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Underpricing in Indonesia: A Systematic Literature Review

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A B S T R A C T

This study employs the charting field method to empirically examine the evolution of underpricing research in Indonesia over the past decade (2014-2023). The research is categorized into four main areas: the development of underpricing studies in Indonesia, theoretical mapping, measurement mapping of underpricing, and causal relationship mapping. The findings reveal that underpricing research in Indonesia has advanced over the last ten years, albeit with fluctuations in the number of publications each year. The three most commonly applied theories in this field are signaling theory, information asymmetry theory, and agency theory. Initial return is the most frequently used measure of underpricing, accounting for 79% of the studies. Additionally, the causal relationship mapping highlights that many variables produce inconsistent results, indicating a research gap that future scholars can address. This study lays the groundwork for further exploration of the variables that influence underpricing, particularly by investigating underwriter reputation as a moderating factor. The research has practical implications for various stakeholders: Initial Public Offering (IPO) companies can use the findings to design more effective strategies, investors can rely on them to guide their investment decisions, and regulators can leverage the insights to develop policies that enhance transparency in the IPO process.

A B S T R A K

Penelitian ini menggunakan metode charting field untuk secara empiris mengkaji perkembangan penelitian tentang underpricing di Indonesia selama dekade terakhir (2014-2023). Penelitian ini dikategorikan ke dalam empat area utama: perkembangan studi underpricing di Indonesia, pemetaan teori, pemetaan pengukuran underpricing, dan pemetaan hubungan kausal. Hasil penelitian mengungkapkan bahwa penelitian tentang underpricing di Indonesia telah berkembang selama sepuluh tahun terakhir, meskipun dengan fluktuasi jumlah publikasi setiap tahunnya. Tiga teori yang paling umum diterapkan dalam bidang ini adalah teori sinyal, teori asimetri informasi, dan teori keagenan. Pengembalian awal adalah ukuran yang paling sering digunakan untuk mengukur underpricing, dengan proporsi 79% dari studi. Selain itu, pemetaan hubungan kausal menunjukkan bahwa banyak variabel yang menghasilkan hasil yang tidak konsisten, menunjukkan adanya celah penelitian yang dapat diisi oleh peneliti di masa mendatang. Penelitian ini membuka jalan bagi eksplorasi lebih lanjut mengenai variabel-variabel yang mempengaruhi underpricing, khususnya dengan menyelidiki reputasi underwriter sebagai faktor moderasi. Penelitian ini memiliki implikasi praktis bagi berbagai pemangku kepentingan: perusahaan yang melakukan penawaran umum perdana saham (IPO) dapat memanfaatkan temuan ini untuk merancang strategi yang lebih efektif, investor dapat mengandalkannya untuk memandu keputusan investasi mereka, dan regulator dapat memanfaatkan wawasan ini untuk mengembangkan kebijakan yang mendukung transparansi dalam proses IPO.

1. INTRODUCTION

An Initial Public Offering (IPO) provides companies with a means to secure additional capital, which can be utilized to expand their business operations (Thoriq et al., 2018). Over the past decade, the number of companies undertaking IPOs has increased (see Figure 1), indicating a growing demand for capital to support business development and execution.

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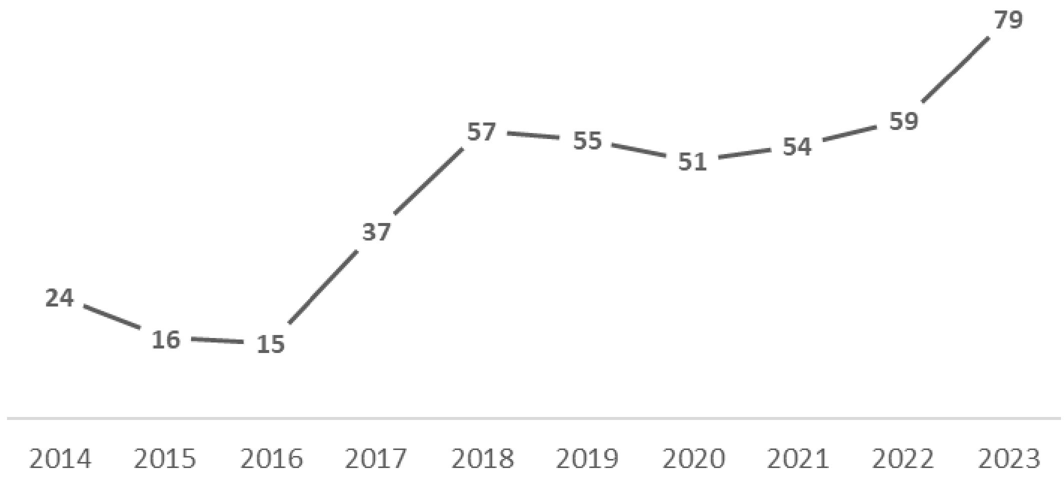

Figure 1. Number of companies that IPO in 2014 – 2023

Before an IPO, a company must determine the price of the shares to be offered to the public. Typically, this pricing is agreed upon by the company and the underwriter (Wahyusari, 2013). The role of underwriters is critical to the success of an IPO, as they strive to set a share price that accurately reflects the company's value (Widarjo et al., 2017). The pricing of shares can result in two outcomes: underpricing or overpricing. Underpricing occurs when the IPO share price is lower than the price established in the secondary market after the first day of trading. Conversely, overpricing occurs when the IPO share price exceeds the closing price on the first day of trading in the secondary market.

Underpricing is a common phenomenon during IPOs. For companies, underpricing is problematic because it limits the capital they can raise (Pahlevi, 2014). However, for investors, underpriced shares are favorable, as they can earn an initial return when the shares are sold in the secondary market (Sitomopul et al., 2017). Table 1 shows that over the past decade, an average of 85% of companies conducting IPOs experienced underpricing, with an average underpricing rate of 36.21%. According to research by Widarjo et al. (2017), underpricing in Indonesia, which ranges from 22% to 29%, is still considered high. One contributing factor to underpricing is the asymmetry of information among issuers, underwriters, and investors. The information provided in the prospectus, which is used to estimate prospects and assess the company's value, may differ among these parties, leading to varying expectations of the shares' value (Soesetio et al., 2022).

A Systematic Literature Review (SLR) on underpricing was conducted by Oliveira et al. (2023), focusing on information asymmetry as the primary theory explaining the underpricing phenomenon. Key factors influencing underpricing include the reputation of the underwriter and issuer, the presence of corporate governance mechanisms, and the size of the offering. Oliveira's study also employed a bibliometric analysis to map relevant academic publications, utilizing Zipf's Law, Bradford's Law, and Lotka's Law to understand the distribution and impact of publications in this field. While both studies explore the factors influencing underpricing and discuss relevant theories, this study expands beyond information asymmetry. A notable difference lies in the methodologies used: Oliveira's research applies bibliometric analysis, whereas this study adopts the charting field method.

Conducting an SLR on IPO underpricing in Indonesia is crucial due to the country's distinct economic, institutional, corporate, and investor characteristics. As an emerging economy with a high growth rate, Indonesia presents a unique context where rapid economic expansion often leads to increased investor optimism, potentially influencing IPO underpricing. However, factors like inflation and interest rates, which may differ from those in other countries, can also impact IPO pricing and market behavior. Additionally, Indonesia's capital market regulations, particularly stringent rules on transparency and reporting, can significantly affect investor confidence. The Indonesian government plays a substantial role in the economy, including in capital market oversight and support, which further influences IPO dynamics. Corporate characteristics in Indonesia, such as ownership structures frequently dominated by specific families or groups and the diversity in company size and industry sectors, contribute to a distinct underpricing landscape. Moreover, the investor profile in Indonesia, which tends to be more retail-focused compared to other markets, along

Table 1. IPO and underpricing companies in 2014-2023

Year	IPO Company	Company Underpricing	Percentage	Average Underpricing
2014	24	21	88%	28,77%
2015	16	14	88%	29,81%
2016	15	12	80%	30,94%
2017	37	29	78%	43,94%
2018	57	54	95%	66,99%
2019	55	51	93%	53,80%
2020	51	51	100%	38,59%
2021	54	45	83%	24,30%
2022	59	47	80%	23,52%
2023	79	56	71%	21,40%
Average	447	380	85%	36,21%

with unique investment preferences and behaviors, may also have a significant impact on the level of IPO underpricing.

