

The influence of inflation and firm characteristics on IPO underpricing: The moderating role of underwriter reputation

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Abstract

This study examines the impact of macroeconomic and firm-specific factors on IPO underpricing in Indonesia, with a particular focus on inflation and the moderating role of underwriter reputation. Drawing from Signal Theory (Spence, 1978), the research investigates whether inflation, firm age, firm size, profitability, and liquidity influence underpricing in IPOs listed on the Indonesia Stock Exchange (IDX) during 2020–2023. The study also tests if underwriter reputation strengthens or weakens these relationships. Using quantitative methods and multiple linear regression analysis, results show that inflation significantly increases underpricing, while firm-specific characteristics such as age, size, profitability, and liquidity have no significant effect. Moreover, underwriter reputation does not moderate the relationship between inflation or firm characteristics and underpricing. These findings suggest that classical signaling mechanisms may have limited explanatory power in the Indonesian IPO context, where investor behavior is likely shaped more by behavioral finance, industry trends, and short-term market dynamics. The study implies the need for a more contextual theoretical model that reflects the characteristics of emerging capital markets. Practically, the study advises investors to evaluate IPOs beyond basic metrics, encourages issuing companies to enhance information disclosure, and calls for regulators such as OJK and IDX to improve market transparency and investor education. Future research should consider alternative variables such as corporate governance, market sentiment, or investor trust to better capture the dynamics of IPO underpricing in Indonesia.

Keywords: Signaling Theory; IPO Underpricing; Inflation; Firm Characteristics; Underwriter Reputation

1. Introduction

In an effort to sustain operations and drive business expansion, companies must determine appropriate financing strategies tailored to their internal conditions and market environment. One viable external financing method is an Initial Public Offering (IPO), a strategic move that enables firms to raise substantial capital and enhance their visibility and valuation (Brigham & Houston, 2019). Prior to the IPO, companies issue a prospectus detailing their financial and operational conditions to assist investors in evaluating potential risks and returns (Ross et al., 2019). A well-structured prospectus can attract investor interest, particularly when it communicates strong future prospects aligned with investor objectives.

Investor decisions in IPOs are influenced by various factors, including macroeconomic conditions, firm-specific characteristics, and market signals such as the reputation of the underwriter (Ariyani, 2023; Oktananda & Gantayowati, 2023; Park & Patel, 2015). A common phenomenon in IPOs is underpricing, where the offering price is set lower than the market price on the first trading day. This has been a recurring pattern in the Indonesian capital market (Figure 1). From 2020 to 2023, the Indonesia Stock Exchange recorded 242 IPOs, of which 196 (81%) experienced underpricing, with annual underpricing rates consistently exceeding 70% (Bursa Efek Indonesia, 2024/ Indonesia Stock Exchange, 2024).

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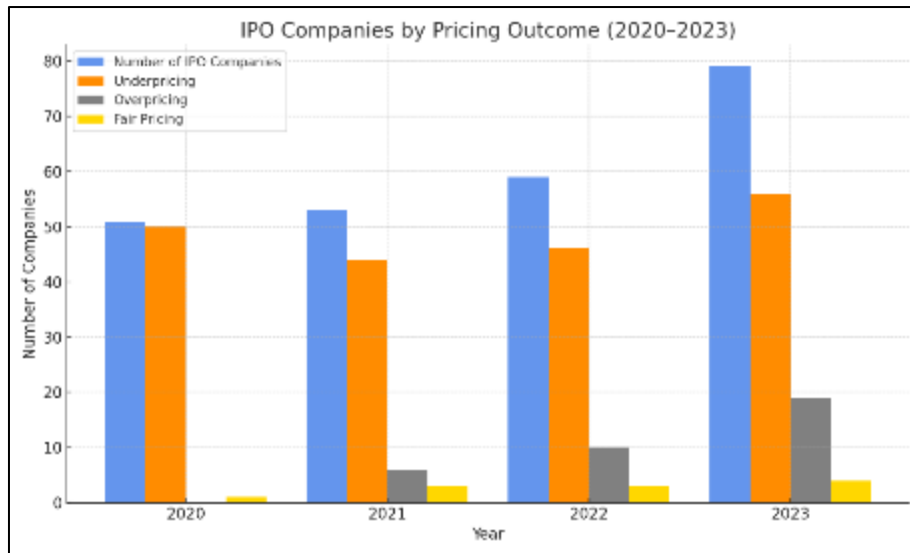


Figure 1 IPO Companies in 2020–2023

Scholars argue that underpricing is primarily a result of information asymmetry between the issuer and investors (Beatty & Ritter, 1986; Ritter, 2021; Rock, 1986), where less informed investors demand lower prices to offset potential information disadvantages. According to Ariyani (2023), high levels of information asymmetry increase the likelihood of underpricing as a form of compensation. Supporting this view, Park and Patel (2015) found that ambiguity in IPO prospectuses tends to amplify underpricing, though reputable signals such as institutional investor involvement and underwriter reputation can mitigate this effect.

