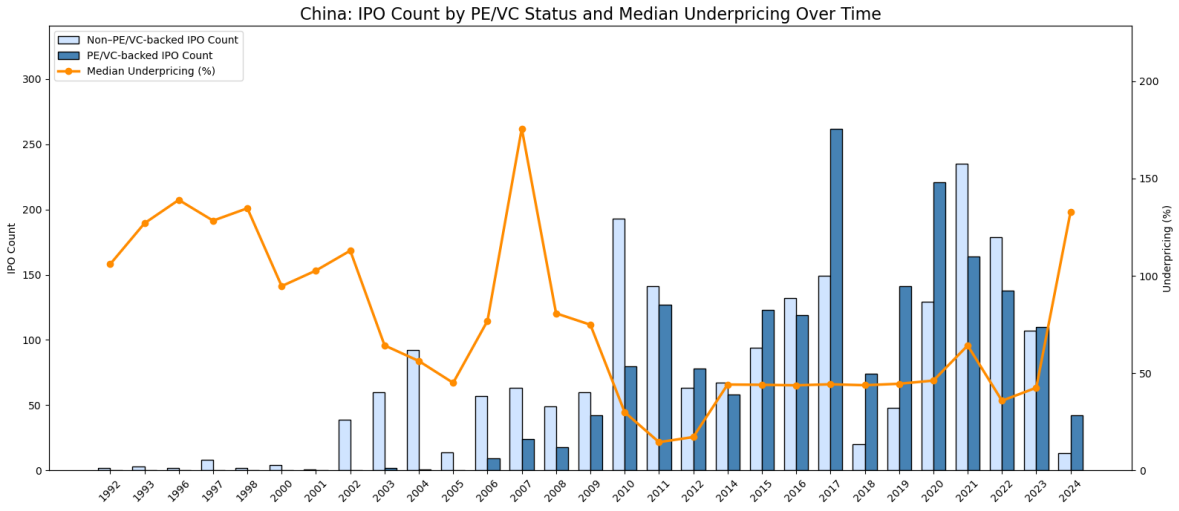


Figure 3: China IPO activity and median underpricing over time

4.2 Limitations and future research

While our analysis provides consistent evidence on the role of democratic institutions and financial sponsors in shaping IPO underpricing, there are a few limitations regarding data availability and self-selection that should be acknowledged.

The global IPO datasets used in this study vary in coverage across regions and over time, with earlier years containing relatively few observations from emerging markets. Similarly, several macro-level indicators from the World Bank are less complete during the period 1990 to 2000. The instrumental-variable data from Acemoglu et al. (2019) are available only through 2010, which further reduces the sample size in our IV specification. This difference in temporal coverage likely contributes to why the IV estimate does not fully match the OLS estimate. As noted by Ljungqvist and Wilhelm (2003), IPO underpricing fluctuates substantially over time, for instance reaching extraordinary levels during the dot-com bubble, because certain types of firms are overrepresented in particular periods. Despite these differences, the democracy coefficient in the IV regression remains statistically significant and of a similar order of magnitude to the OLS estimate. This pattern suggests that the main findings are not artifacts of sample composition, although the temporal scope of the data clearly influences the magnitude of the estimated relationship.

Data availability is also relevant regarding Private Capital sponsorship. Our IPO data from SDC platinum on financial sponsors lack detailed information such as fund size, prior performance, and ownership stakes in the companies. This additional granularity would allow for further nuance. A broader issue concerns the distinction between Venture Capital and Private Equity, as there is no universal definition of these categories across datasets or academic studies. This paper follows the classifications provided by SDC Platinum. In this dataset a deal is labeled as venture backed when an investing firm receives an equity stake that represents minority ownership, while deals are classified as Private Equity backed when the investor acquires a majority or full ownership stake. These operational definitions differ from alternative classifications sometimes used in the literature, which means that some deals might be categorized differently under other definitional frameworks.