This study aims to provide a comprehensive overview of the factors influencing IPO underpricing in Indonesia by analyzing a range of previous studies. Through a systematic literature review, researchers can identify gaps in the existing research and guide future studies to address unresolved questions. Additionally, this study can serve as a valuable reference for investors and companies seeking to gain a deeper understanding of the dynamics of the IPO market in Indonesia. To the best of the researcher's knowledge, no SLR on underpricing in Indonesia has been conducted to date. Therefore, this research is both necessary and timely.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Stages in IPO

There are five stages of the company's IPO process (IDX, 2024).

1. Underwriter appointment and document preparation

In the initial stage, the company must form an internal team, appoint an underwriter, and engage supporting institutions and professionals from the capital market to assist in the process of going public. The company also needs to obtain approval from the general meeting of shareholders, amend the Articles of Association, and prepare the necessary documents for submission to the Indonesia Stock Exchange (IDX) and the Financial Services Authority (OJK).

2. Submission of listing application to IDX and collective custody to KSEI

To become a public company with shares listed and traded on the IDX, a company must submit a listing application accompanied by the required documents, such as the company profile, financial statements, legal opinions, and financial projections. Additionally, the company must apply to register its shares for collective custody (scripless) with the Indonesian Central Securities Depository (KSEI). The IDX will review the submitted application and invite the company, along with its underwriters and supporting professionals, to present the company profile, business plan, and public offering plan. To gain a deeper understanding of the company's operations, the IDX will also conduct a site visit and request additional explanations relevant to the IPO plan. If the company meets the specified requirements within 10 Exchange Days of completing the necessary documents, the IDX will grant, in principle, approval of the listing application.

3. Submission of a registration statement to OJK

When submitting the listing application documents to the IDX, the company must also submit a registration statement and supporting documents to the OJK to initiate an IPO of shares. These supporting documents include the prospectus. During its review, OJK may request changes or additional information from the company to ensure that all material facts about the share offering, financial condition, and business activities are fully disclosed to the public through the prospectus. Before publishing a summary prospectus in a newspaper or conducting a book-building process, the company must obtain approval from OJK. A public expose can also be conducted once OJK has granted this publication permit. OJK will issue an effective statement after the company submits information regarding the public offering price of the shares and other required disclosures. Once the company's Registration Statement is declared effective by OJK, the company must publish any necessary corrections or additions to the summary prospectus in newspapers, provide the full prospectus to the public or prospective investors, and proceed with the public offering.

4. Public offering of shares to the public

The public offering period for shares typically lasts 1 to 5 working days. An allotment process must be conducted if investor demand exceeds the number of shares offered (oversubscription). In this process, any excess order money from investors whose share requests cannot be fulfilled will be refunded after allotment. Shares will be distributed to investors electronically through the KSEI and will not be issued in physical certificate form.

5. Listing and trading of company shares on the IDX

The company submits a listing application to the IDX, along with proof that the registration statement has been declared effective by OJK, the prospectus documents, and a report on the company's shareholder composition. Once the IDX approves the application, it will announce the listing of the company's shares and assign a ticker code for trading. This ticker code will be used by investors when trading the company's shares on the IDX. After the shares are listed, investors can buy and sell them through brokers or securities companies that are members of the IDX.

2.2. Underwriter

In the IPO process, the underwriter plays a crucial role in ensuring the success of a company's public offering. The primary responsibility of the underwriter is to assist the company in pricing its shares appropriately to reflect the company's quality. Underwriters bring valuable experience and a deep understanding of potential investors' needs and preferences. This expertise enables them to offer advice to issuers on the information that should be disclosed, helping to reduce information asymmetry (Farichah, 2018; Widarjo et al., 2017). During the IPO process, the issuer and underwriter collaborate to set the share offering price. However, there is often information asymmetry between them, as underwriters typically have more comprehensive knowledge of the capital market than issuers (Rastiti & Stephanus, 2015). Companies engage underwriters because the process of listing and offering shares is highly complex, allowing the company to concentrate on its core business operations (Legierse, 2023).

Experienced underwriters are generally regarded with higher prestige than newer ones due to their established reputation and proven track record in handling previous IPOs. This elevated reputation is crucial because it helps alleviate investor uncertainty regarding the share offering price (Utami et al., 2019). Research by Oktananda & Gantyowati (2024) supports this view, showing that reputable underwriters can reduce information asymmetry between the issuing companies and potential investors, enabling a more thorough evaluation of the company's prospects. Experienced and reputable underwriters are adept at organizing IPOs and delivering optimal services for investors, reflecting the company's stability and commitment (Prawesti & Indrasari, 2014). They provide high-quality information, which contributes to the overall success of the IPO (Corwin & Schultz, 2005). Reputable underwriters are more effective at facilitating IPOs and achieving better outcomes for share issuers (Logue et al., 2002). They play a crucial role in shaping investor perceptions and decision-making by offering clear and accurate information, which helps investors make more informed choices (Arora & Singh, 2019). Maintaining their integrity, reputable underwriters ensure a financially sound and positively viewed IPO process, ultimately benefiting long-term investors (Su & Bangassa, 2011).

According to How & Yeo (2000), underwriters without a well-established reputation are typically cautious about the risk of unsold shares. As a result, they often set the initial share price lower than the expected secondary market price as a risk-reduction strategy. In contrast, underwriters with a strong reputation are more confident in setting a higher initial share price. Their belief in the quality of their underwriting and its ability to attract investors at a higher price supports this approach. Underwriters' reputation and market activity significantly impact IPOs and long-term investment returns. IPOs managed by reputable underwriters generally experience lower risk and reduced underpricing, which enhances investor confidence. Experienced underwriters accurately assess a company's valuation and set an appropriate offering price. Additionally, their extensive network of investors can attract more interest (Carter & Manaster, 1990). Several studies conducted in Indonesia, including research by Bandi et al. (2020), Farichah (2018), Rastiti & Stephanus (2015), Rodoni et al. (2018), Setya et al. (2020), and Utami et al. (2019), have found that using highly reputable underwriters can lower the level of underpricing in IPOs. Therefore, issuers should carefully select a reputable underwriter to ensure the successful execution of their IPO (Widarjo et al., 2017).

2.3. Underpricing

Underpricing is a common occurrence in IPOs (Purwohedi et al., 2017; Ritter, 1991; Thoriq et al., 2018). This phenomenon happens when the share price offered is below its fair value in the secondary market (Pahlevi, 2014; Utami et al., 2019). The primary cause of underpricing is the information imbalance between the underwriter and the company conducting the IPO. This imbalance arises because underwriters and companies often have different perceptions of the true value of the shares. Consequently, the share price set during the IPO may not accurately reflect the market value (Isynuwardhana & Febryan, 2022; Kuswanto, 2021; Ljungqvist, 2007; Soesetio et al., 2022). Beatty & Ritter (1986) suggest that IPO underpricing is linked to pre-IPO uncertainty, with higher uncertainty leading to greater underpricing. Investors demand a risk premium to compensate for this uncertainty. Previous research indicates that underpricing often results from information asymmetry between the issuer and potential investors (Baron, 1982; Grinblatt & Hwang, 1989; Rock, 1986).

According to Allen & Faulhaber (1989), setting the share price in the primary market presents a significant challenge during an IPO. This process must balance the interests of existing shareholders, who seek to maximize the value of their holdings, with the expectations of new investors, who aim for capital gains. Existing shareholders desire a fair price to maintain the value of their current investments, while new investors look for opportunities to profit from future price increases. Underpricing is particularly appealing to investors because it often leads to higher initial returns in the form of capital gains (Hadiwidjaja et al., 2021; Sitomopul et al., 2017). The initial price is determined through negotiations with the underwriter, and companies set their offering price based on various factors to ensure a successful IPO (Hapsari & Subagyo, 2022). However, if the IPO price is set too low compared to the secondary market price, it can negatively impact the company. In such cases, the company may miss out on potential funds that could have been raised. Investors who purchase shares at the IPO price can benefit from abnormal profits if the share price rises in the secondary market. Consequently, company owners seek to minimize underpricing to avoid transferring wealth from themselves to investors (Pahlevi, 2014; Rastiti & Stephanus, 2015). In essence, underpricing can lead to lost potential profits for the company if the IPO price is not set appropriately. Therefore, careful consideration of the IPO pricing strategy is crucial for management to mitigate the negative effects of underpricing (Setya et al., 2020).