To better understand this phenomenon, researchers have categorized the determinants of underpricing into internal and external factors (Welch, 1996). Internal factors include observable firm characteristics such as firm size, age, profitability, and liquidity (Anggraini & Trisnainingsih, 2021; Ayuwardani & Isroah, 2018; Wicaksono & Suryandari, 2022). Larger firms are perceived as less risky and more reputable, often associated with lower underpricing. Older firms provide more historical data, thus reducing uncertainty and investor skepticism (Arman, 2012). Highly profitable companies are seen as financially stable, sending strong positive signals to investors (Dewi & Wirama, 2024; Kasmir, 2017; Kurnianingsih & Pahlevi, 2024; Nurazizah & Majidah, 2019). However, empirical findings remain mixed. Some studies report no significant effect of firm size, age, or profitability on underpricing (Fadila & Utami, 2020; Lubis, 2024; Mulyani, 2021), while others demonstrate a strong negative correlation (Kurnia, 2022; Nuryasinta, 2017; Solida et al., 2020).

Liquidity, reflecting a firm's ability to meet short-term obligations, is another critical internal factor. Anggraini (2021) suggests that high liquidity reduces perceived risk and thus lowers underpricing. In contrast, Cahyani (2024) and others argue that liquidity does not significantly impact IPO pricing decisions (Isyнуwardhana & Febryan, 2022; Kusumawati & Fitriyani, 2020; Saputri & Santoso Marsoem, 2020).

External factors, notably inflation, also play a significant role in shaping IPO outcomes. Inflation increases macroeconomic uncertainty, decreases purchasing power, and can reduce market appetite for new equity offerings (Mutmainnah, 2024; Thoriq et al., 2018). Some scholars find that higher inflation correlates with greater underpricing (Putri, 2022; Thoriq et al., 2018), while others reject this association, suggesting no significant effect (Amalia & Arisnawati, 2021; Sulistiawati et al., 2021; Vivianti, 2021; Yandes, 2024).

Considering the inconsistency of prior findings, recent studies have examined the moderating role of underwriter reputation. According to Spence's signaling theory and Akerlof's asymmetric information theory, a credible underwriter can serve as a positive signal to the market and reduce investor uncertainty (Yasa, 2008). Empirical research supports this idea, showing that reputable underwriters are associated with lower levels of underpricing (Ariawati, 2005; Gunawan & Gunarsih, 2021; Pelawi & Pelawi, 2023; Rafiely & Yusriah, 2023; Tran & Jeon, 2011).

Despite the breadth of research on IPO underpricing, the inconsistencies in findings call for further investigation. This study seeks to fill this gap by examining the influence of inflation and firm characteristics (firm age, firm size, profitability, and liquidity) on IPO underpricing in Indonesia, while assessing the moderating effect of underwriter

reputation. By integrating internal and external variables into a unified model, this research offers a more comprehensive understanding of the persistent underpricing phenomenon in emerging markets. The proposed research model is illustrated in Figure 2.

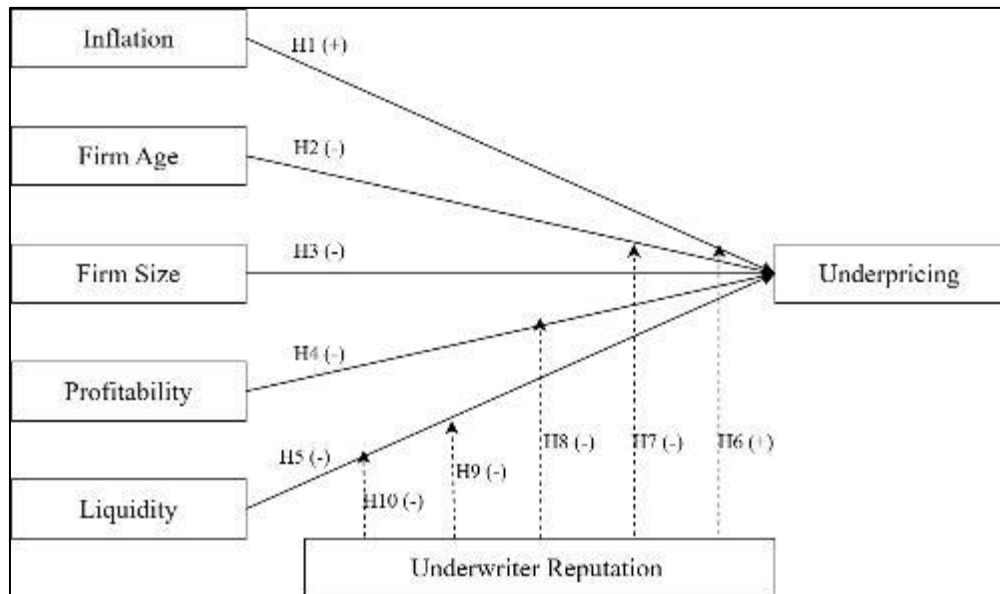


Figure 2 Research Model

2. Literature Review and Hypothesis Development

2.1. Signaling Theory

Signaling theory, introduced by Spence (1978), explains how companies reduce information asymmetry between managers and external stakeholders by sending credible signals, such as financial reports or strategic disclosures. In IPO contexts, these signals help investors evaluate firm quality and reduce uncertainty (Febriyan & Kalao, 2023; Sayidah & Adiraya, 2020). Underpricing can function as a signal of firm quality, especially during high-uncertainty periods like the COVID-19 pandemic (Sayidah & Adiraya, 2020). Companies with strong fundamentals are more willing to bear the cost of signaling, while weaker firms often refrain (Febriyan & Kalao, 2023). The prospectus, containing key financial and non-financial data, serves as a central signal during IPOs (Adi, 2020; Jayanarendra & Wiagustini, 2019).