Looking at concerns related to self-selection, a potential concern in our findings is that the moderating effect of VC ownership simply reflects a selection bias where VCs may prefer investments in firms that are already more transparent, or better governed, and therefore inherently less exposed to

the institutional frictions associated with weak democracies. If this were the case, the mitigating effect attributed to VC monitoring could instead reflect underlying firm quality rather than an active governance or certification mechanism. While this possibility cannot be fully eliminated in observational data, both theoretical and empirical arguments mitigate this concern. Research by Amit et al. (1998) suggest that VC investors do not exclusively target firms with low informational asymmetries. Instead, they strategically invest in environments characterized by moderate levels of information asymmetry, where their expertise and monitoring ability provide a competitive advantage over other investors. This supports the interpretation that the moderating effect observed in our results reflects information asymmetry reduction through for example active governance and certification by VC investors, rather than mere selection of firms already less affected by weak democratic institutions.

Finally, a potential limitation relates to the differences in the composition of firms going public across institutional environments. In stronger democracies, a broader and more heterogeneous set of firms may choose to go public. In contrast, in less functioning markets, only the strongest companies may be able to access public equity markets. This would then weaken our results by generating higher underpricing in democratic countries and lower underpricing in autocratic ones. Our data does not support this interpretation. Unsurprisingly, we observe more IPOs in more democratic countries (Figure 1, however, we also observe a greater variance in less democratic countries (Figure 2), which again supports the notion that increased democracy is associated with more efficient asset pricing. This pattern reinforces the core argument that democracy shapes the information environment and pricing precision.

Another factor that may influence the interpretation of the results is the phenomenon of cross border listing. Prior work shows that when domestic institutional quality is weak, high quality firms sometimes choose to list abroad in order to benefit from stronger investor protection and higher reporting standards (Bruner et al., 2004, 2006). If all high quality firms were to migrate to such markets, one would expect limited variation in IPO underpricing within less democratic countries, since only lower quality firms would remain. However, as shown in Figure 2, there is substantial variation in underpricing in less democratic environments, which suggests that firms of differing quality continue to list domestically despite the option to migrate.

This study opens several avenues for future research. First, regarding the mechanism linking institutional quality to IPO pricing, future work could employ alternative proxies for information asymmetry. While this study relies on government media censorship, utilizing other measures as earnings opacity would offer a complementary perspective on the frictions that drive underpricing in non-democratic regimes. Second, an important extension would be to investigate the durability of the effects by examining post-IPO outcomes. While our results show that Private Equity and Venture Capital ownership mitigates underpricing at the time of listing, it remains an open question whether these sponsors generate lasting value in weak institutional environments. Future studies could examine whether PE/VC-backed firms in less democratic countries exhibit superior long-run operating performance, higher innovation output, or better corporate governance standards compared to non-backed firms in the years following the IPO. Finally, future research should explore the heterogeneity within the Private Capital universe. Our study treats financial sponsors largely as homogenous groups, yet their ability to reduce information asymmetry likely varies significantly based on their characteristics. It would be particularly relevant to investigate how the reputation and experience of the investor affect the certification mechanism.

5 Conclusion

This paper shows that lower levels of democracy are associated with higher IPO underpricing, and that financial sponsors such as Private Equity and Venture Capital firms can partially mitigate this effect.

Using a global sample of 27,141 IPOs from 1990 to 2025, we find that a one-standard deviation increase in democracy is associated with roughly a 9.2 percentage point reduction in average first-day returns. Our analysis further indicates that this relationship operates through information asymmetry. We document a strong negative association between democracy and government media censorship, and in turn a significant relationship between media censorship and IPO underpricing. Together these results suggest that stronger democratic institutions foster more transparent information environments, thereby reducing uncertainty at issuance and leading to more efficient IPO pricing.