3. RESEARCH METHOD

A Systematic Literature Review (SLR) is a structured research method designed to systematically collect, evaluate, and interpret scientific publications on a specific topic. As a qualitative research approach, SLR aims to offer a comprehensive overview of existing studies, identify gaps in the literature, and establish a solid foundation for future research (Cardina et al., 2022). The SLR process involves a methodical procedure to minimize bias throughout the stages of research search, identification, assessment, synthesis, analysis, and summarization. When these procedures are executed correctly and errors are minimized, the review can yield reliable findings and valid conclusions. This rigorous approach is invaluable for decision-makers and researchers, providing them with trustworthy insights to guide informed decisions (Mengist et al., 2020).

This research employs the charting field approach method (Hesford et al., 2006). This method aims to provide an overview of prior research by systematically classifying and analyzing key points from relevant articles. The charting field approach is particularly suitable for this study as it effectively captures the complexity of underpricing by mapping out the development of research, theories, measurements, and causal relationships. This approach enables researchers to understand existing relationships and the impact of underpricing on decision-making. It offers flexibility to adapt the research focus as understanding evolves and helps visualize relationships between different factors, making it a valuable tool for presenting findings. Furthermore, the charting field approach provides a comprehensive perspective by considering the various factors and contexts influencing underpricing, leading to deeper and more thorough insights. The research methodology includes several steps, detailed in Table 2 and Figure 2.

Scopus and Sinta 2 are esteemed databases recognized for their high standards in article publication. They provide rigorous classification and selection processes, ensuring that the articles they publish meet high-quality benchmarks. This study did not include articles from the Web of Science (WOS) due to limited access. The research focused on articles about underpricing from Scopus and Sinta 2, resulting in the collection of 47 relevant articles for analysis. These articles were screened to assess their relevance to the topic of underpricing.

Table 2. Article selection criteria

Sinta 2	Scopus
1. Website: Sinta.kemdikbud.go.id	1. Website: www.scopus.com
2. Sinta Filter 2	2. Search with keywords "*Underpricing*" or "*Initial return*"
3. Keywords: Accounting, Accounting, Finance, Finance, Business, Business, Economy, Economy, Economics	3. Filter years from 2014-2023
4. Search by keyword underpricing, Initial return, IPO and Initial Public Offering.	4. Subject Area: • Economics, Econometrics and Finance • Business, Management and Accounting
5. Select articles according to the research topic	5. Select document type and language i.e. journal and English
6. Articles spanning the years 2014-2023	6. Select country/region: Indonesia
	7. Select articles according to the research topic

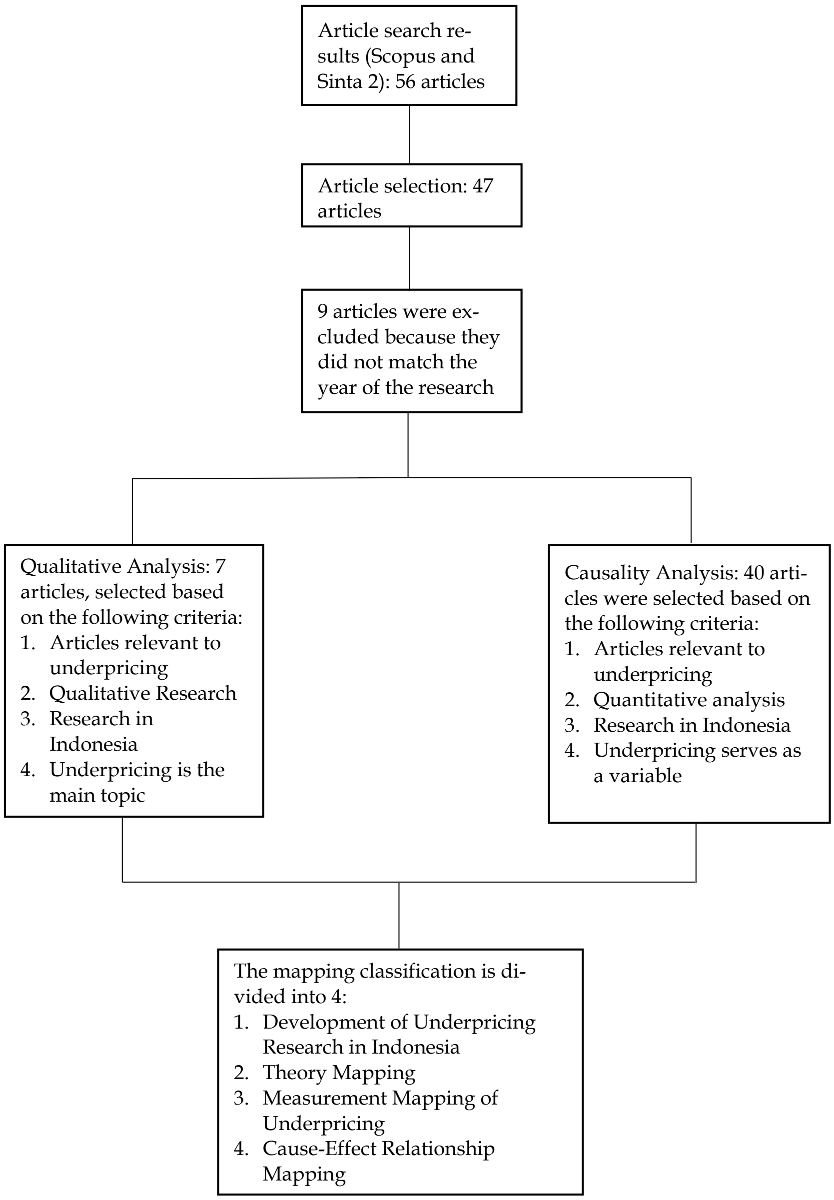

Figure 2. Stages of performing an SLR

Those meeting the criteria outlined in Table 2 will be further examined to gain a deeper understanding of the development of underpricing in Indonesia, as well as to explore causal relationships and unique characteristics of each article. The findings will be presented through tables and diagrams to offer a clear and comprehensive overview of underpricing in Indonesia. According to Sahoo & Rajib (2010), underpricing—referring to the initial return of an IPO—is a crucial metric for evaluating IPO performance. It is calculated as the difference between the closing price on the first trading day and the offer price. Previous research on underpricing includes studies by Bandi et al. (2020), Isynuwardhana & Febryan (2022), Oktananda & Gantyowati (2024), Pangestuti (2022), and Widarjo et al. (2020).

Based on previous research, it is evident that various variables have been linked to underpricing. However, these variables require further examination to provide a comprehensive overview of recent research trends and findings in Indonesia. The results of this analysis will be presented in tables and graphs, which will assist researchers in planning and designing future studies on underpricing. To the best of the author's knowledge, no SLR has been conducted on underpricing in Indonesia. Therefore, this research is timely and necessary. This study aims to provide empirical evidence on underpricing in Indonesia. The authors reviewed 47 articles from Scopus and Sinta 2 databases, focusing on those relevant to underpricing. The study results will be mapped by identifying articles exploring causal relationships, where underpricing is considered a dependent and independent variable. This approach will help illustrate how underpricing is formed and its effects. Ultimately, this research aims to contribute to understanding underpricing in Indonesia and highlight areas that require further investigation.

4. DATA ANALYSIS AND DISCUSSION

4.1. Development of Underpricing Research in Indonesia

The search process yielded 47 articles related to underpricing. These articles were categorized based on their respective journals, as shown in Table 3. This analysis provides an overview of the journals that lead research on underpricing. According to Table 3, the *Jurnal Keuangan dan Perbankan (JKP)* stands out with the highest number of articles, totalling five.