Management's role is critical in delivering signals, as they control privileged information about the firm's performance and outlook (Wahyudi & Ishak, 2024). Accurate, timely disclosures help shape investor perception and improve market response, such as post-IPO price movements (Wirawan & Putri, 2022; Wulanningsih & Agustin, 2020). Investor behavior, including the "wait and see" strategy, often reflects caution in response to unclear signals (Sari, 2022). Overall, signaling theory highlights how voluntary disclosure builds investor trust and reduces the likelihood of adverse selection in IPO pricing (Akerlof, 1978; Spence, 1978).

2.2. IPO Underpricing

Stock underpricing in an IPO occurs when the offer price is lower than the stock's market price on its first trading day, resulting in high initial returns for early investors (Loughran & Ritter, 2004). This phenomenon is common in both developed and emerging markets and remains a key focus in capital market studies (Ritter, 2021). Underpricing benefits investors but reduces the capital raised by the issuing firm, while overpricing harms investors due to limited returns (Maya, 2013). The positive gap between the IPO and market price is known as initial return, representing investor gains. Maya (2013) defines this as the difference between buying in the primary market and selling in the secondary. Ljungqvist (2004) states, "*underpricing is estimated as the percentage difference between the price at which the IPO shares were sold to investors (the offer price) and the price at which the shares subsequently trade in the market.*" Ultimately, underpricing reflects a trade-off between attracting investors and maximizing proceeds for the firm.

2.3. Inflation

Inflation is defined as a sustained and general increase in the prices of goods and services over a period of time (Bank Indonesia, 2020). It reflects a decline in the real purchasing power of money, affecting both macroeconomic stability and individual investment decisions (Syafi'i Antonio in Aji & Mukri, 2020). During inflationary periods, investor confidence in the capital market tends to decrease, as many investors postpone their investment decisions due to concerns over diminishing returns (Manurung & Manurung, 2019; Putri, 2022). In the context of Initial Public Offerings (IPOs), this macroeconomic environment contributes to the occurrence of underpricing. High inflation increases uncertainty, leading underwriters and issuing firms to reduce the offer price of shares in order to attract risk-averse investors and ensure a successful public offering (Nurazizah & Majidah, 2019). This strategy often results in a larger gap between the offer price and the stock's first-day trading price, which manifests as a higher initial return for investors, an outcome commonly referred to as underpricing (Saputra & Suaryana, 2016; Thoriq et al., 2018).

This relationship is also supported by signaling theory (Spence, 1978), which posits that firms in situations of information asymmetry use pricing strategies to send signals to the market. In periods of high inflation, offering IPO shares at a lower price may act as a signal to convey firm value and reduce investor hesitation. By doing so, firms aim to maintain market participation and mitigate the risk of undersubscription. A range of empirical studies reinforces this view. Research by Putri & Isyuardhana (2022), Maygista et al. (2020), Harfadillah et al. (2020), and Nurazizah & Majidah (2019), all report a significant positive relationship between inflation and IPO underpricing. These findings suggest that firms tend to respond to macroeconomic instability by pricing shares conservatively to offset reduced investor demand and perceived risk. Based on the theoretical and empirical evidence, the following hypothesis is proposed:

H1: Inflation has a positive effect on IPO underpricing.

2.4. Firm Age

Firm age reflects a company's operational experience and stability and is often used as a proxy for credibility and reputation (Brigham & Houston, 2019). Older firms are generally perceived as more reliable, with stronger organizational structures and better risk management. In IPO contexts, firm age is typically measured as the number of years between the company's incorporation and its IPO year. According to signaling theory (Spence, 1978; Welch, 1996), older firms can reduce information asymmetry by signaling their credibility and track record to investors. This lowers investor risk perception and reduces the need for firms to set IPO prices below market value (Sulistiawati et al., 2021).

Empirical studies consistently confirm a negative relationship between firm age and IPO underpricing. Older firms tend to experience lower underpricing due to stronger reputations, market trust, and more transparent financial disclosures (Rahmawati et al., 2024). Conversely, younger firms, due to limited public information and operational history, face higher underpricing. Hence, supported by both theoretical reasoning and empirical findings, the following hypothesis is proposed:

H2: Firm age has a negative effect on IPO underpricing.

2.5. Firm Size

Firm size is a critical indicator of a company's operational capacity, stability, and market credibility. It is commonly proxied by total assets, reflecting the scale and maturity of the business (Brigham & Houston, 2019). For research consistency, this study proxies firm size using the natural logarithm of total assets (\ln Total Aset), a common and stable indicator that helps normalize data distribution across firms with varying scales. Larger firms are generally perceived as more stable, with established financial structures, broader access to capital, and better information transparency. In the IPO context, firm size plays a key role in signaling theory (Spence, 1978), where companies aim to reduce information asymmetry by sending credible signals to investors. A large firm sends positive signals through its track record, widespread financial disclosures, and strong reputation (Welch, 1996). This minimizes perceived risk, thereby reducing the need for significant underpricing. In contrast, smaller firms, lacking historical performance and recognition, face higher uncertainty, leading investors to demand greater price discounts (Certo et al., 2001).