In further analyses we find that the relation between democracy and IPO underpricing is attenuated when IPOs are backed by sophisticated financial sponsors. Specifically Venture Capital and Private Equity ownership reduces the democracy-related gap by roughly one-quarter of the effect. This suggests that private governance mechanisms can partially substitute for weak public institutions. We find that this mitigating effect is stronger and statistically significant for Venture Capital while it is insignificant for Private Equity. The difference appears to be driven by the fact that Venture Capitalists invest in firms characterized by higher ex ante uncertainty, such as those that are smaller, operate in the IT sector, and allocate IPO proceeds towards operating expenses.

Overall, our results demonstrate the importance of institutional democracy in facilitating information transparency and improving the functioning of capital markets. As global democratic backsliding intensifies these findings highlight that weaker democratic institutions impose a larger financial cost on issuing firms through higher underpricing. While Private Capital cannot fully compensate for the benefits provided by strong democratic systems, it can help mitigate these increased costs.

Appendix A: Variable definitions

Table 7: Variable Definitions

Variable	Definition
IPO underpricing	Percentage difference between first-day closing price and offer price, scaled by the offer price.
Democracy (V-Dem EDI)	"The electoral principle of democracy seeks to embody the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country."
GDP per capita	Natural logarithm of GDP per capita in the IPO year.
GDP per capita growth	Annual change in GDP per capita.
IPO activity	Ratio of IPOs in a year to total listed firms.
Market return	Country-level value-weighted stock index return over the three months preceding the IPO.
Market size	Ratio of annual market capitalization of stocks traded to GDP.
Market liquidity	Ratio of annual value of stocks traded to GDP.
Offer size	Natural logarithm of IPO proceeds; proxy for firm size.
Profitability	EBITDA divided by total assets; measures operating performance.
Leverage	Total debt divided by total assets; captures capital structure.
IPO age	Natural logarithm of one plus the number of years between firm founding and IPO year.
Carveout	Dummy = 1 if IPO is a carve-out from a listed parent; 0 otherwise.
IPO commitment	Dummy = 1 if securities were purchased by the underwriter to resell (firm commitment); 0 otherwise.
Bookbuilding	Dummy = 1 if the IPO used bookbuilding; 0 otherwise.
Shares issued	Natural logarithm of total number of shares offered.
Top underwriter	Dummy = 1 if underwritten by a top quartile bank based on proceeds; 0 otherwise.
Big four	Dummy = 1 if audited by a Big 4 accounting firm; 0 otherwise.
PE/VC back	Dummy = 1 if backed by venture capital or private equity; 0 otherwise.

Appendix B: AI disclaimer

In the preparation of this thesis, artificial intelligence tools were used in a limited and transparent manner, solely to support the research process and improve the clarity and technical accuracy of the final manuscript. The only AI systems used were ChatGPT and Google Gemini.

AI tools were employed for three specific purposes. First, we used them to refine language and improve clarity. All text was written by us, after which AI tools were consulted to suggest alternative phrasings, improve readability, or ensure consistent wording. AI was never used to generate theoretical content, arguments, or interpretations.

Second, AI assisted with grammar and formatting checks. It was used to identify minor grammatical issues, maintain consistent use of American English, and improve sentence structure in places where clarity could be enhanced.

Third, AI was used as a technical aid when working in Python. Its role was limited to helping us interpret error messages and identify syntactical issues in code that we had written ourselves. All analytical decisions, coding logic, and empirical procedures were entirely our own.

The controlled and clearly defined use of AI contributed to improved linguistic consistency, clearer exposition, and smoother execution of code. This allowed us to devote more time to conceptual reasoning and empirical analysis without affecting the intellectual substance of the thesis.

We were aware of the risks associated with generative AI, including the possibility of fabricated information, unsupported claims, and loss of contextual accuracy. To mitigate these risks, AI was not used to produce or summarize academic arguments, interpret empirical findings, or generate any part of the substantive content. All AI outputs were reviewed critically and used only for language refinement or technical debugging.

Our experience showed that AI can be a helpful supplementary tool when used with clear boundaries. It improved efficiency in editing and debugging while reaffirming the importance of careful human oversight. Restricting AI to non-substantive tasks ensured that all ideas, reasoning, and conclusions presented in the thesis are entirely our own.

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