Table 3. Article search results

No	Journal	Index	Number of Articles
1	Binus Business Review	Sinta 2	1
2	Journal of Accounting and Investment	Sinta 2	2
3	Journal of Accounting and Strategic Finance	Sinta 2	1
4	Journal the Winners: Economics, Business, Management, and Information System Journal	Sinta 2	1
5	Jurnal Akuntansi	Sinta 2	2
6	Jurnal Akuntansi dan Bisnis	Sinta 2	1
7	Jurnal Akuntansi dan Pendidikan	Sinta 2	2
8	Jurnal Akuntansi Multiparadigma	Sinta 2	1
9	Jurnal Analisis Bisnis Ekonomi	Sinta 2	1
10	Jurnal Aplikasi Manajemen dan Bisnis	Sinta 2	1
11	Jurnal Aset (Akuntansi Riset)	Sinta 2	3
12	Jurnal Dinamika Akuntansi dan Bisnis	Sinta 2	1
13	Jurnal Ekonomi Modernisasi	Sinta 2	1
14	Jurnal Ekonomi dan Bisnis (JEB)	Sinta 2	1
15	Jurnal Ilmiah Akuntansi dan Bisnis	Sinta 2	1
16	Jurnal Kajian Akuntansi	Sinta 2	1
17	Jurnal Keuangan dan Perbankan (JKP)	Sinta 2	5
18	Jurnal Manajemen dan Kewirausahaan	Sinta 2	1
19	Jurnal Riset Akuntansi dan Keuangan Indonesia	Sinta 2	1
20	Jurnal Siasat Bisnis	Sinta 2	1
21	Shirkah: Journal of Economics and Business	Sinta 2	1
22	The Indonesian Accounting Review	Sinta 2	1

No	Journal	Index	Number of Articles
23	The Indonesian Capital Market Review	Sinta 2	1
24	Asia Pacific Management Review	Scopus	1
25	Business and Economic Horizons	Scopus	1
26	Business: Theory and Practice	Scopus	1
27	Gadjah Mada International Journal of Business	Scopus	1
28	Global Business Review	Scopus	1
29	International Journal of Business and Globalisation	Scopus	1
30	International Journal of Business and Society	Scopus	1
31	Journal of Economic Behavior and Organization	Scopus	1
32	International Journal of Economic Policy in Emerging Economies	Scopus	1
33	International Journal of Monetary Economics and Finance	Scopus	1
34	Investment Management and Financial Innovations	Scopus	1
35	Journal of Indonesian Economy and Business	Scopus	1
36	Journal of Islamic Accounting and Business Research	Scopus	1
37	Research in International Business and Finance	Scopus	1
38	WSEAS Transactions on Business and Economics	Scopus	1
	Total		47

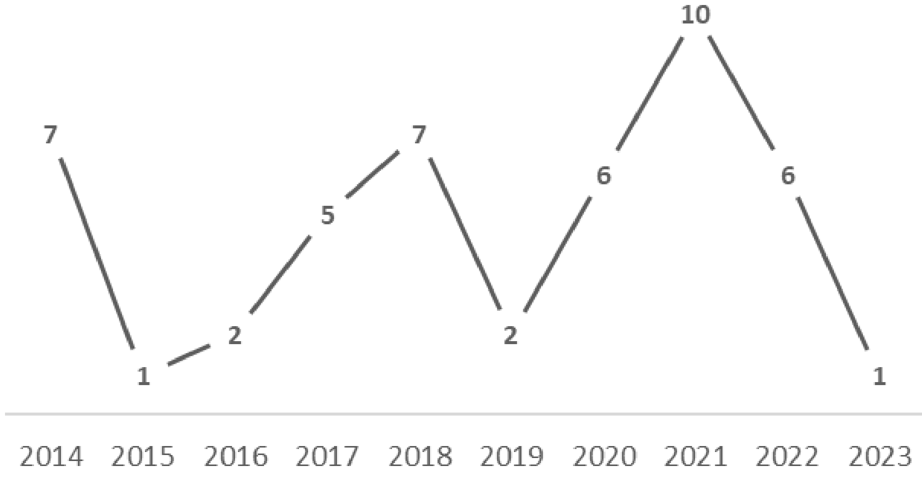

Figure 3. Development of underpricing research in Indonesia

Additionally, we visualize the 47 articles according to their year of publication in Figure 3. This analysis offers insight into the evolution of underpricing research in Indonesia. Figure 3 illustrates that, over the past decade, research on underpricing has generally increased despite fluctuations in the number of articles published yearly. Notably, there was a surge in research output in 2021, following the COVID-19 pandemic, with ten additional articles published that year. This uptick signifies heightened interest among academics and practitioners in underpricing. It reflects a response to the changing dynamics of the Indonesian capital market, where IPOs have become a crucial method for companies to raise capital. The growing body of research underscores the importance of understanding the factors influencing initial share prices and their impact on investors.

4.2. Theory Mapping

Figure 4 outlines the theories utilized in the 47 articles analyzed in this study. A total of 12 theories are employed in research on underpricing. Each theory is detailed in Table 4. Additionally, Table 5 lists the articles that use these theories, with article numbers provided. For more information on article numbers, please refer to Appendix 1.

Table 4. Theory explanation

Theory	Explanation
Signalling Theory	When a company plans an IPO, there is often a disparity in information about business prospects between the company owners and potential investors. Owners typically have a more comprehensive understanding of the company's condition and potential than investors. This information gap creates a challenge known as information asymmetry in the IPO process, where investors may lack sufficient data to accurately assess the true value of the shares being offered (Leland & Pyle, 1977). Signalling theory offers a valuable framework for understanding how differences in information affect external investors' perceptions of newly issued shares. According to this theory, companies with superior information can signal their quality to investors, thereby bridging the information gap and influencing investment decisions (Liu et al., 2020). Welch (1989) suggests that underpricing can signal the issuer's confidence in the company's quality. Investors might view underpricing as a strategy by the issuer to attract attention by offering shares at a lower price than their actual value, which is intended to build confidence in the company's prospects. Signalling theory also posits that issuers of lower-quality stocks will face higher costs if they attempt to use the same underpricing strategy as high-quality firms. The market will eventually evaluate the company's true quality over time. Therefore, signalling theory highlights that underpricing positively affects the firm's quality.
Information Asymmetry Theory	Asymmetric information theory explains that during the IPO process, information disparity exists between the company issuing shares and potential investors. Investors often lack sufficient details about the issuing company, leading to uncertainty due to this information gap. According to this theory, underpricing is considered compensation from companies to investors for the risks associated with this lack of information (Raharja, 2014). Rock (1986) highlights that information asymmetry is crucial in determining the share price during an IPO. Informed investors, such as underwriters and investment managers, have an advantage because they possess more detailed information, allowing them to profit from the stock market. To attract less-informed investors, companies often offer shares at a discount compared to their actual value. This strategy helps mitigate the risks for these investors, who may otherwise struggle with the uncertainty caused by the information gap. The study also indicates that information asymmetry can create uncertainty for uninformed investors, influencing their valuation of the newly offered shares. This uncertainty can affect their willingness to participate in the stock market and impact the stock's performance following the IPO.
Agency Theory	From the agency theory perspective, IPO underpricing arises because investors suspect an imbalance of information between themselves (the principals) and the company's executives (the agents). This information asymmetry concerns the company's true performance during the IPO, leading investors to be more cautious and avoid taking excessive risks when setting the IPO price (Sitomopul et al., 2017). Consequently, the share price offered during the IPO is often lower than the price at which the shares are first traded on the stock exchange (Beatty & Ritter, 1986; Katti & Phani, 2016).
Behavioral Finance Theory	Behavioral finance theory suggests that investor behavior is shaped by social, psychological, and financial factors (Ricciardi & Simon, 2000). This theory examines how changes in economic conditions, individual perceptions, and other factors influence investment decisions (Bikas et al., 2013). According to Yung and Nafar (2017), heightened investor attention boosts stock purchases. Unusual levels of investor attention are strong predictors of underpricing. Specifically, if a stock garners significant attention before its IPO, it will likely experience higher initial returns (Yan et al., 2019).
Market Efficiency Theory	Chivianti & Sukamulja (2021) argue that individual economic behavior influences the market, which in turn reflects collective decisions. Market inefficiencies can arise from the collective behavior of market participants, leading to irrational market conditions. The Efficient Market Hypothesis (EMH) assumes that investors act rationally, meaning irrational behavior should have minimal