Empirical studies consistently show a negative relationship between firm size and IPO underpricing. Larger firms tend to experience lower underpricing due to their credibility and transparency. Further support comes from Hadi (2019), Saron (2017), and Kurnia (2022), who found that mature firms with stronger market presence and better public information access are less likely to offer shares below their intrinsic value. Therefore, based on signaling theory and prior findings, this study proposes the following hypothesis:

H3: Firm size has a negative effect on IPO underpricing.

2.6. Profitability

Profitability reflects a firm's ability to generate earnings from its operations and is a key indicator of efficiency and financial health (Brigham & Houston, 2019; Kasmir, 2017). High profitability signals strong performance and future growth potential, making the firm more attractive during an Initial Public Offering (IPO). In this study, profitability is proxied by Return on Assets (ROA), as it provides a comprehensive view of how effectively a company utilizes its total assets to generate profit (Kasmir, 2017), and is less affected by capital structure than ROE.

According to signaling theory (Spence, 1978; Welch, 1996), firms use observable indicators like profitability to reduce information asymmetry with investors. High ROA serves as a positive signal of operational strength and low risk, helping build investor trust and lowering the need for underpricing at the IPO stage. Companies with strong profitability are seen as more credible and transparent, allowing them to price shares closer to intrinsic value. Empirical evidence supports this view. Studies by Nurazizah & Majidah (2019), Haska et al. (2017), Sari (2022), and Dewi & Wirama (2024) show that higher profitability is associated with lower IPO underpricing. They found that firms with high ROA attract greater investor confidence and thus face less pressure to offer shares at a discount. In line with the signaling theory and prior empirical findings, the following hypothesis is proposed:

H4: Profitability has a negative effect on IPO underpricing.

2.7. Liquidity

Liquidity reflects a firm's ability to meet its short-term obligations, often viewed as an indicator of operational stability and financial health (Brigham & Houston, 2019; Kasmir, 2017). A higher liquidity level, commonly proxied by the Current Ratio (CR), indicates stronger cash management and a lower risk of short-term insolvency. For this reason, this study uses CR as a proxy for liquidity, assuming that firms with higher CRs are better positioned to meet short-term liabilities without financial strain. According to signaling theory (Spence, 1978; Welch, 1996), firms with high liquidity provide positive and credible signals of financial soundness, reducing information asymmetry between the firm and potential investors. This increased transparency and trust can reduce perceived investment risk and consequently decrease the degree of IPO underpricing. Conversely, firms with low liquidity may raise investor concerns, prompting them to demand higher price discounts. Empirical studies consistently support this negative relationship and found that high liquidity levels help lower underpricing by enhancing investor trust. Lukman (2023) and (Dewi & Wirama, 2024), observed that firms with stronger liquidity are more likely to price their IPO shares closer to intrinsic value, reducing the need for excessive discounts.

H5: Liquidity has a negative effect on IPO underpricing.

2.8. Underwriter Reputation

Underwriter reputation plays a critical role in IPOs as a signal of offering quality and credibility. According to Cooley et al. (1975), reputable underwriters bring professional handling, reduce perceived risk, and enhance investor trust in the issuing firm. In Indonesia, underwriters are defined by Law of the Republic of Indonesia Number 8 of 1995 concerning the Capital Market, Article 1 paragraph (5), defines an underwriter as "a party that enters into a contract with an issuer to carry out a public offering on behalf of the issuer, with or without the obligation to purchase any remaining unsold securities." Their reputation is often proxied by their ranking in the "Most Active Brokerage Houses by Total Trading Value" from the Indonesia Stock Exchange. Following Carter & Manaster (1990) and Kusumawati & Fitriyani (2020), this study assigns a dummy value of 1 for top 10 underwriters and 0 otherwise.

Based on signaling theory (Spence, 1978; Welch, 1989), reputable underwriters help mitigate information asymmetry by signaling the credibility and soundness of the issuing firm. Empirical studies by Hidayati & Pradika (2023), Rizki & Santosa (2022), and Siregar & Rachmawati (2021) show a significant negative relationship between underwriter reputation and IPO underpricing, indicating that trusted underwriters reduce market uncertainty and the need for deep price discounts. Moreover, this credibility enables underwriters to moderate the effects of various firm-specific and macroeconomic factors on IPO underpricing. Reputable underwriters can amplify positive signals (e.g., large firm size, high profitability, strong liquidity) and dampen negative ones (e.g., inflation, short operating history), strengthening investor confidence and reducing risk perception. Therefore, the following moderating hypotheses are proposed:

- **H6:** Underwriter reputation weakens the positive effect of inflation on IPO underpricing.
- **H7:** Underwriter reputation strengthens the negative effect of firm age on IPO underpricing.

- **H8:** Underwriter reputation strengthens the negative effect of firm size on IPO underpricing.
- **H9:** Underwriter reputation strengthens the negative effect of profitability on IPO underpricing.
- **H10:** Underwriter reputation strengthens the negative effect of liquidity on IPO underpricing.