Theory	Explanation
	impact. According to EMH, if an asset is priced incorrectly, knowledgeable investors will exploit the opportunity to purchase it below its intrinsic value. The investment price should accurately reflect all available information in a securities market with many informed investors. This is the core principle of the EMH, which asserts that asset prices incorporate all relevant information, thereby eliminating opportunities for unfair profits (Fama, 1970). However, despite the goal of market efficiency, various factors can lead to market inefficiencies. Underpricing in IPOs can signify uncertainty, strategic disagreements, and pricing distortions, which may disrupt the ideal pricing mechanism of an efficient market.
Institutional Theory	Institutional explanations for IPO underpricing suggest that various factors related to legal and market practices contribute to this phenomenon. Companies may opt for underpricing to mitigate the risk of litigation from dissatisfied shareholders. Additionally, support from underwriters can help stabilize the stock price post-IPO, which can enhance the initial average return. Tax advantages associated with underpricing might also influence managers in setting the appropriate level of underpricing (Ljungqvist, 2007). Overall, these institutional factors offer valuable insights into why IPOs are frequently underpriced, though the specific reasons can vary depending on the regulatory and market context of each country.
Equilibrium Theory of Capital Markets	Merton's (1987) theory of capital market equilibrium highlights the crucial role of information in asset pricing. When information is incomplete, investors have varying levels of access and understanding, which leads to differing opinions and creates uncertainty and pricing imbalances. This theory relates to IPO underpricing because both involve issues of information and differing investor perspectives. Underpricing occurs when the initial price of an IPO is set below its actual market value, often due to uncertainty and information imbalances. According to Rock (1986), underpricing is necessary to compensate uninformed investors, who face greater risks compared to those with more information.
Valuation Theory	Valuation theory, first introduced by Josef Kurschak in 1912 and further developed by Joseph E. Stiglitz, Stephen A. Ross, Edward C. Prescott, and Robert C. Merton in 1970, plays a crucial role in finance. It encompasses both shareholder value and fundamental value. Firm value is derived from market and enterprise values, with market value based on stock prices and enterprise value reflecting the overall value of the company. Investors rely on valuation to compare a company's value with its market price, and understanding these values is essential for informed business decision-making (Hapsari & Subagyo, 2022). This theory is relevant to the phenomenon of IPO underpricing, where the initial stock price is set below its true market value, leading to high initial returns for investors. Underpricing can be a strategic move to attract investor interest and ensure the IPO's success. The theory underscores the importance of accurately assessing a company's fundamental value and understanding the factors influencing it. Companies must balance market and enterprise values to set an appropriate IPO price. While setting a lower price may attract investors and offer quick gains, it may also indicate that the company is not fully leveraging its value potential.
Investor Sentiment Theory	Research by Baker and Wurgler (2007) indicates that investor sentiment can significantly impact stock prices, particularly in the short term. They found that markets do not always efficiently incorporate all available information. Investor sentiment can lead to price movements that deviate from fundamental values, potentially resulting in market bubbles and subsequent price declines. When investors are influenced by emotions or irrational expectations, they may drive offering prices higher. Rational IPO issuers can leverage this optimism by setting a higher share price, which helps reduce the extent of underpricing. During periods of optimistic sentiment, issuers can capitalize on the situation by pricing their shares higher, thereby narrowing the gap between the offering price and the market price post-IPO (Ljungqvist et al., 2001).
Stakeholder Theory	Stakeholder theory posits that companies have responsibilities beyond their shareholders to include a range of other parties affected by their operations.

Theory	Explanation
	These stakeholders encompass employees, customers, suppliers, local communities, governments, and other entities that have an interest in or influence over the company (Mcvea & Freeman, 2005).
Herding Behavior Theory	According to Chiang and Zheng (2010), herding refers to a phenomenon where investors' trading behaviors become correlated due to their interactions. In this scenario, investors tend to buy or sell stocks simultaneously, leading to a collective behavior that can drive stock prices away from their fundamental values—i.e., the prices that reflect the company's actual performance and prospects. As a result, stock prices influenced by herding do not represent fair values but are shaped by group behavior. In Indonesia, post-IPO herding is also anticipated due to investors' optimism about the underpricing phenomenon. This optimism is fueled by previous occurrences of underpricing, which have led to expectations of future gains (Arisanti & Asri, 2018).
Conventional Theory	Conventional theory posits that markets are efficient, meaning that any initial price increase in the secondary market is a result of a significant discount applied during the primary market. This price surge is seen as a natural adjustment toward the stock's intrinsic value, with market equilibrium being maintained. However, this theory does not adequately account for the poor long-term performance of stocks, where prices often decline after the IPO, sometimes falling below the initial offering price (Wibowo, 2021). The theory asserts that market prices reflect all available information, including a company's intrinsic value. Yet, the phenomenon of IPO underpricing—where the share price in the primary market is typically set lower than the secondary market price after listing—suggests that there are inefficiencies in the market.

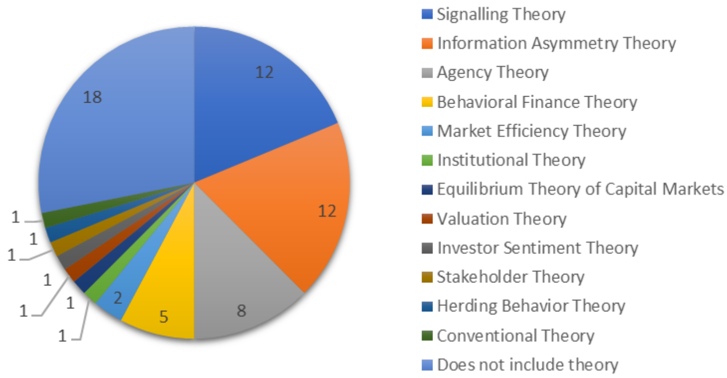

Figure 4. Use of theories related to underpricing research

Table 5. Theory usage article information

Number of Article	Theory
4,5,6,13,15,17,18,20,26,29,36,41	Signalling Theory
1,4,6,7,8,10,22,35,36,42,46,47	Information Asymmetry Theory
1,2,3,5,7,13,15,26	Agency Theory
1,9,14,18,38	Behavioral Finance Theory
9,14	Market Efficiency Theory
1	Institutional Theory
9	Equilibrium Theory of Capital Markets
10	Valuation Theory
19	Investor Sentiment Theory
29	Stakeholder Theory
30	Herding Behavior Theory
38	Conventional Theory
11,12,16,21,23,24,25,27,28,31,32,33,34,37,39,40,44,45	Does not Include Theory

4.3. Underpricing Measurement Mapping

Table 6 presents the methods used to measure underpricing across the 47 articles analyzed. The most commonly used measurement is the initial return, which is employed in 37 of the articles, representing 79% of the total. The table details this information and provides insights into commonly used indicators for assessing underpricing. This can guide future research in selecting appropriate measures for evaluating underpricing.