3. Method

This study employed a quantitative approach to examine the effects of inflation and firm-specific characteristics, including firm age, firm size, profitability, and liquidity on IPO underpricing, with underwriter reputation as a moderating variable. The research focused on 196 companies listed on the Indonesia Stock Exchange (IDX) that conducted IPOs between 2020 and 2023. These were selected from a total population of 242 firms using purposive sampling based on the following criteria: (1) the company conducted an Initial Public Offering during 2020–2023, (2) submitted complete prospectus and financial statements, and (3) experienced underpricing on the first day of trading. Underpricing was measured as initial return, defined as the percentage difference between the offering price and the first day closing price (Siev & Qadan, 2022). Inflation was proxied by the monthly inflation rate prior to the IPO (Bank Indonesia, 2020), firm age by the difference between IPO year and year of establishment (Meilinda & Sun, 2022), firm size by the natural logarithm of total assets (Abbas & Rizwan, 2022), profitability by return on assets or ROA (Kasmir, 2017), and liquidity by current ratio (Hapsari, 2020). Underwriter reputation was treated as a dummy variable, where underwriters ranked in the IDX's top ten were assigned a value of one (Carter & Manaster, 1990; Kusumawati & Fitriyani, 2020). The study utilized secondary data sourced from company prospectuses, financial reports, and macroeconomic indicators. Data analysis involved descriptive statistics, classical assumption tests (normality, multicollinearity, autocorrelation, and heteroscedasticity), multiple linear regression, and Moderated Regression Analysis (MRA), all conducted using EViews 12 software.

4. Results and Discussion

4.1. Description of Population and Sample

From the initial population of the 242 companies that conducted Initial Public Offerings (IPOs) on the Indonesia Stock Exchange (IDX) between 2020 and 2023, the study excluded 35 companies that experienced overpricing, where the first day closing price was lower than the offering price and 11 companies whose stock prices remained stagnant (unchanged) on the first trading day. After these exclusions, the final sample consisted of 196 companies that experienced underpricing, defined as a first day closing price higher than the IPO price. This sample is consistent with the study's objective of analyzing the determinants of IPO underpricing, as presented in Table 1.

Table 1 Sample Selection Criteria for IPO Companies Listed on IDX (2020–2023)

No	Description	Number of Firms
1.	Total population: All companies that conducted IPOs on the Indonesia Stock Exchange (IDX) between 2020 and 2023	242
2.	Companies that experienced overpricing on the first day of trading (i.e., the first day closing price was lower than the offering price)	-35
3.	Companies whose stock price remained unchanged (stagnant) on the first trading day	-11
4.	Final sample: Companies that experienced underpricing on the first trading day (i.e., the first day closing price was higher than the IPO price)	196

Source: Processed data from idx.go.id, 2025.

4.2. Data Description of Research Results

Table 2. presents the descriptive statistics for the 196 IPO firms listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023 reveal key insights into the variables used in this study. The initial return (IR), which represents IPO underpricing, ranges from 2% to 70%, with an average of 27.34%, indicating a significant first-day price increase for many IPOs. The inflation rate (IF) in the month prior to each IPO averaged 0.275%, suggesting a relatively stable macroeconomic environment. Firm age (AG) varied widely from 2 to 64 years, with an average of 16.63 years, showing participation from both new and established firms. Firm size (SZ), measured by the natural logarithm of total assets, had an average of 0.515, with notable variation among companies. Profitability (ROA) ranged from -65% to 222%, with

a mean of 5.64%, indicating that some firms were highly profitable while others faced losses. Liquidity (CR), as measured by the current ratio, averaged 2.74, with values ranging up to 36.1, reflecting differences in short-term financial strength. Lastly, the underwriter reputation (UN) variable, coded as 1 for top 10 underwriters and 0 otherwise, had a mean of 0.1888, meaning that only about 19% of the IPOs were handled by highly reputable underwriters.

Table 2 Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation
IR	196	0.020000	0.700000	0.273354	0.152841
IF	196	-0.000500	0.009500	0.002752	0.002112
AG	196	2.000000	64.000000	16.628870	12.061430
SZ	196	0.001992	32.163090	0.515464	2.541298
ROA	196	-0.650000	2.220000	0.056384	0.186624
CR	196	0.070000	36.100000	2.743150	4.344566
UN	196	0.000000	1.000000	0.188776	0.392332

Source: Processed secondary data, 2025

Description: IR = Initial Return (Underpricing); IF = Inflation Rate; AG = Firm Age (in years); SZ = Firm Size (Ln of total assets); ROA = Return on Assets (Profitability); CR = Current Ratio (Liquidity); UN = Underwriter Reputation (dummy: 1 = top 10, 0 = others)

4.3. Normality Test

The normality test in this study aimed to determine whether the residuals from the regression model are normally distributed, as this is a key assumption for the validity of hypothesis testing and accurate parameter estimation (Gujarati, 2009). As shown in Table 3, the Jarque-Bera test conducted using EViews produced a statistic of 0.573 with a probability value of 0.751—well above the 0.05 significance level. This result indicates no significant deviation from normality, suggesting that the residuals satisfy the assumption of a normal distribution (Ghozali, 2018).

Table 3 Normality Test Results

<i>Unstandardized Residual</i>	
N	196
Jarque-Bera	0.573626
Probability	0.750652

Source: Processed secondary data, 2025

4.4. Autocorrelation Test

Based on Table 4, the Durbin-Watson (DW) statistic is 1.971115, which is used to detect the presence of autocorrelation in the residuals of a regression model. According to Ghozali (2018), if the DW value lies between the upper bound (du) and $(4 - du)$, there is no autocorrelation. In this study, the DW value of 1.971 equals the estimated upper bound ($du \approx 1.971$), meeting the threshold condition. Therefore, there is no evidence of either positive or negative autocorrelation in the residuals, indicating that the regression model satisfies the assumption of residual independence. This result supports the reliability of the regression estimates used in further analysis.

Table 4 Autocorrelation Test Result

<i>Unstandardized Residual</i>	
Durbin-Watson stat	1.971115

Source: Processed secondary data, 2025

4.5. Multicollinearity Test

The multicollinearity test results, as shown in Table 5, indicate that all independent variables in the regression model have centered Variance Inflation Factor (VIF) values below the critical threshold of 10, suggesting no serious

multicollinearity issues (Ghozali, 2018). The highest VIFs are found in ROA_UN (8.65), ROA (8.42), SZ_UN (8.09), and SZ (8.05), which, although relatively high, remain within the acceptable range and do not compromise the model's reliability. Other variables such as IF, AG, CR, and their respective interaction terms (IF_UN, AG_UN, CR_UN) display VIFs between approximately 1.8 and 4.7, further supporting the absence of problematic correlations. These findings confirm that the relationships among the independent variables are within acceptable limits and do not significantly affect the accuracy of coefficient estimations, thereby validating the regression model for further analysis.

Table 5 Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
IF	51.418950	5.793451	2.141337
AG	1.35E-06	5.335489	1.833117
SZ	0.000134	8.383441	8.050511
ROA	0.025892	9.188660	8.416430
CR	1.08E-05	2.670114	1.906232
IF_UN	1971.862000	6.644258	4.743936
AG_UN	6,07E-05	5.034343	3.634850
SZ_UN	0.010442	8.364675	8.090933
ROA_UN	0.860601	8.977381	8.645921
CR_UN	0.000501	2.699147	2.343798
Constant	0.001036	9.716228	NA

Source: Processed secondary data, 2025

4.6. Heteroskedasticity Test

The heteroskedasticity test was conducted using the Glejser method to determine whether the residual variance in the regression model is constant (homoskedastic) or varies (heteroskedastic). According to Ghozali (2018), if the p-value is greater than 0.05, there is no heteroskedasticity. The test results in Table 6 show an F-statistic = 0.6358 (p = 0.7965), Obs*R-squared = 7.1800 (p = 0.7843), and Scaled Explained SS = 12.2602 (p = 0.3444). Since all p-values exceed 0.05, it can be concluded that the model does not suffer from heteroskedasticity, and the residuals have constant variance.

Table 6 Heteroskedasticity Test Results

F-statistic	0.635892	Prob. F(11,182)	0.7965
Obs*R-squared	7.180059	Prob. Chi-Square(11)	0.7843
Scaled explained SS	12.26024	Prob. Chi-Square(11)	0.3444

Source: Processed secondary data, 2025

4.7. Model Feasibility Test Results (F-Test)

The model feasibility test (F-test) was conducted to assess whether the linear regression and Moderated Regression Analysis (MRA) models used in this study are statistically appropriate. According to the results in Table 7, the F-statistic value is 3.2748 with a p-value of 0.0004. Since the p-value is less than 0.05, the model is considered fit for use. This indicates that the independent and moderating variables (IF, AG, SZ, ROA, CR, and their interactions with UN) collectively explain the variation in IPO underpricing on the Indonesia Stock Exchange during the 2020–2023 period.

Table 7 Model Feasibility Test Results

Test	Statistic Value	Probability
F-Statistic	3.2748	0.0004

Source: Processed secondary data, 2025

4.8. Coefficient of Determination Test (R^2)

Table 8 presents the results of the coefficient of determination test (R^2), which evaluates how well the independent variables, namely IF, AG, SZ, ROA, CR, and their interactions with UN, explain the variation in the dependent variable, Initial Return (IR). The R-squared value of 0.165227 indicates that approximately 16.52% of the variation in IPO underpricing is explained by the model. Meanwhile, the adjusted R-squared value of 0.114773 shows that after adjusting for the number of predictors, only about 11.48% of the variation is accounted for. These results suggest that the model has limited explanatory power, with around 83.48% of the variation potentially influenced by other variables not included in the analysis.

Table 8 Results of the Coefficient of Determination Test (R^2)

Test	Statistical Value
R-squared (R^2)	0.165227
Adjusted R-squared	0.114773

Source: Processed secondary data, 2025

4.9. Hypothesis Testing Results

The study employed multiple linear regression analysis to examine the influence of several variables on IPO underpricing (Initial Return/IR) and used the Moderated Regression Analysis (MRA) approach to assess whether the underwriter's reputation moderates these relationships. Among the independent variables (Inflation Rate/IF, Firm Age/AG, Firm Size/SZ, Return on Assets/ROA, and Current Ratio/CR), only the inflation rate (IF) showed a statistically significant effect on underpricing, with a p-value of 0.0059 (< 0.05). The positive coefficient of 19.959 suggests that a one-unit increase in inflation is associated with a 19.96 unit increase in IR, holding other variables constant. Other variables (AG, SZ, ROA, CR) did not show significant effects. Furthermore, the interaction terms (IFUN, AGUN, SZUN, ROAUN, CR*UN) tested using MRA yielded p-values greater than 0.05, indicating that underwriter reputation does not significantly moderate the relationship between the independent variables and IPO underpricing.