Table 6. Measurement of underpricing

No.	Variable	Indicator	Number of Articles	Percentage	Description	Explanation
1	Initial Return	$IR = \frac{P_{t1} - P_{t0}}{P_{t0}}$	37	79%	*IR:* Initial Return P_{t1}: First-day closing price P_{t0}: Initial offering price	Underpricing refers to the initial return of an IPO, which is a key metric for evaluating IPO performance. It is calculated as the difference between the closing price on the first trading day and the stock offering price set for institutional investors (Oktananda & Gantyowati, 2024). This suggests that using initial return to measure underpricing appropriately reflects IPO performance (Sahoo & Rajib, 2010). This method aligns with Miller and Reilly's 1987 recommendation for calculating IPO initial returns, and it remains relevant today, as evidenced by the widespread use of this measurement in research—37 articles in this study employed it. The initial return measurement formula is straightforward to understand, making it accessible for researchers and finance practitioners. It relies on readily available data, such as the first-day closing price and the initial offering price.
2	Market Adjusted Initial Return	$IR = \frac{P_{t1} - P_{t0}}{P_{t0}}$ $MAIR = IR_i - R_{m,t}$	2	4%	*IR:* Initial Return P_{t1}: First-day closing price P_{t0}: Initial offering price *MAIR*: Market-adjusted initial return of stock *i* IR_i: Initial return of stock *i* $R_{m,t}$: Market return on the same day as the trading of stock *i*	The Market-Adjusted Initial Return (MAIR) allows researchers to assess an IPO stock's performance by considering overall market conditions and the offering price. By subtracting market returns from IPO stock returns, MAIR provides a more accurate picture of how well or poorly the stock has performed relative to the broader market (Carter et al., 1998).
3	Underpricing (Dummy)	Values 1 if the stock is underpriced and 0 if not.	2	4%	-	-

No.	Variable	Indicator	Number of Articles	Percentage	Description	Explanation
4	Market Return	$IR = \frac{P_{t1} - P_{t0}}{P_{t0}}$ MR = Composite stock price index t - Composite stock price index t-1/ Composite stock price index t	1	2%	*IR:* Initial Return P_{t1}: First-day closing price P_{t0}: Initial offering price MR: Return generated from a general market investment on the first day of stock trading	Underpricing refers to the difference between the IPO offering price and the closing price of the shares on the first day of trading. It is typically measured by the initial return, adjusted for market return on the first trading day (Bandi et al., 2020). Although there are concerns about using market-adjusted returns to measure underpricing for IPOs of new companies, several arguments support its relevance. First, adjusted market returns offer a broader context for evaluating a new stock's performance against overall market trends, helping investors understand the stock's relative position. Second, while information asymmetry may be present, this method allows for assessing the risk investors face by comparing the new stock's returns with market returns. Additionally, adjusting for market returns helps to normalize market fluctuations, providing a more stable view of the new stock's performance. Finally, previous studies that have employed this method show consistency with established theories, reinforcing the validity of using adjusted market returns in analyzing IPO underpricing despite certain limitations.
5	Marked Adjusted Abnormal Return	$AR_{it} = R_{it} - R_{mt}$	1	2%	AR_{it}: Market-adjusted abnormal return for stock *i* during period *t* R_{it}: Return of stock *i* during period *t* R_{mt}: Market return during period *t*	The market-adjusted model for calculating abnormal returns evaluates stock performance by comparing a stock's actual return with the expected return based on overall market performance (Utamaningsih, 2014).
6	Unavailable	-	4	9%	-	-
Total			47	100%		

4.4. Cause-Effect Relationship Mapping

Mapping cause-and-effect relationships involves identifying and describing the connections between different variables to understand how one variable influence another. In the context of a literature review on underpricing in Indonesia, this approach aims to illustrate how various factors impact underpricing in the Indonesian market.

This study mapped these relationships using the underpricing variable as the foundation, analyzing 40 articles that examined cause-and-effect dynamics. Six cause-and-effect clustering models were identified: additive models, intervening variables, interactions of independent variables, interactions of moderator variables, recursive cyclical models, and non-recursive recursive models (Luft & Shields, 2006). Two articles employed moderating variables (Chivianti & Sukamulja, 2021; Pangestuti, 2022), while one study utilized mediating variables (Hapsari & Subagyo, 2022). The mapped cause-and-effect relationships and explanations of underpricing research in Indonesia are presented in Figure 5.

In the mapping presented in Figure 5 and Table 7, we identify several key variables that serve as both causes and effects of the underpricing phenomenon in the Indonesian stock market. First, auditor reputation significantly influences investors' perceptions of the quality of a company's financial statements. Reputable auditors tend to instill greater confidence in investors, which can reduce the level of underpricing needed to attract investor interest. The age and size of a company also play crucial roles. Older and larger companies typically have more established track records, reducing the need to offer substantial discounts to attract investors. In contrast, newer or smaller companies may struggle to build trust, potentially leading to higher levels of underpricing. Another critical factor is the reputation of the underwriter. A well-regarded underwriter can assist the company during the IPO process by providing more accurate valuations and attracting a broader base of investors, thereby minimizing the need for underpricing. Additionally, financial ratios such as earnings per share (EPS), price-earnings ratio (PER), return on assets (ROA) and return on equity (ROE) offer insights into the company's financial performance. Strong performance in these ratios can boost investor confidence and diminish the necessity for underpricing. Lastly, external factors influence underpricing decisions, including market conditions, investor sentiment, and government policies. For instance, companies may not need to offer significant discounts to entice investors in bullish market conditions. In an economic context, the interaction between various factors influencing investment decisions creates a complex ecosystem. This ecosystem includes multiple elements such as market conditions, investor behavior, issuer reputation, and the availability of information. Each element is interconnected, and their influence on investment decisions cannot be viewed in isolation. When the market is optimistic—characterized by favorable economic prospects and high investor confidence in a company's growth—investors are generally more willing to invest. In such conditions, demand for shares offered in an IPO increases, potentially leading to share prices closer to their actual market value. Confident in the potential future returns, investors are comfortable paying a higher price, which typically results in a lower level of underpricing, as issuers can offer only a small discount to attract interest. Conversely, in unstable or bearish market conditions, where economic uncertainty prevails, and investors are more skeptical about investment prospects, they tend to exercise greater caution. In these circumstances, investors may expect higher returns to offset the increased risk. To attract investors in such a market, issuers may need to set the IPO price below the anticipated market value, resulting in underpricing. By offering shares at a lower price, issuers aim to mitigate negative perceptions and enhance the attractiveness of their offering. However, this approach may limit the funds the company can raise from the IPO.

Underpricing is a dependent variable influenced by various factors, with several variables yielding inconsistent results. These variables include auditor reputation, company age, company size, underwriter reputation, earnings per share, price-earnings ratio, return on assets, return on equity, debt-equity ratio, current ratio, industry type, and net profit margin. The variability in these factors indicates that the degree of underpricing can differ depending on the context and the specific factors at play. Additionally, Figure 4 illustrates that underpricing can act as an independent variable, affecting various other outcomes within the stock market. The following are some dependent variables influenced by underpricing: share buybacks, excess returns, market value, long-term market performance, flipping activity, and investor divergence. For clarity, Appendix 2 provides the abbreviations or codes for each variable affecting underpricing. At the same time, Appendix 1 lists the causality mappings, offering insights into the articles that contribute to the mapping presented in Figure 5.

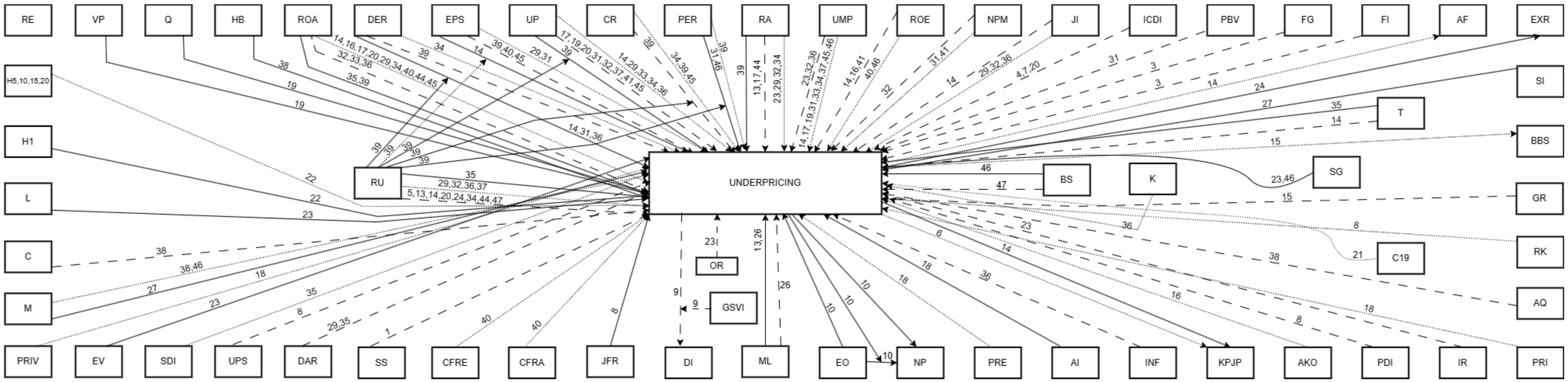

Figure 5. Cause and effect relationship mapping

NOTES:

: Positively Affected
: Negatively Affected
: Not Affected

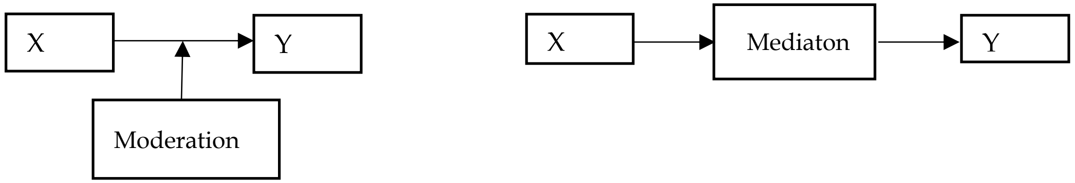

Table 7. Article Group

Financial Performance	Cash Flow Return on Equity, EPS (Earnings per Share), ROA (Return on Assets), ROE (Return on Equity), PER (Price Earnings Ratio), PBV (Price to Book Value), NPM (Net Profit Margin), Liquidity, Earnings Management, Sales Growth, Earnings Variability, Operating Cash Flow, Cash Flow Return on Assets, Current Ratio, DER (Debt to Equity Ratio), DAR (Debt to Assets Ratio), Retained Equity
Non-Financial Performance	Auditor Reputation, Underwriter Reputation, Trading Volume, H1, 5, 10, 15, 20 (Trading), Conservatism, Company Size, Offering Size, Intellectual Capital Disclosure, Company Age
Economic Factors	COVID-19, Inflation, Exchange Rate
Corporate Governance	Family Generations, Family Involvement, Ownership Concentration, Board Size, Share Buybacks, Entrepreneur Ownership, Retained Ownership
Other Variables	Investor Sentiment, Sharia Status (dummy), Investor Divergence, General Risk, Time (dummy), Quarter (dummy), Market, Investor Attention, Abnormal Return, Excess Returns, Accrual Quality, Investment Fund Usage, External Risk Disclosure, Internal Risk Disclosure, Investment Risk Disclosure, Standard Deviation Index, Flipping Activity, Google Search Volume Index, Herd Behavior, Investment Risk, Number of Risk Factors, Industry Type, Market Value, Operating Risk, Standard Deviation Index, Underpricing, Long-Term Market Performance

5. FUTURE RESEARCH DIRECTIONS AND RECOMMENDATIONS

Future research should address two key areas. First, previous studies on underpricing have often produced inconsistent results. Further research is needed to understand these inconsistencies better and explain them better. Such studies could identify the factors contributing to these varying outcomes and offer more precise insights into the underpricing phenomenon. Second, the reputation of underwriters is a crucial factor in the IPO process and may influence the level of underpricing. Despite its importance, current research on underwriter reputation in this context is limited. Therefore, researchers are encouraged to explore the role of underwriter reputation as a moderating variable. This could provide new perspectives and address gaps in the existing literature. By focusing on these areas, future research will deliver more detailed and comprehensive findings on how underwriter reputation affects underpricing and related factors. These suggestions aim to promote more targeted and thorough research in underpricing, thereby contributing significantly to our understanding of this phenomenon in the capital market.

6. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study's conclusion aims to enhance the understanding of the underpricing phenomenon in Indonesia through a systematic analysis of relevant literature. Out of 56 articles reviewed, 47 met the selection criteria and were further analyzed. The study identified 12 theories used in underpricing research and developed a cause-and-effect relationship map illustrating how various factors influence underpricing. The findings suggest that, despite numerous studies, there remains a need for a deeper understanding of the causal relationships and unique characteristics affecting underpricing in the Indonesian capital market. Future research should focus on less explored variables and develop more comprehensive models to explain this phenomenon better.

Theoretically, this study contributes significantly to the literature on underpricing by mapping the theories employed in prior research. This lays the groundwork for developing new theories that are more relevant to the Indonesian context and encourages exploring the relationships between existing variables. Practically, the study's results offer valuable insights for several stakeholders. Companies planning an IPO can use this information to craft more effective offering strategies, reducing the risk of loss and maximizing market value. Investors can benefit from understanding the factors influencing underpricing, aiding in assessing potential returns from newly issued shares. Capital market regulators can also use these findings to develop policies that promote transparency and efficiency in the IPO process.

This research is limited by its reliance on Scopus and Sinta 2 indexed articles, which may restrict the scope of the data. Future research could expand the dataset by incorporating global data from Scopus and visualizing it with VOSviewer. Researchers might also explore issues related to inconsistent research results, such as the role of underwriter reputation as a moderating variable. Addressing these gaps could lead to more detailed and insightful findings.

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Appendix 1. List of causality mappings

No.	Title	Journal	Author
1	Shariah vs non-shariah IPO underpricing: evidence from Indonesia Stock Exchange	Journal of Islamic Accounting and Business Research	(Hanafi & Hanafi, 2022)
2	Fixed price and book building methods in an exogenous environment: Evidence from Indonesia stock market	Research in International Business and Finance	(Hanafi, 2021)
3	Impact of family ownership, management, and generations on IPO underpricing and long-run performance	Investment Management and Financial Innovations	(Atmaja & Chandera, 2021)
4	Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia	Global Business Review	(Widarjo *et al.*, 2020)
5	The lead underwriter reputation and underpricing: study of company's IPO in Indonesia	International Journal of Economic Policy in Emerging Economies	(Bandi *et al.*, 2020)
6	Underpricing and long-term market performance of initial public offerings in Indonesia: A quantile regression approach	Business and Economic Horizons	(Sasikirono *et al.*, 2018)
7	Underwriter Reputation, Intellectual Capital Disclosure, and Underpricing	International Journal of Business and Society	(Widarjo *et al.*, 2017)
8	Underpricing and Number of Risk Factors of Initial Public Offerings in Indonesia	Business: Theory and Practice	(Gumanti *et al.*, 2017)
9	The Effect of Google Search Volume Index on Underpriced IPOs and Divergence of Opinions	Journal of Indonesian Economy and Business	(Chivianti & Sukamulja, 2021)
10	The Role of Initial Return to Market Value and Entrepreneur Ownership in Indonesia	WSEAS Transactions on Business and Economics	(Hapsari & Subagyo, 2022)
11	The Green Shoe Option's Effectiveness at Stabilizing the IPO'S Stock Price on the Indonesian Stock Exchange (2000-2013)	Gadjah Mada International Journal of Business	(Saadah & Panjaitan, 2016)
12	The impact of public ownership and share warrants on market performance of IPOs: Evidence from the Indonesian Stock Exchange (IDX)	Asia Pacific Management Review	(Madyan *et al.*, 2020)
13	The impact of management on under-pricing at IPO and subsequent initial stock trading	International Journal of Business and Globalisation	(Farichah, 2018)
14	Phenomena and determinants of underpricing, flipping activity and longterm performance: an empirical investigation of sharia IPO in Indonesia	International Journal of Monetary Economics and Finance	(Rodoni *et al.*, 2018)