Table 9 Results of Moderated Regression Analysis

Variable	Coefficient	t-Statistic	Probability
IF	19.959000	2.783410	0.0059
AG	0.001531	1.317942	0.1892
SZ	-0.003247	-0.280920	0.7791
ROA	0.107299	0.666824	0.5057
CR	0.002430	0.738775	0.4610
IF*UN	-63.342120	-1.426443	0.1555
AG*UN	-0.007817	-1.003410	0.3170
SZ*UN	-0.035666	-0.349023	0.7275
ROA*UN	-0.145570	-0.156917	0.8755
CR*UN	0.030665	-1.370478	0.1722

Source: Processed secondary data, 2025

4.9.1. The Effect of Inflation on IPO Underpricing

The study found that inflation has a significant positive effect on IPO underpricing, with a p-value of 0.0059 (< 0.05) and a regression coefficient of 19.95900. This suggests that higher inflation levels indicative of increased economic uncertainty, declining purchasing power, and investor concern about the real value of returns prompt companies to set IPO prices below their fair value to attract investors. This strategy aims to ensure market absorption of shares even under unfavorable macroeconomic conditions. The findings align with Signaling Theory (Spence, 1978), which posits that firms use underpricing as a positive signal to reduce perceived investment risk. This result is consistent with previous studies by Putri (2022), Thoriq et al. (2018), and Manurung (2019), which also found that inflation leads firms

to offer IPO price discounts due to reduced investor demand and is seen as a risk signal prompting conservative pricing strategies by underwriters.

4.9.2. The Effect of Firm Age on IPO Underpricing

The regression analysis shows that firm age does not significantly affect IPO underpricing, with a p-value of 0.1892 (> 0.05) and a regression coefficient of 0.001531. According to Signaling Theory (Spence, 1978), older firms are expected to convey stronger signals of stability and credibility, potentially reducing investor risk perception and underpricing levels. However, the empirical findings of this study suggest that investors do not prioritize firm age as a key factor in IPO decisions. Instead, they may focus more on future-oriented indicators such as growth potential, innovation, and market prospects. This aligns with the idea that IPO investors often seek short-term gains, making firm age less relevant than expansion plans and business models. These findings are consistent with previous research by Meisya (2023), Widodo et al. (2021), Dias et al. (2023) and Cahyani (2024) all of which found no significant effect of firm age on IPO underpricing or initial returns.

4.9.3. The Effect of Firm Size on IPO Underpricing

The regression analysis indicates that firm size does not have a significant effect on IPO underpricing, with a p-value of 0.7791 (> 0.05) and a regression coefficient of -0.003247 . According to Signaling Theory (Spence, 1978), firm size is often perceived as a quality signal in IPOs, as larger firms typically possess stronger governance, more resources, and greater operational stability, thereby reducing information asymmetry. However, the findings suggest that investors may not view firm size as a sufficiently strong or relevant signal when assessing IPO prospects. This could occur if large firms fail to convey compelling information in their IPO prospectus, or if other factors such as underwriter reputation or industry conditions play a more dominant role in investor decision-making. As a result, firm size may no longer function as a credible signal in influencing underpricing levels. These findings are consistent with studies by Lubis (2024) and (Mulyani (2021), which also report no significant relationship between firm size and IPO underpricing.

4.9.4. The Influence of Profitability on IPO Underpricing

Profitability was found to have no significant effect on IPO underpricing ($p = 0.5057$; coefficient = 0.107299). Although Signaling Theory (Spence, 1978) suggests that strong financial performance should reduce underpricing by lowering investor risk perception, this study indicates that investors may prioritize future prospects over past profits during IPOs. These findings align with Anggraini & Trisnarningsih (2021), (Bunduwula et al. (2023) and (Ariyani (2023), who also found that profitability is not always a strong signal in IPO markets.

4.9.5. The Influence of Liquidity on IPO Underpricing

The study found that liquidity does not significantly affect IPO underpricing ($p = 0.4610$; coefficient = 0.002430). According to Signaling Theory (Spence, 1978), high liquidity should signal financial stability and reduce information asymmetry, potentially lowering underpricing. However, in the context of IPOs in Indonesia, investors appear to give less weight to liquidity ratios in their decision-making. This finding aligns with previous studies by Cahyani (2024), Isyuardhana & Febryan (2022) and Saputri & Santoso Marsoem (2020), all of which reported no significant impact of liquidity on IPO underpricing.