No.	Title	Journal	Author
15	In search of stock repurchases determinants in listed Indonesian firms during regulatory changes	Journal of Economic Behavior and Organization	(Moin *et al.*, 2020)
16	Pengaruh Profitabilitas Terhadap Intial Return dilihat dari Aspek Cash Basis dan Accrual Basis (Studi pada Perusahaan yang Melakukan Initial Public Offering (IPO) di Bursa Efek Indonesia Periode Januari 2011 – Agustus 2015	AKRUAL: Jurnal Akuntansi	(Febriani *et al.*, 2017)
17	Determinan Underpricing Pada Saat Penawaran Saham Perdana	Jurnal Akuntansi dan Pendidikan (ASSETS)	(Setiawan, 2018)
18	The Effect of Risk Disclosure and Investors' Attention on IPOs Initial Return of Indonesian Companies	Jurnal Akuntansi dan Pendidikan (ASSETS)	(Handayani & Handayani, 2022)
19	Do IPO Hot and Cold Markets Exist at The Indonesia Stock Exchange?	Binus Business Review	(Warganegara & Warganegara, 2014)
20	Intellectual Capital Disclosure and The Underpricing of Indonesian Initial Public Offerings	Jurnal Akuntansi dan Bisnis (JAB)	(Utami *et al.*, 2019)
21	IPO Under-pricing Phenomenon Approach: Does COVID-19 Has a Negative Sectoral Impact?	Journal of Accounting and Strategic Finance (JASF)	(Hadiwidjaja *et al.*, 2021)
22	IPO Stock Performance amidst the COVID-19 Pandemic: Has It been Undervalued?	Jurnal Dinamika Akuntansi dan Bisnis (JDAB)	(Kuswanto, 2021)
23	Disclosure of Risk Factors on Prospectus and Initial Public Offerings (IPO) Performance: Evidence from Indonesia	Jurnal Ilmiah Akuntansi dan Bisnis (JIAB)	(Kuswanto, 2020)
24	Peringkat Penjamin Emisi, Underpricing, dan Kinerja Pasar Sekunder Saham IPO di Bursa Efek Indonesia	Jurnal Keuangan dan Perbankan (JKP)	(Utamaningsih, 2014)
25	Penilaian Saham PT Pembangunan Perumahan Properti dalam Rangka Initial Public Offering	Jurnal Keuangan dan Perbankan (JKP)	(Khoirudin, 2017)
26	Manajemen Laba: Bagaimana Dampaknya Terhadap IPO Underpricing?	Jurnal Keuangan dan Perbankan (JKP)	(Purwohedi *et al.*, 2017)
27	Investor Sentiment, Market Volatility, and IPO Initial Returns	Jurnal Keuangan dan Perbankan (JKP)	(Saputra *et al.*, 2021)
28	IPO Performance Prediction during COVID-19 Pandemic in Indonesian Using Decision Tree Algorithm	Jurnal Keuangan dan Perbankan (JKP)	(Muditomo & Broto, 2021)

No.	Title	Journal	Author
29	Informasi Akuntansi dan Non Akuntansi Terhadap Initial Return Saham	Journal of Accounting and Investment	(Prawesti & Indrasari, 2014)
30	Herding Behavior of Post Initial Public Offering in Indonesia Stock Exchange	Journal of Accounting and Investment	(Arisanti & Asri, 2018)
31	Share Price Analyst with PBV, DER, and EPS at Initial Public Offering	Journal the Winners: Economics, Business, Management, and Information System Journal	(Kriswanto, 2016)
32	Analisis Faktor-Faktor yang Mempengaruhi Underpricing Saham Pada Penawaran Saham Perdana di Bursa Efek Indonesia	Jurnal Siasat Bisnis	(Pahlevi, 2014)
33	Informasi Akuntansi dan Non Akuntansi Pada Fenomena Underpricing yang Terjadi Saat Penawaran Umum Saham Perdana Pada Perusahaan yang Terdaftar di Bursa Efek Indonesia	Jurnal Akuntansi	(Kurniawan *et al.*, 2014)
34	Studi Empiris Tingkat Underpricing Pada Initial Public Offering	Jurnal Akuntansi Multiparadigma (JAMAL)	(Rastiti & Stephanus, 2015)
35	Underpricing pada saat IPO: Pengujian Teori Asimetri Informasi	Jurnal Analisis Bisnis Ekonomi (JURBE)	(Raharja, 2014)
36	Faktor Internal dan Eksternal yang Mempengaruhi Underpricing Pada Saat IPO di Bursa Efek Indonesia	Jurnal Aplikasi Manajemen dan Bisnis	(Thoriq *et al.*, 2018)
37	Analysis of IPO Performance in Indonesia in the "Hot Market" Period and Its Influencing Factors	Jurnal Aset (Akuntansi Riset)	(Agustina *et al.*, 2021)
38	IPO Underpricing, Accounting Conservatism, and Herd Behavior	Jurnal Aset (Akuntansi Riset)	(Wibowo, 2021)
39	Initial Returns Determinants with the Underwriter's Reputation as a Moderating Factor	Jurnal Aset (Akuntansi Riset)	(Pangestuti, 2022)
40	Accrual-based vs cash-based accounting in affecting underpricing phenomenon: Evidence from emerging country	Jurnal Ekonomi Modernisasi	(Soesetio *et al.*, 2022)
41	Pengaruh Return on Equity, Net Profit Margin dan Ukuran Perusahaan Terhadap Underpricing	Jurnal Kajian Akuntansi	(Mayasari *et al.*, 2018)
42	The Intended Use of Funds and IPOs Market Performance in Indonesian Capital Market	Jurnal Manajemen dan Kewirausahaan (JMK)	(Meidiaswati *et al.*, 2019)
43	Book Building vs Fixed Price Revisited: The Case of IndonesiaThe Case of Indonesia	Riset Akuntansi dan Keuangan Indonesia (REAKSI)	(Utami *et al.*, 2022)
44	Determinants of Underpricing in Islamic and	Shirkah: Journal of Economics and Business	(Setya et al., 2020)

No.	Title	Journal	Author
	Non-Islamic Shares on IPO		
45	Factors Affecting Underpricing Level during IPO in Indonesia Stock Exchange 2018-2019	The Indonesian Accounting Review	(Isynuwardhana & Febryan, 2022)
46	The Possibility of Manipulated IPO Underpricing and Post-IPO Stock Return: Empirical Study on Jakarta Stock Exchange 2009-2012	The Indonesian Capital Market Review	(Purwanto, 2014)
47	Information asymmetry, corporate governance, and IPO underpricing: Evidence in Indonesia	Jurnal Ekonomi dan Bisnis (JEB)	(Pelawi & Pelawi, 2023)

Appendix 2. Variable description

No	Code	Description	No	Code	Description
1	AF	Activity Flipping	31	K	Exchange Rate
2	AI	Investor Attention	32	KPJP	Long-Term Market Performance
3	AKO	Operating Cash Flow	33	L	Liquidity
4	AQ	Accrual Quality	34	M	Market
5	BBS	Share Buyback	35	ML	Earnings Management
6	BS	Board Size	36	NP	Market Value
7	C	Conservatism	37	NPM	Net Profit Margin
8	C19	COVID-19	38	OC	Ownership Concentration
9	CFRA	Cash Flow Return on Asset	39	OI	Operating Risk
10	CFRE	Cash Flow Return on Equity	40	PBV	Price Book Value
11	CR	Current Ratio	41	PDI	Investment Fund Usage
12	RK	Ownership Retention	42	PER	Price Earnings Ratio
13	DAR	Debt to Asset Ratio	43	PRE	External Risk Disclosure
14	DER	Debt to Equity Ratio	44	PRI	Internal Risk Disclosure
15	DI	Divergensi Investor	45	PRIV	Investment Risk Disclosure
16	EO	Entrepreneur Ownership	46	Q	Quarter (Dummy)
17	EPS	Earnings Per Share	47	RA	Auditor Reputation
18	EV	Earnings Variability	48	RE	Retained Equity
19	EXR	Excess Returns	49	ROA	Return on Asset
20	FG	Family Generations	50	ROE	Return on Equity
21	FI	Family Involvement	51	RU	Underwriter Reputation
22	GR	General Risk	52	SDI	Standard Deviation Index
23	GSVI	Google Search Volume Index	53	SG	Sales Growth
24	H1, 5, 10, 15, 20	H1, 5, 10, 15, 20 Trading	54	SI	Investor Sentiment
25	HB	Herd Behavior	55	SS	Sharia Status (Dummy)
26	ICDI	Intellectual Capital Disclosure	56	T	Time (Dummy)

No	Code	Description	No	Code	Description
27	INF	Inflation	57	UMP	Company Age
28	IR	Investment Risk	58	UNDP	Underpricing
29	JFR	Number of Risk Factors	59	UP	Company Size
30	JI	Industry Type	60	UPS	Offering Size
			61	VP	Trading Volume (Dummy)