4.9.6. The Moderating Role of Underwriter Reputation on the Relationship Between Inflation and IPO Underpricing

The analysis revealed that underwriter reputation does not significantly moderate the effect of inflation on IPO underpricing, as indicated by a p-value of 0.1555 (> 0.05) and a regression coefficient of -63.34212 . According to Signaling Theory (Spence, 1978), a reputable underwriter serves as a credible external signal, reassuring investors about a firm's quality and reducing perceived risk, particularly under inflationary pressures. In theory, this could reduce the need for underpricing. However, the findings suggest that in the Indonesian IPO market, underwriter reputation did not strengthen the inflation-underpricing relationship. This may be due to investors focus on short-term IPO prospects, industry trends, and firm-level factors such as growth potential and expansion strategies, rather than inflation as a primary risk consideration. As a result, even reputable underwriters do not amplify inflation's impact on underpricing. These findings align with prior studies by Nurazizah & Majidah (2019) and Manurung & Manurung (2019) on inflation's influence on underpricing, as well as Lukman (2023) and Mutmainnah (2024), whose study also revealed that underwriters do not significantly affect IPO underpricing.

4.9.7. The Moderating Role of Underwriter Reputation on the Relationship Between Firm Age and IPO Underpricing

The study found that underwriter reputation does not significantly moderate the relationship between firm age and IPO underpricing ($p = 0.3170$; coef. = -0.007817). While Signaling Theory (Spence, 1978) suggests both variables should act

as positive signals to investors, their interaction was not impactful, possibly because investors see firm age as less indicative of future potential and underwriter reputation as unrelated to firm characteristics. This aligns with Oktananda & Gantjowati (2023), who found that underwriter reputation does not moderate the effect of firm age on IPO underpricing.

4.9.8. The Moderating Role of Underwriter Reputation on the Relationship Between Firm Size and IPO Underpricing

The study shows that underwriter reputation does not significantly moderate the relationship between firm size and IPO underpricing ($p = 0.7275$; coef. = -0.035666). While larger firms are generally perceived as less risky and more transparent, and reputable underwriters are expected to strengthen investor confidence (Spence, 1978), the interaction between these signals proved ineffective. This may be due to the already strong signal sent by firm size alone or limited market sensitivity to underwriter reputation in Indonesia. These findings are consistent with Kurnianingsih & Pahlevi (2024) which likewise identified no significant effect of firm size or underwriter reputation on IPO underpricing.

4.9.9. The Moderating Role of Underwriter Reputation on the Relationship Between Profitability and IPO Underpricing

The analysis reveals that underwriter reputation does not moderate the effect of profitability on IPO underpricing ($p = 0.8755$; coef. = -0.145570). According to Signal Theory (Spence, 1978), profitability is an internal signal of financial health, and reputable underwriters could theoretically strengthen its credibility. However, in practice, investors may view profitability metrics like ROA as historical and less relevant to future performance, especially during IPO evaluations. The insignificance of the moderation effect suggests that investors prioritize growth potential over past earnings, regardless of underwriter involvement. This finding aligns with Dewi & Wirama (2024) and Indra & Saputra (2023), who also found no moderating effect of underwriters and no significant impact of ROA on IPO underpricing.

4.9.10. The Moderating Role of Underwriter Reputation on the Relationship Between Liquidity and IPO Underpricing

The analysis shows that underwriter reputation does not moderate the influence of liquidity on IPO underpricing ($p = 0.1722$; coef. = 0.030665). According to Signal Theory (Spence, 1978), liquidity serves as an internal signal of a company's ability to manage short-term obligations. However, investors often view the current ratio as an insufficient indicator of long-term financial strength, especially if not backed by clear business strategies. Despite reputable underwriters, liquidity is perceived as a weak signal, as IPO investors prioritize growth prospects over short-term solvency. Moreover, underwriters typically signal credibility in pricing and distribution, not in financial ratios like liquidity. These findings align with Dewi & Wirama (2024), Indra & Saputra (2023), and Isyuardhana & Febryan (2022), as they also found no significant moderating effect of underwriter reputation on the liquidity-underpricing relationship.

5. Conclusion

This study tested the relevance of Signal Theory (Spence, 1978) within the context of the Indonesian IPO market. The results reveal that inflation has a significant positive effect on IPO underpricing, indicating that macroeconomic indicators continue to influence investor behavior. However, firm-specific characteristics such as firm age, firm size, profitability (measured by ROA), and liquidity were found to have no significant effect on underpricing. Furthermore, the moderating role of underwriter reputation did not significantly influence any of these relationships, including the effect of inflation on underpricing. These results indicate that classical signaling mechanisms may be insufficient to explain investor behavior in emerging markets like Indonesia. Instead, investors may prioritize behavioral factors, market sentiment, and sectoral trends over traditional firm signals. The role of underwriters in Indonesia has also yet to function as a strong quality signal in IPO pricing.

In practical terms, investors are advised to look beyond inflation and firm fundamentals when evaluating IPO opportunities. A more comprehensive analysis of the prospectus, including business models, capital structure, risk factors, and financial projections is essential. Additionally, Indonesian IPO pricing appears to be influenced by speculative retail investor behavior, short-term orientation, and psychological or strategic factors that may distort intrinsic valuation. Issuing firms should therefore improve how they communicate long-term value, while underwriters must support transparent and informative disclosures. Regulators such as OJK and IDX are encouraged to strengthen IPO transparency standards and enhance investor education, particularly in understanding IPO disclosures and the credibility of underwriters.

Future research should investigate alternative factors such as leverage, governance quality, institutional investor involvement, and disclosure levels as well as test other moderating variables like market sentiment or retail investor trust. Extending the study period or applying alternative methods could also improve robustness and contextual insight.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest to disclose.

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